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<tr>
<td>C”</td>
<td>labialized consonant C</td>
</tr>
<tr>
<td>Ĉ</td>
<td>glottalized consonant C</td>
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<tr>
<td>Ç</td>
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<td>ɜ</td>
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<td>ʒ</td>
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<td>ʃ</td>
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## Abbreviations and notations

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| -A                    | Actant (Sem- or DSynt-)
| A/ADJ                 | Adjective |
| ABL                   | Ablative (case) |
| ACC                   | Accusative (case) |
| ADV                   | Adverb |
| AgCo                  | Agentive Complement |
| AOR                   | Aorist (tense) |
| ART                   | Article |
| ATM                   | Aspects of the Theory of Morphology |
| C                     | Inflectional category |
| COagent               | Agentive Complement |
| COMP                  | Comparative |
| COMPL                 | Completive (aspect) |
| CONT                  | Continuative |
| D-                    | Deep |
| DAT                   | Dative (case) |
| DEF                   | Definite |
| DET                   | Determiner |
| DirO                  | Direct Object |
| DSyntA                | Deep-Syntactic Actant |
| DSyntS                | Deep-Syntactic Structure |
| DU                    | Dual (number) |
| ERG                   | Ergative (case) |
| FEM                   | Feminine (gender) |
| FUT                   | Future (tense) |
| g                     | Grammeme |
| g                     | Value of a syntactic feature |
| GEN                   | Genitive (case) |
| GER                   | Gerund |
| GP                    | Government pattern |
| IMPER                 | Imperative (mood) |
| IMPF                  | Imperfect (tense) |
| INCL                  | Inclusive [form of a pronoun] |
| IND                   | Indicative (mood) |
| INDEF                 | Indefinite |
| INF                   | Infinitive |
| INSTR                 | Instrumental (case) |
| IndirO                | Indirect Object |
| L                     | A particular lexical unit |
| L                     | A particular language |
| LOC                   | Locative (case) |
| LU                    | Lexical unit |
| MASC                  | Masculine (gender) |
| Morph-                | Morphological |
| MV                    | Main Verb |
| MTM                   | Meaning-Text Model |
| MTT                   | Meaning-Text Theory |
| N                     | Noun |
| NEU                   | Neuter (gender) |
| NEUTR                 | Neutral (respectfulness; focalization) |
| NOM                   | Nominative (case) |
| NUM                   | Numerical |
| OBJ                   | Object(ally) verbal affix |
| OBL                   | Oblique (case) |
| ObIO                  | Oblique Object |
| OBL                   | Oblique (case) |
| OBV                   | Obviative |
| PART                  | Participle |
| PART(IT)              | Partitive (case) |
| PERF                  | Perfect; perfective (aspect) |
| PASS                  | Passive (voice) |
| PL                    | Plural (number) |
| POSS                  | Possessive particle (= ‘that of …’) |
| PRES                  | Present (tense) |
| PRET                  | Preterit (tense) |
| RESP                  | Respectful |
| S-                    | Surface |
| -S                    | Structure |
| Sem-                  | Semantic |
| SemA                  | Semantic Actant |
| SemR                  | Semantic Representation |
| SemS                  | Semantic Structure |
| Si                    | Singular (number) |
| SSyntA                | Surface-Syntactic Actant |
| SSyntRel              | Surface-Syntactic Relation |
| SSyntS                | Surface-Syntactic Structure |
| SUB                   | Subject(ally) verbal affix |
| SUBJ                  | 1) Subjective (case) |
|                     | 2) Subjunctive (mood) |
| Subj                  | Subjunctive (mood) |
| Synt-                 | Syntactic |
| U                     | Utterance |
| V                     | Verb |
| V_{inv}               | Intransitive verb |
| V_{tr}                | Transitive verb |
| W                     | Wordform |
Abbreviations and notations

2/3-PERM 2/3-permutative
X, Y, Z, ... variables denoting SemAs
1, 2, 3 1st, 2nd, 3rd person
I, II, III, ... nominal classes I, II, III, ...
I, II, III, ... numbers of DSyntAs
Ø zero sign
R empty set
( X ) meaning (of) X
{ M } morpheme M

/xy...z/ xy...z is a string of phonemes
[ xy...z ] xy...z is a string of phones
X₁ + X₂ ... phraseme consisting of LUs X₁, X₂, ...
X ⇒ Y | C for a rule X ⇒ Y, C are conditions
X ∈ Y x is an element of Y

Lightface italics cited linguistic forms and, more specifically, signifiers and parts thereof (if the latter are not in phonemic transcription, i.e., not between slashes: / /)
CAPITAL LETTERS in a smaller font – names of lexical units and of morphemes
Boldface roman linguistic signs
Boldface italics technical terms on their first mention
SMALL CAPITALS in a smaller font – names of grammemes, such as ‘PLURAL’, ‘IND, PRESS’, ‘1, PL, EXCL, ’
in Courier technical terms in tables
Introduction
**The problem stated: A conceptual system for linguistic morphology**

1. **The goal of the book: Definitions of some important linguistic concepts**

   *Aspects of the Theory of Morphology* (= *ATM*) sets out to develop and sharpen a number of concepts crucial to the theory of linguistic morphology. I believe that one of the most urgent tasks of present-day linguistics is exactly that—putting in place a reliable conceptual apparatus. Strange as this might seem, the wild proliferation of formal approaches that swept through linguistics in the 60’s of the last century (and which still continues today) did not bring with it increased rigor in our treatment of basic concepts. Linguistic terminology still is a shambles. Imposing some order on morphological concepts and the terms used to describe them is the main challenge to be taken on by *ATM*.

   Thus, the orientation of the book is **meta-linguistic**: what follows is a contribution to the language of linguistics rather than to the description of particular natural languages. More specifically, *ATM* proposes rigorous definitions for a number of basic morphological concepts. However, to test these definitions and to show their validity, the book has to deal with data from particular languages. If the proof of a pudding is in eating, the proof of a concept defined is in applying it to a few languages—appreciating or rejecting the results. Therefore, I need to deal with the description of (fragments of) many different languages, and this gives my endeavor a distinct **typological** flavor. I am not presenting any new facts about the languages under analysis nor do I offer new explanations of some known facts. My main thrust is using the facts of this or that language in order to improve our understanding of such concepts as ‘agreement’ vs. ‘government’, ‘(grammatical) case’ vs. ‘nominative’ vs. ‘accusative’ [case], ‘ergative construction’, ‘(grammatical) voice’, ‘passive voice’, etc. I would like to make the terms and concepts current, say, in Slavic or Nilotic studies commensurate with what is known and used elsewhere. In short:

   *ATM* is an exercise in typologically-biased metalinguistics in the domain of morphology.

   This exercise is undertaken in the context of work that I began some forty years ago in Mel’čuk 1963 and have carried forward to the present day (Mel’čuk 1973a, Mel’čuk 1982, 1986, 1991a, b, 1993a, b, 1994b) culminating in Mel’čuk 1993 – 2000. The whole enterprise is aimed at creating a unified linguistic meta-language—something similar to what Nicholas Bourbaki accomplished more
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than half a century ago for mathematics. It goes without saying that a single person cannot succeed in such an adventure for the entire field of linguistics; therefore, I have to accept that my results are much less than final. Nevertheless, even a few timid steps in the right direction is much better than stagnation, and I propose here to take these steps.

To simplify things to manageable proportions, ATM deals only with morphological concepts. But to present a complete self-contained conceptual system—even solely for linguistic morphology—in one volume is, of course, out of the question: this would require too much space (Mel’čuk 1993–2000, where such a system is expounded, consists of five volumes). Here I opt for a different approach: to consider, in sufficient detail, only a few selected morphological problems, taken from the six basic domains of morphology, namely:

– the syntax-morphology interface (agreement, government, and congruence: Chapter 1);
– morphological signifieds (inflectional categories such as case and voice: Chapters 2–4);
– morphological signifiers (morphological processes: Chapter 5);
– morphological syntactics (gender vs. nominal class: Chapter 6);
– morphological signs (morph vs. morpheme; suppletion; zero signs; relations between linguistic signs: Chapters 7–10);
– the morphology-phonology interface (the role of morphology in solving some phonemicization problems: Chapter 11).

As a result, many relevant facets of morphology are not mentioned—things such as historical morphology, psycholinguistic research in morphology and morpho-nology, or computerized morphological models of languages. Even more importantly, the semantic side of morphological phenomena is not considered. However, the selected topics treated in ATM are discussed in some depth, with relevant details and abundant illustrations. Thus, the book is exactly what its title says it is: ATM does not present a complete theory of morphology, but deals with several important aspects of it. Albert Camus said once that "to misname things is to contribute to the world’s miseries" (Mal nommer les choses, c’est contribuer aux malheurs du monde). In ATM, I am trying to propose concepts and terms that hopefully will allow linguists to name linguistic things correctly—or, at least, more correctly.

2. The theoretical framework of the book: Meaning-Text Theory

Concepts such as agreement/government/congruence, case and voice, morph/morpheme/megamorph, etc., can be rigorously defined only in the context of a
specific linguistic theory, and a fairly formalized theory at that. As the theoretical framework for this book, I adopt Meaning-Text theory (= MTT; Mel’čuk 1974a, Mel’čuk 1981b, 1988a: 43 – 101, 1997c). All subsequent argumentation and discussion are carried out strictly in the terms of MTT, and this is really essential. For instance, the adoption of dependency syntax (rather than constituency, or phrase-structure, syntax) and distinguishing two levels in the syntactic representation of sentences (a Deep-Syntactic Representation and a Surface-Syntactic Representation) has crucial implications for the definition of agreement/government/congruence, of case and voice, etc. Considerations of space force me, however, to take the main tenets of Meaning-Text theory for granted, so that in what follows I will use – without special justifications or explanations – a number of theory-specific descriptions. (I will, nevertheless, add short clarifications and illustrations in places where I believe my reader’s good will and intuition might prove insufficient.)

One aspect of MTT that is especially important in connection with my goals in ATM is that in MTT utterances are represented using seven distinct, autonomous levels of representation:

1. Semantic Representation [= SemR]
2. Deep-Syntactic Representation [= DSyntR]
3. Surface-Syntactic Representation [= SSyntR]
4. Deep-Morphological Representation [= DMorphR]
5. Surface-Morphological Representation [= SMorphR]
6. Deep-Phonological Representation [= DPhonR]
7. Surface-Phonological Representation [= SPhonR]

A representation is a set of formal objects, called structures [= -S], each of which represents a particular aspect of the utterance. Thus, a SemR is a set of four structures, or an ordered quadruplet:

SemR = (Semantic Structure ; Sem-Communicative Structure ; Rhetorical Structure ; Referential Structure)

The first structure in a representation – in this case the SemS – is its main component and is referred to as the carrying structure. The remaining structures characterize the carrying structure; taken together, they express all the information relevant to that particular level of representation. However, it is often sufficient to make use of the carrying structure alone, a practice I will follow in most of my examples.

By way of illustration, I will supply the first five levels of representation of the sentence in (1):
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(1) The people’s support for the Prime-Minister amazes Mr. Bumbo-Yumbo.

I will limit myself to the first, i.e., carrying, structure of each representation, and I will omit the Deep-Phon-, or phonemic, and the Surface-Phon-, or phonetic, representations, which are not relevant for my purposes.

The Sem-Structure of (1) is shown in Figure 1:

Figure 1. The Semantic Structure of sentence (1)

Note that the Semantic Structure of Fig. 1 does not show the semantic inflectional meanings (the voice, mood and tense of the verb, the number and definiteness of the noun), which, strictly speaking, should be included as well.

It should be borne in mind that this SemS does not represent the sentence (1) as such, but its meaning; therefore, it corresponds not only to (1) but to all sentences synonymous with it, no matter what is their lexical composition or syntactic organization; cf. (1’), where, of course, only a small sample of all possible synonymous sentences is given:

(1’) a. The support of the Prime-Minister by the people (of the country) amazes Mr. Bumbo-Yumbo.
b. That the Prime-Minister is supported by the people (of the country) amazes Mr. Bumbo-Yumbo.
c. The popular support for the Prime-Minister is amazing to Mr. Bumbo-Yumbo.
d. Mr. Bumbo-Yumbo is amazed that the (country’s) population supports the Prime-Minister.
e. The population gives its support to the Prime-Minister, which causes the amazement of Mr. Bumbo-Yumbo.
The country rallies behind the Prime-Minister, to the amazement of Mr. Bumbo-Yumbo.

At the semantic level, these paraphrases are distinguished by Semantic-Communicative and/or Rhetorical Structure; however, I cannot deal with corresponding details here.

Formally, a SemS is a connected directed graph: a network, with labeled nodes and arcs.

- The nodes of a SemS are labeled with semantic units known as semantemes; these are, roughly, meanings of lexical units of $L$—the language under description. Semantemes are of two logical types: predicates and names (in the logical sense of the terms).
- The arcs of a SemS are labeled with numbers that indicate predicate-to-argument relations (in the sense of predicate calculus). Thus, numbers labeling the arcs simply distinguish individual arguments of the same predicate and have no meaning of their own. If the meaning of a lexical unit $L$ is a predicate, the arguments of this predicate are the semantic actants [$= \text{SemAs}$] of $L$.

Substantially, a SemS represents the common content, i.e. semantic invariant, of the whole family of possible paraphrases.

The DSynt-Structure of (1) is shown in Figure 2:

![Deep-Syntactic Structure](image)

Figure 2. The Deep-Syntactic Structure of sentence (1)

This DSyntS corresponds not only to sentence (1) but also to all sentences which are synonymous with it and exhibit the same Deep-Syntactic organization:

(1’) a. The support of the Prime-Minister by the people amazes Mr. Bumbo-Yumbo.
b. The Prime-Minister’s support by the people amazes Mr. Bumbo-Yumbo.
c. The people’s support for the Prime-Minister amazes Mr. Bumbo-Yumbo.

These sentences constitute a proper subset of the sentences in (1’); other sentences of (1’) have different DSynt-organization.

Formally, a DSyntS is an unordered dependency tree with labeled nodes and arcs.

- The nodes of a DSyntS are labeled with deep lexical units [= LUs] of $L$: basically, these are full lexemes and phrasemes that appear in the sentence represented. Other LUs are excluded:
  (i) ‘structural words’ (governed prepositions and conjunctions, auxiliaries, analytical markers of inflectional values, etc.) are not shown;
  (ii) the substitute pronouns found in the sentence are replaced with their antecedents;
  (iii) an idiom is represented as one node;
  (iv) an LU $L_1$ that is an element of the value of a Lexical Function $f$ of another LU $L_2$ [i.e., $L_1 = f(L_2)$] is replaced with $f$.

- Where necessary, an LU that occupies a node of the DSyntS is subscripted with symbols of semantically full grammemes, representing inflectional values of the particular language—definiteness and number for nouns, voice, mood and tense for verbs, etc.

- The arcs [= branches] of a DSyntS are labeled with symbols that, unlike the labels on the arcs of the SemS, are meaningful—they represent Deep-Syntactic Relations. A DSynt-Relation stands for a family of syntactic constructions (potentially) found in all natural languages, such as ‘Main Verb + Subject,’ ‘LU + Object,’ ‘LU + Complement,’ ‘Noun + Adjective,’ ‘Adjective + Adverb,’ etc. The Subjects, Objects, Complements (and their ‘transforms’) of an LU $L$ are this $L$’s Deep-Syntactic Actants [= DSyntAs]. In all, there are twelve DSynt-Relations distinguished in MTT:
  - Roman numerals I, II, ..., VI stand for actantial DSyntRelS (which hold between an LU and its subject, objects or complements: $Mary \leftarrow I \rightarrow loves \rightarrow II \rightarrow John$, $Mary \leftarrow I \rightarrow is \rightarrow II \rightarrow beautiful$); another actantial DSyntRel $II_{dir.sp}$ holds between an LU introducing Direct Speech and the expression of this Direct Speech (‘Hello,’ $\leftarrow II_{dir.sp} \rightarrow said \rightarrow I \rightarrow John$).
  - ATTR(ibutive) stands for the (restrictive) attributive DSyntRel (which holds between an LU and its restrictive, or specifying, modifier: a beautiful $\leftarrow ATTR_{-girl}, to walk$ $\leftarrow ATTR_{-fast}$).
  - ATTRqual stands for the qualitative attributive DSyntRel (which holds between an LU and its qualifying modifier: $John, ATTRqual \rightarrow tired after the trip$, decided $\ldots$).
COORD(inative) stands for the coordinative DSyntRel, which holds between an LU and its following coordinate dependent:

Mary –COORD→ and John; apples –COORD→ pears –COORD→ peaches; Lat. vent–COORD→ vidt–COORD→ vict ‘I came, saw [and] won’ [Caius Julius Caesar].

QUASI-COORD stands for the quasi-coordinative DSyntRel, which holds between an LU L and its conjoined dependent that semantically elaborates L, adding more specific information:

John was born in the USA, –QUASI-COORD→ in New York, –QUASI-COORD→ in Manhattan, –QUASI-COORD→ on the 56th Street.

APPEND(itive) stands for the appenditive DSyntRel, which covers all ‘loose’ syntactic links such as parentheticals, sentence adverbials, addresses, interjections, etc.:

I cannot, –APPEND→ frankly, do this.

For more on DSyntAs, see Chapter 3, 2, Definition 3.2, p. 184ff. As implied above, the DSyntRels are cross-linguistically universal.

The SSynt-Structure of (1) is shown in Figure 3:

Figure 3. The Surface-Syntactic Structure of sentence (1)
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The SSyntS specifies just one sentence—up to free Deep-Morphological variation, i.e., up to synonymous inflectional values (which do not appear in Fig. 3).7

A SSyntS is also an unordered dependency tree, quite similar to the DSyntS. However, the labeling of nodes and branches is different.

- The nodes of a SSyntS are labeled with all lexemes that appear in the sentence, including ‘structural words’ (e.g., in Fig. 3, the preposition FOR and the article THE), all substitute pronouns, all lexemes which are components of idioms, and all lexemes that are values of LFs.

- Where necessary, a lexeme that occupies a node of a SSyntS is subscripted for semantic grammemes other than those that are expressed by structural words (auxiliaries and articles), because the latter appear in the SSyntS as such—i.e., as labels on separate nodes.

- The branches of a SSyntS are labeled with the names of specific *Surface-Syntactic Relations* of L (see Mel’čuk 1974a: 219–236, Mel’čuk and Pertsov 1987: 85–162; Iordanskaja and Mel’čuk 2000). SSyntRelS are language-specific; a SSyntRel represents a particular syntactic construction of a particular language, this construction being specified by its observable properties: word order and prosody, agreement and government, control phenomena, etc.

The DMorph-Structure of (1) is shown in Figure 4:

**Deep-Morphological Structure**

![Diagram](Figure 4)

*Figure 4. The Deep-Morphological Structure of sentence (1)*

Like the SSyntS, the DMorphS also specifies just one sentence—up to free Surface-Morphological (= synonymous morphs) and free phonemic variation (which do not appear in this case, either).

The DMorphS of a sentence is a string of Deep-Morphological Representations of actual wordforms that make it up. (The DMorphR of a wordform is the name of the corresponding lexeme and a list of the grammemes that the wordform expresses.)

The SMorph-Structure of (1) is shown in Figure 5:
3. Characteristics of the linguistic definitions proposed

The Surface-Morphological Structure

\{THE\} \{PEOPLE\} \{SG\} \{POSS\} \{SUPPORT\} \{SG\}
\{FOR\} \{THE\} \{PRIME-MINISTER\} \{SG\}
\{AMAZE\} \{PRES.3SG\} \{MISTER\} \{SG\} \{BUMBO-YUMBO\}

Figure 5. The Surface-Morphological Structure of sentence (1)

The SMorphS of a sentence is a string of Surface-Morphological Representations of actual wordforms that make it up. (The SMorphR of a wordform is a set of morphemes and meaningful morphological operations—reduplications, apophonies, conversions—of which this wordform is made up.)

The DPhonS and the SPhonS of a sentence are, respectively, a phonemic and a phonetic transcriptions of the sentence (with the indication of all relevant prosodies). As noted above, these are not relevant to our discussions here in ATM.

According to MTT, a theoretical description of a language takes the form of a Meaning-Text linguistic model. This is a system of rules that is supposed, among other things, to ensure the correct correspondences between all adjacent levels of linguistic representation for a given sentence. Thus, given a SemS as in Fig. 1 (actually, of course, the whole SemR), an MT-model of English must produce for it a SMorphS as in Fig. 5 and then the corresponding phonemic/phonetic transcriptions; or vice versa, given the phonemic transcription of sentence (1), an MT-model of English must ‘extract’ from it the SemS of Fig. 1 (again, in fact it will be the corresponding SemR). Thus, an MT-model of L specifies for L the correspondence \{SemR\} \Leftrightarrow \{SPhonR\}, which—in the framework of this book—is reduced to the correspondence between their carrying structures.

All the discussion below will be in terms of Meaning-Text linguistic models. This means that I proceed on the basis of the postulates and formalisms adopted within this approach and make use of the types of the representations just introduced.

3. Characteristics of the linguistic definitions proposed

In order to help the reader to better understand my intentions, I will introduce here the requirements or principles, on which the definitions presented in ATM are based—first substantively, and then formally.
3.1. Substantive aspect of the definitions

As for the substantive characteristics of our definitions, the following three should be mentioned:

– they must be strictly deductive in character;
– they must strive for maximal separation of defining features;
– they must be designed to account, above all, for the prototypical cases.

These are the pillars of my ‘definitorial’ philosophy, or the basic principles of ATM.

The definitions proposed below apply to linguistic concepts—that is, the content of such terms as morph and morpheme, inflectional category and grammeme, case and voice, segmental and suprasegmental, suppletive, causative, derivation, alternation, etc. These concepts constitute the conceptual apparatus of linguistic morphology, and the corresponding terms form its metalanguage. They are necessary in order to ensure rigorous and unambiguous description of observable linguistic facts.

The deductive character of the definitions proposed

Suppose I want a rigorous definition of a concept, C, which is intuitively more or less clear in some obvious cases, but which in many marginal cases is confusing and unsatisfactory. First of all, I have to find and define the most general concept of which C is but a particular case. I emphasize: the most general concept, not genus proximum (= ‘nearest kind’). In other words, I begin by specifying the most general class of phenomena to which the phenomenon under study—i.e., the phenomenon covered by C—belongs, along of course with many other phenomena, which are superficially similar to, but essentially different from, C. Then I partition this class into the biggest subclasses available—ideally, into two subclasses—and repeat this operation again and again, until I get a subclass that consists only of phenomena covered by C. In this way, I establish the place of C among other similar concepts. Thus, my approach is deductive: I proceed from the most general to the most particular. (As mentioned in Subsection 3.2, whether it is preferable to use the term “C” for the most general concept developed or keep it for the most specific one—i.e., for C—is a separate matter; in what follows we will see both cases.)

Let me illustrate the application of this principle with a preliminary discussion of two examples: the concept of ‘morph’ and that of ‘ergative construction’ (these topics will be dealt with again in more detail later in ATM).
The concept of morph. Consider the following hypothetical situation: the term *morph* is applied to 1) radicals and suffixes (e.g., *dog* and *-s*), 8 to 2) meaningful alternations (e.g., *oo* ⇒ *ee*, as in *tooth* ~ *teeth*) and to 3) prosodic markers (e.g., the tones ‘, ‘, and ‘ that express different verbal tenses in Sudanic languages). 9 Is such a use valid or should we introduce better concepts and better terminology? The most general class to which all three types of elements belong is ‘elementary linguistic sign;’ let us call it ClassI. This ClassI is naturally subdivided into signs whose signifiers are segmental and suprasegmental entities—ClassI.1—and signs whose signifiers are operations, also segmental and suprasegmental (phonemic and tonal alternations)—ClassI.2. Thus, we obtain ClassI.1 that contains radicals, suffixes and prosodic markers, and ClassI.2 that includes all meaningful alternations. ClassI.1 is further subdivided into segmental (ClassI.1a) and suprasegmental (ClassI.1b) signs; as a result, we need a name for radicals and suffixes together, but to the exclusion of suprasegmental markers. What is more convenient than to call them *morphs*? (The elements of the ClassI.1b can be named supramorphs/suprafixes.) It becomes clear then that to use *morph* for the three types of elements mentioned above is a bad practice. It is better to narrow its range and apply it only to segmental elementary linguistic signs. (See Chapter 7 for details on the morph and related concepts.)

**NB:** Since my proposal concerns the use of a name rather than some linguistic facts, it cannot be, strictly speaking, proved or disproved. I can only indicate why the proposed terminological use is more convenient. Thus, it is logically possible to keep applying the term *morph* to segmental and suprasegmental signs, distinguishing them by modifiers: segmental morphs vs. suprasegmental morphs. But then the class of most widespread and typical signs (= segmental elementary signs) and the class of relatively rare and rather ‘exotic’ signs (= suprasegmental elementary signs) will have formally similar complex names; it seems preferable to use a short and versatile name *morph* for the first class and coin a new term for the second.

Such is the nature of my whole endeavor: I propose a set of names (‘pasted’ to corresponding concepts) that—hopefully—form a unified system and contribute to a better logical analysis of real linguistic phenomena.

The concept of ergative construction. Traditionally (since Nikolaj Trubetzkoy), the ergative construction is defined as a ‘finite transitive verb construction in which the Direct Object is expressed in the same way as the Subject of an intransitive verb.’ However, I cannot accept such a formulation for a purely terminological reason: it covers no more than a single particular case of finite verb (i.e., predicative) construction. The most general class of special finite verb constructions (in case languages) that includes all instances of what is without hesitation
called *ergative construction* is the finite verb, or predicative, construction in which the Subject is marked by a case other than the nominative and can in principle denote a Causer. I propose that this construction be called an *ergative construction*. Then I proceed to defining its particular cases, among which we find a particular subtype of ergative construction whose DirO is formally identical to the Intransitive Subject. This is the most widespread and best known variety of ergative construction; yet logically and terminologically it is but a particular case. Therefore, here it is better to widen the range of the term under analysis. (See Chapter 4, 3, Def. 4.2, p. 270.)

Accepting this way of constructing definitions guarantees the consistently deductive and strictly hierarchical character of the conceptual system developed in this book.

**Separation of defining features**

Modern linguistics shows a clear tendency to describe a complex linguistic phenomenon P by a ‘multifaceted’ definition, which leads to a cluster concept, aimed at capturing the sum of properties that accrue to P. In a sharp contrast, I lay emphasis on separating as much as possible the defining features of P, thus creating fine-grained concepts each of which characterizes P only partially. To put it differently, I include into a concept as little as I can. Not that I am against cluster concepts in general—on the contrary, on many occasions, they cannot be avoided, and I am quite willing to use them. But first I will try to separate the properties of the phenomenon P as far as possible and then define P by the minimal set of relevant properties—that is, by a set of concepts rather than by one complex concept. Thus, instead of trying to define grammatical voice by its function and by its form taken together, I separate them. As a result, I cannot say, for instance, that the ‘[Algonquian] inverse construction cannot be considered a voice at all, since it is not an option chosen to express one pragmatic nuance or another’ (Payne and Laskowske 1997: 423; emphasis added—IM.): I do not consider the function of expressing pragmatic information to be a defining property of voice—in this case, the passive. Therefore, I believe that we can have both passives that fulfill pragmatic functions and passives that do not. This is so because expressing communicative factors is typical of a number of inflectional categories, not only of voice, while permuting syntactic actants with respect to semantic actants characterizes the passive only. (In actual fact, I agree that the Algonquian inverse is not a passive—but not for the reason mentioned above. See Chapter 3 for more details—in particular, Subsection 7.4, p. 244, on the inverse.)

Observing this principle enhances the flexibility of the conceptual system, as well as its ‘power of resolution:’ it uses, so to speak, simpler and more general concepts.
Orientation towards prototypical cases

I try, to the best of my ability, to preserve traditional linguistic notions as they arose 100 or more years ago, departing from the prescientific interpretation only where logic requires certain extensions or reductions. Therefore, the morphological concepts I propose are not very different in substance from those employed in mainstream traditional morphology. The novelty is basically in form: the concepts are rigorously defined, and these definitions are rigorously applied to a variety of phenomena—sometimes gives quite unexpected results, as in, for example, the analysis of grammatical case in Nilotic languages (Chapter 4). In essence, my concepts are, nevertheless, the same as those employed in most traditional definitions: they are based on the analysis and definition of the prototypical instances of the phenomenon under study and subsequently generalized. (See Taylor 1989 and Wierzbicka 1989 on the role of prototypes in linguistic description.)

Thus, my approach is basically identical with what Hockett proposed some 50 years ago for the concept of grammatical case: to define case strictly on the basis of a prototypical case system—for instance, that of Latin or Ancient Greek—and then to generalize reasonably, so that new phenomena subsumed under the definition thus obtained will be sufficiently similar to, say, the Latin case (Hockett MS).

Let me emphasize that no Eurocentrism is implied in this methodology. What I am saying is not that the Latin concept of case should be imposed on a completely different language. I am insisting only on using the name case strictly for phenomena that are similar enough in criterial ways to Latin case to make the label ‘case’ applicable. If the phenomenon considered is not sufficiently similar to what we call case in Latin it simply should not be called case.

Taking this stance allows me to solve problems such as that presented by the passive voice in Mam, as described by Shibatani (1985: 836, ex. (39)). According to this description, Mam expresses the Patient in an active transitive clause as the Surface-Syntactic Subject (“[Mam is] a syntactically ergative language”). However, in a passive clause, the same Patient is still the Subject, as shown in (2b):

(2) a. $\text{Ma}$ $\emptyset$ $+$ xaw $+$ ěew $+$ ma+n $\hat{\text{Čeep}}$ $\text{cee?}$

REC(ent).PAST 3SG.ABS ACT 3SG.ERG cut ACT José tree

José cut the tree’ [CEE? ’tree’ is claimed to be the Subject].

vs.

b. $\text{Ma}$ $\emptyset$ $+$ ěem $+$ at $\text{cee?}$ $t$ $+$ u$\hat{\text{n}}$ ěep

REC.PAST 3SG.ABS cut PASS tree 3SG by José

‘The tree was cut by José’ [CEE? again is claimed to be the Subject].
The problem is then as follows:

How can one maintain a definition of the passive as a voice that promotes the expression of the Patient to be the Syntactic Subject—as, for instance, in Latin—and at the same time apply it to the Mam form in question (in (2b))? I think I have an answer: One cannot. We have to choose between two solutions:

1) Either we accept, with Shibatani, that CEE 'tree' is the Subject in both (2a) and (2b). In this case, the verbal form in (2b) should by no means be called passive, since this form is not at all similar to the prototypical Latin/English passive, where the Object becomes the Subject. The Mam form in -at (in (2b)) does serve to 'defocus' the Agent, as prototypical passives do, but it does so in a way that is diametrically opposed to how the prototypical passive works. If the description of the SSyntS of the sentences in (2) were correct, the form in -at would be a detransitivative (see Chapter 3, 7.1.2, Def. 3.13, p. 231ff), and not a passive.

2) Or we accept that the form Ø+keem+at is a passive. Then we have to reject the analysis under which CEE 'tree' is the SSynt-Subject in both sentences: in (2a), it must be a DirO.

(Personally, based on England’s description of the voices in Mam—England 1988, I accept the second alternative: in (2a), CEE 'tree' is the DirO, because, as far as I can judge from the data available to me, the Mam Subject must linearly precede all other dependents of the verb; this makes CEEP 'José' in (2a) the SSynt-Subject. See Chapter 3, 8.2, (56), p. 249ff.

3.2. Formal aspect of the definitions

From the standpoint of their formal aspect, I try to formulate the definitions in ATM in such a way as to satisfy the following four general conditions for a ‘good’ definition (cf. Apresjan 1982: 175):

A definition should be

− Formal: it should be applicable automatically, or literally.
− Rigorous: it should contain only previously defined concepts and/or else undefinable (= primitive) concepts, which must be listed as such. More precisely, it should be a definition of axiomatic type: per genus proximum et differentia specifica 'by the nearest kind and specific differences', as established by Boetius (480–524 AD, minister of the Ostrogoths’ king Theodoric the Great), who was following the ideas of Aristotle.
− Sufficient and necessary: it should cover all the phenomena that are perceived as being subsumable under the corresponding concept, and nothing but such phenomena.
3. Characteristics of the linguistic definitions proposed

– Universal: it should be applicable to any relevant phenomena of any language.

Definitions of this type form a coherent unified conceptual system; this book presents a fragment of such a system of linguistic concepts proposed for morphology. As indicated above, I have been working on this system for a long time now— for about 40 years. The results of this endeavor are brought together in Mel’čuk 1993–2000, where 248 morphological concepts are defined, illustrated and discussed.

In ATM, I follow the methodology set out in my previous work. When considering a class of observable linguistic phenomena $P_i$— my pretheoretical set of data—which I believe to be subsumed under some concept, $C$, I construct the definition of $C$ by taking these six steps:

1) First of all, establish a ‘kernel’ subclass $P_j$ of the class $P_i$ ($P_j \subset P_i$)— that is, isolate those phenomena among all the $P_i$s that we would like to have covered by our definition under any circumstances. These $P_j$s correspond to the most typical particular case of $C$— in other words, to a prototypical $C$, symbolized as $c$. They will constitute the empirical basis of our future definition and are chosen quite intuitively; this choice must be taken as a postulate.

2) Analyze $c$ to find its constitutive components.

3) Develop a calculus of all logically possible cases of $c$, presumably covered by $C$. This requires combining the constitutive components of $c$ in all logically possible ways and trying to explain the unacceptability of the combinations banned by the language.

4) Formulate the definition of $C$ by generalization of the concept $c$, extract all underlying concepts vital for this definition, and make sure that these can be defined in their turn. Define $C$ in the most general way possible, again making sure that all subtypes of $C$ are automatically covered.

5) Review the whole field by applying the definition of $C$ to less clear-cut, fuzzy or dubious items in the set $P_j$, in order to see whether all relevant phenomena have been covered.

6) Discard similar but essentially different phenomena $C'$, delimiting them with respect to $C$; sketch out a definition for $C'$ to make sure that this can be done in a reasonable way.

Now the definition of $C$ is ready. We have to check it to make sure that it:

(i) covers all items which are intuitively sufficiently similar to $P_j$s (cf. Kuipers 1975 on the importance of intuitively felt similarity for linguistics);
(ii) rejects all items which are intuitively sufficiently dissimilar to $P_j$s;
(iii) produces results for all intermediate domains where our intuition balks—results that can be supported by further arguments elaborated especially for the solution in question. (Such an instance will be provided by an analysis of the English ‘Saxon Genitive’ in Chapter 2, 4, p. 120.)
When we are finished with the concept, the problem of the choice of an appropriate term should be dealt with: could we use one of the existing terms associating it with the concept we have just defined or is it better to coin a new term? As mentioned above, this is a difficult question that must be answered with delicacy and caution. What we do depends on the particularities of the term under analysis. Sometimes it is better to keep the term as it is—that is, to apply it to the old concept and invent a new term for the new concept. Sometimes, on the other hand, it pays off to use the term for the new concept and to rename the old one using the old term with some modifier. For the time being, I do not know of any formal criteria to guide our choice, so that the decision must be made based on the taste and intuition of the researcher. In ATM I will present several cases of such choices.

4. Intermediate concepts used in this book

To formulate morphological definitions, a set of linguistic concepts are needed which are not specific to my concrete tasks. These are intermediate concepts. A list of all intermediate concepts that underlie the definitions in ATM follows. Several of these concepts are discussed in some detail in the body of the book, but I give them here in order to ensure systematicity and easy reference. It is, of course, impossible to rigorously define all the intermediate concepts in this section, so I will in some cases limit myself to minimal explanations. (All these concepts are carefully defined in Mel’čuk 1993–2000.)

The intermediate concepts are divided in four groups:

– general linguistic concepts,
– lexical concepts,
– syntactic concepts,
– morphological concepts.

General linguistic concepts

1. **Utterance**: a speech segment which can appear autonomously—that is, between two major pauses. Notation: U. Utterance is a rather flexible (or elastic) concept, covering such speech segments as wordform, phrase, clause, sentence.

2. **Linguistic unit** (of L): an entity or an operation found in an utterance of a language L.


Two remarks are in order here:

– A linguistic signified is not necessarily a genuine meaning: it can be a syntactic dependency, or a piece of information about the syntactic valence of a unit,
or else a command to change, in a specified way, the combinatorial properties of a unit. Of course, all such signifieds are related, in the final analysis, to meaning, so that in this sense they are ‘meaningful.’ However, they are not parts of a Semantic Representation and are linked to it only indirectly.

On the other hand, a chunk of genuine meaning \( m \) is not necessarily a signified: \( m \) can be a configuration of several signifieds or a part of a signified. Thus, in Russian, the inflectional meanings, or grammemes, of the noun \( \text{SINGULAR} \) and \( \text{PLURAL} \) are not signifieds, because they cannot be expressed as such: they are always expressed cumulatively with case, so that each of them is only a part of a signified.

– The concept of linguistic sign, introduced by Ferdinand de Saussure one hundred years ago, was and still is described as the pair \( \langle \text{Signifier}; \text{Signified} \rangle \) – in this order. The fact that the signifier is put first is of course due to the predominant ‘analytic’ view of natural language – that is, from the viewpoint of text understanding rather than that of text production (I also used to follow this practice; cf., e.g., Mel’čuk 1982: 40). However, in my present perspective – FROM Meaning TO Text – it is by far more convenient to have the inverse order of presentation: \( \langle \text{Signified}; \text{Signifier} \rangle \).

4. **Segmental linguistic sign**: a linguistic sign whose signifier is segmental – i.e., is a string of phonemes supplied with all necessary prosodemes. See No. 27, p. 23, and Chapter 7, 2, Definition 7.2, p. 386.

5. **Syntactics** \( \Sigma \): one of the three components of the linguistic sign; it specifies the constrained cooccurrents of the sign that are not conditioned semantically or phonologically – in other words, which are determined neither by the signified nor by the signifier of the sign in question.

6. **Feature of syntactics** \( \langle \text{syntactic feature} \rangle \) \( \Sigma_i \): for example, the gender of nouns, the government pattern \([= \text{GP}]\) of verbs and other lexical units, declension/conjugation class. A particular feature of syntactics \( \Sigma_i \) can characterize a particular wordform \( w \) or a lexical unit \( L \). Notations: \( \Sigma_i(w), \Sigma_i(L) \).

7. **Value of a feature of syntactics** \( \gamma_i \): examples:
   - ‘feminine gender’ in the syntactics of a noun – e.g., Sp. MANO(fem) \( \langle \text{hand} \rangle \);
   - ‘governs the dative of the nominal expression of the DSyntA \( i \) in the GP of a lexical unit – e.g., Rus. PRINADLEŽAT’(D [DAT]) \( \langle \text{to belong} \rangle \);
   - ‘does not passivize’ in the syntactics of a transitive verb – e.g., Fr. AVOIR(\text{no passive}) \( \langle \text{to have} \rangle \).

8. **Operation of linguistic union** \( \oplus \). See Chapter 7, 2, Definition 7.3, p. 386.

9. **Represent, representable**: ‘A linguistic unit \( X \) can be represented \( (= \text{is representable}) \) in terms of linguistic units \( Y_1, Y_2, ..., Y_n \) and operation \( \oplus \)’ means that

\[
X = \oplus\{Y_1, Y_2, ..., Y_n\} \text{ or } X = Y_1 \oplus Y_2 \oplus ... \oplus Y_n;
\]

the two formulae are equivalent.
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A linguistic sign X is representable in terms of signs Y₁, Y₂, ..., Yₙ if and only if its signified is representable in terms of the signifieds of Y₁, Y₂, ..., Yₙ and its signifier is representable in terms of the signifiers of Y₁, Y₂, ..., Yₙ:

\[ X = \oplus \{ Y₁, Y₂, ..., Yₙ \} = \{ Y₁, Y₂, ..., Yₙ \} \]

and \( /X/ = \oplus \{ /Y₁/, /Y₂/, ..., /Yₙ/ \} \).

10. Quasi-representable (this concept applies only to signs): A linguistic sign X is quasi-representable in terms of signs Y₁, Y₂, ..., Yₙ if and only if it is not representable in terms of Y₁, Y₂, ..., Yₙ, but either its signified or its signifier is representable in terms of the signifieds or signifiers, respectively, of Y₁, Y₂, ..., Yₙ. Thus, the sign am is representable only in its signified:

\[ 'am' = \oplus \{ 'be', 'indic', 'pres', '1 pers', 'sg' \} \]

but not in its signifier:

\[ /æm/ \neq \oplus \{ /b\,\verbs/, /\,\verbs/ \} \].

A sign quasi-representable in its signified is suppletive with respect to some other sign(s); see Chapter 8, p. 405ff.

The expression kick the bucket, on the contrary, is representable only in its signifier:

\[ \text{kick the bucket} = \oplus \{ \text{kick}, \text{the}, \text{bucket} \} \]

but not in its signified:

\[ 'die' \neq \oplus \{ 'kick', 'the', 'bucket' \} \].

A sign quasi-representable in its signifier is an idiom with respect to the signs that constitute it; cf. below, No. 17.

11. Elementary sign: a sign that is neither representable nor quasi-representable in terms of other signs.

12. Quasi-elementary sign: a sign that is quasi-representable in terms of other signs.

13. Minimal sign: a sign that is not representable—i.e., an elementary or quasi-elementary sign.

Lexical concepts

14. Wordform: a minimal utterance—i.e., an utterance not containing other utterances, a sufficiently autonomous linguistic sign which is not necessarily elementary. Notation: w. All signs that appear in the representation of the wordform w are said to be components of w. (See Mel’čuk 1993–2000, vol.
1. Ch. 4, p. 167–252 for a substantive discussion of this extremely important but hard-to-define notion.

15. **Lex**: a wordform or a phrase which is an analytical form (of a lexeme); examples: *sees, saw, will see or has been seen*, for the verb [to] SEE. A lex is an element of a lexeme; lexes that belong to the same lexeme are its *allolexes*.

16. **Lexeme**: the set of all lexes that can be described by one dictionary entry (= a word in one of its senses; all the lexes of a lexeme have an identical lexicographic definition and identical lexical cooccurrence). Notation: L.

17. **Idiom**: a special type of non-free phrase [= phraseme]—i.e., a phrase that needs to be stored in the lexicon as a *multilexemic* unit. An idiom is a semantically indecomposable but formally decomposable sign—i.e., a minimal sign quasi-representable in its signifier; cf. above, No. 10.

**Syntactic concepts**

18. (Direct) syntactic dependency (Mel’čuk 1988a: 129–144): in the expressions *PLEASANT trip, for HER* and *MARK smiled* the lexical item in small caps [= X] syntactically depends on the other lexical item [= Y]; X is a (syntactic) Dependent of Y, while Y is the Governor of X. Notation: X $\rightarrow$ synt $<$ Y.

19. Passive SSynt-role of X: a) a particular type of Surface-Syntactic dependency which subordinates X to its Governor (for instance, X is the Subject, a Direct Object, an Indirect Object, a Modifier, the Object of a preposition, etc.); or b) the status of X as the absolute SSynt-head of the utterance.

20. Actantial (= major) passive SSynt-role of X: a particular type of passive SSynt-role of X such that X is the Subject, an Object, or a Complement (of its Governor). The SSynt-relations that hold between such elements and their Governor are referred to as *major SSynt-relations*: for instance, subjectival, direct-objectival, indirect-objectival, etc. What is at issue here is a crucial distinction between (governed) actants, specified here, and (freely added) circumstantial (cf. Vater 1978 and Mel’čuk 2004b).

21. Passive SSynt-valence of X: the union of all passive SSynt-roles possible for X—i.e., the union of all SSynt-constructions in which X can be the Dependent and those where X is the absolute SSynt-head of the utterance. Notation: VALpass\(_p\)(X).

**Morphological concepts**

22. **Inflectional category** C: a set of mutually exclusive signifieds or parts of signifieds which oppose (allo)lexes—wordforms and phrases—of the same lexeme, such that the choice between them is obligatory in L. The inflectional category C characterizes the wordform w; notation: C(w).\(^{10}\)
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This is a very important concept, being genus proximum with respect to the concepts of case and voice, discussed in detail in ATM (e.g., ‘The inflectional category of case is an inflectional category which ... ’). Therefore, it seems necessary to give the corresponding definition in full here.

Definition 0.1: Inflectional Category

An inflectional category of class \( \{ K_i \} \) of signs of language \( L \) is a set of mutually exclusive values \( \{ (g_1), (g_2), \ldots, (g_n) \} \) such that:

1. with any \( K_i \), one of \( (g_j) \) is obligatorily expressed and every \( (g_j) \) is obligatorily expressed at least with some \( K_i \);
2. \( (g_j) \)-s are expressed regularly, i.e.:
   (a) a \( (g_j) \) is strictly compositional (this means that the meaning of any expression of the form \( s \circ (g_j) \) is 100% compositional);
   (b) a \( (g_j) \) has a relatively small set of markers distributed according to general rules;
   (c) a \( (g_j) \) is applicable to (nearly) all \( K_i \).

Comments on Definition 0.1

1. Classes of signs characterized by specific inflectional categories are actually classes of stems (see No. 31 below)—i.e., what is known as word classes, or parts of speech. Thus, in \( L \), nouns have particular inflectional categories (e.g., number and case), verbs have such and such others (voice, mood, tense, number, person), etc. Morphological signs, such as affixes, are not characterized by inflectional categories.

2. ‘Is obligatorily expressed’ means ‘is always expressed—if nothing explicitly contradicts this expression.’ Two factors can block the expression of an otherwise obligatory category \( C \) with the sign \( s \) of a given class (this phenomenon is known as neutralization of an inflectional category):
   - Either \( s \) expresses a value of another obligatory category \( C' \) such that \( C' \) is incompatible with \( C \) and is ‘stronger’ than \( C \); then \( C' \) ‘overrides’ \( C \).
     Thus, the plural in Russian adjectives precludes the expression of gender, which is otherwise obligatory: as a result, the Russian adjective does not distinguish gender in the plural.
   - Or else \( s \) is a component of another sign whose syntax does not admit the expression of \( C \). Thus, the sign read within the complex sign reader loses its ability to require the expression of voice, mood, and tense.

Note that what is obligatory is thus not the inflectional category as such, but the choice between its elements (= grammemes).

3. The two formal conditions in Definition 0.1 reflect the two intuitively felt constitutive properties of inflectional categories: their obligatory charac-
ter and relatively regular expression of their elements, respectively. In Condition 1, requirement a guarantees that no lexeme of K can be outside of the category in question, while requirement b provides for both incomplete (= defective) paradigms (e.g., singularia/pluralia tantum) and so-called partial inflectional signifedps (= relevant only for a subclass of K; see Chapter 2, 7, 2, p. 139, on partial cases. In accordance with a long-standing grammatical tradition, I do not require, for an inflectional category C, that any of its elements should be applicable to all of the lexemes in K; it is sufficient if any of the elements applies to some lexemes of K.

23. **Grammeme**: an element of an inflectional category, i.e., an inflectional value: e.g., 'SINGULAR', 'ACCUSATIVE', 'FUTURE [tense]'. Notation: g. I will write g ∈ C with the sense of ‘the grammeme g belongs to the inflectional category C,’ and g ∈ w to mean ‘the grammeme g belongs to the signified of the wordform w.’ A particular grammatical case or a particular voice (e.g., the instrumental or the passive) is a grammeme.

24. **Semantic inflectional category**: an inflectional category whose grammemes express genuine, ‘semantic’ meanings – i.e., they are directly related to configurations of semantemes in the Semantic Structure of the utterance. These are categories such as number in the noun, mood and tense in the verb, degree in the adjective. Semantic inflectional categories are opposed to syntactic inflectional categories, see immediately below.

**NB**: Grammemes of a semantic inflectional category may also mark syntactic relations (and often do); this does not prevent them from being semantic. It is sufficient that they express semantemes – what else they do at the same time is irrelevant.

25. **Syntactic inflectional category**: an inflectional category whose grammemes do not express genuine ‘semantic’ meanings, but rather mark syntactic dependencies, not necessarily directly: e.g., gender, number and case in the adjective. Syntactic inflectional categories are opposed to semantic inflectional categories.

26. **Grammatical meaning**: a meaning that is either inflectional, called a grammeme, or derivational, called a derivateme. Grammemes are obligatory and are regularly expressed; derivatemes are meanings which, without being obligatory or always regular, are expressed similarly to grammemes – by the same types of morphological means, like affixes or alternations: for example, the agent noun (-er) or the abstract noun (-ness) in English.

27. **Segmental**: such that it involves a string of phonemes.

28. **Suprasegmental**: such that it involves a complex of prosodemes.

29. **Radical/Root**: a morph that carries the main part of the wordform syntactics (i.e., most of its syntactic features), in particular – all of its interlexemic
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syntactics. The interlexemic syntactics of a wordform $w$ bears on the syntagmatic relations of $w$ with other wordforms of the same sentence—roughly speaking, it regulates $w$’s cooccurrence with other wordforms. Radicals/Roots constitute the vast majority of the morphs of $L$.

30. **Affix**: a morph that is not a radical/root. The main part of its syntactics is **intralexemic**: it bears on its relations with other signs within a wordform—i.e., specifies the affix’s cooccurrence with the radical of this wordform and perhaps with other affixes of the same wordform.

31. **Stem**: the component of a wordform that includes the radical and may include other non-inflectional components; it is not, of course, a complete wordform.

32–34. **Morph, morpheme, allomorph**: 
*Morph* is an elementary segmental sign. Different morphs having the identical signified belong to (=are allomorphs of) the same *morpheme* if and only if they are distributed according to sufficiently simple and general rules contingent on word-internal context. A morpheme is thus not a sign, but a set of signs. A morph is said to **manifest** the morpheme of which it is an *allomorph*. See Chapter 7, 2, p. 388ff.

35. **Strong megamorph**: a semantically decomposable but formally indecomposable sign—i.e., a minimal sign representable in its signified, but not in its signifier and manifesting a set of morphemes: e.g., Eng. {BE} ⊕ {PRES. IND} ⊕ {1SG} ⇔ *am*. A more common name for a megamorph is **portmanteau morph**—this, however, is terminologically flawed, since a portmanteau morph is by no means a morph: it does not belong to a morpheme, but rather is a ‘fusionned’ expression of two or more different morphemes.

36. **Alternation**: substitution of phonemic strings or prosodemic complexes such that, if applied to an appropriate signifier of $L$, it produces another signifier of $L$. Example: /ʃ/ ⇔ /ʃ/ in such pairs as *thief* ~ *thief*[es], *leaf* ~ *leaf*[es] and *wife* ~ *wife*[s].

37. **Apophony** (in the wider sense): a meaningful alternation, or, more precisely, a sign whose signifier is an alternation. Examples:

- in *foot* ~ *feet* we have an apophony expressing the plural:
  $A_{\text{PL}} = \langle \text{PL}^\Sigma \rangle$ ; /u/ ⇔ /u/ ; $\Sigma$ = applies to nouns of type $n_1, ...$; in *shoot* ~ *shot* we have an apophony expressing the past tense:
  $A_{\text{PAST}} = \langle \text{PAST}^\Sigma \rangle$ ; /u/ ⇔ /u/ ; $\Sigma$ = applies to verbs of type $n_2, ...$.

5. **The structure of the book**

*ATM* covers nine selected topics in linguistic morphology that seem to be of prime importance, each dealt with in its own chapter. To this, I add two chapters
dealing with the syntax-morphology and morphology-phonology interfaces—
to address, on the one hand, the problem of agreement and government, and on
the other, the problem of phonemicization within a morphological model. This
gives us, in total, eleven chapters, which follow each other in what seems the
natural order: the syntax-morphology interface, the morphological signified, the
morphological signifier, the morphological syntactics, morphological signs, and
the morphology-phonology interface. The result looks as follows:

Introduction
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Part I. The Syntax-Morphology Interface
Chapter 1. Agreement, government, congruence

Part II. Morphology Proper
1. Morphological signifieds
   Chapter 2. Case
   Chapter 3. Voice
   Chapter 4. Case, basic verbal construction, and voice in Maasai

2. Morphological signifiers
   Chapter 5. Morphological processes

3. Morphological syntactics
   Chapter 6. Gender and noun class

4. Morphological signs
   Chapter 7. Morph and morpheme
   Chapter 8. Suppletion
   Chapter 9. Zero sign in morphology
   Chapter 10. The structure of linguistic signs and the semantic-formal rela-
tions between them

Part III. The Morphology-Phonology Interface
Chapter 11. The phonemic status of Spanish semivowels

Conclusion
Results and perspectives
At the beginning of each section the plan of the ensuing discussion is briefly
sketched out. Definitions and linguistic examples are numbered separately wi-
thin each chapter. If they are referred to from a different chapter, they are always
identified by chapter number and subsection. Different phonemic transcriptions
and transliterations used by different authors have been standardized.

The presentation of examples and glosses follows the guidelines used in my
previous work:

Examples from ‘major’ languages are given in the accepted official spelling.
Languages with a non-Latin script (such as Russian, Greek, Japanese, Arabic,
Georgian) are transliterated in the most common way. If need be, phonemic
values of (some) letters are indicated.
Examples from languages which have no commonly known writing system are phonemically transcribed.

Wordforms are divided into morphs, which are separated by ‘+’ signs (that is, + stands for a morph boundary). The gloss of each morph is aligned left with the morph itself.

A lexical morph is glossed with English words, keeping as close to the original meaning as possible. A grammatical morph is glossed with grammatical abbreviations.

Different elements of lexical glosses and grammatical glosses are separated by periods: “do.well” or “PL.NOM”. Within one gloss, a string of lexical elements is separated from the string of grammatical elements by a hyphen: “you-DAT” or “go.by.vehicle-IMPER.2SG”.

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Notes

1 (1, p. 3) See, however, an interesting attempt by Aronoff (1994: 5–28) to sketch out the definitions of such morphological concepts as word formation, lexical/lexemic, root, stem, etc. To this, I would add Plungjan 2000, where many morphological concepts are discussed in depth.
2 (1, p. 3) The spelling ‘Igor’ Mel’čuk’ is used as a direct transliteration of the Cyrillic form of my name (Игорь Мельчук), pronounced /ígar´ m´el´čuk/, while its Westernized spelling is ‘Igor Mel’čuk.’

3 (1, p. 3) Nicolas Bourbaki, a fictitious French mathematician, was credited with having undertaken, in the 30’s of the 20th century, a formidable task of reformulating the whole body of modern mathematics in terms of a unified conceptual apparatus in order to provide a solid foundation for mathematics. He managed to publish over 20 volumes of a highly formalized treatise that deals with all major aspects of the field—algebra, set theory, number theory, calculus, topology, mathematical logic, and many other topics. In point of fact, ‘Nicolas Bourbaki’ is a pen name for a team of French mathematicians, led by Jean Dieudonné, Henri Cartan, Claude Chevalley, and André Weil. Their method of exposition is axiomatic and abstract, proceeding normally from the general to the particular.

4 (1, p. 5) Cf. Lehfeldt 1991: 14–18, on the relevance of the syntactic ‘background’ to the definition of agreement.

5 (2, p. 8) For Lexical Functions, see, e.g., Mel’čuk 1996a.

6 (2, p. 9) Although this is not directly relevant to the main content of ATM, I have to say a few words about the representation of coordination in dependency syntax. Consider a coordinated expression X and Y; the passive valence of the phrase and Y is imposed by the conjunction, so that Y depends on the conjunction, and we have and – synt – Y. The passive valence of X and Y is that of X (rather than that of and Y); as a result, we have X – synt – and – synt – Y. In other words, the head of a coordinated construction is its first member, and each subsequent member depends on the preceding one.

7 (2, p. 10) Free Deep-Morphological variation occurs when, in particular contexts, the opposition between two inflectional values that normally contrast is suspended, so that these values become synonymous. Examples:

(i) Rus. Nalej mne čaj+u [ČAJsg.genitive] = čaj+u [ČAJsg.partitive]!
‘Pour me some tea!’

(ii) Rus. dvadcat’ odna kniga, kuplenn+aja [KUPLENNYJfem.sg.nominative] věera = kuplenn+ye [KUPLENNYJpl.nominative] věera
‘21 books bought yesterday’

(iii) Oats is/are what we grow here.

8 (3.1, p. 13) I prefer radical to root for the following two reasons: 1) Root is often understood in the etymological (= diachronic) sense; thus, the root of the English noun restaurant is *stà, while its radical is restaurant-. (The hyphen is used here to indicate that it is a radical rather than a complete wordform.) 2) It is counter-intuitive to apply the term root to a quasi-elementary sign, such as institution, while the term radical applies here quite naturally.

9 (3.1, p. 13) This situation is very close to what was normal in American structural linguistics of the 1940’s and 1950’s, with the only difference being that the term used in this way was morpheme rather than morph (for instance, in Nida 1961: 62, 71, 75).

10 (4, No. 22, p. 21) A category is a maximal set of mutually exclusive signifieds or parts of signifieds. For instance, the meanings ‘solid’, ‘liquid’ and ‘gas-like’ form a category. Another example is the category of tense: ‘present’, ‘past’, ‘future’. (The modifier maximal ensures that a category actually embraces all the signifieds it can
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embrace.) From the above formulation, it follows that a category has no fewer than
two elements—one element cannot be ‘mutually exclusive.’

(4, No. 25, p. 23) No impenetrable border separates semantic and syntactic inflectional categories. As is well known, in special contexts a semantic inflectional category may function as a syntactic one, being governed or agreed for. Thus, the semantic category of nominal number in Russian is governed by the numeral that quantifies the noun: dvadcat’ odin dom$^+\emptyset$ [sg. nom] $^{21}$ houses$^1$ vs. tri dom+a [sg. gen] $^3$ houses$^1$ vs. pijat’ dom+ov [pl. gen] $^5$ houses$^1$. On the other hand, a typically syntactic category may acquire a fully semantic role; thus, krasn$^+$yj i bel$^+$yj šary, lit. ‘one-red and one-white balls’ vs. krasn$^+$ye i bel$^+$ye šary, lit. ‘several-red and several-white balls’, where the semantic difference—‘two balls’ vs. ‘more than three balls’—is carried by otherwise purely syntactic grammemes of adjectival number (see Iomdin 1990: 77–80).
PART I

The Syntax-Morphology interface
Serious coverage of every problem in the domain of the syntax-morphology interface is, of course, a monumental task and one which is well beyond the scope of ATM. In the interests of limiting our discussion, I will pass over without comment several of the ‘discrepancies’ between syntax and morphology which are entirely relevant to the interaction between these two modules of language (cf. Stump 2001: 12 – 15), including the following five groups of phenomena:

- syntactic elements that behave as morphological elements (‘a word that behaves as part of a word’) – that is, clitics of all types
- syntactic elements that behave as such but which express inflectional values (‘a word that expresses the grammemes of another word’) – that is, analytical forms
- groups of syntactic elements that give rise to one morphological element (‘several words that make up one word’):
  - productive compounds (more specifically, incorporation)
  - amalgams (of the type Fr. à + le ⇒ au)
- morphological elements that behave as syntactic elements (‘a part of a word that behaves as a word’):
  - migratory affixes, in particular those that occupy the left/right edge of the phrase to which they belong (e.g., the English possessive -s: the girl I go out with’s umbrella)
  - separable affixes (e.g., Ger. Er machte die Tür auf ‘He opened the door’, where aufmachen = ‘[to] open’)
- morphonological interaction between different syntactic elements (‘interaction between different words as if between parts of a word’ – that is, external (= interlexemic) sandhis (the French liaisons, Celtic mutations, a vs. an in English, etc.). This is a vast domain known loosely as Satzphonetik ‘sentence phonetics’.

For a general discussion of the Syntax-Morphology and Morphology-Phonology interfaces, see Lapointe et al. (eds.) 1998 and Katamba (ed.) 2004, vol. IV.

Part I of ATM concentrates on only one central issue concerning the Syntax-Morphology interface: agreement and government. These are the cases where there is a specific syntactic configuration that includes lexical units L₁ and L₂ in a Surface-Syntactic Structure such that one of them imposes a grammeme on the other, this grammeme appearing in the Deep-Morphological Structure. Chapter 1 offers an in-depth analysis of these involved and fascinating phenomena.
Chapter 1. Agreement, government, congruence

1. Introductory remarks

Agreement and government have long been the object of heated debate in linguistic literature. The last 25 years alone have seen such studies as Kibrik 1977a, 1992: 102–124, Moravcsik 1978, Keenan 1979 (= 1987: 380ff), Lehfeldt 1980, 1991, Apresjan 1982, Lehmann 1982, 1983, 1988, Corbett 1983a, b, 1986, 1998, Corbett (ed.) 1999, Schmidt and Lehfeldt 1984, Lapointe 1985, 1988, Nichols 1985, Seiler 1986: 110–123, Zwicky 1986, Barlow and Ferguson (eds.) 1988, Brentari et al. 1988, Barlow 1992, Pollard and Sag 1994: 60–99, and Wechsler and Zlatić 2000 (not to mention earlier works: e.g., Dingwall 1969, Zaliznjak 1967: 62–66 and Gasparov 1971). Moreover, there are numerous monographic descriptions of agreement in particular languages: for instance, Skoblikova 1971, Crocket 1975 and Iomdin 1990 for Russian, Kibrik 1977b for Archi and 1999a for Tsakhur, Davies 1986 for Choctaw, Chung 1998 for Chamorro. As a result, the notions of agreement and government are more or less clear from the viewpoint of their substance—at any rate, as applied to most current facts. Yet even today, we still do not have rigorous and at the same time universal definitions of these concepts—definitions of an axiomatic type. Some of the above-mentioned works do actually put forward definitions of agreement and government (congruence, as a rule, is not considered separately from agreement); however, I cannot accept them as formulated and therefore I propose my own definition: Mel’čuk 1993a (on which the present chapter is based). It is impossible to analyze and criticize alternative definitions here; I limit myself to the above references, leaving it to the reader to establish the advantages and disadvantages of various approaches.

Following the methodology outlined in the Introduction, I proceed from the most traditional understanding of agreement, government and congruence (an understanding that probably goes back to Medieval Latin grammars). I take as my cornerstones the clearest and least contentious—i.e., prototypical—examples of these phenomena, in order to generalize from them in such a way as to cover all relevant cases—including the marginal ones. So as not to overload the presentation, I exclude from consideration the following topics, although they are directly linked to my main task:

1) Typology of agreement, government and congruence (the description of all their possible varieties in different languages).
Chapter 1. Agreement, government, congruence

2) Inflectional categories and syntactic features exploited by agreement, government and congruence (cf., for instance, Moravcsik 1978).

3) Specific properties of agreement, government and congruence in particular languages.

4) Linguistic functions of agreement, government and congruence (Lehmann 1983). For instance, I will not consider the use of agreement as a means of indicating the communicative structure of the sentence. Thus, in Ostyak (= Hanty), a transitive verb agrees with its Direct Object [= DirO] in number 2 but only if this DirO does not express the Rhematic Focus (Nikolaeva 1999); in Tabassaran, the Main Verb agrees with the 1st/2nd person Possessor of the Subject, if this Possessor is Foregrounded; in Russian, the Main Verb that is a verb of existence agrees in number 2 with its plural Subject if the latter is Given (= Old), but does not otherwise, cf. (15b), p. 65; etc. However interesting this phenomenon might be, I have to leave it out.

Unlike some of the above-mentioned works (e.g., Corbett 1983a, b and Lehmann 1982), I do not establish linguistic hierarchies which determine the possible types of agreement, government and congruence, nor do I try to explain their presence in languages, relate them to other linguistic phenomena, formulate constraints on the types of corresponding rules, or analyze them diachronically, etc. My only aim in this chapter is to sharpen the formal concepts of agreement, government, and congruence.

2. Three auxiliary concepts

Along with some general linguistic concepts, described in the Introduction, three particular basic concepts are needed in order to define agreement, government and congruence: morphological dependency, agreement class and mirroring (syntactic) inflectional category.

2.1. Morphological dependency

I define agreement, government and congruence as particular cases of morphological dependency. The concept of morphological dependency as a particular case of syntagmatic dependency between wordforms of one utterance, distinct from semantic and syntactic dependencies, was introduced in Mel’čuk 1964 and then elaborated in Mel’čuk 1981a and 1988a: 105–149. It was shown that the presence and the orientation of a direct morphological dependency between two wordforms may differ from the presence and the orientation of direct semantic and syntactic dependencies between the same wordforms. As a result, 14 combinations of different dependencies, connecting two given wordforms, are logically possible and actually exist in languages. In particular, it was established that
2. Three auxiliary concepts

in a syntactic construction ‘Governor->synt->Dependent,’ all four logical possibilities can be realized: either the Synt-Dependent can morphologically depend on the Synt-Governor, the Synt-Governor can morphologically depend on the Synt-Dependent, each can morphologically depend on the other, or else there can be no morphological dependency between the two at all. Morphological dependency can also directly connect two wordforms which are not directly connected semantically or syntactically; see examples (28)-(33), p. 77ff.

2.1.1. Notation

Let \( w_1 \) be a morphologically dependent wordform and \( w_2 \) its morphological Governor:

\[ w_1 \leftarrow \text{morph} \rightarrow w_2. \]

Following current terminology (Corbett 1983a: 5, 1986: 996), wordform \( w_2 \) is called the **controller** of wordform \( w_1 \), and \( w_1 \) is the **target** of \( w_2 \). In the examples in this chapter, controllers are boxed. I will say that the controller (or one of its properties) **imposes** a grammeme or a value of a syntactic feature on the target; or, alternatively, that a grammeme/value of a syntactic feature of the target is **selected** depending upon the controller (see 2.1.2).

Let me introduce the following notations:

- \( g_1 \) is a grammeme imposed on the wordform \( w_1 \) by its controller, and \( C_1 \) is the inflectional category to which \( g_1 \) belongs, i.e. \( g_1 \in C_1 \); \( g_1 \) and \( C_1 \) are called, respectively, the **controlled grammeme** and the **controlled category**. In the examples, the grammeme \( g_1 \) and its marker are in boldface.

- \( \gamma_1 \) is a value of the syntactic feature \( \Sigma_1 \) imposed on the wordform \( w_1 \) by its controller, i.e. \( \gamma_1 \in \Sigma_1 \); \( \gamma_1 \) and \( \Sigma_1 \) are called, respectively, the **controlled value (of a syntactic feature)** and the **controlled syntactic feature** (of wordform \( w_1 \)).

- \( g_2 \) is a grammeme of wordform \( w_2 \) which imposes on wordform \( w_1 \) the grammeme \( g_1 \) or the value \( \gamma_1 \) of a syntactic feature, and \( C_2 \) is the corresponding inflectional category, i.e. \( g_2 \in C_2 \); \( g_2 \) and \( C_2 \) are called, respectively, the **controlling grammeme** and the **controlling category**.

- \( \gamma_2 \) is a value of a syntactic feature \( \Sigma_2 \) which imposes on wordform \( w_1 \) the grammeme \( g_1 \) or the value \( \gamma_1 \) of another syntactic feature, i.e. \( \gamma_2 \in \Sigma_2 \); \( \gamma_2 \) and \( \Sigma_2 \) are called, respectively, the **controlling value (of a syntactic feature)** and the **controlling syntactic feature** (of wordform \( w_2 \)).

Note that:

- \( C_1 \) and \( \Sigma_1 \) characterize \( w_1 \), and \( C_2 \) and \( \Sigma_2 \) characterize \( w_2 \), i.e., we have, on the one hand, \( C_1(w_1) \) and \( \Sigma_1(w_1) \), while on the other, we have \( C_2(w_2) \) and \( \Sigma_2(w_2) \).
g₁ belongs to the signified or to the syntactics of the wordform w₁, and g₂ to 
the signified or to the syntactics of the wordform w₂, i.e., g₁ ∈ w₁/Σ₁ and 
g₂ ∈ w₂/Σ₂.

The general scheme that should be kept in mind while reading this chapter is as follows:

\[ w₁ \sim_{\text{morph}} C₁ \sim w₂, \]
i.e., ‘w₁ depends morphologically on w₂ with respect to (= for the value of) the 
inflectional category C₁.’ This means that the selection of the grammeme g₁ ∈ 
C₁, which characterizes w₁ in the utterance U (i.e. \( g₁ \in w₁/\Sigma₁ \)), depends on w₂.

NB: Instead of C₁, in some (exceptional) cases the scheme above contains Σ₁ 
and what is selected then is the value \( γ₁ \) of the syntactic feature Σ₁, see below, 
2.1.3, 4, p. 40.

2.1.2. The concept of morphological dependency

Definition 1.1: Morphological dependency

We say that in an utterance a wordform w₁ morphologically depends on a wordform 
w₂ with respect to the inflectional category C₁ or the syntactic feature Σ₁ if and on-
ly if the grammeme g₁ ∈ C₁ or the value γ₁ ∈ Σ₁ (which characterizes w₁) is selected 
depending upon w₂.

Definition 1.1 does not have the word only in the expression ‘g₁ ... is selected 
depending upon w₂’: g₁ may be selected depending simultaneously upon several 
factors; as noted above, a morphological target can have several controllers si-
multaneously. A typical example is the morphological dependency of the Main 
Verb [= MV] on a string of conjoined Subjects. Thus, in some Bantu languag-
es, if the conjoined Subjects are of different noun classes 1, the class marking of 
the MV is determined by complex rules which take into consideration the noun 
class 1 of each one of the conjoined Subjects and their respective order. (Corbett 
1983a: 97 ff describes a similar phenomenon as it occurs in Slavic languages.)

The relevant properties of the controller w₂ may be of all three possible 
types—morphological, syntactic, and semantic. More specifically, the wordform 
w₁ morphologically depends on w₂ if and only if the selection of some gramme-
mes of w₁ depends:

1) either on some morphological properties of w₂— that is, on its grammemes 
(as when the case II of an adjective depends on the case I.1a of the noun it 
modifies) or on the values of some features of its syntactics (as when the gen-
der 2 of an adjective depends on the gender I of the noun it modifies, gender I 
being a property of the noun which is specified in the noun’s syntactics); 4
2) or on some contextual syntactic properties of \( w_2 \)--that is, on the position/role/environment of \( w_2 \) in the Surface-Syntactic Structure (as when the case I.1a of the Direct Object of a transitive verb \( w_2 \) may depend on whether the verb has been negated);

3) or else on some semantic properties of \( w_2 \)--that is, on the signified of \( w_2 \) or on some properties of its referent (as when the gender 2 of the verb may depend on the sex of the referent of its subject).

There are no other properties of \( w_2 \) that can be relevant for morphological dependency.

Note that ‘a property of \( w_2 \) (i.e., of the controller)’ is understood here in a very broad way: as anything that can be said about \( w_2 \). Thus, belonging to a particular part of speech and being a member of a particular syntactic construction—so to speak, ‘non-specific’ properties—are legitimate properties of a morphological controller. Based on this, I will introduce the concept of ‘non-specific morphological dependency,’ see Comment 7 in the next Subsection, p. 45.

Examples

(1) a. In French, an adjective depends morphologically on the noun it modifies in gender 2 and number 2:

\[
\begin{align*}
\text{maison blanche} & \quad \langle \text{blanc, *blanches} \rangle \quad \text{‘white house’} \\
\text{instruments idéaux} & \quad \langle \text{idéal, *idéales} \rangle \quad \text{‘ideal instruments’}
\end{align*}
\]

b. In English, a verb depends morphologically on its SSynt-Subject in person and number 2 (this is especially clear with the forms of the verb [to] BE):

\[
\begin{align*}
\text{I am} & \quad \langle \text{*is, *are} \rangle , \quad \text{you are} \quad \langle \text{*am} \rangle , \quad \ldots , \quad \text{they are} \quad \langle \text{*is} \rangle.
\end{align*}
\]

c. In Russian, a noun which is a DirO, an IndirO or an OblO of a verb depends morphologically on this verb—in case I.1a:

\[
\begin{align*}
[\text{On}] \text{vidit Boris} & \quad \langle \text{ACC} \rangle \quad \langle \text{*Bore, ...} \rangle \quad \text{‘[He] sees Boris’}.
\end{align*}
\]

\[
\begin{align*}
[\text{On}] \text{prinadležit Bor} & \quad \langle \text{DAt} \rangle \quad \langle \text{*Borju, ...} \rangle \quad \text{‘[He] belongs to Boris’}.
\end{align*}
\]

\[
\begin{align*}
[\text{On}] \text{storonitja Bor} & \quad \langle \text{GEN} \rangle \quad \langle \text{*Bore, ...} \rangle \quad \text{‘[He] is avoiding Boris’}.
\end{align*}
\]

d. In French, a verb depends morphologically on certain conjunctions in mood:

\[
\begin{align*}
\text{bien qu’il soit} \quad \langle \text{*est} \rangle \quad \text{malade} \quad \text{‘although he is [SUBJUNCTIVE] sick’}
\end{align*}
\]
2.1.3. Comments on Definition 1.1

1. Morphological dependency as a particular case of syntagmatic correspondences

Morphological dependency is a particular case of a widespread linguistic phenomenon: obligatory syntagmatic correspondences between some components of an utterance (Babickij 1974). Such syntagmatic correspondences are found on all levels of utterance representation (cf. Iomdin 1990: 37–43):

1) Syntagmatic correspondences on the semantic level concern what can be called ‘congruity’ of semantic components in the signified of the wordforms being combined in a phrase. Here are three examples:

**Congruity of sex-specifying semantic components:**

Rus. *Marina* − staryj *moskvič* [MASC: ‘inhabitant of Moscow of the masculine sex’]

‘Marina [a female first name] is an old Muscovite’

(correct form: ... *staraja moskvička* [FEM: ‘inhabitant of Moscow of the feminine sex’]).

vs.

*Marina* − xorošij *vrač* [MASC: ‘[medical] doctor’, without specification of the sex] ‘Marina is a good doctor’.

**Congruity of respect-specifying semantic components:**

Rus. *Kogda skončalas’* (umerla) *Vaša [bolonka]?* ‘When did your Pekinese pass away (die)?’

vs.

*Kogda skončalas’* *Vaša [mat’]?* ‘When did your mother pass away?’, etc. (In Russian, the verb *SKONČAT’SJA* ‘pass away is reserved’, like its English counterpart, for respected people.)

**Congruity of time-specifying semantic components**

Sequence-of-tense rules, well known in English and French (cf. also the notorious *Consecutio Temporum* in Latin, which has tortured many generations of students), reflect a necessary correspondence between semantic elements, in particular, between absolute vs. relative tense grammemes. In English, *Traveling through the country in 1986, John noticed that people *are [= were] unhappy* is ungrammatical because English (unlike, e.g., Russian) requires that simultaneity with a past-time reference point be expressed by the Past tense, and not by the Present (as, for example, in Russian).
2) Syntagmatic correspondences on the syntactic level concern the congruity of lexical units and syntactic relations within a given sentence. One can include here, for instance:

**Congruity of lexical units**

a) What is called ‘government of prepositions’ (see below, pp. 85–86: government(2): INSIST on, BELONG to, LEAN against, (his) LOVE for, TYPICAL of, etc.

b) The correspondence between negative adverbs and negative particles: Rus. On *nikogda ne poët* (*nikogda poët*) vs. *He never sings* (*He never does not sing*).

c) The correspondence between nouns and numeral classifiers, which can be separate lexemes or affixes deriving special lexemes (in Maya, Persian, Malay, Vietnamese, Japanese, etc.). Thus, in Maya all animate nouns are quantified by numerals suffixed with -tul, while for inanimate nouns numerals suffixed with -pel are used: oš+tul winik ‘three men’ vs. oš+*pel na ‘three houses’ (*oš+tul na, *oš+*pel winik). In careful speech, more than 80 types of numerals with such suffixes are distinguished, each of which must correspond to the nouns quantified: numerals in -ban go with Ns denoting objects in heaps, numerals in -kot with Ns denoting quadrupeds, numerals in -čšiik with Ns denoting wounds caused by a thrown object which has remained in the body, numerals in -wal with Ns denoting big leaves (tobacco, banana, ...), etc.

d) The correspondence between some syntactic Objects (direct and indirect) and ‘resumptive’ clitics: Sp. *María le habla a Pedro* ‘Maria talks to Pedro’ (*María habla a Pedro*) (Lapointe 1985: 232ff treats this correspondence as a particular case of agreement).

**Congruity of syntactic relations**

I mean here the obligatory presence of the syntactic relation $r_1$ when the syntactic relation $r_2$ is present; for example,

$$r_2 \rightarrow^* r_1 \rightarrow \text{uma ‘man of great intelligence’}$$

3) Syntagmatic correspondences on the phonological level manifest themselves in assimilations and dissimilations. A typical example would be vowel harmony in Turkic and Uralic languages, as well as the distribution of allomorphs depending on phonological context.

4) Syntagmatic correspondences on the morphological level are the object of this chapter: they are manifestations of several types of morphological dependency.
2. Morphological dependency vs. semantic/syntactic dependency

Morphological dependency must be strictly distinguished from syntactic dependency, on the one hand, and from semantic dependency, on the other. I cannot enter here into the details of this crucial distinction, established already in Tesnière 1959: 40ff (cf., in this connection, Mel’čuk 1981a or 1988a: 107–118).5

Recall that:

- ‘w₁ semantically depends on w₂’ means that the meaning of w₂ is a semantic predicate such that in the given utterance the meaning of w₁ is an argument of w₂. Thus, in the phrase *an interesting book*, the meaning ‘book’ is the argument of the predicate ‘interesting’—that is, in the notation of predicate calculus, we have ‘interesting(book)’.

- ‘w₁ syntactically depends on w₂’ means roughly that the phrase w₁+w₂ has, on the whole, the distribution of w₂ rather than that of w₁ (‘interesting book’ has the distribution of book, and not that of interesting).

Crucially, in a clause, a morphological dependency can link two wordforms even though a direct syntactic dependency, or a direct semantic dependency, or even both between them are lacking. Thus, in

```
Fr. Il trouve--synt→Marie heureuse ʻHe finds Mary happyʼ,
```

the adjective heureuse depends morphologically on Marie (*Il trouve Marie heureux), although there is no direct syntactic dependency between these two wordforms; they are linked, however, by a semantic dependency: ‘heureux(Marie)’ = ‘happy(Mary)’. Here are some more examples.

(2) Tabassaran [as everywhere else in ATM, the Roman numerals in the glosses refer to noun classes]

```
  morph      morph
     jiz  daβ +Ø+Ø       ža+b+yura+jiz
  lit. ʻMy foal runs-myʼ = ʻMy foal runsʼ.
    [The marker of class 2 in the verbal form is infixed into the radical.]
```
2. Three auxiliary concepts

b.  \[ \text{Jav} \; \text{daj} \; +\text{Ø}+\text{Ø} \; \overset{2}{\text{ža}+\text{b}+\text{yura}+\text{jav}} \]

(yourSG foal[classII] SG NOM run II run yourSG)
lit. ‘YourSG foal runs-yourSG’ = ‘Your foal runs’.

c.  \[ \text{Jiz} \; \text{daj} \; +\text{ar}+\text{Ø} \; \overset{1}{\text{ža}+\text{r}+\text{yura}+\text{jiz}} \]

(my foal[classII] PL NOM run I run my)
lit. ‘My foals run-my’ = ‘My foals run’.

d.  \[ \text{Jav} \; \text{daj} \; +\text{ar}+\text{Ø} \; \overset{1}{\text{ža}+\text{r}+\text{yura}+\text{jav}} \]

(yourSG foal[classII] PL NOM run I run yourSG)
lit. ‘YourSG foals run-yourSG’ = ‘Your foals run’.

In Tabassaran, the Main Verb depends morphologically not only on its SSynt-Subject—in class2, but which on the possessive pronoun of the 1st/2nd person that modifies the Subject and has no direct semantic or syntactic link with the verb.

According to Meaning-Text Theory, morphological dependencies are not explicitly shown on any level of representation: in the process of text synthesis, they are computed by special rules based on Surface-Syntactic dependencies, not necessarily direct ones. To put it differently, the rules for agreement, government and congruence have as their input the Surface-Syntactic Structure of the sentence and as their output, the Deep-Morphological Structure thereof. Therefore, such rules all belong to the Surface-Syntactic component of a linguistic model.

3. The type of the controlled category $C_1$

The inflectional category $C_1$ with respect to which $w_1$ morphologically depends on $w_2$ is most often a syntactic inflectional category (on the distinction ‘semantic inflectional category vs. syntactic inflectional category,’ see Introduction, 4, Nos. 24 and 25, p. 23). However, this is not necessarily so; here are three examples of a $C_1$ being a semantic inflectional category (but overridden by syntax, so that its values are emptied of semantic content):
In many languages—Turkic, Finno-Ugric, Kartvelian, etc.—the grammatical number of a noun \( N \) (i.e., a semantic inflectional category: number1) depends on the presence of a cardinal \( \text{NUM}(eral) \) quantifying this \( N \); a NUM requires the \( N \) to be in the singular in spite of its semantic plurality; thus, Turk. \( \text{beş dağ} (\*\text{beş dağ+tar}) \), lit. ‘five mountain’.

In English and French, the tense of a verb \( V \) (again, a semantic category) can depend on the subordinate conjunction that introduces this \( V \); the conditional conjunction \( \text{IF} / \text{SI} \) requires the \( V \) to be in the present instead of the semantically determined future: \( \text{If you come} (\*\text{will come} \text{ tomorrow}) \ldots \)

In Russian, the aspect of a verb \( V \) (also a semantic category) can depend on the syntactic context. In particular, it can be controlled by an adverb which is a syntactic dependent of \( V \). Thus, with \( \text{NIKOGDA ‘never’} \) depending on \( V \) only the imperfective aspect of \( V \) is possible: \( \text{On nikogda ne } \*\text{prišel} \text{ ‘He never came’} \) [correct form: \( \text{On nikogda ne prišodil} \text{ or On tak i ne prišel} \)]

Therefore Definition 1.1 is deliberately vague with respect to the type of the controlled category.

4. **A syntactic feature \( \Sigma_1 \) can also be controlled**

Morphological dependency has an interesting peculiarity: a target \( w_1 \) can be controlled for not only an inflectional category \( C_1 \), but also for a syntactic feature \( \Sigma_1 \). To put it differently, since a syntactic feature is a lexicographic property, \( w_1 \) can change its lexicographic properties depending on \( w_2 \). This phenomenon may be not widely found; however, logically—and, as we will see right away, practically—it is possible and should be accounted for in Definition 1.1. Thus, in Russian the syntactic feature “Animacy” in a noun \( w_1 \) can change its value to the opposite one (from ‘animate’ to ‘inanimate’ or vice versa) depending upon the noun’s controller \( w_2 \) in some special contexts (when \( w_1 \) is in the accusative; the corresponding facts are set out in Mel’čuk 1980a):

(3) **Russian**

An animate \( N \) becomes inanimate

(i) In appositive constructions:

\( \text{podnijat\text{"gruzovik\text{"gigant [INANIM] }\*\text{gruzovik-gigant+a}} \)

‘[to] lift the giant truck’;

\( \text{vspominat\text{"gorod\text{"geroj [INANIM] }\*\text{gorod-geroj+a}} \)

lit. ‘[to] remember the hero city’;

\( \text{rassmatrivat\text{"krasavc [INANIM] }\*\text{krasavc+a-teploxod}} \)

lit. ‘[to] look at the handsome man ocean liner’.
(ii) In phraseological constructions of the type *idti inžener+y [INANIM] ‘([to] go into engineers) = *[to] become an engineer’, *lezt načal’nik+i [INANIM] ‘([to] push oneself into bosses)’, etc. (Mel’čuk 1980b, 1985: 461–488).

An inanimate N becomes animate

(iii) In expressions of the type *pljasat’ gopak+a [ANIM] ‘(to) dance the hopak [Ukrainian dance]’, otvesir’ zдорovogo tumak+a [ANIM] ‘(to) give a (strong) box on the ear’ (Mel’čuk 1985: 478; cf. also Rothstein 1977 on a possible modification of lexicographic features of N in certain phrases).

(3-i) shows agreement of a noun in animacy with another noun, and (3-ii/iii), government of animacy (the difference between agreement and government will be discussed below, 3 and 4, p. 57ff).

Similarly, in several Australian languages, the syntactic feature “Transitivity” in an ‘adverbal’ verb \( w_1 \) must have the same value as the “Transitivity” feature in the conjoined full verb \( w_2 \).

(4) Australian languages (Evans 1989)

An ‘adverbal’ V becomes intransitive/transitive

a. Ngiyambaa

\[
\text{winar+u mingga+Ø gunu +miyi bagiyi}
\]

\(<\text{gunu+ma+ni}>\) INTRANS

‘The woman dug a burrow energetically’.

vs.

\[
\text{winar+Ø gunu +ma +ni yupa +ni <gunu+miyi>>}
\]

\(<\text{gunu+miyi}>\) INTRANS

‘The woman cried energetically’.

b. Yukulta

\[
\text{kuya +yikanti wagalk+a mirala +fa gurj>}
\]

\(<\text{mirala+fa}>\) INTRANS

‘Will you throw the boomerang well?’

vs.

\[
\text{mantuwara+Ø yiŋka mirala +fa wirka +fa}
\]

\(<\text{mirala+fa}>\) TRANS

‘The boy danced well’.
In (4a-b), we see agreement of a verb in transitivity with another verb; in (4a), this agreement is marked by the intransitivizing suffix -\textit{ma}, and in (4b), it manifests itself by the choice of the form of the indicative suffix: the lamino-dental stop /t/ in the transitive, and the palatal stop /ţ/ in the intransitive.

5. The syntactic properties of controllers

Two essential, or ‘controlling,’ properties of controllers—namely, their morpho-logical characteristics (grammemes + values of syntactic features) and their semantics—are well-known; however, a third property—being part of a certain syntactic configuration—appears less frequently and therefore warrants special examples. What is meant here is the fact that a ‘controlling’ property of the controller $w_1$ is, so to speak, localized not in $w_1$ itself, but in a different wordform that syntactically depends on $w_1$.

(5a) In Hungarian, a Main Verb having a Direct Object $[\text{DirO}]$ morphologically depends on the latter: if the DirO is definite, the verb must be in the so-called \textit{objective}, or \textit{definite}, form; but if the DirO is indefinite, the verb is in the \textit{objectless}, or \textit{indefinite}, form. Proper names are always definite; but the definiteness of a common noun is expressed by a definite article modifying it. Thus, the relevant property of the morphological controller—of the DirO noun $N$—is the presence of a particular syntactic dependent of $N$:

\[
\begin{array}{ccc}
\text{Egý} & \kómý \oplus \text{et} & \overset{+\emptyset}{\text{lát}} \\
\text{a book} & \text{SG ACC} & \text{see} & \text{3SG.INDEF}
\end{array}
\]

\[
\begin{array}{ccc}
A & \kómý \oplus \text{et} & \overset{+\text{ja}}{\text{lát}} \\
\text{the book} & \text{SG ACC} & \text{3SG.DEF}
\end{array}
\]

(5a) shows the agreement of a verb with its DirO in definiteness.\(^8\)

b. In Russian, the DirO of a transitive verb can be in the genitive (under specific conditions), if the verb itself or its syntactic governor is negated:

(i) \[
\begin{array}{ccc}
\text{Ja} & \overset{\text{ne}}{\text{mogu} \rightarrow \text{načat} \rightarrow \text{pisat} \rightarrow \text{stix+ov}} & \text{[PL.GEN]} \\
\text{I cannot begin to write poetry.}
\end{array}
\]

vs.

(ii) \[
\begin{array}{ccc}
\text{Ja} & \text{mogu} \rightarrow \text{načat} \rightarrow \text{pisat} \rightarrow \text{stix+i} & \text{[PL.ACC]} \\
\text{I can begin to write poetry.}
\end{array}
\]

In (5b-i), the transitive verb \textit{pisat} ‘[to] write’ governs the genitive of its DirO; this is determined by the presence of negation, NE, with its indirect syntactic
governor MOć ‘can’. (Otherwise, PISAT’ governs the accusative of its DirO, as we see in (5b-ii: *pisat’ sti+ı \textit{vs. nepisat’ sti+ıov}.)

6. The logical type of the relation ‘to depend morphologically’

Sometimes, one needs to talk about morphological dependency in the broad sense of the term—that is, talk about morphological dependency \textit{tout court} rather than with respect to a particular inflectional category (E. Savvina drew my attention to this distinction). Then the following statement becomes possible: semantic and syntactic dependencies are \textit{anti}-reflexive and \textit{anti}-symmetrical; syntactic dependencies are in addition \textit{anti}-transitive (cf. Mel’čuk 1988a: 118); in contrast, morphological dependency is \textit{non}-symmetrical and \textit{non}-transitive, although it is also \textit{anti}-reflexive. This means that:

- if the (inflectional) form of \(w_1\) depends on \(w_2\), the form of \(w_2\) may, but need not, depend on \(w_1\) (= non-symmetry);
- if the (inflectional) form of \(w_1\) depends on \(w_2\) and the form of \(w_2\) depends, in its turn, on \(w_3\), the form of \(w_1\) may, but need not, depend on \(w_3\) as well (= non-transitivity);
- the (inflectional) form of \(w_1\) may depend, in particular, on some properties of \(w_1\) itself, yet \(w_1\) cannot morphologically depend on itself—this would be absurd from the viewpoint of the concept of dependency (= anti-reflexivity).

Let me give some examples of each of these cases.

Non-symmetry of morphological dependency

To show the non-symmetry of morphological dependency, we have to present two types of cases: one where it cannot be symmetrical and one where it is symmetrical. The first case is easy to cite: in the Russian phrase A\textasciitilde morph–N, the morphological dependency cannot be symmetrical, since a Russian noun never morphologically depends on its modifying adjective. An example where the morphological dependency between \(w_1\) and \(w_2\) is symmetrical is shown in (6):

\[(6) \text{In Russian, the inflectional form of a NUM may depend on the quantified noun N, while at the same time the form of N depends on NUM:}\]

\[
\begin{align*}
dv+ā & \text{okna} & \sim\ dv+ē & \text{krovati} \\
\text{NEU} & & \text{FEM}
\end{align*}
\]

‘two windows[NEU]’ \textit{vs.} ‘two beds[FEM]’

and

\[
\begin{align*}
dvē & \text{krovati} & \text{pjat} & \text{krovati+ej} \\
\text{SG.GEN} & & \text{PL.GEN}
\end{align*}
\]

‘two beds’ \textit{vs.} ‘five beds’
Chapter 1. Agreement, government, congruence

Naturally, such reciprocal, or two-way, morphological dependency obtains with respect to different inflectional categories: **NUM** morphologically depends on **N** in gender2, while **N** depends on **NUM** in number1 and caseI.1a.

Non-transitivity of morphological dependency

Similarly, a case where morphological dependency cannot be transitive is easy to find: in the chain A←**morph**←N←**morph**←V, the form of A never depends directly on V. Now comes a case where morphological dependency is transitive:

(7) Again in Russian, the inflectional form of a predicative-attributive adjective A depends on the copular verb V (for caseII),10 while the form of the verb depends on its Subject N (for number2, person and gender2): at the same time, the form of A also depends on N (for number2 and gender2):

<table>
<thead>
<tr>
<th>Ivan</th>
<th>byl+Ø</th>
<th>bol’n+oj/bol’n+ym*</th>
<th>kazalsja</th>
<th>*bol’n+oj / bol’n+ym</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>was</td>
<td>NOM INSTR</td>
<td>seemed-MASC</td>
<td>ill NOM INSTR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ivan</th>
<th>byl+a</th>
<th>bol’n+aja</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ivan</td>
<td>was</td>
<td>MASC MASC.NOM</td>
</tr>
<tr>
<td></td>
<td>~</td>
<td>byl+i</td>
</tr>
</tbody>
</table>

As can be seen in (7), morphological dependency allows for non-uniqueness of controller: the predicative-attributive A depends morphologically on two different wordforms – with respect to two different inflectional categories. In other words, it depends on V with respect to caseII, and on the SSynt-Subject N with respect to gender2 and number2. From this angle, morphological dependency is similar to semantic dependency, which also admits non-uniqueness of Governor, but it contrasts with syntactic dependency, which presupposes only one Governor per Dependent.

Anti-reflexivity of morphological dependency

No wordform can morphologically depend on itself. In some cases, the controller of a morphological dependency imposes on the target a set of alternative grammemes, and properties of the target determine the choice between them; this, however, does not constitute a counter-example to anti-reflexivity of morphological dependency. Consider the following cases:

(8) a. In Lak, the SSynt-Subject of a transitive verb must be in the nominative if it is a pronoun of the 1st or 2nd person, but in the genitive if it is a pronoun of the 3rd person or a noun. In this way, the inflectional
form of the transitive Subject depends on its own properties. However, the set of possibilities—the nominative vs. the genitive—is imposed by the Main Verb [= MV], obviously not by the Subject itself: its properties determine only the choice between the two cases I.1b.

b. Similarly, in Alutor, the SSynt-Subject of a transitive verb must be in the instrumental if it is not a proper name, and in the locative if it is. Again, the range of possible cases I.1b is imposed by the MV; the properties of the Subject condition the exact choice.

7. Non-specific morphological dependency

A syntactically conditioned—i.e., semantically empty—grammem of the target wordform \( w_1 \) does not necessarily depend on some specific, more or less individual, properties of another wordform \( w_2 \): it may depend on the syntactic class (= part of speech) of \( w_2 \), the syntactic role of \( w_2 \) in the clause, or even simply on the syntactic role of \( w_1 \) with respect to \( w_2 \). Such a morphological dependency is called non-specific (see 2.1.2, p. 35). A prototypical example is the English possessive form in ‘s—the ‘Saxon Genitive.’ In a construction with the Saxon Genitive, noun \( N^1 \) depends on \( N^2 \) via the possessive Surface-Syntactic Relation [= SSyntRel]: \( N^1 \leftarrow \text{possess} \leftarrow N^2 \); crucially, \( N^1 \) receives the possessive form whatever the other noun \( N^2 \) is—this form is actually imposed by the possessive SSyntRel, and not by a particular controller. Here are some other examples of non-specific morphological dependency:

(9) a. In Turkic languages, the elective construction (e.g., ‘the best of you’, ‘three of the books’) morphologically marks both elements—that is, the syntactic Governor as well as the syntactic Dependent:

Uzbek

\[
\text{odam+\text{lar}+\text{ning}} \leftarrow \text{elective-} \text{jaxši} + \emptyset + \emptyset + \text{si}
\]

\begin{array}{cccc}
\text{man} & \text{PL} & \text{GEN} & \text{good} & \text{SG} & \text{NOM} & \text{3PL}
\end{array}

‘the best [one] of men’

The adjective \( A \) depends morphologically on its syntactic Dependent \( N \): the possessive grammemes (person + number 2 ) of \( A \) are selected depending on the person and number 1 of \( N \), cf.:

\[
\text{biz+\text{ning}} \leftarrow \text{elective-} \text{jaxši} + \emptyset + \emptyset + \text{miz}
\]

\begin{array}{cccc}
\text{we} & \text{GEN} & \text{good} & \text{SG} & \text{NOM} & \text{1PL}
\end{array}

‘the best [one] of us’

However, \( N \) in an elective construction depends morphologically on its surface-syntactic role (on the elective SSynt-Relation): this \( N \) gets the
genitive, whatever the syntactically governing A and whatever A’s own inflectional form. This morphological dependency is non-specific.

b. In Hebrew, any noun N₁ modified by any other noun N₂ (without an intervening preposition) obligatorily receives the form of status constructus: sfárim ‘books’, but sifrej limúd, lit. ‘books [of] study’ = ‘manuals’; bájit ‘house’, but bet Ríná ‘house of Rina’; etc. Therefore, the morphological dependency of N₁ is non-specific: the form of N₁ does not depend on N₂, but only on the fact that N₂ is present.

Non-specific morphological dependencies will not be considered in this chapter. In what follows, morphological dependency is always understood as a specific morphological dependency—i.e., the morphological dependency of a wordform on specific properties of another wordform. (A non-specific morphological dependency is necessarily a case of government: thus, in (9a) the genitive of N is governed by the A which is the head of the elective SSyntRel.)

8. Criteria for morphological dependency

The decision concerning the presence and the direction of a morphological dependency between the wordforms w₁ and w₂ is made based exclusively on formal rules of the corresponding model of the language—rules that, proceeding from a given Surface-Syntactic Structure, compute for w₁ the corresponding grammeme g₁: if this computation necessitates the mention of w₂, this w₂ is the controller of w₁. Thus, formally speaking, the main criteria for morphological dependencies are the rules for the realization thereof (cf. Iomdin 1990 for this approach). In some cases, the rule we need can be written just in one way; but in other cases, several possible formulations may exist, one of which is, however, simpler than the others and therefore is accepted. Let me give some examples:

– In constructions of the type Rus. PRENEBREGAT’→PACIENT:+ami ‘[to] ignore [one’s] patients’ the rule that assigns the instrumental to the wordform pacient+ami ‘[to ignore]’ cannot avoid mentioning the lexeme PRENEBREGAT’ ‘[to ignore]’ w₁. This is a clear-cut case: w₂ is the controller of w₁ beyond any doubt.

– The constructions of the type Lat. pro dictis et malefactis ‘for words and misdeeds’ are less obvious: Ostrowski 1982: 252, for instance, denies the existence of a direct morphological link between dictis and malefactis; both these nouns are said to be dependent ‘in parallel’ on the preposition PRO. Let me, however, give the SSyntS of this expression:
2. Three auxiliary concepts

PRO → prepositional → DICTUMPL → coord(inative) → ET → conjunctival → MALEFACTUMPL.

The rule which assigns the ablative to the wordform malefact is [= w₁] can refer:
– either to the configuration of the form ‘X→coord’ which is the nearest (in the SSyntS) to w₁; in this case, it is dictis;
– or to the nearest element which dominates the leftmost term of the chain of coordinated elements; in this case it is pro.

The second solution is obviously more complex, because it requires climbing up the chain of coordinated elements until the syntactic Governor of the whole chain is reached, while in order to get the necessary case grammeme for w₁ it is sufficient to find the nearest coordinated element to the left of w₁. Therefore, dictis [= w₂] is taken to be the controller of malefact is.₁¹

2.2. Agreement class

The second basic concept is agreement class. It occupies a central place in this chapter but nevertheless is too complex to be characterized here in a thorough manner. I will limit myself to the indication that it is based on Zaliznjak’s ideas (Zaliznjak 1964 and 1967: 62–82), which were later developed and formalized in Gladkij 1973 and 1983: 203–214. A general review of the concept is offered in Corbett 1988, while its detailed logical analysis is found in Mel’čuk and Bakiza 1987, as well as Mel’čuk 1993–2000, vol. 3: 207–213.

2.2.1. The concept of agreement class

In a language L, consider the set of all wordforms of the same part of speech. On this set, we define a partition into subsets K₁, K₂, ..., Kᵢ, where i ≥ 2 (i.e., the minimal number of agreement classes in a language is two). Let there be

wᵢ→ morph → wᵀ,

that is, the wordform wᵀ (= the target wordform) depends morphologically on wᵢ,
**Definition 1.2: Agreement class**

We say that the subset $K$ of wordforms of the same part of speech of language $L$ is an agreement class if and only if $K$ is a maximal subset that satisfies simultaneously the following three conditions:

1. For any two wordforms $w_i$ and $w_j$ belonging to $K$, in any context where both $w_i$ and $w_j$ can appear alternatively in the same syntactic role and impose on a wordform $w_T$ (which morphologically depends on $w_i/w_j$) a grammeme of the inflectional category $C_1(w_T)$ such that this grammeme does not depend on $w_i$’s and $w_j$’s own grammemes, $w_i$ and $w_j$ both impose on $w_T$ the same grammeme $g \in C_1(w_T)$.

2. For any wordform $w_i$ belonging to $K$, in any context where $w_i$ imposes simultaneously on several wordforms $w_T$s which morphologically depend on $w_i$ a grammeme of the inflectional category $C_1$ such that this grammeme does not depend on $w_i$’s own grammemes, $w_i$ imposes on all $w_T$s in the same context the same grammeme $g \in C_1$.

3. The grammemes of the category $C_1$ are never imposed by anything except wordforms of $K$, and $C_1$ is neither pronominal person nor pronominal number.

Wordforms $w_i$, which are the morphological Governors of $w_T$s (= their controllers), are distributed in agreement classes $K$ according to the ‘reactions’ of their morphological Dependents (= their targets).

As far as I know, in natural language, agreement classes exist only for nouns. They are realized in particular languages as one of the three major types: (grammatical) gender, (nominal) class, and animacy. Logically, however, nothing prevents the existence of agreement classes in the verb or in the adjective. Thus, one could imagine, in $L$, the classification of verbs into three classes: static verbs (which denote states), processual verbs (denote changes of state), and dynamic verbs (denote actions); nouns that are actants of a verb mark its class by an affix. This would give in $L$ verbal agreement classes. (Cf. also Note 32, p. 105: agreement classes in German determiners?) Therefore, I have not introduced a constraint with respect to part of speech into Definition 1.2.

### 2.2.2. Comments on Definition 1.2

1. **Subset $K$ is maximal**

A set $E$ is maximal if and only if $E$ includes all the elements which it can include, i.e., all those that satisfy the conditions by which $E$ is specified. Therefore, an agreement class includes all wordforms that satisfy all of its defining conditions.
2. Morphological status of agreement class

The agreement class is a syntactic feature of the lexeme it characterizes. This remark is important because traditionally, agreement class is often spoken about as a morphological inflectional category (especially, gender of the noun). However, nothing can be more confusing: a noun is not declined according to its agreement class, it belongs to an agreement class.

3. Condition 1

Condition 1 of Definition 1.2 guarantees that an agreement class will include any two wordforms that affect their morphological target \( w_T \) identically, i.e., by imposing on \( w_T \) the same grammeme(s) of the category \( C_1 \). This identity of the impact of both these controllers depends only on their syntaxics: their own grammemes, in accordance with Definition 1.2 (‘... which do not depend on \( w_i \)’s and \( w_j \)'s own grammemes’), should be ignored. This last qualification is needed because of morphological neutralization, or mutual exclusions between grammemes of different inflectional categories. Thus, in Russian, adjectives do not distinguish genders in the plural; therefore, if we take, say, two feminine nouns, one in the singular and the other in the plural, they will not impose identical grammemes on their adjectival targets: the plural noun will not impose gender.

It is to avoid interference on the part of such phenomena that Condition 1 requires the exclusion of the controller’s proper grammemes. Cf. Comment 5 below, in this Subsection, p. 50.

To illustrate Condition 1, consider the Spanish adjective. It possesses two syntactic inflectional categories: gender and (adjectival) number; for instance, the adjective ROJO (red) has four forms, which represent all possible combinations of the values of these two categories:

\[
\begin{align*}
\text{roj}^+\text{a}^+\emptyset & \quad \text{[MASC, SG]} \sim \text{roj}^+\text{a}^+\emptyset & \quad \text{[FEM, SG]} \\
\text{roj}^+\text{a}^+\text{s} & \quad \text{[MASC, PL]} \sim \text{roj}^+\text{a}^+\text{s} & \quad \text{[FEM, PL]}
\end{align*}
\]

Since the grammeme of adjectival number is imposed by the grammeme of nominal number of the controller noun, the category of adjectival number must be excluded from consideration here. Our \( C \)—that is, the inflectional category controlled according to an agreement class—is then just (adjectival) gender. It is immediately obvious that wordforms such as lápiz (pencil) and lápices (pencils) are included in the same agreement class because they both impose the same grammeme of \( C \) on the modifying adjective, i.e. ‘MASC’: lápiz \( \text{roj}^+\text{a}^+\emptyset \) and lápices \( \text{roj}^+\text{a}^+\text{s} \).
As can be seen from this example (and from all similar examples in Indo-European and Semitic languages), agreement class is the same for all wordforms of a lexeme – agreement class applies here to nominal lexemes. But this is not necessarily so in all languages: thus, in Bantu or Daghestanian languages, different wordforms of a lexeme can belong to different agreement classes, see Comment 8, p. 52.

4. **Condition 2**

Condition 2 guarantees the distinction between *agreement class* and *rection class* (= the set of lexical units that govern in the same way; the notion of rection class is based on the Government Pattern, also known as ‘subcategorization frame’). Note the importance, in this condition, of the quantifier *ALL* (‘... ALL ...’): it is absent from the definition of rection class. For instance, the Latin verb *COMPARARE* ‘[to] compare’ simultaneously imposes on its three actants three different cases:

\[
\begin{align*}
&\text{Julius} & \text{Cicero} & \text{Ennius} \\
\text{[NOM]} & \text{[ACC]} & \text{[DAT]} \\
& \text{compārat} \\
& \text{Julius compares Cicero with Ennius}.
\end{align*}
\]

This is a typical example of government: three different nominal wordforms that depend simultaneously on the verb *COMPARARE* in a clause receive under its ‘influence’ three different cases. But the set of verbs that impose the accusative (or the dative, etc.) on one of their syntactic actants is not an agreement class – because a verb that requires the accusative of an actant can simultaneously require the dative of another actant. All the verbs with an identical government pattern form one rection class. An element of a given rection class imposes on its nominal co-dependents different grammemes; on the contrary, an element of a given agreement class imposes on all its nominal co-dependents the same grammeme.

5. **Condition 3**

This condition guarantees that the following two sets of lexical units are excluded from the concept of agreement class:

- First, the sets of prepositions governing the same case. Without Condition 3, the prepositions like Rus. DLJA ‘for’, DO ‘till’ and U ‘by’, which all govern the genitive, would form one agreement class, while the prepositions K ‘to’ and ПОМ ‘in accordance with’, which both govern the dative, would form another: such sets of prepositions satisfy Conditions 1 and 2. However, what
the prepositions actually do impose on their Dependents is case1.1a, not gender2; therefore, admitting identically-governing prepositions as agreement classes is utterly anti-intuitive. (N. Pertsov drew my attention to this complication.)

Second, the sets of personal pronouns of the type Fr. 1) MOI ‘I’ and NOUS ‘we’ [1st person], 2) TOI ‘youSG’ and VOUS ‘youPL’ [2nd person], as well as 3) IL ‘he’, ELLE ‘she’, ILS ‘they-masc’, and ELLES ‘they-fem’ [3rd person]). Without Condition 3, pronouns of the same person or of the same number would form an agreement class, since they impose on their target (= the Main Verb) the same grammeme: the corresponding pronominal person or the pronominal number. However, the pronominal person and number, based on reference to the participants of a speech act, are not at all similar to grammemes imposed by agreement classes; it is therefore inappropriate to admit the sets of personal pronouns among agreement classes.

6. Lexical units having special agreement properties

The universal quantifier in Conditions 1 and 2 (‘for any’) should be interpreted _cum grano salis_: these conditionals apply globally, but with the exception of some precisely specified situations, which must be stated beforehand13. The fact is that various languages have a number of lexical units for which Conditions 1 and 2 are partially violated. Here are three examples:

- In Russian, the lexeme MINISTR ‘minister’ is of masculine gender1; however, if it denotes a woman, it can impose on the Main Verb (but not on an adjectival modifier!) feminine gender2: [Ministr] [MASC] _inostrannyx del Islandii zajavil+a [FEM], čto... ‘Island’s Foreign Minister declared that ...’ (but not: *naš+a [FEM] ministr Ingrid Torvaldsen ‘our minister I. T.’).

- Also in Russian, phrasemes of the type MEŠOK S DER´MOM ‘bag of shit’ or PUGALO OGORODNE ‘scarecrow’ [= ‘untidy looking person’] are inanimate (although they denote a person): they impose on their adjectival modifiers the grammeme ‘INANIMATE’. At the same time, however, they impose on the relative pronouns that morphologically depend on them the grammeme ‘ANIMATE’:

   Ja objazan opekat´ èt+ot [INANIM] _mešok s der´mom [INANIM] /
   / èt+i [INANIM] _pugala ogorodnye [INANIM]

   (_*èt+ogo [ANIM] meška s der´mom /èt+i [ANIM] pugal ogorodnyx),

   kotor+ogo [ANIM]/kotor+yx [ANIM] (_*kotor+yj [INANIM] */kotor+ye [INANIM])

   davno pora vygnat´!"
Chapter 1. Agreement, government, congruence

'I have to take care of this bag of shit/of these scarecrows, who should have been fired long ago!' (Mel’čuk 1985: 474ff).

– The German lexeme MÄDCHEN ‘girl’ is of neuter gender, but it can be (optionally) replaced (in accordance with its meaning) by a substitute feminine pronoun, SIE ‘she’.14

All such nouns should have special values specified in their syntactics. In these cases, we are actually dealing with semantically conditioned agreement (see below, 3.2, Comment 8 on Definition 1.4, p. 64).

7. Morphological neutralization

The special mention of contexts (‘... in any context, where ...’), which we see in Conditions 1 and 2, is necessary because of morphological neutralizations: in some contexts in which \( w_1 \) appears, an inflectional category \( C_1 \) of \( w_1 \) cannot be expressed at all, so that in these contexts the controller \( w_2 \) does not impose on its target any grammeme of the category \( C_1 \) (cf. Comment 3 above). Thus, as already indicated, in Russian the adjective does not distinguish gender2 in the plural, and therefore a plural \( N \) does not impose a gender2 on its morphological target \( A \). For examples and a discussion of morphological neutralization, see Chapter 6, 3.5, p. 336ff.

8. Agreement class and lexeme

Definition 1.2 does not require that agreement classes ensure a partition of lexemes of the same part of speech in \( L \). This is so because of the following fact:

 Agreement classes are not necessarily disjoint with respect to lexemes; logically, they can have intersections, which means that a lexeme can belong to several agreement classes—by proxy through its different lexes.

I am not, of course, speaking here of simple homonyms, of the type Fr. le capital ‘capital [money]’ [MASC] vs. la capitale ‘capital city’ [FEM] or le poêle ‘stove’ [MASC] vs. la poêle ‘frying pan’ [FEM]. What is really of interest are different forms, or lexes, of the same lexeme that belong to different agreement classes. This logical possibility is realized in many languages, for instance, in the Bantu family; thus, in Swahili, two wordforms of the lexeme MTI ‘tree’ belong to two different nominal classes1: the singular form \( mti \) is of class1 III, while the plural form \( mati \) is of class1 IV. The same is true of most nouns in this language: KITU ‘thing’ has its singular in class1 VII (kitu) and its plural in class1 VIII (vi-
2. Three auxiliary concepts

...
2.2.4. Agreement class vs. lexical class

Along with agreement classes, natural languages possess classes of lexemes—which, at first sight, resemble agreement classes and sometimes are confused with them. For instance, in English, nouns fall naturally into three classes according to the substitute pronoun which replaces the noun in the singular: HE, SHE or IT. Roughly speaking, HE replaces the nouns that denote males (some speakers even use HE to refer to small animals: insects, snakes, fishes, ...); SHE replaces the nouns denoting females, ships and certain countries and cities; and IT replaces all the other nouns. From the viewpoint of the use of the relative pronoun, English nouns are divided in two different classes: animate nouns, which take WHO, and inanimate nouns, which take WHICH.16 However, the classes obtained in this way are by no means agreement classes: the nouns in question do not participate in any morphological dependence: they do not impose syntactic grammemes on a clause element—what they do is determine lexical choices. The pronouns HE, SHE and IT, like WHO and WHICH, are different lexemes of English, so that the fact that BOY requires HE as substitute, while GIRL or CRUISER requires SHE has nothing to do with agreement or, more generally, with morphology. The classes under consideration are lexical classes, without being agreement classes. (A lexical class is any class of wordforms or lexemes; consequently, any agreement class is a lexical class, but the converse is not true.)

Lexical classes which are not agreement classes are found in languages that possess classifiers: special lexemes that most often are inserted between a numeral and the quantified noun. (In some languages, a classifier must precede the noun in other contexts as well: for instance, in Yidiny, see Dixon 1982: 185–205. For a general review of classifiers in the world’s languages, see Aikhenvald 2000.) Thus, in Vietnamese, to express the meaning ‘three bowls (cats, newspapers, pear trees, bananas, ...)’ you say the following:

\[
\begin{array}{lll}
\text{ba} & \text{bát} & \text{bowl}\text{'} \\
\text{con} & \text{mèo} & \text{cat}\text{'} \\
\text{tờ} & \text{báo} & \text{newspaper}\text{'} \\
\text{cây} & \text{lê} & \text{pear tree}\text{'} \\
\text{qua} & \text{chuôi} & \text{banana}\text{'} \\
\end{array}
\]

The second wordform in these expressions (boldfaced) is a classifier; without it the construction is ungrammatical: *ba bát, *ba mèo, etc. (These classifiers can be very roughly glossed as follows: cái ≈ ‘thing’, con ≈ ‘non-human being’, tờ ≈ ‘leaf’, cây ≈ ‘plant’, qua ≈ ‘fruit’.) Vietnamese has three general classifiers (cái for inanimate objects, người for people and con for non-human beings) and about two hundred more specific classifiers (such as, for instance, lười—for
cutting weapons: sabers, swords, etc.). Although classifier systems are, as a rule, semantically motivated to some extent, the distribution of Vietnamese classifiers is, strictly speaking, arbitrary. Thus, some human nouns take *con* (instead of *người*: *con bạn* ‘girlfriend’, *con bé* ‘little girl’, *con người* ‘human being’), some inanimate nouns also take *con* (‘knife’, ‘ship’, ‘road’, ...), etc. Consequently, each Vietnamese noun must be supplied in the dictionary with the indication of the classifier(s) it takes—in the same way French or German nouns are supplied with the indication of their gender\(^1\). It follows from this that Vietnamese nouns fall into many classes induced by the cooccurrence with classifiers. These classes are of course lexical classes, but by no means agreement classes—the noun does not impose any grammeme on the classifier; the noun selects its classifier as a lexical unit. Agreement does not exist in Vietnamese, because Vietnamese does not have inflection.

Nevertheless, the borderline between agreement classes and lexical classes which are not agreement classes is not always as clear-cut as in Vietnamese. For instance, a language can have a noun classification system where it is difficult to say whether agreement classes are involved or not. For instance, Japanese has classifiers that resemble those of Vietnamese, but, unlike Vietnamese, Japanese classifiers are not autonomous lexemes: they are suffixes of numerals, such that in a construction \textit{NUM}́-synt-\textit{N}, a Japanese \textit{NUM} is modified as a function of the quantified \textit{N}. Therefore, one may be tempted to say that in Japanese, a \textit{NUM} agrees with the quantified \textit{N}; if this viewpoint is accepted, the classes of Japanese nouns induced by the cooccurrence with classifiers would be agreement classes. However, personally, I think that this is not the case: see Chapter 6, 5, 3, p. 377 ff; but the above example shows to what extent the situation may be complicated.

On the other hand, a language can simultaneously feature two different systems of noun classification: such is the case of Jacaltec, see Chapter 6, 3, 8, (26), p. 345.

2.3. **A mirroring inflectional category**

Now comes the last auxiliary concept: mirroring inflectional categories.

**Definition 1.3: Mirroring inflectional category**

We say that in a language \(\mathcal{L}\) a syntactic inflectional category \(C_1\) **mirrors** the inflectional category \(C_2\) if and only if the following condition is satisfied:

For any two wordforms \(w_1\) and \(w_2\) such that \(w_1\) is characterized by \(C_1\) and \(w_2\) by \(C_2\), if \(w_1\) has a direct syntactic link with \(w_2\), then the appropriate grammeme of \(C_1\) is selected depending only on some grammemes of \(C_2\).
The relation ‘[to] mirror’ is of course antisymmetrical: if $C_1$ mirrors $C_2$, then $C_2$ by no means mirrors $C_1$.

Informally, a syntactic inflectional category $C_1$ mirrors an inflectional (not necessarily syntactic) category $C_2$, if $C_1$ exists in the language, so to speak, especially for ‘reflecting’ $C_2$, so that the grammemes of $C_1$ are, in a sense, replicas of the grammemes of $C_2$—with the exception (as always!) of some special constructions. Typical examples of mirroring categories are the number 2 and the case II of the adjective, which ‘reflect,’ respectively, the number 1 and the case I of the noun modified by this adjective.

**Examples**

**Mirroring categories**

(10) In Russian, the inflectional category “Case II,” or adjectival case, mirrors the category “Case I.1a,” or nominal case: if an A syntactically depends on an N, then A’s case II depends only on the case I.1b grammeme of N. Generally speaking, the case II of an A can also depend on the type of its verb controller V in a copular construction, i.e., on V’s syntactics (e.g., Rus. *Ona kazalas’ ustal+oj [INSTR]/*ustal+aja [NOM] ‘She seemed tired’ vs. *Ona byla ustal+oj [INSTR]/*ustal+aja [NOM] ‘She was tired’, etc.). This does not, however, contradict the definition of mirroring categories, since in a copular construction $N \leftarrow V_{copul} \rightarrow A$ the adjective A is not a direct syntactic dependent of the noun N.

**Non-mirroring categories**

(11) In Georgian, the choice of a grammeme of the category “case I.1a [of the noun]” for the Subject depends on the tense grammeme of the Main Verb: roughly speaking, the Subject of a transitive verb gets the nominative in the present/the imperfect, the ergative in the aorist, and the dative in the perfect. However, the category “case I.1a” does not mirror the category “(verbal) tense,” since on many occasions the case I.1a of a noun does not depend on the tense of a verb: for instance, the case I.1a on an Indirect Object of a verb never depends on its tense (the case I.1a of a noun can of course be governed also by another noun or a preposition).

The concept of mirroring category is very important in this context—as mentioned above, it underlies the distinction of agreement and government.
2.4. Relationships between the concepts ‘agreement class,’ ‘mirroring category,’ and ‘agreement’

In the approach I propose here, the concepts of *agreement class* and *mirroring category* logically precede the concept of agreement; they are therefore essential to the distinction between agreement and government. As a result, in order to avoid circularity, agreement class and mirroring category are defined prior and without reference to agreement (although with reference to the concepts of morphological and syntactic dependency).

So, now that I have defined these two underlying concepts, I can take up the concepts that are the main concern of this chapter: agreement, government, and congruence. Agreement is the most substantial of these—it is based on a number of positive properties, and therefore it will be introduced first; government is defined, so to speak, negatively with respect to agreement—as a morphological dependency which is not agreement, so it seems natural to introduce it in second place; congruence, being a particular case of agreement (in a broad sense), will be considered last.

Two main properties of the approach adopted here oppose it to other similar attempts at definition.

1) Agreement, government and congruence are defined as specific varieties of morphological, rather than syntactic, dependency. In taking this tack, the present approach breaks sharply with a long grammatical tradition, which considers agreement and government as particular cases of syntactic subordination (cf., e.g., Peškovskij 1956: 68, Skoblikova 1971, GRJa 1960, GSRLJa 1970: 488–490, RG 1980: 20ff, Lehmann 1983) or—less frequently—as different types of morphological marking of syntactic subordination (Gasparov 1971: 10). In their discussion of agreement etc., none of these studies considers morphological dependency as a separate type of dependency at all.

2) Agreement, government and congruence are defined here on the basis of synthesis rules of a formal linguistic model rather than on the basis of observable distribution of grammatical markers, i.e., not on the basis of cooccurrence or covariance of inflectional characteristics, as is currently done. Of course, the synthesis rules themselves take into consideration the distribution of the elements in question; nevertheless, proceeding from the rules (the approach followed as well in Iomdin 1990) gives quite a different perspective.

3. Agreement

General problems of agreement are discussed in depth in Moravcsik 1978b, Lehman 1982, Corbett 1983, 1986, Lapointe 1985, Barlow and Ferguson 1988, and
Brentari et al. 1988. Apresjan 1982 proposes a theoretical analysis of difficulties related to the distinction between agreement and government; the first attempt at a rigorous definition is presented in Mel’čuk 1993a (see also Mel’čuk 1993-2000, vol. 3: 266–270). Barlow 1992: 98ff discusses the links between agreement and the structure of discourse. Finally, Schmidt and Lehfeldt 1995 give a comprehensive review of problems involved in the description of agreement.

3.1. The concept of agreement

Definition 1.4: Agreement

We say that, in an utterance \( U \), a wordform \( w_1 \) which morphologically depends on wordform \( w_2 \) with respect to an inflectional category \( C_1 \) agrees with \( w_2 \) with respect to \( C_1 \) if and only if the following two conditions are simultaneously satisfied:

1) the wordform \( w_1 \) is not a substitute pronoun that replaces an occurrence of \( w_2 \) in \( U \);

2) the grammeme \( g_1 \in \{'w_1'\}, \) where \( g_1 \in C_1 \), is selected depending:

(a) either upon a grammeme \( g_2 \in \{'w_2'\}, \) where \( g_2 \in C_2 \), such that \( C_1 \) mirrors \( C_2 \);

(b) or upon the value of a syntactic feature \( \Sigma_2 \) of \( w_2 \), this \( \Sigma_2 \) being agreement class, (pronominal) person or (pronominal) number;

(c) or upon some semantic components of \( w_2 \) or some properties of its referent in \( U \).

3.2. Comments on Definition 1.4

1. Condition 1

Condition 1 is necessary in order to separate agreement from an important particular case which I prefer to define as an autonomous concept—congruence, see Definition 1.6 below, p. 89.

A substitute pronoun is a substantive pronoun of the 3rd person that replaces in a text an occurrence of a nominal (called its antecedent); in Russian it is the lexeme ON ‘he’, whose forms are on ‘he’, ona ‘she’, ono ‘it’ and oni ‘they’ in all grammatical cases. A substitute pronoun is different from personal pronouns of the 1st and 2nd persons, in that these never replace a noun. However, all pronouns are characterized by the syntactic features of person and number, which oppose such lexemes as Rus. JA ‘I’ ~ TY ‘youSG’ ~ ON ‘he’, MY ‘we’ ~ VY ‘you-PL’ ~ ON ‘they’ (pronominal person) and JA ‘I’ ~ MY ‘we’, TY ‘youSG’ ~ VY ‘you-PL’ (pronominal number).
2. Condition 2

Condition 2 states the differences between agreement and government. As a matter of fact, it specifies the positive properties of agreement: agreement takes place exclusively with respect either 1) to a mirroring syntactic inflectional category, 2) to one of the three syntactic features mentioned in (b), or else 3) to semantic properties of the controller or its referent. Subcondition 2c addresses such cases of agreement as My family [sg] are [pl] happy, where the plural of the verb depends on the semantics of the noun FAMILY, or Rus. Ja prišl+u [fem], where the feminine gender of the verb depends on the feminine sex of the referent of the pronoun JA. (I assume that Russian has only one lexeme JA, which does not distinguish genders – that is, it is itself ‘non-sensitive’ to the sex of the referent, while its morphological target is; the same treatment is to be reserved for TY ‘you[sg],[pl]).

3. Agreement with respect to a syntactic feature

For Definition 1.4 to cover ‘exotic’ examples of the type of (3) – (4) [2.1.3, 4, pp. 40–42], I have to add a mention of syntactic features: “w1 which morphologically depends on w2 with respect to the syntactic feature Σ1 agrees with w2 with respect to the syntactic feature Σ1 if and only if the selection of the value γ1 of the syntactic feature Σ1(w1) depends on the value of a syntactic feature Σ1(w2).” But a correct formulation of this refinement complicates Definition 1.4 to such an extent that it becomes more convenient to split it into two more specific definitions: agreement with respect to an inflectional category vs. agreement with respect to a syntactic feature. However, in order to avoid cluttering my exposition with overspecific details, I prefer to sacrifice some rigor and limit myself to the present statement.

4. Agreement is not identity of some characteristics of the controller and the target

Definition 1.4 does not require identity of grammeme g1 with grammeme g2 or with the value γ2 of the corresponding syntactic feature: what is necessary is some dependency of the selection of g1 on g2 or γ2. In other words, it is sufficient if rules for the selection of the controlled grammeme g1 mention – as a necessary condition – the controlling element g2 or γ2. Thus, in the notorious Russian construction tri bol’šix stola ‘three big tables’, the adjective A bol’šix [pl] is taken to agree with N stola [sg] in number2, because the rule that selects the number2
of a modifying A says: “If N is in the singular, but has a ‘small’ NUM syntactically depending on it, then A is in the plural.”

**NB:** In this respect—that is, in rejecting the requirement of the identity of $g_1$ and $g_2$—the proposed definition of agreement deviates from many other definitions (e.g., Moravcsik 1978: 333 or Lehmann 1982: 203; cf., however, Kibrik 1977a: 176).

To justify my approach, I can quote some substantive and some formal considerations.

First, from a substantive viewpoint, one immediately notes, on leafing through numerous descriptions of agreement in different languages, that specialists do not hesitate to include in the sphere of agreement a number of cases where no identity of controlling and controlled characteristics is found. The book Corbett 1983a is dedicated to such cases; they are also central to all concrete descriptions of agreement (e.g., Crockett 1975, Iomdin 1990). Here are three typical examples from Slavic languages where we see non-identity of controlling and controlled genders (Corbett 1983a, b, 1986):

(12) a. Slovene

Ta streha, okno in gnezdo mi bodo ostal +i v spominu

This roof, window and nest to-me will remain. PL.MASC in memory

b. Serbo-Croatian

Vredal+1 su ga nebriga i lakomislenost Tahir-begova

offend PL.MASC are him carelessness and capriciousness[FEM] of-Tahir-beg

'Tahir-beg’s carelessness and capriciousness offended him'.

c. Polish

Któr+e z malżonków jest winn+e?

which SG.NEU of spouses[MASC] is guilty SG.NEU

'Who of the spouses is guilty?'

(12a–b) show non-identity of genders in the agreement of the Main Verb with its Subject in gender2; in (12c), the head in an elective construction ‘which of N<sub>PL</sub>’ is in the neuter, while N<sub>PL</sub> with which it is supposed to agree is masculine.

Another telling example of non-identity of controlling and controlled genders is found in what is called the inverse agreement of numerals in Arabic: the numerals from 3 to 10 take the gender2 opposite of the gender1 of the controlling N. For instance:
Second, from a formal viewpoint, the identity of controlling and controlled elements is impossible—even in the most common, non-exotic cases. The reason is purely logical: these elements are of a different nature. Indeed, the gender1 of a noun is a feature of its syntactics while the gender2 of an adjective or a verb is one of its inflectional categories. Furthermore, number in nouns and number in adjectives are two different inflectional categories: one is semantic, and the other syntactic—i.e., they are number1 and number2; their grammemes are different. (The identical names are due to the fact that one of the corresponding categories mirrors the other.) Therefore, definitions of agreement based on the identity of grammemes of the target and the controller (or on that of a grammeme of the target and a value of a syntactic feature of the controller) are logically incorrect.22

5. Agreement and semantic actants

E. Keenan (1974: 298–303, 1978: 94–98) noted that under agreement the controller is, as a rule, a semantic dependent [= Sem-actant] of the target (Keenan presented his observations in different terms; cf. the formulation of what Keenan called the ‘functional principle’ in Lehmann 1982: 231–233). Indeed, A and V agree with an N which is one of their Sem-dependents. Relative pronouns such as Rus. KOTORYJ ‘which’ can be treated in the same way: KOTORYJ agrees in gender2 and number2 with the modified N, and the relative clause introduced by KOTORYJ is the Sem-Governor of the modified N. In other words, the target morphologically agrees with one of its Sem-actants. Thus, one might be tempted to define the concept of agreement via the concept of Sem-actant. Why not say simply that morphological dependency \( w_1 \rightarrow \text{morph} / C_1 \rightarrow w_2 \) is agreement if and only if \( w_2 \rightarrow \text{sem} / w_1 \)? In the vast majority of cases this is actually so. There are, however, counterexamples: On the one hand, there exist constructions in which the Sem-Governor morphologically depends on its Sem-actant but does not agree with the latter; on the other hand, there are also constructions in which the morphologically agreeing element is not the Sem-Governor of its controller.

— A Sem-Governor does not agree with its Sem-actant

Consider the possessive genitive construction \( N^1 \rightarrow N^2_{\text{GEN}} \), such as, e.g., Rus. sad starik\( +a \) ‘old man’s garden’ or karandaš otc\( +a \) ‘Father’s pencil’, where \( N^i \) is non-predicative, i.e., non-relational. This construction represents semantical-
ly possessive phrases, in which the genitive noun is taken to have the Sem-represen-
tation \( N \) belonging to \( X' \)—so that, e.g., Rus. otc+a 'Father’s' = 'belonging
to Father', etc. In such a construction, the noun \( N_2^{\text{GEN}} \) is the Sem-Governor of
the noun \( N_1 \); however, \( N_2^{\text{GEN}} \) does not agree with its Sem-actant \( N_1 \), but rather
is syntactically and morphologically governed by it. This difficulty for Keenan’s
principle was noted in Lehmann 1982: 230–321.

At least five cases can be cited here:

- A target of agreement is not the Sem-Governor of its controller
- A noun \( N_2^{\text{GEN}} \) that is a syntactic complement of a predicative (= rela-
tional) noun \( N_1 \) (in the same genitive construction \( N_1 \rightarrow N_2^{\text{GEN}} \) as above) can
agree with \( N_1 \) with respect to case 1.1a, being not its Sem-Governor, but rath-
er one of its Sem-actants: cf. expressions meaning ‘Father’s arrival’ or ‘Fa-
ther’s name’ in Old Georgian, see (19), 3.3, p. 69.
- A noun \( N_1 \) conjoined with another noun \( N_2 \) (\( N_2 \rightarrow \text{coord} \rightarrow N_1 \)) and agreeing
with \( N_2 \) with respect to case 1.1a is not a Sem-Governor of its controller, ei-
ther (see below).
- An Object noun \( N_1 \) agreeing with the Subject noun \( N_2 \) (of the same verb) in
person and number 2/class 2 is again not a Sem-Governor of the controller,
see (28), p. 77.
- An adjectival modifier \( A \) of an \( N \) that expresses a Sem-Actant of this \( N \) agrees
with \( N \), but is its Sem-Dependent: Rus. americanskaja pomošč ‘Ameri-
can aid’ [= ‘America aids’], vsenarodnaja odobrenie ‘all-nation approval’,
Svetin Ø prirod ‘Sveta’s arrival’, etc.
- A verb \( V \) showing objectival agreement with an \( N \) which is not \( V \)’s Object,
but an Object of another \( V’ \) depending on \( V (V \rightarrow V’ \rightarrow N) \).

Since I want logical universality of the definitions, the existence of such con-
structions does not allow me to reduce the concept of morphological agreement
to the morphological dependency of Sem-Governors on their Sem-actants. An
additional complication comes from the fact that an agreeing lexical item can
have several SemAs, so that one has to specify with which of its actants it is sup-
posed to agree.

Nevertheless, the following holds:

In most cases, under agreement the controller is a Sem-actant of the target.

6. ‘Double’ agreement (= agreement simultaneously with two controllers)

A wordform \( w_1 \) can simultaneously agree with two controllers \( w_2 \) and \( w_3 \)– of
of course, with respect to two different inflectional categories \( C_2 \) and \( C_3 \).
3. Agreement

(14) a. In Akhvakh, as well as in some other Daghestanian languages (Boguslavskaja 1991), a participle or an adjective as a modifier agrees in class 2 and/or in number 2 with its actant complement,23 or its ‘relational’ circumstantial,24 and at the same time – in class 2 and number 2 with the modified noun; the first agreement is shown by a prefix, the second by a suffix:

i. Roča +Ø b +eχeq+ida + je jaše +Ø eša+jani 
book[III] SG.NOM III bring ADJ (ec-tivizer) II NOM girl[II] SG.NOM left


ii. mina +Ø b +aš +ida +we ekwa+Ø 
head[III] SG.NOM III white ADJ I.NOM man[II] SG.NOM

‘white-headed man’, lit. ‘head-white man’ = ‘man white with respect to [his] head’

Akhvakh adjectivals thus have (as Boguslavskaja points out) two inflectional categories of (nominal) class 2 and two inflectional categories of number 2: Governor’s class 2 and Dependent’s class 2, Governor’s number 2 and Dependent’s number 2. This situation is logically close to polypersonal agreement of finite verbs: cf. example (22), p. 72ff.

b. In Tzotzil (Aissen 1988: 223), a transitive Main Verb agrees in number 2 with its DirO and can also agree in person with the Possessor of this DirO (the wordform expressing the Possessor, in this case, ‘I’, is absent on the surface):

L +i +s +kel +be +ik [j + ħamaltak] li Xune 
PAST 1OBJ 3SUB watch 2/3- 3.PL ISG child-PL ART Juan PERMUT

‘Juan was-watching my children’, lit. ‘...was-watching-me my-children’.

[The 2/3-PERMUT(ative) – a special voice – marks the fact that an IndirO, in this case, ‘my children’, is promoted to be a DirO; see Chapter 3, 5.2.2, p. 223ff.]

Double agreement corresponds to a general property of morphological dependency: the possibility of several simultaneous controllers, see Comments on Definition 1.1, 2.1.3, 6, after (7), p. 44.

7. What can agree with what?

I will interpret this question and formulate the answer in terms of parts of speech, postulating four Deep-Syntactic, or universal, parts of speech: noun N, verb V,
adjective A and adverb ADV (the class of DSynt-adverbs also includes particles, prepositions/postpositions and conjunctions). My answer relies on the following two observations:

1) In some cases we speak of ‘induced,’ or indirect, agreement. Thus, a (circumstantial) adverb can agree with the Main Verb in class 2, but the verb itself gets the class 2 grammeme from its Subject, so that such an adverb can also be said to agree with the Subject, cf. (25) below, p. 75. However, I will consider indirect agreement as a bona fide example of agreement.

2) In Meaning-Text Theory, the Surface-Syntactic structure of coordinate constructions is represented in the following way: each conjunct (except the first one) is taken to be syntactically dependent on the preceding one; the leftmost conjunct is the syntactic head of the chain and represents it in its external dependencies, being itself syntactically dependent on the Governor of the chain. Each dependent conjunct agrees with its Governor with respect to the relevant inflectional categories; thus, a nominal conjunct agrees with its governor in case I.1a, e.g.:

Rus. k Maš+e,–coord→Pet+e,–coord→i (našim pročim) druž’+jam

DAT         DAT

(to Masha, Petja and our other friends)

In answering the above question as to what can agree with what, I will proceed from the known facts concerning agreement and add some agreement situations which I can readily imagine, although I am not aware of actual examples. Taking into consideration the two above remarks, we find that out of 16 theoretically possible major types of agreement (N with N, N with V, N with A, ..., ADV with A, ADV with ADV), 11 actually exist; I am unable to propose sufficiently natural situations for the following five cases: agreement of N and of V with A as well as of A, of V and of A with ADV.

Definition 1.4 is formulated in such a way as not to link a priori the concept of agreement with particular parts of speech. There are many obvious strong correlations—thus, N is, of course, the main ‘imposer of agreement,’ while A and V are the ‘most agreeing’ elements. Nevertheless, I believe, no clear-cut and strict logical dependency exists between agreement and part of speech (on this see Schmidt and Lehfeldt 1984: 214–215).

8. Semantically conditioned agreement, or agreement according to meaning

Several lexemes and some constructions can condition variable agreement. This variability can be related, although not necessarily, to the expression of semantic nuances; it can be disjunctive (= paradigmatic) or conjunctive (= syntagmatic).
Disjunctively variable agreement
In a given context, the controller $w_2$ can impose upon the target $w_1$ either the grammeme $g_{1,1}$ or the grammeme $g_{1,2}$ of the same inflectional category $C_1$. An example:

(15) Russian
a. [Bol′šinstvo [SG] ljudej sčita+et [3SG]/sčita+jut [3PL], čto ...] 'The majority of people believes / believe that ...'
b. [Na mostu stojal+a [SG.NEU] /stojal+ı [PL] pijat′ maččikov] 'On the bridge stood five/the five boys'.

In (15a), I do not see a semantic difference; this seems to be an example of free DMorph-variation. In (15b), the Main Verb is used in the singular if the Subject is indefinite or New, and in the plural with a definite Given Subject.

Conjunctively variable agreement
In a given context, the controller $w_2$ can simultaneously impose upon two different targets $w_{1,1}$ and $w_{1,2}$ two different grammemes $g_{1,1}$ and $g_{1,2}$ of the same inflectional category $C$:

(16) Russian
b. [Moj+ı zubn+ıaj vřeč [MASC.SG] skazal+i a mne, čto ...] 'My dentist [a woman] told me that ...' ['dentist' = zubnoj vřeč, lit. dental doctor].

Examples (15) – (16) show, along with ‘regular’– grammatical – agreement, the existence of what is sometimes called semantically conditioned agreement (‘agreement according to meaning’): the grammeme $g_1$ of the target $w_1$ is selected as a function of the meaning of the controller $w_2$ or of some properties of its referent (e.g., actual number of referents, biological sex of the referent, etc.) rather than of strictly grammatical properties of $w_2$ (its grammatical number, grammatical gender, etc.). The choice of the appropriate type of agreement may depend on a great number of complex factors: on the lexical type of the controller, on its referentiality/definiteness, on the linear position of the controller with respect to the target, etc. For a survey and an analysis of these factors see Corbett 1983a and Iomdin 1990. Although semantically conditioned agreement attracts a great deal of attention, from the viewpoint of our task here – constructing a definition of agreement – it does not entail any additional difficulties. (However, for the definition of agreement class semantically conditioned agree-
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ment presents some complications and requires special refinements: see comment 6 on Definition 1.2 in 2.2.2, p. 51.)

9. The logical type of the relation of agreement

Being a particular case of morphological dependency, agreement possesses the following logical properties:

– Agreement is anti-reflexive: no \( w \) can determine its own grammemes.

– Theoretically speaking, agreement is non-symmetrical, rather than anti-symmetrical: in principle, \( w_1 \) can agree with \( w_2 \) in the inflectional category \( C_1 \), while \( w_2 \) agrees with \( w_1 \) in the category \( C_2 \); imagine, for instance, an N \( w_1 \) which agrees with the MV \( w_2 \) in tense, while this MV \( w_2 \) agrees with the N \( w_1 \) in number 2 and person. However, I do not know of actual cases of such symmetrical agreement: anywhere we find symmetrical morphological dependency between X and Y, if X agrees with Y, then Y is governed by (but does not agree with) X. Thus, whether ‘symmetrical’ agreement can exist is an open question. If we decide to ignore the purely theoretical possibility or if we consider agreement only in one inflectional category, then agreement is anti-symmetrical.

– Again, in purely theoretical terms, agreement is non-transitive, rather than anti-transitive: \( w_1 \) that agrees with \( w_2 \) in the inflectional category \( C_1 \), while \( w_2 \) agrees with \( w_3 \) in the category \( C_2 \), can in principle agree with \( w_3 \) in the category \( C_3 \); thus, an A \( w_1 \) can agree with the modified N \( w_2 \) in number 2, while this N \( w_2 \) agrees with the MV \( w_3 \) in tense and the A \( w_1 \) can, but need not, agree with the MV \( w_3 \) in transitivity. However, as before, no real examples are known; if we choose to disregard such a speculative possibility or to consider agreement just in one category, then agreement is anti-transitive.


3.3.  Examples of agreement

Many examples of agreement, organized according to the syntactic roles of the participating elements, are found in Lehmann 1982: 207ff (see also the table in Lapointe 1988: 71); to avoid repetition, I will give a few trivial and a few ‘exotic’ examples, grouping them according to the parts of speech of the controller and the target.

From the standpoint of surface syntax, agreement can be of the following three types:
Types of Agreement

If the target $w_1$ and the controller $w_2$ are SSynt-linked, we have contact agreement; more specifically:
- the target $w_1$ is a SSynt-Dependent of the controller $w_2$: upward agreement;
- the controller $w_2$ is a SSynt-Dependent of the target $w_1$: downward agreement (the terms are from Nichols 1985).

If the target $w_1$ and the controller $w_2$ are not SSynt-linked, we have distact agreement; another current term is long-distance agreement.

Contact Agreement (see ‘Distact Agreement’ on p. 77)
Agreement of an A and an MV with an N

(17) In Russian, an A agrees with its controller N (= with the N this A modifies) in number2 and case11, and in the singular also in gender2 (upward agreement). The Main Verb agrees with its Subject: if the MV is not in the past, it agrees in person and number2; and if it is in the past, it agrees in number2, and, if it is in the singular, then it also agrees in gender2 (downward agreement):

**Molod +oj**

- čelovek $+\emptyset$ voščel $+\emptyset$
- čist $+yj$
- čist $+uju$
- čist $+oe$
- čist $+ye$
- čist $+aja$
- čist $+yj$
- čist $+uju$
- čist $+oe$
- čist $+ye$
- čist $+aja$

**Molod +aja**

- čelovek $+\emptyset$ voščel $+\emptyset$
- čist $+yj$
- čist $+uju$
- čist $+oe$
- čist $+ye$
- čist $+aja$
Chapter 1. Agreement, government, congruence

Molod\+\(oe\) young \(\text{NEU.SG.NOM}\) animal[\(\text{NEU}\)] \(\text{SG.NOM}\) entered \(\text{SG.NEU}\) in
\(\text{životn} + oe\)
\(\text{vošl} + o\)
\(\nu\)
\(\text{čist} + yj\)
\(\text{MASC.SG.ACC}\)
\(\text{dom} + \emptyset\)
clean
\(\text{komnat} + u\)
clean
\(\text{FEM.SG.ACC}\)
\(\text{žilišč} + e\)
clean
\(\text{poko} + i\)
clean
\(\text{apartments}[\text{PL}]\)
\(\text{Čist} + ye\)
\(\text{NEU.SG.ACC}\)
\(\text{žilišč} + e\)
clean
\(\text{poko} + i\)
clean
\(\text{apartments}[\text{PL}]\)
\(\text{Čist} + ye\)
\(\text{PL.ACC}\)
\(\text{živišč} + e\)
clean
\(\text{apartments}[\text{PL}]\)
\(\text{Čist} + ye\)
\(\text{FEM.SG.ACC}\)
\(\text{živišč} + e\)
clean
\(\text{apartments}[\text{PL}]\)
\(\text{Čist} + ye\)
\(\text{NEU.SG.ACC}\)
\(\text{živišč} + e\)
clean
\(\text{apartments}[\text{PL}]\)
\(\text{Čist} + ye\)
\(\text{PL.ACC}\)
\(\text{živišč} + e\)
clean
\(\text{apartments}[\text{PL}]\)

(18) In Kikongo, an A and an MV agree with a controller N (the modified N for an A, and the 3rd person Subject for the Main Verb) in (nominal) class 2; if the Subject is of the 1st or 2nd person, the MV agrees with it in person and number 2. The noun N 1 depending on another noun N 2 (= genitive construction) also agrees with N 2 in class 2, so that N 1 gets two noun class markers: one is its own (= class 1, a syntactic feature), and the other comes from N 2 (= class 2, an inflectional category); N 1 ‘passes’ both noun class/syntactic feature value and noun class 2 grammemes to its modifying adjectives, which, in this way, have in Kikongo two different inflectional categories of class 2 as well (very much like Akhvakh adjectives, cf. (14a), p. 63).

\(\text{Mu}+ntu\)
\(\text{I}\) person \(\text{I}\) black \(\text{I}\) fell
\(\text{Ba}+ntu\)
\(\text{II}\) person \(\text{II}\) black \(\text{II}\) fell
\(\text{Ki}+nkutu\)
\(\text{VII}\) garment \(\text{VII}\) black \(\text{VII}\) fell

\(\text{mu} + ndombi\) \(a + bwidi\) ‘A black person fell’.
\(\text{ba} + ndombi\) \(ba + bwidi\) ‘Black people fell’.
\(\text{ki} + ndombi\) \(ki + bwidi\) ‘A black garment fell’.
3. Agreement

The black garments of the black person fell.

The black garments of the black people fell.

The phenomenon observed in (18b) – namely, agreement of N₁ with the governing N₂ in noun class 2 – should, strictly speaking, be considered below, in the section "Agreement of a modifying N₁ with a modified N₂."

Agreement of a V with a V in a coordinate construction

The syntactically dependent conjoined verb V₁ in the construction V₂<coord>A V₁, as in

writes,<coord>→reads,<coord>→corrects,

agrees with its Governor in person and number 2 or in number 2 and gender 2.

(On distinguishing two categories of case in nouns – governed case ~ agreeing case – see Chapter 2, 11.1, p.159ff.)
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Interestingly, agreement of N1 with N2 in case I.2 is not recursively repeatable; cf.:

\[
\text{envy SG NOM house SG GEN servant PL.GEN GEN NOM}
\]

′envy for the house of the servants′,

where the noun MONA ′servant′ has two markers of case I.2 – the genitive, because of the genitive of the governing noun SAXLI ′house′, and the nominative, because of the nominative of the noun ŠURI ′envy′, which is governor of SAXLI. However, SAXLI itself – the second noun in the chain – does not agree in case I.2 with ŠURI. The same phenomenon is present in the next example:

\[
\text{assembly SG ERG son PL.GEN Israel SG GEN PL.GEN ERG}
\]

′assembly of sons of Israel [did something]′

The third (final) noun in the chain – ISRAEL – agrees in case I.2 with the second and the first nouns (and so has three case suffixes), but the second, i.e. central, noun does not agree in case I.2 with KREBUL (*že+ta+man).26

This phenomenon was made known to European linguists by F. Bopp (in 1842; Georgian grammarians were of course aware of it much earlier). It was later dubbed ′Suffixaufnahme′ by F.N. Finck; under this name (it is also known as ′Double/Multiple Case′) it has become the object of intense study: e.g., Plank (ed.) 1995. Interestingly, the agreement of a genitive noun with its SSynt-governor in case I.2 is a typical feature of Hurrian and closely related Urartian, see Chapter 2, (34), p. 160.

Agreement of a modified N2 with a modifying N1 (upward agreement – this case is, in a sense, the inverse of the previous example)

(20) Chechen (Nichols 1985: 278) has a few nouns that agree with the preceding genitive noun in noun class II:

\[
\text{rope(II) GEN II end}
\]
Agreement of an Object or Complement N with the MV (upward agreement)

(21) In Kayardild (Evans 1988: 221–222), all the objects and complements agree with the Main Verb with respect to its tense/mood by featuring a particular case. The correspondence is as follows:

<table>
<thead>
<tr>
<th>Tense/Mood of the Main Verb</th>
<th>Case of the Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>non-future [= 'actual']</td>
<td>locative</td>
</tr>
<tr>
<td>past</td>
<td>ablative</td>
</tr>
<tr>
<td>future</td>
<td>proprietive</td>
</tr>
<tr>
<td>apprehensive</td>
<td>oblique</td>
</tr>
<tr>
<td>imperative</td>
<td>nominative</td>
</tr>
</tbody>
</table>

\[
\text{danga+a bargi+da tuñal+Ø +i nara+nünü +y}
\]

(The man just chopped/is chopping the tree with a knife).

\[
\text{danga+a bargi+da tuñal+Ø +u nara+nünü +wu}
\]

(The man will chop the tree with a knife).

\[
\text{danga+a bargi+dara tuñal+Ø +ina nara+nünü +na}
\]

(The man (had) chopped the tree with a knife).


Agreement of an MV with its noun actants (downward agreement)

Many languages have what is traditionally called *polypersonal agreement* of the Main Verb—that is, the verb agrees in person, number and/or class with two or three of its actants, not only with the Subject, as is the case in most Indo-European languages. (A better term would probably be *polyactant* agreement.) A polypersonal verb can agree with the Subject and the DirO (bi-personal verbs), or with the Subject, the DirO and the IndirO (tri-personal verb). Cf.:
(22) a. Chukchee
Agreement with the Subject and the DirO in person and number

<table>
<thead>
<tr>
<th>Subject</th>
<th>DirO</th>
<th>IndirO</th>
</tr>
</thead>
<tbody>
<tr>
<td>γόɗ + nan</td>
<td>γόɗ to +γόɗ u + γόɗ</td>
<td>I saw youSG.</td>
</tr>
<tr>
<td>γόɗ</td>
<td>γόɗ to +γόɗ u + γόɗ</td>
<td>I saw them.</td>
</tr>
<tr>
<td>γόɗ + nan</td>
<td>γόɗ ine +γόɗ u + γόɗ</td>
<td>YouSG saw me.</td>
</tr>
<tr>
<td>γόɗ + nan</td>
<td>γόɗ ne +γόɗ u + γόɗ</td>
<td>They saw me.</td>
</tr>
<tr>
<td>γόɗ + nan</td>
<td>γόɗ ne +γόɗ u + γόɗ</td>
<td>They saw youSG.</td>
</tr>
<tr>
<td>γό钌 + nan</td>
<td>γό钌 ne +γό钌 u + γό钌</td>
<td>They saw them.</td>
</tr>
</tbody>
</table>

In Chukchee, the Subject of a transitive verb is in the instrumental while the DirO is in the nominative (an ergative construction).

b. Abkhaz
Agreement with the Subject, the DirO, and the IndirO in person, number, and gender

<table>
<thead>
<tr>
<th>Subject</th>
<th>DirO</th>
<th>IndirO</th>
</tr>
</thead>
<tbody>
<tr>
<td>ьара jара</td>
<td>ьара i +u</td>
<td>+ь +т+е +и</td>
</tr>
<tr>
<td>I</td>
<td>ьара to-youSG[MASC]</td>
<td>I gave.</td>
</tr>
<tr>
<td>бара jара</td>
<td>бара i +b(α)</td>
<td>+ь +т+е +и</td>
</tr>
<tr>
<td>they</td>
<td>бара to-youSG[FEM]</td>
<td>I gave.</td>
</tr>
<tr>
<td>дара jара</td>
<td>дара i +r(α)</td>
<td>+ь +т+е +и</td>
</tr>
<tr>
<td>they</td>
<td>дара to-them</td>
<td>I gave.</td>
</tr>
<tr>
<td>ьара jара</td>
<td>ьара i +s(α)</td>
<td>+ь +т+е +и</td>
</tr>
<tr>
<td>I</td>
<td>ьара to-me</td>
<td>+ь +т+е +и</td>
</tr>
<tr>
<td>дара jара</td>
<td>дара i +r(α)</td>
<td>+ь +т+е +и</td>
</tr>
<tr>
<td>they</td>
<td>дара to-them</td>
<td>+ь +т+е +и</td>
</tr>
</tbody>
</table>
In Abkhaz, nominals, including pronouns, do not have case, so that the Surface-Syntactic roles of different actants of a verb are expressed by the linear arrangement of the corresponding person-number prefixes:

DirO Prefix + IndirO Prefix + Subject Prefix.²⁷

c. Ostyak
Agreement with the Subject in person and number, and with the DirO in number only (Nikolaeva 1999)

The verb WAN- ‘[to] see’ (bi-personal) in the aorist of the indicative

Ma  təm kalaŋ  wan+s+Ø  +em
1 this reindeer saw SG.OBJ 1SG.SUB
I saw this reindeer.

Naŋ  təm kalaŋ  wan+s+Ø  +en
YouSG this reindeer saw SG.OBJ 2SG.SUB
YouSG saw this reindeer.

Ma  təm kalaŋ  wan+s+gil  +am
1 this reindeer saw DU.OBJ 1SG.SUB
I saw these two reindeer.

Naŋ  təm kalaŋ  wan+s+gil  +an
YouSG this reindeer saw DU.OBJ 2SG.SUB
YouSG saw these two reindeer.

Ma  təm kalaŋ  wan+s+l  +am
1 this reindeer saw PL.OBJ 1SG.SUB
I saw these reindeer.

Naŋ  təm kalaŋ  wan+s+l  +an
YouSG this reindeer saw PL.OBJ 2SG.SUB
YouSG saw these reindeer.
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Note that:
– The dual/plural number of the DirO need not be expressed on the DirO noun when the verb shows the DirO’s number by agreement.
– The object agreement takes place only if the DirO does not express the Rhe- matic Focus of the clause. Thus, all sentences in (22c-i) can answer only the questions ‘What happened?’ or ‘Who saw this reindeer?’ In the sentence that answers the question ‘What did I/youSG see?’ object agreement is impossible and the objectless form of the verb has to be used:

ii. 
Ma tám kālq wan+s+əm Nāŋ tám kālq wan+s+ən
I this reindeer saw YouSG this reindeer saw
‘I saw this reindeer’. ‘YouSG saw this reindeer’.

– The object agreement ignores the person of the DirO:
iii. 
Ma nāŋ +en / lūw+el wan+s+əm
I youSG ACC he ACC saw
‘I saw youSG/him’; the DirO = Rhem. Focus.
Ma nāŋ +en / lūw+el wan+s+Ø+em
I youSG ACC he ACC saw
‘I saw youSG/him’; the DirO ≠ Rhem. Focus.

Quite a different type of agreement of the MV is found in Korean (Pollard and Sag 1994: 92). Here, the MV agrees only with one of its actants (its Subject), but not in person and number2, as in Indo-European languages: the agreement is for respectfulness (‘honorific agreement’; the Korean verb does not have person/number2 inflection). Cf.:

(23) a. Kim hwecang (+Ø) +i o + Ø +ass +ta
President Kim arrived.
Kim president NEUTRAL SUBJ(ective) come NEUTRAL PAST DECL (arative)

b. Kim hwecang (+nim) +i o + si +ass +ta
≈ ‘Honorable President Kim deigned to arrive’.
Kim president RESPECT SUBJ come RESPECT PAST DECL

c. *Kim hwecang (+Ø) +i o + si +ass +ta
≈ ‘President Kim deigned to arrive’.
3. Agreement

(According to H. Yoo, sentences (23c–d) are possible in certain speech situations.)

Korean has a semantic inflectional category of respectfulness for the noun and a syntactic inflectional category of respectfulness for the verb; a grammeme of the former imposes on the MV the corresponding grammeme of the latter.

Agreement of an A with another (governing) A

(24) a. In Russian, some pronominal adjectives agree in gender, number and case with another adjective on which they syntactically depend:

\[
\begin{align*}
\text{masculine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{masculine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{feminine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{feminine singular} & \quad \text{masculine singular} & \quad \text{masculine singular}
\end{align*}
\]

\[
\begin{align*}
\text{šam+} & \quad \text{šumnyj} & \quad \text{šam+} & \quad \text{šumno} \\
\text{šam+} & \quad \text{šumnuj} & \quad \text{šam+} & \quad \text{šumni}
\end{align*}
\]

\[
\begin{align*}
\text{masculine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{masculine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{feminine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{feminine singular} & \quad \text{masculine singular} & \quad \text{masculine singular}
\end{align*}
\]

\[
\begin{align*}
\text{kak+} & \quad \text{šumnyj} & \quad \text{kak+} & \quad \text{šumnogo} \\
\text{kak+} & \quad \text{šumnuj} & \quad \text{kak+} & \quad \text{šumni}
\end{align*}
\]

\[
\begin{align*}
\text{feminine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{feminine singular} & \quad \text{masculine singular} & \quad \text{masculine singular}
\end{align*}
\]

\[
\begin{align*}
\text{kak+} & \quad \text{šumnyj} & \quad \text{kak+} & \quad \text{šumnogo} \\
\text{kak+} & \quad \text{šumnuj} & \quad \text{kak+} & \quad \text{šumni}
\end{align*}
\]

[\text{SAMYJ is a superlative marker—an adjectival equivalent of Eng. MOST}]

b. In (written) French, the adjective TOUT ‘all’ agrees in gender and number (but only in gender if it is masculine) with the adjective on which it syntactically depends:

\[
\begin{align*}
\text{masculine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{masculine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{feminine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{feminine singular} & \quad \text{masculine singular} & \quad \text{masculine singular}
\end{align*}
\]

\[
\begin{align*}
\text{šout+} & \quad \text{šou} & \quad \text{šou} \\
\text{šout+} & \quad \text{šou} & \quad \text{šou} \\
\text{šout+} & \quad \text{šou} & \quad \text{šou} \\
\text{šout+} & \quad \text{šou} & \quad \text{šou}
\end{align*}
\]

\[
\begin{align*}
\text{masculine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{masculine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{feminine singular} & \quad \text{masculine singular} & \quad \text{masculine singular} \\
\text{feminine singular} & \quad \text{masculine singular} & \quad \text{masculine singular}
\end{align*}
\]

\[
\begin{align*}
\text{šout+} & \quad \text{šou} & \quad \text{šou} \\
\text{šout+} & \quad \text{šou} & \quad \text{šou} \\
\text{šout+} & \quad \text{šou} & \quad \text{šou} \\
\text{šout+} & \quad \text{šou} & \quad \text{šou}
\end{align*}
\]

[\text{KAKOJ is an adjectival equivalent of Eng. HOW in How smart (she is!), etc.}]

‘Improper’ agreement of an ADV with a MV

(25) In Avar, some locative adverbs agree in class with the Main Verb (on which they depend syntactically); the MV, in its turn, receives this class from its Subject. Therefore, we have here a case of ‘induced’ (= improper) agreement:28
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Hani + v vas \text{v+ugo} \quad \text{`Here is a boy'.}
\text{here I} \quad \text{boy-I} \quad \text{I be-PRES}

Hani + j jas \text{j+ugo} \quad \text{`Here is a girl'.}
\text{here II} \quad \text{girl-II} \quad \text{II be-PRES}

Hani + b \text{ču } \text{/rosu} \text{b+ugo} \quad \text{`Here is a horse / a village'.}
\text{here III} \quad \text{horse-III/village-III} \quad \text{III be-PRES}

Hani + r vas+al / jas+al / ču+jal / ros+abi \text{r+ugo} \quad \text{`Here are boys / girls / horses / villages'.}
\text{here IV} \quad \text{PL} \quad \text{PL} \quad \text{PL} \quad \text{PL} \quad \text{IV be-PRES}

[In Avar all nouns in the plural belong to noun class I IV.]

Agreement of ADV with A can be of the same type.

Proper agreement of an ADV with a V

(26) a. Seri has a special particle that marks a subordinate clause C and specifies whether the Subject of the following main clause is the same as that of C or a different one (= DIFF-SUB). In other words, this particle marks \textit{syncategorematicity}, or what is currently called \textit{switch-reference}. This particle agrees in tense with the Main Verb of the subordinate clause (Moser 1978):

\begin{align*}
\text{Po+kóo} \quad \text{ta,} \quad \text{in} \quad +\text{sii} \quad +\text{?iit} \quad +\text{a?a} \\
\text{FUT} \quad \text{be.all} \quad \text{DIFF-SUB.FUT} \quad \text{2SUB} \quad \text{FUT} \quad \text{eat[SG]} \quad \text{IND}
\end{align*}

\text{`They being[FUT] all, youSG will eat them'.} = \text{`YouSG will eat all of them'.}

\begin{align*}
\text{To+kóo} \quad \text{ma,} \quad \text{i} \quad +\text{mi} \quad +\text{itolka} \\
\text{PAST} \quad \text{be.all} \quad \text{DIFF-SUB.PAST} \quad \text{3OBJ} \quad \text{PERF} \quad \text{eat[PL]}
\end{align*}

\text{`It being[PAST] all, they ate it'.} = \text{`They ate it all'.}

b. In Malagasy, some adverbial circumstantials and prepositional complements agree in tense with the Main Verb (Keenan 1979 (1987: 396)):

\begin{align*}
\text{N +iresaka} \quad \text{t} \quad +\text{amin-dRabe} \quad \text{t} \quad +\text{any} \quad \text{Antsirabe izy} \\
PAST \quad \text{speak} \quad \text{PAST} \quad \text{with} \quad \text{Rabé} \quad \text{PAST} \quad \text{thither} \quad \text{Antsirabe he}
\end{align*}

\text{`He spoke with Rabé there in Antsirabe'.}

\text{vs.}

\begin{align*}
\text{H +iresaka} \quad \emptyset \quad +\text{amin-dRabe} \quad \emptyset \quad +\text{any} \quad \text{Antsirabe izy} \\
\text{FUT} \quad \text{speak} \quad \text{NON-PAST} \quad \text{with} \quad \text{Rabé} \quad \text{NON-PAST} \quad \text{thither} \quad \text{Antsirabe he}
\end{align*}

\text{`He will speak with Rabé there in Antsirabe'.}

I am not aware of actual examples of agreement of A with V (say, with the copula); theoretically, however, this could be agreement in tense or aspect.\textsuperscript{29}
3. Agreement

Agreement of a PREP with its Complement N (downward agreement)

(27) In Welsh, several prepositions (but not all!) agree in person and number with their complements:

<table>
<thead>
<tr>
<th>YN</th>
<th>HEB 'without'</th>
<th>GAN 'with'</th>
<th>WRTH /urth/ 'over'</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td>ynof /æfn/</td>
<td>hebof i</td>
<td>gennyf /gênif/ i</td>
</tr>
<tr>
<td>2sg</td>
<td>ynot ti</td>
<td>hebot ti</td>
<td>gennyt ti</td>
</tr>
<tr>
<td>3sg, masc</td>
<td>ynddo /nədo/ ef</td>
<td>hebddo ef</td>
<td>gandddo ef</td>
</tr>
<tr>
<td>3sg, fem</td>
<td>ynddi hi</td>
<td>hebddi hi</td>
<td>ganddi hi</td>
</tr>
<tr>
<td>1pl</td>
<td>ynom ni</td>
<td>hebom ni</td>
<td>gennym ni</td>
</tr>
<tr>
<td>2pl</td>
<td>ynoch /nɔx/chwi</td>
<td>heboch chwi</td>
<td>gennych chwi</td>
</tr>
<tr>
<td>3pl</td>
<td>ynddynt /nɔnt/hwy</td>
<td>hebddynt hwy</td>
<td>ganddynt hwy</td>
</tr>
</tbody>
</table>

Distact Agreement (see ‘Contact Agreement’ on p. 67)

Agreement of an Object N1 with the Subject N2

(28) a. In a (dead) Mexican language, Coahuilteco, a noun N1, being an object of the Main Verb, agrees in person with the Subject N2 (Troike 1981):

i. **Dios** **tupō +Ø mak** +pa +k=ācum
   God ART NOM 3SUB.2OBJ SUBJUNCT pardon
   (‘...[in order for] God to pardon youSG/youPL’).
   vs.

ii. Cin **Dios** **tupō+n** na +kāwa xo
    I God ART ACC.1 1SG love AUX
    ‘I love God’.

iii. **Dios** **tupō+m** xa +kāwa xo
     God ART ACC.2 2 love AUX
     ‘YouSG/YouPL love God’.

iv. **Dios** **tupō+t** a +pa +ktacēy
    God ART ACC.3 3 SUBJUNCT pray.PL
    ‘...[in order for them] to pray God’.

As is readily seen, in Coahuilteco the accusative suffix on the DirO phrase marks cumulatively the person of the Subject; cf. also below, example (31). Sentences (28a-i, iii, iv) contain covert controllers: pronouns present in the SSyntS but omitted on the surface (see Note 27, p. 103).

b. In Archi (as in many other Dagestanian languages), a pronominal In-dirO of certain verbs agrees in class with the Subject (in the glosses, a Roman numeral indicates, as before, a noun class):

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>+ez</td>
<td>dija</td>
<td></td>
</tr>
</tbody>
</table>

vs.
Agreement in case I.1a between an N and a coreferential relative pronoun

(‘case attraction;’ Nichols 1985: 279)

(29) Ancient Greek admits agreement in case I.1a between an N and the word-form of the lexeme meaning ‘which’ in a relative clause that modifies this N; such agreement happens in either direction—i.e., either the pronoun ‘which’ agrees with N, or N agrees with the ‘which’-pronoun:

i. prò t +ôn [kak +ôn] h +ôn oīda
   instead ART PL.GEN misdeed PL.GEN which PL.GEN know-1SG
   ‘instead-of the misdeeds, which I know’
   [hōn should be in the accusative, because the verb ΟΙΔΑ ‘[to] know’ governs
    the accusative; kakōn is in the ‘legitimate’ genitive because of the government
    of the preposition PRÒ ‘instead’].

   ii. Élegon hóti Lakedaimónioi [h +ôn] déontai
       say-PAST.3PL that Lacedaemonians-NOM which PL.GEN require-PRES.3PL
       pánt+ôn peprāgōt +ēs eten
       all PL.GEN achieve-PART.ACT.PAST PL.NOM were
   ‘They said that Lacedaemonians achieved [lit. ‘were those-having-achieved’]
    all they require’
   [pántōn should be in the accusative, because the verb ΠΡΑΣΣΩ ‘[to] achieve’
    governs the accusative; the genitive of hōn is governed by the verb
    ΔΕΩΜΑΙ ‘[to] require’].

Agreement of an ADV with a codependent N

(30) In Dhalandji, a circumstantial adverb agrees in case II with the Subject of the Main Verb:

   a. [pinta+lu] ŋapa +n taş+i+lu! ‘Cover [it] fast!’
      youSG ERG cover IMPER fast ERG
   vs.
      [pinta+ Ø] pañakari +j taş+i+Ø! ‘Come [here] fast!’
      youSG NOM come IMPER fast NOM

   Similarly, an N in a local case I.1b (= locative, ablative, or allative) receives a second case suffix (= case I.2)—through agreement with the Subject:

   b. [ŋu+lu] ŋakur+win ŋapuru +pa puwaļa+paŋi+lu
      he ERG see PRES we-INCL ACC hill ABL ERG
      ‘He sees us from the hill’.
This is another example of Suffixaufnahme – one of manifestations of what is called Multiple Case, cf. Chapter 2, 11.1, p. 159ff.

(31) In Coahuilteco (cf. (28a)), an adverb – in particular a connector (like ‘and then’, ‘and in this way’) – can agree with the Subject in person:

Me + n [cim] pituk=áhā san nā ni +ka +mālkūyta
and 1 1 then FUT 1 1SUB 2OBJ confess
‘And I then will confess youSG/youPL’.  
Me + m xa +pa +māš santupāyo
and 2 2 SUBJUNCT see thus/so
‘And that youSG/youPL thus see’.  
Me + x Dios ta +Ø axtikāl pa
and 3 God ART NOM three 3SUB-be
‘And [they] are three Gods’.

I would also like to add examples of two more interesting types of distact agreement here. These involve the objective agreement of a transitive verb V with a nominal expression N which is an Object of a different verb, V’, that syntactically depends on V:

V → V’ → N.

The first case of complex distact agreement, found in many languages, is the objective agreement of a modal or phasal verb with the DirO of its infinitive:

(32) a. Hungarian

Akar+Ø megvár+ni [leged+et] [= indefinite DirO of ‘wait’]  
want 3SG.INDEF wait INF youSG ACC
‘He wants to wait for youSG’.  
vs.

Akar+ja megvár+ni [a barát+já +t] [= definite DirO of ‘wait’]  
want 3SG.DEF wait INF the friend 3SG ACC
‘He wants to wait for his friend’.

As shown in 2.1.3, Comment 5, (5a), p. 42, a finite transitive verb in Hungarian agrees with its DirO in definiteness – the verb is in the definite form if the DirO is definite. (The definiteness of the DirO must be understood grammatically; thus, in Hungarian 1st/2nd person pronouns are indefinite.) However, the infinitive does not distinguish definite ~ indefinite forms, so that in (32a), it is the modal verb AKAR ‘[to] want’ that agrees in definiteness with the DirO of the dependent infinitive.

b. Hindi

Rām+ne [rof] +Ø khan +Ī čāh +Ī th +Ī
Ram 3SG.NOM eat-INF FEM.MSG want-PERF FEM.MSG be-PRET FEM.MSG
‘Ram had wanted to eat bread’.
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<table>
<thead>
<tr>
<th>VS.</th>
<th>Rām+ne seb+Ø khan+ā čāh+ā th+ā</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ram</td>
<td>ERG apple SG.NOM eat- MASC SG want- MASC SGbe-PRET MASC SG</td>
</tr>
<tr>
<td>(MASC)</td>
<td>INF PERF</td>
</tr>
</tbody>
</table>

Ram had wanted to eat [an] apple.'

The modal MV čāh(-na) ‘[to] want’ agrees in gender 2 and number 2 with the DirO of the dependent infinitive.

c. Alutor

<table>
<thead>
<tr>
<th>VS.</th>
<th>+name γomne Ø +ina +ŋvu +Ø +j kɔplɔ +k</th>
</tr>
</thead>
<tbody>
<tr>
<td>he</td>
<td>INSTR I.NOM 3SG.SUB 1SG.OBJ begin AOR 3SG.SUB beat INF</td>
</tr>
</tbody>
</table>

‘He began to beat me’. = lit. ‘He began me to beat’.

<table>
<thead>
<tr>
<th>VS.</th>
<th>+name γome na +ŋvu +Ø +ŋət kɔplɔ+k</th>
</tr>
</thead>
<tbody>
<tr>
<td>he</td>
<td>INSTR yousg-NOM 3SG.SUB begin AOR 2SG.OBJ beat INF</td>
</tr>
</tbody>
</table>

‘He began to beat youSG’. = lit. ‘He began youSG to beat’.

<table>
<thead>
<tr>
<th>VS.</th>
<th>+name 2tut+wwi Ø +ŋvu +Ø +nina +w(wi) kɔplɔ+k</th>
</tr>
</thead>
<tbody>
<tr>
<td>he</td>
<td>INSTR they-NOM 3SG.SUB begin AOR 3OBJ P.LOBJ beat INF</td>
</tr>
</tbody>
</table>

‘He began to beat them’. = lit. ‘He began them to beat’.

The phasal MV ŋəvũ(-k) ‘[to] begin’ agrees in person and number 2 with the DirO of the dependent infinitive.

The second case of complex distact agreement is the objective agreement of a Main Verb with the Subject or the DirO of its clausal complement. The situation I am referring to here is as follows: suppose the MV of a matrix clause, which is a perception or information-processing verb, has a clause as its DirO, something like ‘I know that you are reading these newspapers’; in 2, the verb is bi-personal – it agrees with its Subject (here, ‘I’: subjectal agreement) and its DirO (here, the THAT-clause: objectal agreement). Now, in some languages, the MV can agree not only with the subordinate clause as a whole, its ‘legitimate’ DirO, but also with either this clause’s Subject (here, ‘you’) or its DirO (here, ‘newspapers’)! This type of agreement exists in Alutor (Mel’čuk 1988a: 291–294, based on Mel’čuk and Savvina 1978):

(33) a. Alutor

Object agreement of the Main Verb with the subordinate clause as a whole

Qomav+nak na +laʔu+tkə +nin +Ø
|
Qomav  | SG.LOC 3SG.SUB see PRES 3OBJ SG.OBJ |
γon +anə Ø +kəlyət+oʔə+na +wwi qura+wwi
|
yousg  | SG.INSTR 2SG.SUB harness PRES 3OBJ P.LOBJ reindeer PL.NOM |

‘Qomav sees-it yousg are harnessing reindeer’. 
3. Agreement

Object agreement of the Main Verb with the Subject of the subordinate clause

Qomav + nak na + lai+t + koni + got
Qomav SG.LOC 3SG.SUBL see PRES 2SG.OBJ
+pron + ann + Ø + kolyat + otk + na + wwi qura + wwi
youSG SG.INSTR 2SG.SUBL harness PRES 3.OBJ PL.OBJ reindeer PL.NOM
‘Qomav sees-youSG youSG are harnessing reindeer’.

Object agreement of the Main Verb with the Direct Object of the subordinate clause

Qomav + nak na + lai't + tko + nina + wwi
Qomav SG.LOC 3SG.SUBL see PRES 3.OBJ PL.OBJ
+pron + ann + Ø + kolyat + otk + na + wwi qura + wwi
youSG SG.INSTR 2SG.SUBL harness PRES 3.OBJ PL.OBJ reindeer PL.NOM
‘Qomav sees-them youSG are harnessing reindeer’.

The choice between these types of agreement is made based on the Communicative Structure of the sentence – depending on the topicality of the elements in the subordinate clause.

A similar agreement pattern is reported for Daghestanian languages (Polinsky and Comrie 1999):

b. Tsez

Object agreement of the verb with the subordinate clause as a whole

Eni + r už + a magalu + Ø b + ač + ru + li r + i b + xo
Mother DAT boy ERG bread[III] NOM III eat PAST. NOMINAL IV know PRES PART
‘Mother knows-it [that the] boy ate bread’.

The verb li ‘[to] know’ agrees with the completive clause as a whole; the clause is treated as an abstract noun of class I IV.

Object agreement of the verb with the Direct Object of the subordinate clause

Eni + r už + a magalu + Ø b + ač + ru + li b + i b + xo
Mother DAT boy ERG bread[III] NOM III eat PAST. NOMINAL III know PRES PART
‘Mother knows-it [that the] boy ate bread’.

The verb li agrees with the noun magalu ‘bread’, which is of class III.

The choice between the two types of agreement is again controlled by the topicality of the DirO in the object clause. (In Tsez, the MV agrees only with the sentence element in the nominative – therefore, in contrast to Alutor, Tsez does not admit agreement with a transitive subject, which is in the ergative.)
Finally, in order to conclude this section with an interesting example, let us consider the agreement of the ADJ and the MV with a plural noun in colloquial Brazilian Portuguese (Ribeiro 2001).

(34) Brazilian Portuguese

a. Standard

Que menina+s bonit+a +s! ‘What pretty girls!'
what girl PL pretty FEM PL

vs.

Colloquial

Que menina+s bonit+a +Ø! [idem]
what girl PL pretty FEM SG

b. Standard

A +s menina+s bonit+a +s cheg+aram ‘The pretty girls came'.
the-FEM PL girl PL pretty FEM PL came PAST.3PL

vs.

Colloquial

A +s menina+Ø bonit+a +Ø cheg+ou [idem]
the-FEM PL girl SG pretty FEM SG came PAST.3SG

c. Standard

Tod+a +s aquel+a +s minh+a +s camiseta+s são azu+is
all FEM PL that FEM PL my FEM PL shirt PL be-PRES. blue PL

lit. ‘All those my shirts are blue'.

vs.

Colloquial

Tod+a +s aquel+a +s minh+a +s camiseta+Ø é azul+Ø
all FEM PL that FEM PL my FEM PL shirt SG be-PRES. blue SG

[idem]

In colloquial speech, in a complex NP, all modifying adjectivals (including determiners) that precede a plural noun agree with it in number2, i.e., they are in the plural; but the noun itself loses its plural grammeme and controls the following modifying adjectivals, the MV and the predicative-attributive adjectives in the singular. (Cf. the discussion of similar phenomena in Barlow 1992: 36–38.)
4. Government

4.1. The concept of government

Definition 1.5: Government

We say that, in an utterance, a wordform \( w_1 \) which morphologically depends on wordform \( w_2 \) with respect to an inflectional category \( C_1 \) *is governed by* \( w_2 \) (= \( w_2 \) governs \( w_1 \)) with respect to \( C_1 \) if and only if the grammeme \( g_1 \in \{w_1\} \) such that \( g_1 \in C_1 \) is selected depending upon

1) either some grammeme \( g_2 \in \{w_2\} \) such that \( g_2 \in C_2 \) and \( C_1 \) does not mirror \( C_2 \);
2) or the value of a syntactic feature \( \Sigma_2 \) of \( w_2 \), \( \Sigma_2 \) being neither agreement class, (pronominal) person, nor (pronominal) number.

Alternative formulations

If \( w_2 \) governs \( w_1 \) in \( C_1 \), requiring \( g_1 \in C_1 \), it can also be said that:

– \( w_2 \) governs the category \( C_1 \) of \( w_1 \); or
– \( w_2 \) governs the grammeme \( g_1 \) (of the category \( C_1 \)) of \( w_1 \).

This variation (similar to *load the hay on the wagon* ~ *load the wagon with hay*) is admitted for better flexibility and clarity.

4.2. Comments on Definition 1.5

1. Conditions 1 and 2

In Definition 1.5, both conditions are in fact negations of the two main subconditions – (a) and (b) of Condition 2 – in the definition of agreement (Definition 1.4, p. 58). However, because of congruence, I cannot simply define government as ‘morphological dependency which is not agreement.’ I would have to say ‘which is neither agreement nor congruence.’ In such cases it seems preferable to spell out explicitly the defining conditions of government.

2. Government of a syntactic feature

For Definition 1.5 to cover ‘exotic’ examples like those in (3-ii) and (3-iii), 2.1.3, 4, p. 42), I have to add to it, as in Definition 1.4, a mention of syntactic features:

‘\( w_1 \) which depends morphologically on \( w_2 \) with respect to the syntactic feature \( \Sigma_1 \) is governed by \( w_2 \) with respect to \( \Sigma_1 \) if and only if the selection of the value \( \gamma_1 \) of the syntactic feature \( \Sigma_1(w_1) \) depends on the value of the syntactic feature \( \Sigma_2(w_2) \), where \( \Sigma_2 \neq \Sigma_1 \).’ However, here again, a correct formulation of this refinement complicates Definition 1.5 too much and seems also to require splitting it into two more specific definitions: government of an inflectional category vs. government of a syntactic feature. As in the case of Definition 1.4, I will limit myself to merely calling this to the reader’s attention.
3. Government and semantic actants

In languages which have case \textit{I.1a}, the verb morphologically governs the surface realizations of all its Sem-Actants (= its SSynt-Actants – the Subject and Objects). Thus, the inflectional form of a Synt-Actant (the case \textit{I.1a} assigned to N and infinitival/gerundival form assigned to V) depends on the corresponding syntactic features of the controller, or, in other words, on its Government Pattern. In much the same way, the noun and the adjective govern the case \textit{I.1a} and the infinitival/gerundival form of their actants. A preposition also governs the dependent N, which realizes one of its SemAs, in case \textit{I.1a}, and a conjunction such as Rus. ČTOBY ‘(in order) to’ governs the verb it introduces (again, its SemA) in mood – namely, ČTOBY requires the subjunctive. Russian NUM (in the nominative and the inanimate accusative) governs the case \textit{I.1a} of the N it quantifies (more specifically, the genitive) and its number I.1. ‘small’ NUMs – from ODIN ‘one’ to ČETYRE ‘four’ plus all the compound numerals ending in a ‘small’ NUM, such as 21, 54, 17892, 309873, etc. – require the singular of the noun; all the other NUMs impose the plural). In all these constructions, as is easily seen, the controller morphologically governs its Sem-actant.

As with agreement, the question can be asked whether it is possible to define government through the concept of Sem-Actant. In other words, can we say that a morphological dependency $w_1 \leftarrow \text{morph}/C_1 \rightarrow w_2$ is government if and only if $(w_1)$ is a semantic actant of $(w_2)$ – i.e., if $w_1 \leftarrow \text{sem}/w_2$? As with agreement, in most cases this is so. However, we find counter-examples here as well: on the one hand, there are constructions where a Sem-Actant depends morphologically on its Sem-Governor but is not governed by the latter, and, on the other hand, there are constructions where a target which is morphologically governed is not a Sem-Actant of its controller. Here are some such examples.

- A SemA is not morphologically governed by its Sem-Governor
  A Sem-Actant expressed by an A with a Sem-Governor N agrees with its controller rather than being governed by it: Rus. amerikansk+a pomoć’ ‘American aid’ $\sim$ amerikansk+oe vmešatel’stvo ‘American intervention’, mamin+a ljubov’ ‘Mum’s love’ $\sim$ mamin+y zaboty ‘Mum’s cares’, paragvajsko-urugvajsk+ij konflikt ‘Paraguayan-Uruguayan conflict’ $\sim$ paragvajsko-urugvajsk+a vojna ‘Paraguayan-Uruguayan war’, etc. One can easily imagine a language where the Sem-actants of a verb agree with it in tense or in verbal class (stative $\sim$ dynamic, voluntary $\sim$ spontaneous, etc. verbs); see the examples in (21), p. 71, and (26b), p. 76, which show agreement of Sem-Actants of a verb with the verb in tense.

- A morphologically governed item is not a SemA of its controller
  N$^1$ modifying another N$^2$ is linked to it by non-specific morphological government (with respect to case \textit{I.1a}), without being a Sem-actant of its controller:
4. “Double” government (= government with two controllers)

Like agreement, government can also be double: a wordform $w_1$ can be governed simultaneously by two controllers $w_2$ and $w_3$—of course, with respect to two different inflectional categories $C_1$ and $C_2$. Examples of such double government are rather rare, but possible; we see it, for instance, in the phrase “NUM + N” in Turkic languages: if such a phrase appears as an object of a verb, the case I.1a of N is governed by the verb and its number 1 (the singular) by NUM. Here is an example:

(35) Tatar

\[
\text{Bala}^{+\text{lar}}+\emptyset \quad \text{bu} \quad \text{biš} \quad \text{kitap}^{+\text{O}}+\emptyset \quad \text{ny} \quad \text{ukyj}^{+\text{lar}}
\]

child PL NOM this five book SG ACC read 3PL

‘[The] children read these five books’.

5. The ambiguity of the term ‘government’

In linguistic literature we find two further uses of the term government.

First, it is said that a verb (or a lexeme of a different part of speech) governs a preposition or a conjunction, as, for example, in Fr. INSISTER sur ‘[to] insist on’, S’APPROCHER de ‘[to] approach to [lit. ‘from’]’, DEMANDER à /si ‘[to] ask N [lit. ‘to N’]/whether’, NÉCESSAIRE à ‘necessary for [lit. ‘to’]; similarly, it is said that in a Russian sentence of the type Svet rešil, čto on umën i očen´ mil ‘High society decided that he was clever and very nice’ “the verb governs a clause” (Kibrik 1977a: 177). In these expressions, however, we find quite a different concept:
Chapter 1. Agreement, government, congruence

the selection of a lexeme rather than a grammeme—an auxiliary, empty lexeme, but a lexeme nevertheless. Therefore, in such cases we cannot speak about morphological government, i.e., about government1. Here we find government2—a particular case of syntagmatic correspondence between lexemes on the syntactic level (see above, p. 37). As a lexemic-syntactic, and not morphological, correspondence, it is not of interest to us here.

Second, it is said that in Russian sentences On prošël kilometr ‘He covered a kilometer walking’ and On prospal čas ‘He spent an hour sleeping’ the verb governs the N kilometr/čas, while in On šël kilometr ‘He walked for a kilometer’ and On spal čas ‘He slept for an hour’ it doesn’t. This usage manifests still another important concept: government3. This concept contrasts not with agreement but with (free) adjunction (see below) and is related to the distinction between actants and circumstantials (arguments vs. modifiers, or terms vs. non-terms).

Thus, it can be said that:

– Government1 is a special case of morphological dependency, and the corresponding rules belong to the SSynt-component of a linguistic model.
– Government2 is a special case of lexemic-syntagmatic correspondence, and the corresponding rules belong to the DSynt-component of a linguistic model.
– Government3 is a special case of semantic dependency, and the corresponding rules belong to the Sem-component of a linguistic model.

Government3 is theoretically universal: with respect to its very nature it should be present in any language. Government2 is, most likely, nearly universal: logically speaking, a natural language could do without it, but for psychological reasons probably all languages do have government2. Government1 (like agreement) cannot be universal: isolating languages, having no morphological dependencies at all, cannot have it.

Since in the current literature all three of the concepts above are often confused, it seems advisable to draw special attention to their essential differences.

6. What can morphologically govern what?

Interpreting this question in the same way as for agreement and using the same four deep-syntactic parts of speech—N, V, A, and ADV, we obtain for government a slightly different picture: out of 16 theoretically conceivable types of government only 10 types seem possible. Namely, while N and V can be morphologically governed by all four parts of speech, A seems to be morphologically governed only by V and N (Rus. priznanie Ivana bol’nym, lit. ‘recognition of-Ivan as-sick’, where the instrumental of bol’nym is governed by PRIZNANIE), and ADV cannot be morphologically governed at all.
7. The logical type of the relation of government

Being a particular case of morphological dependency, government possesses the following logical properties:

- Government is anti-reflexive: no $w$ can determine its own grammemes.
- Government is anti-symmetrical: if $w_1$ governs $w_2$ in the inflectional category $C_1$, then $w_2$ can never govern $w_1$ (in $C_1$ or some other category $C_2$).
- Government is anti-transitive: if $w_1$ governs $w_2$ in the inflectional category $C_1$ and $w_2$ governs $w_3$ in $C_1$ or some other category $C_2$, then $w_1$ can never govern $w_3$ in either $C_1$ or $C_2$.

As the reader can see, government is a somewhat more restricted relation than agreement.

4.3. Examples of government

(36) In Russian, all types of government are well represented.

a. $V$–govern./case$\rightarrow$N:

i. Government by syntactic features (= by the Government Pattern)

$Ivan$ $\text{SG.NOM}$ $\Rightarrow$ $\text{obučaet}$ $\text{det}$ $+$ $\text{ej}$ $\text{geograf}^{+ii}$

'Ivan instructs children in geography'.

$m + am$ $\text{ne}$ $\text{xvataet}$ $\text{opyt}$ $+$ $\text{a}$

'we not suffice experience $\text{SG.GEN}$ lit. 'To-us not suffices of-experience'. = 'We lack experience'.

ii. Government by the infinitive grammeme

$Ivan$ $+\text{u}$ $\text{eščë}$ $\text{rabota}^{+I}$ $\text{INF}$

'Ivan still has to work'.

$b. V$–govern./inf$\rightarrow V$:

$Ivan$ $\text{SG.DAT}$ $\text{still}$ $\text{work}$ $\text{INF}$

'Ivan won’t be able to cope'.

$c. V$–govern./case$\rightarrow$A:

$Ivan$ $\text{SG.ACC}$ $\text{Maš+u}$ $\text{zdorov+oj}$ $\text{FEM.SG.INSTR}$

'Ivan found Masha in good health'.

N

G

L
Chapter 1. Agreement, government, congruence

Masha znala Ivan moloda
SG.ACC young MASC.SG
Ivan when he was young.

SG.

N=govern./case→N:

obucenie Ivan om det + ej geografii
SG.INSTR children PL GEN geography SG.DAT

the instruction of children in geography by Ivan.

Nexvatka opyt
SG.GEN

lack of experience.

N=govern./inf→V: ego zelanie molca t'
SG.GEN

his desire to keep-silent.

A=govern./case→N:

i. Government by syntactic features (= by the Government Pattern)

ravnaia Ivan u equal to Ivan,
SG.DAT

zanjatye Ivan om occupied by Ivan
SG.INSTR

ii. Government by the comparative grammeme

umn ee Ivan a smarter than Ivan
smart COMP SG.GEN

sil' n ee menja stronger than me
strong COMP I SG.GEN

A=govern./number→N:

Government by a numeral (at the DSynt-level Russian numerals are A)
dve krovat i, cetrye derev
two bed SG.GEN four tree SG.GEN

sto dvadcat odin student O, pjetidesjati odnoj
hundred twenty one student SG.NOM fifty one book SG.DAT

A=govern./inf→V: gotovy molca t'
SG.GEN

ready to keep-silent.

A=govern./case→N:

i. Government by a preposition

bez doma without the house,
SG.GEN

doma to the house,
SG.DAT

k domu about the house,
SG.PREPOS
5. Congruence

5.1. The concept of congruence

Definition 1.6: Congruence

We say that, in an utterance $U$, a wordform $w_1$ which morphologically depends on wordform $w_2$ with respect to an inflectional category $C_1$ is congruent with $w_2$ if and only if $w_1$ is a substitute pronoun replacing an occurrence of $w_2$ in $U$.

5.2. Comments on Definition 1.6

1. Congruence vs. Agreement

Traditionally, congruence and agreement are not differentiated. As a rule, both phenomena are described together under the name of agreement. Nevertheless,
these two types of morphological dependency manifest several important differences which can be explained by the differences in their semantic and syntactic functions:

Agreement (in the sense of Definition 1.4) serves to mark syntactic and/or semantic dependencies, direct or indirect, within the borders of a clause; congruence marks anaphoric relations outside the borders of a clause (within a whole discourse).

The main differences between agreement and congruence can be stated in the following way:

– Semantic differences: agreement, at least prototypically, deals with Sem-Governors (which, roughly speaking, morphologically agree with their SemAs), while congruence, again prototypically, remains outside semantic dependency.

– Syntactic differences: under agreement, both wordforms $w_1$ and $w_2$ always are present (= cooccur) in the same clause (of course with the exclusion of ellipsis); under congruence, $w_1$ and $w_2$ are, as a rule, not in the same clause.

– Morphological differences: under agreement, the wordform $w_1$ agrees with $w_2$ ‘according to meaning’ much less frequently than under congruence (for which agreement ‘according to meaning’ is especially typical: see Corbett 1983a: 28, Fig. 2.1, 60–64).

Informally speaking, congruence is a particular case of agreement, namely – agreement in absentia: a pronominal target $w_1$ agrees with its noun antecedent $w_2$ as a controller. (For more on the problem ‘agreement vs. congruence’ see Barlow 1992:134–152.)

2. “Double” congruence

As a particular case of agreement, congruence can be double as well: the pronoun $w_1$ can have as its antecedents two (or more) nouns $w_2$ and $w_3$ – that is, it can be congruent with a whole nominal phrase. There are many well-known examples:

\[
\begin{array}{c}
\text{Rus.} & \text{Sveta} & \ldots \quad \text{on+a} & \sim & \text{Sveta i Katja} & / & \text{Sveta s Katej} & \ldots \quad \text{on+i}, \text{etc.} \\
\text{Sveta} & \text{she} & \text{Sveta and Katya} & \text{Sveta with Katya} & \text{they}
\end{array}
\]

3. Pronominalization ≠ congruence

The selection of a pronominal substitute is not necessarily linked to morphological dependency. Thus, the noun BROTHER or DOG is replaced with the pronoun HE, the noun SISTER or CRUISER with SHE (CRUISER can also be replaced with IT), and the noun BED or LOVE with IT. But the wordforms he, she and it are
by no means forms of the same lexeme with opposing values of the inflectional category of gender (as are, for instance, ona, ona and ono in Russian): in the first place, this ‘category’ would not have any regular markers, and, in the second, it would apply to only one lexeme (or at most to two, if we consider his, her and its to be wordforms of another, separate lexeme). He, she and it are different lexemes of English, and the selection of one of them does not happen within morphology; the replacement of sister by she, etc. is therefore not an example of congruence. The same considerations apply to the choice between himself and herself in He cut himself vs. She cut herself: these items are different lexemes, not lexes of the same lexeme; therefore, the dependency between he and himself/she and herself is not a morphological dependency and thus not agreement nor congruence. Similarly, congruence does not cover the selection of a pronoun for an antecedent of the type that occurs in Rus. ja i Sveta ‘I and Svyeta’ or ja so Svetoj ‘I with Svyeta’, which requires my ‘we’: ja and my are different lexemes. For there to be congruence, it is necessary for the substitute pronouns between which the choice is made to be forms of one lexeme, as is the case in Bushong:

(39) Bushong has only one pronominal substitute lexeme: -N ‘he/she/it’; all actual pronominal wordforms are built on its stem -n by means of regular noun class \( 2 \) prefixes:

\[
\begin{align*}
I & \quad \text{aa} +n \quad \text{replaces a noun of class} \ 1 \ I; \\
II & \quad \text{baa} +n \quad \text{replaces a noun of class} \ 1 \ II; \\
III & \quad \text{muu} +n \quad \text{replaces a noun of class} \ 1 \ III; \\
IV & \quad \text{mi}i +n \quad \text{replaces a noun of class} \ 1 \ IV; \\
V & \quad \text{dii} +n \quad \text{replaces a noun of class} \ 1 \ V; \\
VI & \quad \text{mi}i +n \quad \text{replaces a noun of class} \ 1 \ VI; \\
VII & \quad \text{i}i +n \quad \text{replaces a noun of class} \ 1 \ VII; \\
VIII & \quad \text{bi}i +n \quad \text{replaces a noun of class} \ 1 \ VIII; \\
\end{align*}
\]

The selection of the appropriate form of the pronoun -N is the purest example of congruence.

4. The logical type of the relation of congruence

Being a particular case of agreement, congruence has the following logical properties:

- Congruence is anti-reflexive: no \( w \) can determine its own grammemes.
- Congruence is anti-symmetrical: if \( w_1 \) controls the pronoun \( w_2 \) in the inflectional category \( C_1 \), then \( w_2 \) can never control \( w_1 \) in the same or different category \( C_2 \).
Chapter 1. Agreement, government, congruence

– Congruence is anti-transitive, because the situation of logical transitivity is impossible for congruence: if \( w_1 \) is congruent with \( w_2 \) in the inflectional category \( C_1 \), this means that \( w_1 \) is a substitute pronoun – and nothing can be congruent with a pronoun.

6. Summing up

To close the chapter, I will look briefly at the following six issues:

– Agreement vs. government.
– Compatibility of agreement and government in one wordform.
– Correlations between agreement/government and semantic dependencies.
– Correlations between agreement/government and syntactic dependencies.
– Are agreement/government ‘syntactic’ or ‘morphological’?
– Does adjunction exist?

6.1. Agreement vs. government

According to a long tradition, it is believed that “government is a correspondence between a word (or its lexicographic properties) and the form of another word, and agreement is a correspondence between the form of one word and the form of another word” (Iomdin 1990: 65; translation is mine – IM). This viewpoint is, however, wrong.

– In the first place, government may require a correspondence between the form of one word and the form of another word; here are four examples:

  • In an ergative construction, the governed case \( I.1a \) of the Subject may depend on the tense of the Main Verb, see (38), p. 89.
  • The case \( I.1a \) of an N which appears as the complement of a comparative (be it a comparative A or ADV) may depend on the grammeme of comparative (as in Slavic languages: see (36f-ii), p. 88).
  • The case \( I.1a \) of an N that appears as an object of a V may depend on the infinitive grammeme (Rus. \( Mne \ [DAT] \ sxodit’ \), lit. ‘To-me to-get-off’ = ‘I have to get off’; \( Vam \ [DAT] \ tu ne projti, \) lit. ‘To-you here not to-pass’ = ‘You won’t be able to pass here’; see Apresjan 1982: 182).
  • The case \( I.1a \) of an N which appears as a complement of another N may depend on the case \( I.1a \) of N:

(40) In Tsakhur, \( N^1 \) that syntactically depends on \( N^2 \) is marked by one of two different cases\( I.1b \): either the direct genitive (GEN), if \( N^2 \) is in the nominative, or the oblique genitive (GEN-OBL), if \( N^2 \) is not in the nominative (see Chapter 2, 5, (13), p. 131):
- In the second place, agreement may require—and, as a rule, does require—a correspondence between the form of a word and another word (i.e., the lexicographic properties of another word). All three types of agreement classes (gender, noun class, animacy) which underlie the idea of agreement itself are nothing but lexicographic properties of controller lexemes.

It is also said that agreement and government are not separated by a clear borderline. This tenet is, however, also wrong—agreement and government are distinguished quite sharply, and I do not know of any vague or intermediate cases. The main difference between agreement and government is as follows:

Let $C_1$ be the controlled inflectional category from which the grammeme $g_1$ is selected for the target wordform $w_1$. Then:

- Under agreement, $C_1$ is controlled either by the category $C_2$ of $w_2$ for which $C_1$ is a mirroring category, or by a syntactic feature $Y_2$ of $w_2$ which is agreement class, pronominal person or pronominal number.

- Under government, $C_1$ is controlled either by the category $C_2$ of $w_2$ for which $C_1$ is a non-mirroring category, or by a syntactic feature $Y_2$ of $w_2$ which is neither agreement class, pronominal person, nor pronominal number.

In other words, under agreement the target reflects some properties of the controller, while under government there is no such reflection.

### 6.2. Agreement and government in one wordform

A wordform $w_1$ can be the target simultaneously for agreement and government by one controller $w_2$ or by two separate controllers $w_2$ and $w_3$ (of course, with respect to different inflectional categories). For example:

**One controller**

(41) Old Georgian (cf. (19), p. 69)

\[
\text{neb}_+\emptyset +\text{ita}, \quad \text{ymrt}_+\emptyset +\text{isa} +\text{jta} \quad \text{‘by God’s will’}
\]

<table>
<thead>
<tr>
<th>will</th>
<th>SG</th>
<th>INSTR</th>
<th>will</th>
<th>God</th>
<th>SG</th>
<th>GEN</th>
<th>INSTR</th>
</tr>
</thead>
</table>

The wordform $ymrtisajta$ is governed by the wordform $nebita$ in case $1a$ and agrees with it in case $1b$. (The lexeme NEBI ‘[the] will’ imposes the genitive on its DSynt-actant $I$—i.e. governs it—while its instrumental case $1b$, governed from the ‘outside,’ conditions the agreed instrumental in the lexeme JMETI ‘God’.)
Two controllers

(42) a. In German, an A agrees with the modified N in gender, number and case, while being governed by the determiner with respect to the syntactic inflectional category “declension type” (with three grammemes: \('\text{STRONG}' \sim '\text{MIXED}' \sim '\text{WEAK}'\):

<table>
<thead>
<tr>
<th>Case</th>
<th>Gender</th>
<th>Number</th>
<th>Grammemes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART. INDEF</td>
<td>big</td>
<td>MASC. NOM. STRONG</td>
<td>apple[MASC]-SG.NOM</td>
</tr>
<tr>
<td>ART. DEF</td>
<td>big</td>
<td>MASC. NOM. WEAK</td>
<td>apple[MASC]-SG.NOM</td>
</tr>
</tbody>
</table>

vs.

<table>
<thead>
<tr>
<th>Case</th>
<th>Gender</th>
<th>Number</th>
<th>Grammemes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART. INDEF</td>
<td>big</td>
<td>NEU. NOM. STRONG</td>
<td>window[NEU]-SG.NOM</td>
</tr>
<tr>
<td>ART. DEF</td>
<td>big</td>
<td>NEU. NOM. WEAK</td>
<td>window[NEU]-SG.NOM</td>
</tr>
</tbody>
</table>

b. In Russian, the lexeme KOTORYJ \('which'\) agrees in gender and number with its nominal antecedent but is governed in case by its syntactic Governor:

- \(\text{dom}\) [(MASC)SG.NOM] \(kotor+yj\) [MASC.SG.ACC] my \(\text{vidim}\) \~
  \(\text{the house which we see}\)
- \(\text{xižina}\) [(FEM)SG.NOM] \(kotor+uju\) [FEM.SG.ACC] my \(\text{vidim}\)
  \(\text{the hut which we see}\)
- \(o\ dom\) [(MASC)SG.PREPOS] \(kotor+omu\) [MASC.SG.DAT] my podxodim \~
  \(\text{about the house [lit. 'to'] which we are approaching}\)
- \(o\ xižine\) [(FEM)SG.PREPOS] \(kotor+oj\) [FEM.SG.DAT] my podxodim
  \(\text{about the hut [lit. 'to'] which we are approaching}\)
- \(\text{domd}\) [(MASC)PL.NOM] \(kotor+ye\) [PL.ACC] my \(\text{vidim}\) \~
  \(\text{the houses which we see}\)
- \(\text{xižiny}\) [(FEM)PL.NOM] \(kotor+ye\) [PL.ACC] my \(\text{vidim}\)
  \(\text{the huts which we see}\)
- \(k\ domam\) [(MASC)PL.DAT] \(kotor+y\) [PL.DAT] my podxodim \~
  \(\text{to the houses [lit. 'to'] which we are approaching}\)
- \(k\ xižinam\) [(FEM)PL.DAT] \(kotor+y\) [PL.DAT] my podxodim
  \(\text{to the huts [lit. 'to'] which we are approaching}\)
6.3. Agreement/government and semantic dependencies

Based on what has been said above, the following statement (= ‘Keenan’s principle’) can be formulated:

- In prototypical cases of agreement and government,
  - Sem-Governors agree with their Sem-Actants;
  - Sem-Actants are governed by their Sem-Governors.

The historical development of natural languages, especially analogical leveling and syntactic derivations (nominalizations, etc.), creates a number of deviations from the above principle; I have presented such deviations in 3.2, Comment 5, p. 61, and 4.2, Comment 3, p. 84. Nevertheless, in all normal, ‘non-exotic’ constructions Keenan’s principle holds. It can be beautifully illustrated by the example of the elective construction in Latin:

(43) Latin

<table>
<thead>
<tr>
<th>Gall</th>
<th>+ orum ← sem–fortissim + i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaul [MASC] PL. GEN</td>
<td>bravest [MASC] PL. NOM</td>
</tr>
<tr>
<td>bēlu</td>
<td>+ arum ← sem–null + am</td>
</tr>
<tr>
<td>beast [FEM] PL. GEN</td>
<td>none [FEM] SG. ACC</td>
</tr>
</tbody>
</table>

Here, A is the semantic (and syntactic) Governor of N. As stipulated by Keenan’s principle, A agrees with N, which realizes its Sem-Actant (in gender 2); at the same time, N is governed by A in case I.1a (N is in the genitivus comparisonis). Cf. the elective construction in Turkic – 2.3.1, Comment 7, (9a), p. 45.

6.4. Agreement/government and syntactic dependencies

The following is true of agreement/government and syntactic dependencies:

- If \( w_1 \) morphologically agrees with \( w_2 \), then \( w_1 \) and \( w_2 \) may be but are not necessarily linked by a direct syntactic dependency.
- If \( w_1 \) is morphologically governed by \( w_2 \), then \( w_1 \) and \( w_2 \) are always linked by a direct syntactic dependency (cf. an analogous remark in Kibrik 1977a: 178).
- If \( w_1 \) is morphologically congruent with \( w_2 \), then \( w_1 \) and \( w_2 \) are never linked by a direct syntactic dependency.\(^{33}\)

For agreement, as noted in the first point, it is possible for there to be no direct syntactic dependency between controller and target, as shown by the following examples of distact agreement from three typologically very different languages:

(44) a. In Tabassaran, the Main Verb can agree in person and number with the Possessor of its Subject, if this Possessor is a pronoun of the 1st or 2nd person (cf. (2), p. 38):

\[
\begin{array}{l}
\text{Jīz} & \text{ümūr+Ø} & \text{kerg+ni} & +\text{jīz}, \text{lit. ‘My life began-my’}.
\end{array}
\]

\begin{tabular}{llll}
my & life & NOM & begin PAST 1SG
\end{tabular}
b. In Maithili, the Main Verb, which obligatorily agrees in number and (degree of) respectfulness with its Subject, also agrees—optionally, but frequently—in the same categories with the Possessor of any of its actors (Stump and Yadav 1988; NEUTR(al) stands for the grammeme ‘NEUTRAL’ of the respectfulness):

\[
\begin{align*}
\text{Ham} & \quad \text{torā} & \quad \text{betā+ke} & \quad \text{dekhal +iau} \\
& \quad \text{I-NOM} & \quad \text{your-sg.NEUTR} & \quad \text{son} & \quad \text{OBL} & \quad \text{see-PAST} & \quad \text{1SUB.NEUTR-2OBJ.NEUTR} \\
& \quad \text{I saw yourSG son}. \\
\end{align*}
\]

\[
\begin{align*}
\text{Ham} & \quad \text{Jibach+ak} & \quad \text{kkur+ke} & \quad \text{dekhal +iain} \\
& \quad \text{I-NOM} & \quad \text{J.RESP GEN} & \quad \text{dog} & \quad \text{OBL} & \quad \text{see-PAST} & \quad \text{1SUB.NEUTR-3OBJ.RESP} \\
& \quad \text{I saw Jibach’s dog}. \\
\end{align*}
\]

\[
\begin{align*}
\text{Tohar} & \quad \text{bābu} & \quad \text{Mohan+ke} & \quad \text{dekhal +thun} \\
& \quad \text{your-sg. father.} & \quad \text{OBL} & \quad \text{see-PAST} & \quad \text{3SUB.RESP-2OBJ.NEUTR} \\
& \quad \text{Your father saw Mohan}. \\
\end{align*}
\]

A similar pattern of agreement is reported in Tangut and Wichita as well.34

Under government, the controller and the target are always linked by a direct Surface-Syntactic dependency. There seem to be two reasons for this:

- Government is much more semantic than agreement (cf. also Kibrik 1977a: 178); in a vague sense, it is somehow linked to the meaning of the controller.
- Government is much more lexicalized than agreement; it is known that even close synonyms may govern in different ways, as in Ger. *begegnen* wom [DAT] ~ *treffen* wen [ACC] [to] meet someone [involuntarily]. It is because of this that lexemes need their *Government Pattern* specified in the lexicon. In all cases known to me, the Government Pattern reaches to depth 1—i.e., it affects only direct syntactic dependents of the entry lexeme, L. If morphological government of L could ‘jump over levels’ and affect, say, a Dependent of one of L’s Dependents, or the Governor of L’s Governor, or some other Dependent of its Governor, then the Government Pattern would immediately become much more complex. This fact may underlie the explanation of the
difference observed between agreement and government with respect to their relation to syntactic dependencies.

It is interesting to note in this connection that quite unlike Adj-to-N agreement, government (or, more precisely, the governed category) can be expressed—in the target or the controller—by suprasegmental means. Thus, in some Nilotic languages (Maasai, Teso, Kalendjin) the opposition of the nominative and the oblique case\textsuperscript{l.1b,35} which mark government, is expressed through difference of tonal schemes—generally, by lowering of the nominative prosody (see Chapter 4):

(45) \begin{align*}
\text{Maasai} & \quad \text{nominative} & \quad \text{oblique} \\
\quad \text{horse} & \quad \text{embártá} & \quad \text{embartá} \\
\quad \text{thing} & \quad \text{tóki} & \quad \text{tóki} \\
\text{Teso} & \quad \text{river} & \quad \text{écilét} & \quad \text{écilet} \\
\text{Kalendjin} & \quad \text{bull} & \quad \text{kirúk} & \quad \text{kirúk}
\end{align*}

Analogously, consider the Hebrew constructions \(N^1\text{--synt} \rightarrow N^2\) and \(A\text{--synt} \rightarrow N\), where the syntactic Governor is morphologically governed by its syntactic Dependent; this is partially expressed by suprasegmental means: \(N^1/A\) loses its stress and receives what is called \textit{status constructus}, or \textit{construct state} (a special form often marked by alternations; see Chapter 2, 3, Comment 2, p. 115). In many West African languages, in the construction \(N^1\text{--synt} \rightarrow N^2\) the ‘governed’ status of \(N^2\) is expressed by a special tonal scheme of \(N^2\); etc. At the same time, I am not aware of examples for suprasegmental marking of Adj-to-N agreement (cf. Moravcsik 1978: 333, note 1). All this can be connected to the fact that, according to its very nature, agreement is, roughly speaking, a grammar-controlled ‘long-range’ morphological dependency while government\textsuperscript{l} is a lexicon-controlled ‘short-range’ dependency. (Interestingly, V-to-N agreement is different in this respect. In several Meso-American languages—for instance, in the Oto-Manguean, Zapotecan and Chinantecan families—person-number agreement of the Main Verb is marked by tonal schemes; see, e.g., Mel’čuk 1993–2000, v. 4: 266–267.)

6.5. Should agreement/government be called syntactic or morphological?

How should we refer to agreement and government\textsuperscript{l} as defined in this chapter—as ‘syntactic’ or ‘morphological’ agreement/government? The answer has no crucial logical importance: this is a matter of convention. However, from a purely terminological standpoint, it appears to be more convenient to call them ‘morphological.’ Although the corresponding rules belong to the syntactic component of a linguistic model, agreement and government\textsuperscript{l} are morphological dependencies, and as such, they are opposed to syntactic ones. Confusing them with syntactic dependencies has more than once been a source of misunderstandings and therefore should, I believe, be avoided.
6.6. Other types of morphological dependencies?

In our approach, morphological dependency is manifested either through agreement or through government—tertium non datur (congruence being a particular case of agreement). But in some grammatical traditions (in particular, in the Russian tradition), when discussing agreement and government, it is usual to include the discussion of constructions such as *idti bystro* ‘[to] walk fast’ or *rabotat’ celu-ju nedelju* ‘[to] work a whole week’. The link of the boldfaced element to its syntactic Governor is often referred to as ‘adjunction’ (= Rus. *primykanie*), which is counted as a third type of ... but type of what? This is exactly the problem: it is not clear what is meant by adjunction. Since government and agreement are defined as varieties of morphological dependency, adjunction should also be a variety of morphological dependency. This is, however, logically impossible: adjunction is a characteristic of morphologically invariable lexemes—that is, of lexemes which in principle cannot participate in morphological dependencies as targets. Therefore, adjunction cannot exist as a morphological dependency and the term itself should be dropped from use. What is often called adjunction turns out to be government. Thus, the nominative (forms printed in boldface) in Russian constructions of the type *v gorode Odess-a* ‘in the city of Odessa’, *posle matča Spasskij – Kotov+Ø* ‘after the Spasskij—Kotov match’, *vesom odna tonn+a* ‘having the weight [of] one ton’ is governed. In the same vein, the infinitive with modal or phasic verbs (*xoču či-t+č* ‘I want to read’ or *načinaet či-t+č* ‘He begins to read’) is another typical case of government—rather than of some mysterious ‘adjunction.’ Traditionally, adjunction is considered in contrast to government: for Rus. *On probežal celuju milju* [ACC] ‘He covered a whole mile running’ one would say that the wordform *milju* is governed with respect to the case *I.1a* by the verb (*milju* is a DirO), while in *On bežal/pel celuju mil+ju* [ACC] ‘He ran/sang for a whole mile’ the same wordform is adjoined to the verb (*milju* is here a Circumstantial of duration). In reality, we see here an opposition, first, between being an Object vs. a Circumstantial and, second, between syntactic vs. semantic use of cases *I.1b* (called ‘non-specific,’ or ‘ungoverned,’ cases in Lapointe 1985: 348-352). In the second sentence, where the wordform *milju* functions as a Circumstantial, the accusative means ‘[this activity] lasting for the distance of ...’. To sum up: in our conceptual system, there is no place for adjunction.

Notes

1 (1, p. 32) Numeric indices are used with the names of inflectional categories and syntactics features in the following way:

number1 : semantic inflectional category of nouns

number2 : syntactic inflectional category of adjectives and verbs;
gender<sub>1</sub> : syntactic feature of nouns

<sup>vs</sup>.

gender<sub>2</sub> : syntactic inflectional category of adjectives and verbs;

noun class<sub>1</sub> : syntactic feature of nouns

<sup>vs</sup>.

noun class<sub>2</sub> : syntactic inflectional category of adjectives and verbs;

case<sub>1.a</sub> : syntactic inflectional category of ‘governed’ case of nouns

<sup>vs</sup>.

case<sub>1.b</sub> : concrete governed case of nouns

<sup>vs</sup>.

case<sub>1.2</sub> : syntactic inflectional category of ‘agreed’ case of nouns

<sup>vs</sup>.

case<sub>II</sub> : syntactic inflectional category of adjectives.

(For these different concepts of case, see Chapter 2, 2, p. 111 ff.)

2 (1, p. 32) Barlow and Ferguson 1988 offer a clear survey of the problems related to agreement along the seven following axes: domain, categories involved, directionality, strictness, conflicts and their resolution, functions in language, and historical change.

3 (2.1, p. 33) However, indirect syntactic and semantic connections are always present between any two wordforms of a sentence—as a corollary of obligatory connectedness of the syntactic and the semantic structure of a sentence (Mel’čuk 1988a: 116–118).

4 (2.1.2, p. 34) Recall that features of L’s syntactics carry information on L’s morphological properties as well.

5 (2.1.3, 2, p. 38) Many years ago (Mel’čuk 1961), I proposed to describe morphological dependencies of a language by sets of rules called correspondence operators, completely separated from syntactic rules proper; Iordanskaja 1961 compiled a list of government operators for Russian. Since then, agreement and government operators have been repeatedly used in syntactic descriptions of various languages in the Meaning-Text framework. For instance, Mel’čuk 1985: 162–210 lists operators specifying the morphological form of the noun and the numeral in the Russian construction NUM + N; Mel’čuk and Pertsov 1987: 193 use the same type of operators (called standard functions) to describe agreement (as well as inversion and coordination) in English; Iomdin 1990 (Ch. 4) presents four complete agreement operators for Russian, which cover practically all agreement phenomena in Russian neutral style texts. A convenient notation for agreement operators was proposed in Iomdin 1979. This is the notation that I am using here.

6 (2.1.3, comment 1, (2d), p. 39). As the agreement of the Main Verb shows (examples (2a–b) vs. (2c–d)), the Tabassaran noun in the plural changes its inherent class<sub>1</sub>: II ⇒ I (the prefix b- is the marker of the verbal class<sub>2</sub> II, and the prefix r-, the marker of the verbal class<sub>2</sub> I). This phenomenon—nouns changing their class<sub>1</sub> in the plural—is discussed in detail in Chapter 6, 4.3, 1, (29)–(32), p. 350 ff.

7 (2.1.3, 5, p. 42) The semantic properties of a controller, relevant from the viewpoint of agreement, are linked either with its signified or with its referent. The role of the signified of a morphological controller can be seen in such cases as Ger. das Mädchen ‘girl’: this lexeme of the neuter gender can be replaced with the pronoun of the
Chapter 1. Agreement, government, congruence

feminine gender SIE 'she' ('agreement according to meaning'), cf. Note 14. The role of the referent of the controller is seen in the case of the Russian pronouns JA 'I' or TY 'youSG', which impose (on the adjectives and on the verb) agreement in gender depending on the biological sex of the referent.

8 (2.1.3, 5, (5a), p. 42) This example is theoretically problematic, since it is not quite clear what formal status "Definiteness" has with the Hungarian N. It could be a grammeme, a value of a syntactic feature (e.g., 1st/2nd person pronouns are indefinite in Hungarian), a component of the signified 'N', or a property of its referent. This problem, however, is immaterial from the viewpoint of the concepts under study.

Let me quote a similar case from Swahili. Here the MV agrees with its DirO in noun class2, but only if this DirO is definite (in contrast to Hungarian, Swahili does not have the inflectional category of definiteness and has no articles). Cf.:

(i) M+walimu a+li +leta vi +tabu
I teacher I PAST bring VIII book
'The teacher brought (some) books'.

vs.
M+walimu a+li +vi +leta vi +tabu
I teacher I PAST VIII bring VIII book
'The teacher brought THE books'.

9 (2.1.3, 6, p. 43) Semantic dependency can be transitive, as in I am trying to sleep:

\[
\begin{array}{c}
\text{try} \\
\downarrow \\
I \\
\downarrow \\
\text{sleep}
\end{array}
\]

where 'try'-sem→'sleep' and 'sleep'-sem→'I' entail 'try'-sem→'I' ("X is trying that I sleep", where 'X' ≠ 'I'). This, however, does not happen with every meaning: thus, 'know'-sem→'sleep' and 'sleep'-sem→'I' does not entail 'know'-sem→'I', because one can have 'X knows that I sleep'.

10 (2.1.3, 6, (7), p. 44) I distinguish nominal case, or caseI, and adjectival case, or caseII (cf. Note 1, p. 98). For more detail, see Chapter 2, p. 110.

11 (2.1.3, 8, p. 47) Thus, we have the following situation with conjoined, or coordinated, clause elements:

- A chain of coordinated Ns shows the agreement in caseI.1a: Ni agrees with Ni-1. This is true, of course, only for syntactic casesI.1b, since two coordinated Ns can be in two different semantic casesI.1b – e.g., "UNDER-table and ON-chair". In this situation, no agreement in caseI.1a takes place.
- A chain of coordinated Vs shows agreement in number2/person/gender2/class2 and, probably, in tense and mood; again, Vi agrees with Vi-1. In some languages, in particular, in the Bantu family, the first verb in a coordinated chain (the syntactic head of this chain) can govern a special grammeme in the dominated conjoined verb – the **coordinative**. A verb in the coordinative does not distinguish tenses, and all subsequent conjoined verbs agree with their governors in coordinativity.
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– A chain of coordinated As shows agreement in gender2/class2/number2/caseII.

(2.2.1, p. 48) Like gender1/class2, noun class1 is a syntactic feature of N, while noun class2 is a syntactic inflectional category of A and V.

(2.2.6, p. 51) Such formulations—‘Always, but with the exception of several special cases which need to be fully specified’—are fairly typical of linguistic descriptions.

(2.2.2, 6, p. 52) Here is an example of such replacement: *Dieses Mädchen hatte er gern und beschützte es oft ..., weil sie die Tochter des Regenmachers war* IHe liked this girl and often defended her [lit. ‘it’] against other people, since she was the daughter of the Rain Maker* (H. Hesse, *Glasperlenspiel*).

(2.2.8, p. 53) In point of fact, the gender1 of Russian pluralia tantum can be established in many cases—thanks to their declensional group. Thus, ČASY ‘watch’ and ŠTANY ‘pants’ have the genitive in -ov: čas+ov, štan+ov; since only masculine nouns can have such genitive suffixes in Russian, these nouns are masculine. Similarly, ČERNILA ‘ink’ has in the nominative the non-accented suffix -a, which only neuter nouns can have; therefore, ČERNILA is neuter. However, the information about the gender1 of pluralia tantum is completely useless in terms of defining agreement classes: wordforms agreeing with pluralia tantum are in the plural and thus cannot show gender2. Thus, we have the same forms of the adjective and the verb with Russian pluralia tantum of different genders1 (because in Russian, the opposition of the genders2 is neutralized in the plural: U menja byl+î [m.] amerikansk+î [m.] časy [masc.] /den’gi [masc.] /černil+a [neut.], lit. ‘At me were [= I had] American watch/ money/ink’.

(2.2.4, p. 54). These two classifications—by pronominalization and by relativization—overlap. Thus, for instance, names of (big) ships, which belong to the pronominalization class “it”, can be also used in the pronominalization class “she”, but must still be in the relativization class “which” (that is, they remain inanimate); cf.:

(i) *I saw the cruiser ‘Saratoga’, which (*who) returned to port yesterday: she (it, *he) was moored at a nearby pier.*

(2.4, p. 57) This tradition is due to the fact that in a vast majority of cases, agreement and government in Russian (and in other languages) do mark syntactic subordination.

(3.2, 2, p. 59) Cf. a similar proposal concerning the French lexemes JE ‘I’ and TU ‘youSG’ in Pollard and Sag 1988: 239. This paper quotes an example from Onondaga (following Chafe 1970: 31, (43)), where the Main Verb agrees with the SSyntax-Subject according to the actual number of elements in its referent rather than to its grammatical number: the noun in Onondaga does not have obligatory grammatical number (although it does have an optional pluralizer suffix: ciha+šōřah ‘dogs’, šawēha+šōřah ‘flowers’, hatiksət+šōřah ‘children’). Cf.:

(i) ciha ka +hnyā;ha? ‘The dog is barking’.

dog SG bark

ciha kni+hnyā;ha? ‘Two dogs are barking’.

dog DU bark

ciha kökt+hnyā;ha? ‘Dogs [= three or more] are barking’.

dog PL bark

Such examples demonstrate the importance of Subcondition 2c.
Chapter 1. Agreement, government, congruence

NB: I don’t of course insist on my description of the data presented in (i). It is possible that in Onondaga and in other similar languages the verbal category of number (of actants) is semantic rather than one of agreement (Frajzyngier 1985); in such a language the Main Verb does not agree with its actant in number but expresses the real number of the referents of its actant directly. This seems to be the viewpoint of Chafe himself: “...dual and plural in these sentences have been postsemantically transferred from the noun to the verb” (p. 31); see also Barlow 1992: 35–37. If this is so, example (i) becomes invalid. However, this is marginal: it is quoted exclusively as illustration.

The statement “In Russian, the number of an A depends on the number of the N it modifies, in particular, in the construction NUM+A+N” is true only if the SSynt-rules are formulated exactly as I indicated: “Number of A: if N is in the singular, then ...; if N is in the plural, then ...” (formulation I). In principle they can be stated differently: “Number of A: if N has a NUM as its syntactic dependent, then plural” (formulation II); in this formulation, the number of A does not depend on the number of N in the construction “NUM+A+N”, i.e., this construction does not involve the agreement of A with N in number. Which way of formulating the rules for the agreement of A with N in Russian is preferable, I or II? The question is too specific to be discussed here. Suffice it to say that, in my opinion, the system of SSynt-rules will be more compact and coherent if formulation I is accepted; that is how the operator for agreement of A with N is formulated in Iomdin 1990: 99, Rule 2. Recall that one of the main characteristics of the approach to agreement and government that I advocate is the fact that it relies on formal rules of text synthesis, rather than on cooccurrence of relevant markers in actual texts.

“It is illegitimate to include in the definition of agreement the requirement that the word that undergoes the agreement contains the same feature that the word that imposes the agreement has. Generally speaking, the similarity of the features of the gender, number and case in the adjective and the noun is due only to the conventional way of naming them. In reality, the nature of these features in the adjective and in the noun is quite different” (Kibrik 1977a: 176; translation is mine – IM).

To avoid cluttering my presentation with too many details, I will not discuss the actual rules for the cases of agreement quoted here.

Interesting facts about agreement are found exactly where the ‘agreement’ in a prescientific sense (= identity) is violated and various complications emerge. As Corbett aptly remarked, ‘cracks’ in agreement systems are as important for the linguist as cracks in the Earth’s crust for the geologist, “who can learn more from a geological fault than from many miles of unbroken terrain” (Corbett 1983a: 1).

In reality, the rules for the agreement of a dependent noun with its governing noun in case1.2 in Old Georgian are fairly complex: in Marr and Brière 1931 they take up five full pages (231–235).
As explained to me by Lamara Margvelani, the real situation is more complex. In Old Georgian texts, beginning from IXth century, in a three-member noun chain, the central noun can also agree in case 1.2 with the governing (i.e., first) noun, but only if the latter is in the nominative and thus has the suffix -i. As a result, one can see noun phrases of the form
\[ \text{šur} + \emptyset + \text{i} \text{saxl} + \emptyset + \text{j} \text{mona} + \text{a+jsa} + j. \]
This phenomenon is known in Georgian as \textit{j}-\textit{metoba} (\textit{j}-redundancy). Otherwise, the central noun never agrees in case 1.2 with its nominal Governor.

In connection with polypersonal verbs I would like to introduce the following problem, which is by no means limited to them, as we will see immediately below.

In many languages, the pronominal actants of a polypersonal verb do not, as a rule, appear in the text (except for special emphasis); what then does the verb agree with if its Subject and the Objects are actually not in the sentence? Thus, what does the Alutor verbal form \textit{t+uvvat+òkni+yer} \textit{1 kiss youSG}, agree with, if it constitutes a complete sentence and presupposes no explicit actants (= wordforms meaning \textit{1} and \textit{youSG})? Wouldn’t it be more correct to see here something like congruence expressing anaphoric relations rather than agreement? My answer is a clear no. I believe that what we see here is the most common agreement – with the pronominal actants which are obligatorily present in the Surface-Syntactic Structure of the sentence but then are (almost) obligatorily elided on the morphological level (i.e., in the Deep-Morphological Structure).

This phenomenon is quite widespread in diverse languages and is by no means something specific to polypersonal conjugation. Thus, a pronominal Subject is normally omitted in Spanish and Italian, or, to take Slavic languages, in Polish and Serbian; the Subject of the imperative is almost always omitted in all languages; and so on. This, however, does not preclude us from seeing in this a typical case of agreement. Corbett 1986: 1007 introduces a special term for the agreement controllers absent from the actual text on the surface: ‘reluctant controllers;’ I propose to replace it with \textit{covert controllers}.

Three less known cases where covert controllers are at work deserve special mention.

– In Spanish, the Main Verb can agree with a pronominal Subject which appears in the Deep-Syntactic Structure of the sentence only, but is absent from its Surface-Syntactic Structure:

\[ \text{i) Los médicos lo entendemos [1pl] muy bien} \]

\[ '\text{We doctors understand this quite well}, \text{lit. 'Doctors we-understand ...'} \]

The Main Verb receives its person-number grammemes from the DSynt-subject NOSOTROS ‘we’, which has an apposition – MÉDICOS ‘doctors’, this assignment of grammemes happens in the process of transition from DSyntS to SSyntS, when the DSynt-subtree

\[ \text{NOSOTROS–ATTR} \rightarrow \text{SER–II} \rightarrow \text{MÉDICOS} \]

is represented as MÉDICOS plus the grammemes ‘1 pl’ on the Main Verb. (The symbol ‘ ‘ marks so-called \textit{ficticious} Deep LUs that appear in the DSyntS to express the semantically loaded SSynt-constructions.)
In Upper Sorbian, a personal-possessive pronominal adjective agrees— in DSyntS—in gender\(^2\), number\(^2\) and case\(^2\) with the noun denoting the possessor, which itself then appears in SSyntS as a possessive adjective:

(ii) *našeho tučerjowa zahrodk*a

The noun *TUČER* (teacher) denotes a male teacher and is masculine.

In many Australian languages, the Main Verb shows polypersonal conjugation: most of the times it depends morphologically on (= agrees with) the Subject and the DirO, but in quite a few languages it can in addition depend on the IndirO, on the beneficiary (‘for him’), on the comitative (‘with him’), and on human directional (‘to him’ ~ from him’). Now, in the tradition of Australian descriptive grammars, this dependency more often than not is called *cross-referencing* rather than agreement. It is even explicitly said that cross-referencing is “a separate specification of a referent,” different from agreement (Blake 1987: 105). The main reason for this viewpoint is that there are numerous discrepancies between grammemes induced in the verb and the grammemes/values of syntactic features in the controlling actants, for example (Blake 1987: 105–106):

(iii) *Ngalakan*

\[ nu +bolo yir +qanin gop \]

MASC boss 1PL.SUB-3SG.OBJ.INAN ate kangaroo

lit. ‘Boss we-it-ate kangaroo’ = (The boss and I ate the kangaroo).

(iv) *Warlpiri*

\[ tjarka ka +ŋa pula+mi \]

man AUX.NON-PAST 1SG shout NON-PAST

lit. ‘Man I-am shouting’ = ‘I, a man, am shouting’.

Yet what we find here is normal agreement with a covert controller: the Subjects in the SSyntS should be of the form BOSS→AND→I and I→MAN, respectively (cf. the Spanish example above). Less notable discrepancies, such as the Main Verb being in the plural while its Subject can be either in the plural or the dual (neutralization of the plural ~ dual opposition), or the verb distinguishing fewer noun classes than the nominals, are even less of a problem for our definition of agreement, which does not require the identity of controlling and controlled characteristics. I do not see any grounds to reject the description of Australian polypersonal verbal constructions as pure agreement. On the other hand, I do think that it is simply impossible to construct a rigorous definition of cross-referencing as a separate type of morphological dependency different from agreement.

28 (3.3, (25), p. 75) Logically speaking, nothing prevents one from seeing in (25) agreement of ADV directly with the Subject. I simply do not know what the actual facts are, i.e., whether in Avar an ADV can agree with a N without mediation by a MV, etc. In any event, example (25) retains its illustrative value; moreover, the rule for agreement of ADV with a MV is simpler that the rule for agreement of ADV with N (= Subject), because the latter rule has to find the Subject first (cf. a brief discussion of such cases in Lapointe 1988: 74, note 2).
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29 (3.3, before (27), p. 76) Lehmann 1982: 229 offers the following explanation of the fact that, although agreement of actants and/or circumstantials with the verb is theoretically possible, it is found very rarely in natural languages:

The main task of agreement is to show what bears on what, to ‘gather’ noun phrases scattered across the sentence; however, each simple clause has just one finite verb and therefore there is no need to earmark its actants as linked to it—in any event, there is nothing else in the clause they could be linked to.

However, the real state of affairs is much more complex: a simple clause can contain—and often does contain—numerous predicate nouns, so that their actants also can be intermingled. For an example of the complements agreeing with the Main Verb in tense, see (21) and (26b)

30 (4.1, 5, p. 86) The distinction between morphological government and syntactic government (= our government) was made in Nichols 1985: 285, note 3.

31 (4.1, 6, p. 86) Apresjan 1982: 183–184 talks about sentence elements “governing an adverb”—as, e.g., in proixodit ottuda ‘originates from-there’; otsjuda sleduet, čto ..., lit. ‘from-here it follows that ...’; ploxo obraščat’sja ‘[to] treat [someone] badly’ (see also Kibrik 1977a: 177). However, this phenomenon is by no means morphological government. Such adverbs are semantic actants of the corresponding lexemes and so they are governed, but not in the sense that interests us here: this is government, mentioned above (4.1, 5, p. 86). The inability of an adverb to be morphologically governed is perhaps one of its defining properties as a particular part of speech.

32 (6.2, (42a), p. 94) See a detailed description and an analysis of this construction in Zwicky 1986. I propose here the most traditional description of the German construction “DET+A+N.” Another logically coherent description is also possible (I borrowed this idea from V. Plungjan). It can be said that A agrees with N in gender and case, and with DET in, say, ‘definiteness,’ which is an agreement class of the determiner. Then DER and DIESER belong to one definiteness class, EIN and MEIN to the second one, and the zero determiner to the third one. This description deserves consideration.

33 (6.4, (44c), p. 96) There is a presumed exception to this statement (pointed out to me by L. Iomdin): the *reprise pronominale* of the type Fr. Cette fille, je l’adore!, lit. ‘This girl, I adore her!’ If we assume that in such constructions the proleptic noun (FILLE ‘girl’) and the substitute pronoun (LA ‘her’) are syntactically linked by a direct dependency, we would have to admit that, contrary to our statement, a direct Surface-Syntactic dependency between the target and the controller of a congruence is possible. The problem, however, is the Surface-Syntactic structure of this type of construction. I, for one, believe that the proleptic noun and the resumptive clitic both depend directly on the Main Verb, so that there is no direct syntactic link between them.

34 (6.4, (44c), p. 96) This is one of the many manifestations of a well-known phenomenon found in possessive constructions with Inalienable Possession and called ‘Possessor Raising.’ See Iordanskaia and Mel’čuk 1995, as well as Mel’čuk 2001: 205–207.

35 (6.4, before (45), p. 93) The Nilotic nominative is the lexicographic form of the noun and the form used for naming things; it also marks (almost) all syntactic roles of the noun except for the Subject, the Agent of the passive and the complement of a preposition: these three are marked by the oblique. For details, see Chapter 4, p. 263ff. (The traditional names for these cases L1b are accusative/absolutive [= my nominative] and nominative [= my oblique].)
PART II

Morphology proper
Part II is organized along the same lines as the description of its principal topic—the morphological sign. Like any linguistic sign, the morphological sign is a triplet:

\[ ('\text{signified}', \text{signifier}, \Sigma(\text{syntactics})) \]

Accordingly, we will begin with morphological signifieds (1), then move on to morphological signifiers (2), and, after that, consider morphological syntactics (3). In the final section, we will look at the morphological signs as wholes (4): special types of morphological signs and the possible relations between them.
II.1. Morphological signifieds

Given the limitations of space, I will make no attempt to discuss morphological signifieds in any systematic manner, nor will I take on the differences between inflectional and derivational signifieds or try to sketch a calculus of inflectional categories of semantic vs. syntactic type. On these topics, the reader is referred to Mel’čuk 1993–2000, vol. 2. In *ATM*, only two inflectional categories will be analyzed: nominal case and verbal voice. The advantage of this is that both can be treated in depth—with all their subtleties and abundant examples. Case is described in Chapter 2, and voice in Chapter 3; Chapter 4 is dedicated to a study of case and voice in Maasai, which allows me to illustrate these concepts and their practical application.
Chapter 2. Case

In modern linguistics, the term case is used to cover nominal case (Rus. pojas+Ø ‘belt’ SG.NOM, pojas+a SG.GEN, pojas+u SG.DAT, ...) as well as adjectival case (Rus. dlinn+yi ‘long’ MASC.SG.NOM, dlinn+ogo MASC.SG.GEN, dlinn+omu MASC.SG.DAT, ...). However, nominal case and adjectival case are two different inflectional categories: adjectival case is imposed by agreement with nominal case. Therefore, these categories should be discussed separately. In this chapter, only nominal case is considered; it will be referred to as caseI (in opposition to caseII, or adjectival case).

Moreover, even for nouns (i.e., within caseI), two different case categories must be distinguished: one case is directly imposed by the syntactic Governor of the noun; the other appears as a mark of agreement, very much like adjectival case (e.g., in Old Georgian, Basque, Ngarluma, where a noun may have two consecutive markers of two different casesI: see below, 11.1, p. 159ff). Of these two categories, Chapter 2 considers exclusively the first, governed nominal case: casus rectus (referred to as caseI.1— in opposition to caseI.2, or agreeing nominal case: casus concordatus).

Even if we take the term case solely in this narrow sense—as caseI.1, the term is still, as currently used, at least three-way ambiguous:

1. Case as an inflectional category—that is, a set of mutually exclusive inflectional meanings, or grammemes. This sense is seen in such sentences as The Czech noun is inflected for case; Tartar possesses case as an autonomous category; Case is widely discussed nowadays. This is caseI.1a.
2. **Three concepts of Case: Definitions 2.1–2.3**

The prototypical examples of the category of caseI.1a are taken to be caseI.1a in Slavic languages (Russian, Serbian, Polish), in classical languages (Latin and Ancient Greek), in Sanskrit and in German, as well as in Georgian, Lezgian, Finnish and Hungarian. In all these languages, the presence and the nature of caseI.1a seem indisputable. Based on the analysis of such prototypical casesI.1a, the general concept of caseI.1a will be proposed.

Informally speaking, I define caseI.1a as an inflectional category of nominals which has the two following properties:

(i) In language \( \mathcal{L} \), caseI.1a:
   a) necessarily serves to mark the passive SSynt-role of a nominal \( N \) – that is, to mark the SSynt-dependency relation between \( N \) and another element of the clause (= the SSynt-Governor of \( N \));
   b) potentially serves to express the semantic relation between \( N \) and its SSynt-Governor.

(ii) In language \( \mathcal{L} \), caseI.1a is significantly involved in the grammar of \( \mathcal{L} \) such that
   a) it contains at least two different casesI.1b expressing two different ac-tantal SSynt-roles of nominals;\(^3\) or
   b) it is relevant to agreement; or
   c) it cumulates with other grammemes; or
Chapter 2. Case

d) it is relevant to morphonology.

The formal definition of case \( I.1a \) which follows is fairly complex; hopefully, its complexity reflects the actual state of affairs rather than my inability to come up with something simpler. After all, grammatical case is known to be an exceedingly complex concept.

**Definition 2.1: Case I.1a**

**Case I.1a** is an inflectional category \( C \) of nominals (in language \( L \)) such that Conditions 1 and 2 are simultaneously satisfied:

1. Each of \( C \)'s grammemes \( 'c_i' \) when attached to a nominal \( N \) serves to express the dependency of \( N \) on its SSynt-governor and, perhaps, a Sem-relation between \( N \) and its governor; formally, \( 'c_i' \) is a pair \( \{ \rho_m \}, \{ \alpha_n \} \), where:
   a. \( \{ \rho_m \} \) is a non-empty proper subset of the set of all passive SSynt-roles \( \rho_m \) that can be filled by the nominals of \( L \) such that:
      i. for any nominal lex \( w \) that expresses \( 'c_i' \), the set of \( w \)'s possible passive SSynt-roles is identical with or included in \( \{ \rho_m \} \);
      ii. for any \( \rho_m \), there is a nominal lex \( w \) that expresses \( 'c_i' \) and an utterance in which \( w \) fills the SSynt-role \( \rho_m \).
   b. \( \{ \alpha_n \} \) is a (possibly empty) proper subset of the set of predicate semantemes \( \alpha_n \) of \( L \) such that:
      i. for any nominal lex \( w \) that expresses \( 'c_i' \), if in an utterance the lex \( w \) itself or its semantic relation to its SSynt-governor is characterized by the semanteme \( \alpha_n \), then \( \alpha_n \) belongs to \( \{ \alpha_n \} \);
      ii. for any \( \alpha_n \), there is a nominal lex \( w \) that expresses \( 'c_i' \) and an utterance in which \( w \) itself or its semantic relation to its SSynt-governor is characterized by the semanteme \( \alpha_n \).

2. \( C \) contains no fewer than two grammemes \( 'c_i' \) and \( 'c_j' \) that are integrally involved in the syntax or the morphology of \( L \); this means that the grammemes \( 'c_i' \) and \( 'c_j' \) satisfy at least one of the following subconditions:
   a. \( \{ \rho_m('c_i') \} \) and \( \{ \rho_m('c_j') \} \) include each at least one MAJOR (i.e., ACTANTIAL) SSynt-role of \( L \) that the other does not.
   b. Or \( 'c_i' \) and \( 'c_j' \) participate in AGREEMENT with adjectives (if \( L \) has such agreement).
   c. Or \( 'c_i' \) and \( 'c_j' \) are both EXPRESSED IN THE SAME WAY as other grammemes of \( L \) are (for instance, they are expressed cumulatively with the grammeme of number).
   d. Or the expression of both \( 'c_i' \) and \( 'c_j' \) triggers or blocks some MORPHONOLOGICAL TRANSFORMATIONS similar to those that are triggered/blocking by the expression of other grammemes.

Since the verbal formulation of Definition 2.1 proves so cumbersome, symbolic notation may be useful. Let there be:

\( w('c_i') \) : a lex \( w \) that expresses the case grammeme \( 'c_i' \)
2. Three concepts of Case: Definitions 2.1–2.3

VA LP ass(\(w\)) : the (surface-syntactic) passive valence of \(w\) = the set of all passive SSynt-roles the lex \(w\) can fill

VA LP ass(\(L\)) : the (surface-syntactic) passive valence of nominals in \(L\) = the set of all passive SSynt-roles a nominal in \(L\) can fill

\(R\) : a major [= actantial] SSynt-role of nominals in \(L\) (Subject or Object)

SEM(\(L\)) : the set of all predicate semantemes of \(L\)

GU(\(w\)) : the Surface-Syntactic Governor of \(w\) (in utterance \(U\))

lU(\(w\)) : the passive Surface-Syntactic role filled by \(w\) (in utterance \(U\))

\(\alpha(\(w\))\) : the semanteme characterizing \(w\) (the semantic relation between \(w_1\) and \(w_2\))

\(U(\(w\))\) : utterance in which the lex \(w\) appears

Then:

**CaseI.1a** is an inflectional category \(C\) of nominals (in \(L\)) such that both Conditions 1 and 2 hold:

1. Each of \(C\)’s grammemes ‘\(c_i\)’ is a pair ‘\(c_i\)’ = \(\langle \{\rho_m\}, \{\alpha_n\}\rangle\), where:
   a. \(\{\rho_m\} \subseteq \text{VA LP ass}(\(L\)) \& \{\rho_m\} \neq \emptyset\);
      i. \(\forall w(\(c_i\))\) \[\text{VA LP ass}(w) \subseteq \{\rho_m\}]\;
      ii. \(\exists w(\(c_i\)) \& \exists U(w)\)[\(\rho_U(w) = \rho_m\]]
   b. \(\{\alpha_n\} \subseteq \text{SEM}(\(L\))\);
      i. \(\forall w(\(c_i\)), \forall U(w)\)[\(\exists \alpha_n\) \(\alpha_n(w(\(c_i\))) \lor \alpha_n(w(\(c_i\)), G(w(\(c_i\)))) \rightarrow \alpha_n \in \{\alpha_n\}]\;
      ii. \(\exists \alpha_n \in \{\alpha_n\} \& \exists w(\(c_i\)) \exists U(w)\)[\(\alpha(w(\(c_i\))) \lor \alpha(w(\(c_i\)), G(w(\(c_i\))))\)]

2. \(\forall c'_i, \exists c'_j, c'_i \neq c'_j\):
   a. \(\exists R_1, \exists R_2, R_i \neq R_j \subseteq \{\rho_m\}(c'_i) \& R_i \neq \{\rho_m\}(c'_j); R_j \subseteq \{\rho_m\}(c'_i) \& R_j \subseteq \{\rho_m\}(c'_j)\);
   b. \(\forall c'_i, c'_j\) participate in agreement;
   c. \(\forall c'_i, c'_j\) participate in cumulation with other grammemes;
   d. \(\forall c'_i, c'_j\) participate in controlling morphonological operations.

If the category under analysis satisfies Condition 1 and at least one of the Sub-conditions of Condition 2, it is sufficient for it to be accepted as caseI.1a. However, it may, of course, satisfy several or even all of these subconditions. Therefore, the category in question can be a more/less typical specimen of caseI.1a, a familiar situation to linguists.

**Definition 2.2:** CaseI.1b

\[\text{CaseI.1b}\] is a grammeme belonging to caseI.1a.
Definition 2.3: Case I.1c

Case I.1c is a lex expressing a case I.1b.

In order to avoid possible confusion, I suggest banning the term case I.1c altogether, replacing it with the expression the form of a case I.1b, or case form.

3. Comments on Definitions 2.1–2.3

1. Syntactic vs. semantic cases I.1b

The main task of case I.1a and, therefore, of cases I.1b is to mark the SSynt-dependent roles of nominals. There are cases I.1b (or specific uses of cases I.1b) which do no more than just that: these are syntactic cases I.1b. (Syntactic cases I.1b are also known as ‘structural cases.’) However, even if a case I.1b expresses a particular meaning (and is eo ipso a semantic case), it still marks the SSynt-dependency of the corresponding nominal. In other words, marking the SSynt-dependencies of nominals is the primary, constitutive property of cases I.1b and, consequently, of case I.1a; conveying meanings is their secondary, non-obligatory property. Thus, theoretically, there can be purely syntactic cases I.1b, but no purely semantic cases I.1b: every semantic case I.1b obligatorily marks a passive syntactic role of its nominal as well, whereas the converse is not true.

Therefore, the concept of case I.1a is, in my view, essentially based on a specific SSynt-representation of utterances—in particular, on the system of SSynt-relations adopted by the linguist. (The semantic functions of cases I.1b will be discussed in Section 6, p. 134ff.)

2. Inflectional categories related to case I.1a

Case I.1a—or more precisely, one of its grammemes (i.e., a case I.1b)—is used to mark a nominal as the dependent member of particular SSynt-relations; thus, case I.1a determines the nominal’s passive SSynt-valence. There are, however, other inflectional categories of nominals which mark a nominal N1 as the governing member of certain SSynt-relations. These categories are, in a sense, the inverse of case I.1a, that is, in the respective constructions the orientation of the syntactic and morphological dependencies is opposite:

\[
\text{synt} \quad \text{morph} \quad \text{N1} \quad \text{N2}.
\]

As a result, we have here a typical case of what is known as morphological head-marking.
I will illustrate two such categories.

The first one is the inflectional category of state of nominals. The nominal \( N^1 \) that syntactically subordinates another nominal \( N^2 \) must be in the construct state, as opposed to the absolute state, which marks on \( N^1 \) the absence of syntactic dependents:

\[
\begin{align*}
\text{SSyntR} & \quad \text{DMorphR} \\
N^1 & \quad \Leftrightarrow \quad N^1_{\text{absolute}} \\
N^1 - \text{synt} \rightarrow N^2 & \quad \Leftrightarrow \quad N^1_{\text{construct}} + N^2
\end{align*}
\]

The category of state can be illustrated with data from Semitic and Iranian languages.

In Modern Hebrew, the construct state marks nouns and adjectives that have a noun as a dependent. The change of state is expressed by the loss of stress and, as a rule, by alternations:

(1) Hebrew

\[
\begin{array}{llll}
\text{absolute} & \text{construct} \\
\hline
\text{‘room’} & \text{xéder} & \text{zadar} & \text{ökel} & \text{lit. ‘room-of food’ = ‘dining room’} \\
\text{‘word’} & \text{davdr} & \text{dvar} & \text{ha-naví} & \text{‘word-of the-prophet’} \\
\text{‘dress’} & \text{siml+at} & \text{siml+at} & \text{kalá} & \text{‘bride’s dress’} \\
\text{‘books’} & \text{sfar+ím} & \text{sifr+ej} & \text{limúd} & \text{‘books-of learning’ = ‘manuals’} \\
\text{‘years’} & \text{šan+ím} & \text{šn+ot} & \text{jaldút} & \text{‘years of childhood’} \\
\text{‘big’} & \text{gadól} & \text{gdol} & \text{memad+ím} & \text{‘big-of dimensions’ = ‘big in size’} \\
\text{‘those-reading’} & \text{kor?+ím} & \text{kor?+ej} & \text{ha-iton+ím} & \text{‘those-reading-of the-newspapers’ = ‘the newspaper readers’}
\end{array}
\]

If the governing noun or adjective has a non-zero plural suffix in the absolute state, this suffix is realized in the construct state by a different allomorph. (L. Iomdin drew my attention to the fact that this phenomenon could be considered as cumulative expression of state.)

In Persian (and several other Iranian languages), the construct state is expressed by a suffix—called ezafa, or idafa (lit. ‘addition’). Roughly speaking (cf. below, before (2e)), only nouns can have the construct state, and the type of dependent is irrelevant: it can be almost anything.

(2) Persian

If a noun has a postposed modifier, which can be an adjective, a participial phrase, another noun, a pronoun or a prepositional phrase (but not a relative clause), this noun obligatorily receives the construct state, expressed by the suffix -e/-je:
Chapter 2. Case

a. ketāb ‘book’
   ketāb+e ẓāleb ‘interesting book’;
   ketāb+e pedar+e man, lit. ‘book-which father-which I’ = ‘the/a book of my father’;
   ketāb+e ki?, lit. ‘book-which who?’ = ‘whose book?’

b. nāme ‘letter’
   nāme+je ẓāleb ‘interesting letter’,
   nāme+je to, lit. ‘letter-which youSG = ‘your letter’

c. šahr ‘city’
   šahr+e Tehrān ‘city of Teheran’

d. sāat ‘hour, time’
   sāat+e bad az kār, lit. ‘time-which after of work’ = ‘time after work’

If the modified noun has several postposed modifiers, all of them—except for the last one—must also be in the construct state. In this way, even adjectives can receive the construct state:

e. ketāb+e xub+e ẓāleb +e bozorg+e man,
   lit. ‘book-which good-which interesting-which big-which I’ = ‘my big interesting good book’

As one can easily see, state is a purely syntactic inflectional category: it marks a nominal as a syntactic Governor (in Persian, it marks also an adjectival as being co-subordinated with another adjectival to the same noun).5

The second category that is, in a sense, also an inverse of the caseI.1a, is the inflectional category of belonging in Altaic and Uralic languages (this is a category of nouns only). The noun N1 that syntactically subordinates another noun N2, which can be in the nominative, genitive or dative—depending on its referentiality, determinacy and the like (and, of course, on the language)—receives a marker of belonging to the 3rd person:

\[ N^2 \rightarrow \text{synt} \rightarrow N^1 \equiv N^2_{\text{NOM/GEN/DAT}} + N^1_{\text{3pers}} \]

(3) Turkish

a. ata +Ø +nμ kitab+Ø +i +Ø +Ø
   Father SG GEN book SG [BELONG 3SG] NOM
   lit. ‘Father’s book-belonging.to-3sg’ = ‘Father’s book’

b. Türk +Ø +Ø dil +Ø +i +Ø +de
   Turk SG NOM language SG [BELONG 3SG] LOC
   lit. ‘Turk language-belonging.to-3sg-in’ = ‘in [the] Turkish language’
3. Comments on Definitions 2.1 - 2.3

(4) Hungarian

a. a család + Ø +Ø ajándék+Ø +a +Ø +Ø
the family SG NOM gift SG [BELONG 3SG NOM
lit. ‘the family gift-belonging to-3sg’ = ‘the family’s gift’]

b. a költő + Ø +nek barát + Ø +já +Ø +val
the poet SG DAT friend SG [BELONG 3SG SOC(iative)
‘the to-poet friend-belonging to-3sg with’ = ‘with the poet’s friend’]

The category of belonging is semantic: it marks a noun as a syntactic Governor of a Possessor and one of its grammemes carries the meaning ‘belong to...’ (this meaning should, of course, be taken in a very large and vague sense). Cf. Turk. ata+Ø+m ‘my father’ or Hung. ajándék+Ø+unk ‘our gift’, where the belonging grammemes express such meanings as ‘my’ or ‘our’. However, in the construction N2—synt—N1 one of belonging grammemes is used on N1 as a purely syntactic marker of the syntactic dependency between N1 and N2.

3. Case1.1a marks only some SSynt-roles of a nominal

The requirement that for a given case1.1b ‘c’, the set \{p_m\} should be a proper subset of the set of all passive SSynt-roles of \( \mathcal{L} \) ensures that ‘c’ cannot mark all passive SSynt-roles which a nominal can play. A case1.1b marking all possible passive SSynt-roles is a *contradictio in adjecto*: if the same marker accompanies a nominal in all of its SSynt-roles, such a marker is independent of the SSynt-role and consequently is not a case1.1b marker. On the other hand, a case1.1b marking no syntactic role at all is equally a *contradictio in adjecto*; hence the requirement for \{p_m\} to be non-empty. Note that such a requirement is absent with respect to \{c_m\}: \{c_m\} is allowed to be empty, because a case1.1b can express no meaning.

4. Case1.1a and the role of syntactic head

A case1.1b can also mark the SSynt-role of a nominal in constructions where this nominal is the Top Governor (= the highest node in the dependency tree, or an absolute head) and does not depend on anything else: Rus. *Grammatika russkogo jazyka* ‘Grammar of [the] Russian Language’ [the head noun of a title is in the nominative], Rus. *Xleba i zrelišči!* [the head noun is in the genitive] = Lat. *Panem et circensem!* [the head noun is in the accusative] ‘Bread and circuses!’; Rus. *Avtoprobegom — po bezdorožju i razgilďajstvu!*, lit. ‘[Let us strike] with an auto rally [INSTR] on lack of roads and slipshodness!’ ≈ ‘Let us rally against the lack
of roads and slipshoddiness! [a famous quotation from Il’f and Petrov’s Twelve Chairs]; Rus. Aristokratov na fonar’! [Hang] aristocrats [acc] from [lit. ‘on’] the street-lamps!; etc. In order to cover all such occurrences of case_1.1b as well, the notion of passive SSynt-role must be extended to include the ability of the nominal in question to be the absolute SSynt-head of an utterance in a particular construction. That is exactly what is done in the characterization of passive SSynt-valence in the Introduction, 4, No. 21, p. 21.

5. Case_I.1a and the lexical meaning of the stem

The actual passive SSynt-valence of a case_I.1b form—i.e., of a declined nominal lex—depends not only on the case_I.1b it expresses but also on the semantic and syntactic properties of the stem of this lex. These properties can reduce the passive SSynt-potential of the case_I.1b to all nominal lexes in L. For instance, in Russian the accusative marks, along with DirOs, the circumstantial of duration, but only with a specified subset of nouns—lexicographically marked names of time intervals, of some events, etc. Cf. Vsju nedelju [ACC] on nabljudal ... ‘The whole week he kept observing ...’ or Vsju vojnu [ACC] on nabljudal ... ‘[During] the whole war he kept observing ...’; but not *Vsë sobranie [ACC] on nabljudal ... ‘The whole meeting he kept observing ...’ (the correct way to say this is V techenie vsego sobranija on nabljudal ... ‘During the whole meeting he kept observing ...’). This is why it is required that the passive SSynt-valence of w_1(c_i) be equal to or included in \{p_m\}.

6. Sufficiency and necessity of the elements in the definition

Items (i) and (ii) in Subconditions a and b, Condition 1 of Definition 2.1, are about sufficiency and necessity, respectively. More specifically, Condition 1a-i requires that any SSynt-role which a lex expressing a given case_I.1b can have should be included in \{p_m\} of this case_I.1b. Conversely, Condition 1a-ii requires that any SSynt-role in \{p_m\} of a given case_I.1b should be played by some lexes (expressing this case_I.1b) in some utterances. Analogously, Condition 1b-i requires that any semanteme which can characterize either a lex expressing a given case_I.1b or the relation of this lex to its SSynt-Governor should be included in \{c_n\} of this case_I.1b. Conversely, Condition 1b-ii requires that any semanteme in \{c_n\} of a given case_I.1b should characterize either some lexes (expressing the case_I.1b) or their relation to their SSynt-Governors in some utterances.
7. Screening out non-cases I.1a

Condition 2 of Definition 2.1 provides for the correct treatment of case-like forms that are in fact not cases I.1b and so should not be admitted as such. Suppose that a language has a vocative form, obligatory for address and formally always distinct from the basic form of the noun; at the same time, the language has no other nominal case-like form. The inflectional meaning ‘vocative’ [= ‘direct address’] satisfies Condition 1 of Definition 2.1 (the grammeme in question serves to express dependency of the noun in this role on the Main Verb or its Top Node role); without Condition 2 we would be forced to classify this vocative form as the form of a case I.1b. The result would be that the other noun form (the basic form of noun) would – by default – become another case I.1b – say, the common case I.1b (or the nominative), used in all SSynt-contexts except for direct address. (This is so because an inflectional category cannot contain fewer than two elements, cf. above, Introduction, Note 10, p. 27.) Therefore, by postulating one case I.1b in a language, we automatically create a second case I.1b which has to embrace all the nominal forms not covered by the first case I.1b.

Thus, the language under consideration would be described as having the category of case I.1a, with all the theoretical implications of this decision, which obviously contradicts our intuition. A vocative form alone should not be allowed to force us into admitting case I.1a in L in the absence of further evidence. We avoid this problem with Condition 2. Subcondition a of this condition stipulates that a case system includes at least two different genuine, unquestionable cases I.1b which encode different major SSynt-roles, such as [syntactic] Subject vs. [syntactic] Object. If a case system is well established by obvious cases I.1b, then even a ‘dubious’ case I.1b is readily accommodated within it. Consequently, for example, in Modern Greek the vocative is a case I.1b because there are other unquestionable cases I.1b – nominative, accusative, genitive. However, dubious forms alone cannot create a case system. Thus, for instance, what has been called the Saxon Genitive in Modern English is rejected as a case I.1b by Definition 2.1: there are, as a result, no cases I.1b (and no case I.1a) in the English noun (the pronominal subsystem of English has case I.1a: it distinguishes the nominative and the oblique, as in I ~ me, he ~ him, etc.); cf. Section 4 below.

Subcondition a of Condition 2 amounts to forbidding that L has only semantic cases I.1b (sometimes called ‘concrete,’ or ‘adverbal’) and no syntactic cases I.1b (also known as ‘abstract,’ or ‘grammatical’); on the distinction ‘semantic vs. syntactic cases I.1b,’ see Section 6, p. 134ff. As stated above, I try to model the general concept of cases I.1a after such languages as Latin or Russian, where the case system is strongly anchored in syntactic cases I.1b. (For a different viewpoint, see Lehmann 1983: 366–367.)
Note that case I.1b cannot be defined prior to case I.1a—because, generally speaking, an inflectional category has to be defined before its grammemes (see Introduction, 4, No. 22, p. 21).

4. English ‘Saxon Genitive’

The problem of the ‘Saxon Genitive case’ in English (the boy’s book, my children’s room) has a long history, which can be summarized as follows. A current view has it that the noun in Modern English features a two-case system: the marked genitive case I.1b in -s and the unmarked ‘common case.’ This point of view is simply stipulated by Otto Jespersen (in his classic works 1924, 1927, 1933) and accepted without discussion in one of the best contemporary English grammars (Quirk et al. 1991: 318ff). However, this view is by no means universal: there are also many scholars who deny the English -s-form the status of a case I.1b—the, for example, Vachek 1961: 24–31, Ilyish 1965: 45, Poldauf 1970, Hansen 1970 (with further references), Chomsky 1975: 281, and Zwicky 1975. I side with the latter researchers and think that the Saxon Genitive is not a case I.1b and, therefore, there is no category of case I.1a in the English noun at all. Definition 2.1 as it stands rejects the form in -s as a case I.1b: this is ensured by Condition 2, since the -s-form cannot play any major SSynt-role, is not involved in agreement, is expressed in a way different from that in which all other grammemes of English are expressed, and has no impact on morphology (i.e., does not trigger any alternations in its neighbors). The question is whether this is the right analysis. To be sure that our definition is good, we must be intuitively sure that the Saxon Genitive really does not deserve the status of a case I.1b. To demonstrate this, I will present six arguments that show that the Saxon Genitive does not behave like elements of other inflectional categories of Modern English; therefore, it is not a grammeme and, consequently, not a case I.1b. (These arguments are essentially adapted from Vachek, Hansen and Zwicky, op. cit.)

1. All English grammemes characterize a given lexeme, never a phrase. Group inflection—i.e., morphological marking of whole phrases rather than of individual lexemes (cf. 11.5 below, p. 167)—never occurs in English. Thus, consider, for example, the nominal plural -s, the comparative -er, and the past tense -ed:

<table>
<thead>
<tr>
<th>English Form</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>all my relative+s</td>
<td>~</td>
</tr>
<tr>
<td>and acquaintance+s</td>
<td>*all my relative and acquaintance+s</td>
</tr>
<tr>
<td>my sister+s-in-law</td>
<td>~</td>
</tr>
<tr>
<td>three passer+s-by</td>
<td>~</td>
</tr>
<tr>
<td><em>my sister-in-law+s</em></td>
<td></td>
</tr>
<tr>
<td><em>three passer-bi+es</em></td>
<td></td>
</tr>
</tbody>
</table>
young+er and strong+er ~ *young and strong+er
He shav+ed and wash+ed ~ *He shave and wash+ed

But the Saxon Genitive systematically marks phrases rather than lexemes:
John and Mary+’s parents, my sister-in-law+’s house,
the unfortunate passer-by+’s body, the king of England+’s throne, etc.

In this respect, the Saxon Genitive is quite like English derivational suffixes, several of which can be easily joined to (lexicalized) phrases:

atomic physics ~ atomic physic+ist [≡ (atomic physic)+ist]
historical novel ~ historical novel+ist
stay at home ~ stay-at-home+ish
out of doors ~ out-of-doors+y
good ol’ boy ~ good-ol’-boy+ish+ness

...expresses a certain level of ‘any fool knows that it isn’t’+ness [spontaneously used by D. Beck in one of his comments].

2. An English non-zero inflectional suffix never combines with another non-zero inflectional suffix: e.g., there is no 3sg marker in the past tense. However, the Saxon Genitive -s does combine with plural inflectional suffixes different from /iz, z, s/ and with plurals marked by an apophony: childr+en’s, virtuos+i’s, seraph+im’s, women’s; it is easily added to plural nouns having no overt plural marker – both sheep’s. Nevertheless, the Saxon Genitive does not combine with the plural markers /iz, z, s/ (*boy+s’s /bɔjzəz/, etc.): in the regular -s plural, a morphologically controlled truncation eliminates the Saxon Genitive -s. (For a careful analysis of all relevant problems see Zwicky 1975; cf. as well Chapter 9, 5.4, (24), p. 502.) This fact is by no means purely phonological. On the one hand, in a context where the Saxon Genitive should have appeared on an -s-plural noun though linearly separated from the plural suffix /iz, z, s/, it doesn’t appear: *all my sister+’s-in-law’s parents or *the kings of England’s throne (although for some speakers these phrases are acceptable: D. Beck); *all my sister+’s-in-law parents is equally ungrammatical. (The correct way to say this is to use the construction with of: parents of all my sisters-in-law.) Moreover, according to Zwicky 1988, the Saxon Genitive suffix -s cannot be used on a word different from the genuine host of this suffix if this host is in the plural, including non-s plurals: phrases like *many children from Chicago’s hair (but many children’s hair), *all the people who care’s attention (but all the people’s attention), *all sheep from Calgary’s wool (but all sheep’s wool) are bad. On the other hand, the Saxon Genitive readily appears after any non-plural /z/ or /s/: in Rose’s (Max’s) case, for missus’s
Chapter 2. Case

/misztz/ dress. It is clear, then, that what is at stake here is a complicated (phono-)morphological interdependency between the plural and the Saxon Genitive. Such involved interaction is not at all typical of English inflections. On the other hand, several English derivational formations do exhibit similar restrictions—for example, three fingers ~ three-finger+ed (three-finger+s+ed), many values ~ many-value+ed (many value+s+ed), etc.; or murder+er, not *murder+ed+er, although ‘murderer’ = ‘who (has) murdered’. Obviously, in this respect, the Saxon Genitive is closer to a derivateme than to a grammeme.

3. The -s of the nominal plural induces voicing of the final consonant in several stems: wife ~ wives, thief ~ thieves, wolf ~ wolves; the /z, s/ of the Saxon Genitive never does that: my wife’s (*wife’s) friends, the thief’s (*thief’s) footsteps, ...

4. All English inflectional categories (with the exception of the -ing form) show irregular forms: there are irregular nominal plurals (such as women, mice, children, …), irregular 3sg verb forms (is, does, has), irregular past forms (was, went, put, sang, …), irregular participles (gone, put, sung, …), irregular adjectival degree forms (good ~ better or bad ~ worse). In contrast to this, the Saxon Genitive is absolutely regular (even more so than derivational formations).

5. An English inflectional category is, as a rule, valid for the majority of lexemes within the corresponding word class, exceptions being semantically motivated: grammatical number embraces all the (semantically) countable nouns, tense (and 3sg) – all of the verbs, degree – all of (semantically) gradable adjectives. The Saxon Genitive, however, applies to a restricted (although rather vast) set of nouns: all human and animal nouns, all proper names, some measure nouns (at a mile’s distance, the whole week’s work) plus quite a few isolated instances—but not to many other nouns, as in *table’s legs, *this morph’s signifier, *those phenomena’s significance, *two meat’s pounds, etc.

6. An English inflectional category never changes the syntactic behavior of a lexeme drastically. Take, for example, grammatical number. A noun, be it singular or plural, retains the main syntactic properties of a noun: quite independent of its number, it can be the syntactic subject or object of a verb, the object of a preposition, the head of an absolute construction (such as in My courage (All the students) gone, I …), etc. Tenses and degrees behave similarly: a verb has, both in the present and in the past, the same SSynt-actants,
4. English ‘Saxon Genitive’

as does an adjective in different forms of comparison. The Saxon Genitive, however, radically transforms the syntactic properties of the noun:

- A Saxon Genitive noun cannot fulfill any of the syntactic roles of a ‘normal’ (= non-Genitive) noun – in particular, it may not be the dependent of a verb or of a preposition (other than in special cases as of Mary’s or at the grocer’s).
- A Saxon Genitive noun has an obligatory passive SSynt-valence slot no normal noun has: it requires the expression of the Possessed (Mary’s ... – ?; in a sentence of the type I’ll take Mary’s the Possessed must be clear from the context).
- A Saxon Genitive noun acquires the syntactic properties of a determiner and becomes incompatible with the latter: Mary’s book ~ this book of Mary’s ~ *this Mary’s book, exactly parallel to my book ~ this book of mine ~ *this my book. (This is not true of the so-called qualifying Saxon Genitive: a children’s book, etc.)
- A normal noun can never be used in a context where the Saxon Genitive appears (except, of course, in the nominal compounds): my wife’s friends ~ *my wife friends, these men’s job ~ *these men job, etc.
- A normal noun usually follows its SSynt-governor. Only in two constructions does a normal noun precede its SSynt-governor: the Subject, as a rule, precedes the verb, and the subordinate component of a nominal compound precedes the noun it modifies. A Saxon Genitive noun, however, can only precede its governor.

It is true that a caseI.1b is supposed to change the (passive) syntactic potential of a wordform in a more significant way than, for instance, a grammatical number. But a noun in different casesI.1b still remains within the limits of typically nominal roles (in particular, it may depend on a verb or a preposition; it does not become a quasi-determiner, etc.), and it retains the basic syntactic properties of nouns. This is not so with the Saxon Genitive.

Summing up this evidence, I conclude that the English Saxon Genitive is not a caseI.1b: it is a specialized possessive formation found in many languages which do not use caseI.1a (or caseI.1a alone) to mark possession. In some respects it also resembles the possessive adjective formation in Slavic languages (of the type Rus. Mašin ‘Masha’s’, otcov ‘Father’s’). It can be conveniently called possessive form, and its status can be seen as analogous to that of the different forms of the Abkhaz noun, mentioned in Note 6, p. 173. Therefore, the English noun lacks caseI.1a altogether. It is in order to account for this substantive conclusion and cover all such cases that Condition 2 is necessary in Definition 2.1.
Now, the following question arises with respect to the possessive form (= Saxon Genitive) in Modern English. If it is not a case I.1b, it is not inflectional; is it derivational? I am against calling it derivational: we would not be justified in considering *wife* and *wife’s* lexes of two different lexemes (and derivation presupposes exactly that). I believe that a possessive form belongs to the same lexeme as the basic form—although it is not an inflectional form. In order to accommodate English possessive forms in the same lexeme as the basic forms and not consider them forms of a case I.1b, we have to introduce an intermediate mechanism between inflection (in the strict sense of the term) and derivation: something that could be called *quasi-inflection*. Quasi-inflectional forms are lexes of the same lexeme as their basic forms, but what they express is not an element of an obligatory category—not a grammeme; the corresponding meanings are called *quasi-grammemes*. English possessive forms fall precisely in the realm of quasi-inflection. There are lots of other morphological phenomena that could be handily described in terms of quasi-inflection (and quasi-grammemes), but this topic goes far beyond the limits of the present chapter. (On quasi-grammemes, see Mel’čuk 1993–2000, vol. 1: 302–303.)

In order to add depth to the discussion, let me compare the English Saxon Genitive, which is not a grammatical case I.1b, with the Modern Irish genitive. The latter is superficially very similar to the Saxon Genitive, but is in fact a case I.1b. I will proceed from the assumption that Standard Irish has just two cases: the nominative and the genitive. (That is, I will expressly ignore the dative, which officially exists in the literary language and in some dialects, but has become obsolete. Without taking the dative into account, my task is even harder and, therefore, more interesting.) The Irish nominative, called in the normative grammar the *Common Form*, invariably marks the Subject, the Direct Object, the Object of a preposition, etc., just like the English ‘Common Form.’ The Irish genitive, also very much like the Saxon Genitive, is never used to mark verbal dependents; therefore, it does not pass Subcondition a of Condition 2 in Definition 2.1. However, the case status of the Irish genitive cannot be doubted, because in Modern Irish, the genitive behaves exactly as do all the other grammemes of the language. Namely:

1. The Irish genitive never marks a whole phrase, but only a wordform. Irish does not have anything similar to *John and Mary’s parents*, *my sister-in-law’s house* or *the Bishop of Canterbury’s speech*. All Irish grammemes, including the genitive, function in the same way—marking isolated wordforms only.

2. The Irish genitive is always cumulated with number. Moreover, its expression depends on the noun’s grammatical gender 1 and its declension group. Cf.:
4. English ‘Saxon Genitive’

(5) Irish

<table>
<thead>
<tr>
<th>Noun (gender)</th>
<th>SG. NOM</th>
<th>SG. GEN</th>
<th>PL. NOM</th>
<th>PL. GEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘boat’, MASC</td>
<td>bád</td>
<td>báid/</td>
<td>báid/</td>
<td>báid/bád/</td>
</tr>
<tr>
<td>‘cake’, MASC</td>
<td>ciste</td>
<td>cistil</td>
<td>cistil</td>
<td>cistil</td>
</tr>
<tr>
<td>‘palm [hand]’, FEM</td>
<td>bosa</td>
<td>bos/a/</td>
<td>bosa</td>
<td>bosa/bos/</td>
</tr>
<tr>
<td>‘gap’, FEM</td>
<td>bearna</td>
<td>bá:ám/a/</td>
<td>bearna</td>
<td>bá:ámu/</td>
</tr>
</tbody>
</table>

We see that the Irish genitive is deeply involved in Irish nominal morphology, which cannot be said about the English Saxon Genitive. The next property only adds to this observation.

3. The Irish genitive triggers/blocks lenition – a particular modification of the initial consonant of the wordform concerned. Thus, a noun in the genitive or an adjective (in any case) undergoes lenition if it follows a feminine noun which is not itself in the genitive, but does not otherwise:

(6) ‘rainy weather’

\[ \text{aimsir}+\emptyset \quad /\text{ám´s}`\text{r´}/ \]
weather(FEM)-SG.NOM

\[ \text{bháisti} \quad /\text{vá:s} \text{`t´}/ \quad (*/\text{bá:s} \text{`t´}/) \]
rain-SG.GEN

But

\[ \text{cloc}h+\emptyset \quad /\text{klo:x}/ \]
stone(FEM)-SG.NOM

\[ \text{bháisti} \quad /\text{bá:s} \text{`t´}/ \quad (*/\text{vá:s} \text{`t´}/) \]
rain-SG.GEN

\[ \text{mhaith} \quad /\text{vah}/ \quad (*/\text{mah}/) \]
good-FEM,SG.NOM

(7) ‘woman’, FEM

\[ \text{beann} \quad /\text{b´an}/ \]

\[ \text{mná} \quad /\text{mn´}/ \quad \text{déithe} \quad /\text{d´éh´}/ \]

\[ \text{leape} \quad /\text{l´áp´}/ \quad \text{leapacha} \quad /\text{l´ápoxs´}/ \]

\[ \text{laethanta} \quad /\text{l´ehonts´}/ \]

‘god’, MASC

\[ \text{dia} \quad /\text{d´ia}/ \quad \text{dé} \quad /\text{d´é}/ \quad \text{d́éithe} \quad /\text{d´éh´}/ \]

‘bed’, FEM

\[ \text{léaba} \quad /\text{l´á:ba}/ \quad \text{leapa} \quad /\text{l´áp´}/ \quad \text{leapacha} \quad /\text{l´ápoxs´}/ \]

‘day’, MASC

\[ \text{lú} \quad /\text{l´é}/ \quad \text{laethanta} \quad /\text{l´ehonts´}/ \]

4. The Irish genitive is expressed in some nouns by irregular, even suppletive, forms, just as other grammemes of the language such as nominal number, adjectival gender, verbal mood and tense, which all have, among their markers, irregular/suppletive expressions:

(7) ‘woman’, FEM

\[ \text{beann} \quad /\text{b´an}/ \]

\[ \text{mná} \quad /\text{mn´}/ \quad \text{déithe} \quad /\text{d´éh´}/ \]

\[ \text{leape} \quad /\text{l´áp´}/ \quad \text{leapacha} \quad /\text{l´ápoxs´}/ \]

‘god’, MASC

\[ \text{dia} \quad /\text{d´ia}/ \quad \text{dé} \quad /\text{d´é}/ \quad \text{d´éithe} \quad /\text{d´éh´}/ \]

‘bed’, FEM

\[ \text{léaba} \quad /\text{l´á:ba}/ \quad \text{leapa} \quad /\text{l´áp´}/ \quad \text{leapacha} \quad /\text{l´ápoxs´}/ \]

‘day’, MASC

\[ \text{lú} \quad /\text{l´é}/ \quad \text{laethanta} \quad /\text{l´ehonts´}/ \]

5. The Irish genitive is a **complete** grammeme – it can be expressed for any nominal lexeme; in other words, unlike English, the genitive can appear on all Irish nouns. This is so because the Irish genitive expresses not only ‘possession’ (in a very general, vague sense) but is also used, in a sharp contrast to the English Saxon Genitive, in partitive and attributive constructions:

(8) ‘butter’

\[ \text{adhmad} \quad /\text{á:m´ad}/ \quad \text{bosca} \quad /\text{bo:sk´}/ \quad \text{geir} \quad /\text{g´ar}/ \quad \text{ghaithi} \quad /\text{gh´aiti}/ \]

‘wood’

\[ \text{adhmad} \quad /\text{á:m´ad}/ \quad \text{bosca} \quad /\text{bo:sk´}/ \quad \text{geir} \quad /\text{g´ar}/ \quad \text{ghaithi} \quad /\text{gh´aiti}/ \]

‘pound of butter’

\[ \text{adhmad} \quad /\text{á:m´ad}/ \quad \text{bosca} \quad /\text{bo:sk´}/ \quad \text{geir} \quad /\text{g´ar}/ \quad \text{ghaithi} \quad /\text{gh´aiti}/ \]

‘box of wood’

\[ \text{adhmad} \quad /\text{á:m´ad}/ \quad \text{bosca} \quad /\text{bo:sk´}/ \quad \text{geir} \quad /\text{g´ar}/ \quad \text{ghaithi} \quad /\text{gh´aiti}/ \]

‘reason for a laugh’

\[ \text{adhmad} \quad /\text{á:m´ad}/ \quad \text{bosca} \quad /\text{bo:sk´}/ \quad \text{geir} \quad /\text{g´ar}/ \quad \text{ghaithi} \quad /\text{gh´aiti}/ \]
6. The Irish genitive does not radically change the syntactics of the noun to which it is applied. Among other things, the latter does not acquire the properties of a determiner.

In sum, unlike the English Saxon Genitive, the Irish genitive does not differ from other grammemes of Irish. Therefore, we have no reason to exclude it as a case. Let us see how the Irish genitive is treated by the Subconditions 2a-d of Definition 2.1:

- The Irish genitive does not mark any actantial role of a nominal with a verbal or prepositional governor; in this it resembles the English Saxon Genitive.

However, it differs from the Saxon Genitive in the following respects.

- The Irish genitive imposes agreement in case II on the adjective:

  (9) Adjectives MÓR /mór/ ‘big, large’ and MAITH /mah/ ‘good’

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘man’ [MASC] NOM</td>
<td>fear mór / maith</td>
<td>mhóra / mhaithe</td>
</tr>
<tr>
<td>GEN</td>
<td>mhóir / mhaiith</td>
<td>fear mór / mhaithe</td>
</tr>
<tr>
<td>‘stone’ [FEM] NOM</td>
<td>cloch móir / mhaiith</td>
<td>clocha móra / mhaithe</td>
</tr>
<tr>
<td>GEN</td>
<td>cloiche móire / mhaithe</td>
<td>cloch mór / mhaithe</td>
</tr>
</tbody>
</table>

- The Irish genitive is cumulated with number (see Item 2 above);
- The Irish genitive is deeply involved in morphonology (see Item 3 above).

Therefore, in Irish, the genitive is accepted as a case II by Definition 2.1: it satisfies three of the four Subconditions of Condition 2 and is thus a genuine grammeme of case I.1a.

Thus, we see to what extent appearances can be deceiving. In spite of their surface similarity, the English Saxon Genitive and the Irish genitive are two different linguistic phenomena: the former is a quasi-grammeme of a minor quasi-inflectional category, while the latter is a typical grammeme of a governed nominal case I.1a.

5. **External autonomy of case forms**

The deplorable confusion of case I.1a and case I.1b with case form (= our case I.1c), mentioned in Section 1, has led to the widespread use of the expression variant of a case, which in fact is meaningless. Let us consider a well-known example, that of so-called Russian masculine genitivies in -a and -u (KON’JAK ‘cognac’: konjak+a vs. konjak+u). Following are several representative examples:

(10) a. *Nalej mne rom+a/rom+u* ‘Pour me some rum?’

   b. *Nalej mne rom+Ø* ‘Pour me the rum (rather than anything else)’
5. External autonomy of case forms

c. On prodaval rom\+Θ (*rom+u) tuzemcam
   ‘He used to sell rum to the aborigines’.
d. nemnogo (2 litra) rom+a/rom+u ‘a little (two liters of) rum’
e. cvet (cen) rom+a (*rom+u) ‘the color (the price) of rum’

The first form (in -a) is possible for all masculine nouns of 2nd declension and
can be used in all contexts requiring the genitive; it is a real genitive. The sec-
ond form (in -u) is possible:
1) only with certain masculine mass nouns ([nemnogo ‘a little’] saxar+u ‘sugar’,
   but not *xleb+u ‘bread’; [nemnogo] sup+u ‘soup’, but not *borsč+u ‘borscht
   [type of Russian beet soup]; [nemnogo] xvorost+u ‘firewood’, but not *ugl+ju
   ‘coal’) and several masculine abstracts (strax+u ‘fright’, xod+u ‘going’, tolk+u
   ‘result’, ...);
2) and only in three contexts—specifically, on an N which is:
   – a DirO of a transitive verb, if this N refers to an indefinite amount of some
     substance (Nalej mne sok+u! ‘Pour me [some] juice!’);
   – in a quantitative expression of the form ADV quant/N measure + N, if this N
denotes the substance quantified (mnogo/kilo saxar+u ‘a lot/[a] kilo of
   sugar’);
   – a constituent of several idiomatic expressions (so strax+u ‘from fear’,
     Davaj xod+u ‘Go faster!’ = lit. ‘Give [more] going’, bez tolk+u ‘without
   result’, Smex+u-to (bylo)! ‘[Boy, was this] ridiculous!’ = lit. ‘Of-laughter!?,
naterpet’šja strax+u ‘[to] have a terrible fright’, ...).

It is very often said that the form in -u manifests a variant of the genitive which
can (and sometimes must) be used in specified contexts; such is the official view
of school grammar and most reference books. However, if we allow that the form
or, more precisely, the suffix of a case I.1b be, without any restriction, chosen
depending on the external governing context of the wordform concerned, this
would open the door to the absurd claim that any forms of different cases I.1b are
actually different forms of the same case I.1b—distributed in accordance with dif-
ferent governing surface-syntactic contexts. Suppose we say that Rus. saxar+a
and saxar+u are forms of the same case I.1b—the genitive, but that saxaru can
appear only when selected by nemnogo, verbs such as dat’ ‘[to] give’ or prinesiti
‘[to] bring’, etc. Then nothing prevents us from saying that stolb+e ‘pole, SG.PREP’
and stolb+om ‘pole, SG.INSTR’ are forms of one and the same case I.1b distributed
along the following lines: stolbe is used with the prepositions NA, V, O, PRI, etc.,
and stolbom is used with the preposition S or ZA, with such verbs and adjectives
as INTERESOVAT’ŠJA [N INSTR] ‘[to] be interested in’, DOVOLEN [N INSTR] ‘[to be]
satisfied with’, and with transitive verbs to denote the Instrument of action. This
would simply mean that all syntactic cases I.1b of \(e \) are in fact a single case I.1b,
whose various forms are determined by their governing SSynt-contexts—that is, that there are no cases $1.1b$ at all in $\mathcal{L}$.

To preclude such ‘argumentation,’ I postulate the Principle of External Autonomy of Case $1.1b$ Forms [= EACF Principle]. (This principle is by no means a novelty in linguistics: it has been followed, although implicitly, for a long time, at least in more or less obvious situations.)

Let there be:

- $R$ : a nominal stem;
- $w(R)$ : a wordform with the stem $R$;
- $\langle c \rangle$ : a specific case $1.1b$;
- $m_1(c') \; \{ \}$ : different markers that express case $1.1b$ $\langle c' \rangle$;
- $m_2(c') \; \{ \}$ : $m_2(c')$ may well express not only case $1.1b$ $\langle c' \rangle$, but other grammemes as well—that is, they may be cumulative markers.

Then the following must hold:

**Principle of External Autonomy of Case $1.1b$ Forms**

If language $\mathcal{L}$ displays two different markers $m_1(c')$ and $m_2(c')$ that can express case $1.1b$ $\langle c' \rangle$ with the same nominal stem $R$ of the wordform $w$, then either $m_1(c')$ and $m_2(c')$ are in free variation, or the choice between them depends either a) only upon the properties of $w$ (i.e., upon the grammemes $w$ expresses and/or other morphological signs it includes) or b), in rather exceptional situations, upon the presence of a particular SSynt-dependent/governor of $w$.10

In prose, this means that for a nominal stem, two different markers of the same case $1.1b$ can only stand in one of the following two relationships:

a) They are always mutually interchangeable, independent of context and without affecting meaning or grammaticality; then they are in free variation (subject to stylistic and maybe rhythmic constraints). Cf. Rus. -oju/-oju and -eju in the instrumental singular (feminine nouns of the 1st declension): ruk+oj/ruk+oju ‘hand’ or stolic+ej/stolic+eju ‘capital city’; similarly, Ger. -Ø/e in the dative singular of (some) strong masculine nouns: am Tag+Ø/am Tag+e ‘in-the day’, im Haus+Ø/im Haus+e ‘in-the house’, vom Volk+Ø/vom Volk+e ‘from-the people’ (Die Staatsgewalt geht vom Volk+e aus ‘The authority of the State comes from the people’ [the first clause of the Weimar Constitution in Germany]), etc.

b) They are distributed contingent upon the following two factors:
   - The case marker is chosen depending only upon some properties of the same wordform, e.g., upon other grammemes expressed. Cf. Russian
suffixes -om and -ami, both expressing the instrumental: -om expresses the instrumental and the singular, while -ami expresses the instrumental and the plural. These are cumulative morphs expressing syncretically a case I.1b together with one or more other grammemes. This is the most common, prototypical situation.

The case marker in the wordform w is chosen depending also upon the presence of a different wordform w' syntactically linked to w; most often w' is a particular SSynt-dependent of w, but can be its SSynt-governor. This is an exceptional situation, which must always be precisely circumscribed. Compare the following examples:

(11) German; the genitive of some proper names:

a. *Heimat Maria's* (Maria) Maria's motherland
   vs. Heimat meiner [GEN] geliebten Maria (Marias) my beloved Maria's motherland

b. *die geheimnisvollste Stadt Europa's* (Europa) Europe's most mysterious city

or Europa's (Europa) geheimnisvollste Stadt

vs.

Städte ein(es) [GEN] unbekannten Europa (Europas) 'cities of an unknown Europe'

c. *die Klage Rigoberta Menchú's* (R. Menchú) 'R. Menchú's complaint'

vs.

die Klage des [GEN] Nobelpreisträgerin Rigoberta Menchú 'the complaint of the Nobel Prize winner R. Menchú'

In such phrases, the genitive of a proper noun is expressed either by the suffix -s if this noun has no adjectival modifier (which shows the genitive case I.1b of the noun modified by its agreeing form), or by a zero suffix.

(12) In Serbo-Croatian, the instrumental singular N INSTR of some lexically marked feminine nouns of the 4th declension can be marked by one of two suffixes --(j)u or -i. Their distribution is as follows:

- (j)u is always possible; but
  if N INSTR has a modifying adjective, the suffix -i is admissible;
  if N INSTR has a modifying adjective and, at the same time, is introduced by a preposition, the suffix -i is normal.

This gives the forms below:

a. pameć+i /*pameti+ *intelligence, sg.instr or ljubav+i /*ljubavi+i *love, sg.instr
In both (11) and (12), the choice of case suffix is influenced by the syntactic dependent of the noun involved – and in (12c), also by its governor. Therefore, the EACF Principle foresees two situations:

– No case marker in the wordform \( w \) is selected with respect to the external SSynt-context of \( w \). Only cases I.1b as such are determined by the SSynt-context or by the meaning to be expressed; as for the marker of a given case I.1b, it is determined by the ‘internal state of affairs’ within \( w \). This is the prototypical situation.

– The choice of a case marker for \( w \) can be contingent upon a wordform with a direct syntactic link to \( w \); the particular conditions under which this is possible must be fully specified. This is a rather exceptional situation.

To better illustrate the EACF Principle, let us consider the consequences of its application to the case systems of three languages: Russian, Tsakhur, and Finnish.

1. **Russian**

   What cases I.1b does Russian have? As early as 1936, Roman Jakobson insisted (following Šaxmatov and Trubetzkoy) that Russian wordforms such as [\( na \) most+u] ‘[on] the bridge’, [\( y \) les+ú] ‘[in] the forest’, [\( y \) krov+i] ‘[in] the blood’, on the one hand, and [\( nemnogo \) čaj+u] ‘[a little] tea’, [\( daž mne \) sáxar+u] ‘[give me] some sugar’, on the other, should not be considered mere variants of the prepositional and the genitive cases I.1b respectively, but rather forms of two separate cases I.1b in their own right: the locative (or ‘prepositional II,’ as Jakobson called it) and the partitive (or ‘genitive II’). The papers Jakobson 1936/1971 and 1958/1971, which expound this view, are too well known for me to reproduce his argumentation here. Jakobson’s proposal neatly corresponds to the EACF Principle, which forces us to postulate in Russian ten cases I.1b:

   – six universally distinguished cases I.1b (nominative, genitive, dative, accusative, instrumental, and prepositional);
   – the locative and the partitive just mentioned;
   – the (intimate) vocative, attested as a distinct entity in the colloquial forms of hypochoristic kinship terms and human first names of the 1st declension, such as Mam! ‘Mum!’ (a form of mam+a), Nad’! /nad’/ (a form of Nad+ja), Serěž! /s’ir’ož/ (a form of Serěž+a), etc. (the forms of the voc-
ative admit a voiced final consonant, which is impossible elsewhere in Russian, see Chapter 9, §4.4, (25), p. 503ff);

- and the adnumerative, used with numerals, as in *dva šag+á* ‘two steps’, etc. (cf. below, p. 139).

If, for some reason, one did not want to allow these ‘extra’ cases I.1b, the only choice would be to introduce additional declensional categories for the Russian noun. Thus, one might posit ‘partitivity,’ allowing *pesk+a* ‘sand’ and *[nemnogo] pesk+u* ‘[a little] sand’ to be described as PESOKsg, gen, non-part and PESOKsg, gen, part, respectively. But one cannot speak about *‘variants of a case I.1b’* or about *‘case allomorphs that differ semantically’* (as is sometimes done): these expressions are logically absurd.

2. Tsakhur

In Tsakhur, the EACF Principle rules out Talibov’s claim (1967: 694-695) that Tsakhur has three different forms of the genitive case I.1b, the choice depending on the type of the noun N1 modified by the genitive form N2GEN:

(13) Tsakhur

- If the modified noun N1 is in the nominative, then:
  - if N1 is of (nominal) class I, II or III, the genitive on the modifying N2GEN is marked by the suffix *-na*:
    
    | N1 | N2GEN | Suffix | Meaning |
    |----|-------|--------|---------|
    | friend | GEN | -na | ‘friend’s father’ |
    | father(I) | NOM | -na |  |
  - if N1 is of class I IV, the genitive on the modifying N2GEN is marked by the suffix *-m*:
    
    | N1 | N2GEN | Suffix | Meaning |
    |----|-------|--------|---------|
    | friend | GEN | -m | ‘friend’s heart’ |
    | heart(IV) | NOM | -m |  |
  - If the modified noun N1 is not in the nominative, then the genitive suffix on N2GEN is *-ni*, independently of the class I of N1:
    
    | N1 | N2GEN | Suffix | Meaning |
    |----|-------|--------|---------|
    | friend | GEN | -ni | ‘to friend’s father/heart’ |
    | father(I) | DAT | -ni |  |
    | heart(IV) | DAT | -ni |  |

Since the choice of a concrete marker in the form of an N2GEN is not optional and does not depend on an ‘internal’ property of this N2GEN, following the EACF Principle, we are forced to postulate in Tsakhur three different ‘genitive’ cases I.1b: the Direct Genitive I ( -*na*), modifying nominative nouns of classes I I-III; the Direct Genitive II ( -*m*), modifying nominative nouns of class I IV; and the Oblique Genitive ( -*ni*), modifying non-nominative nouns. (Note, incidentally, that the distinction of a Direct Genitive vs. an Oblique Genitive is a routine matter in several Dagestanian languages, especially in all languages of the Didoy, or Tsez, group: Bokarev 1967: 401.)
3. Finnish

In Finnish, the EACF Principle also applies in an interesting way. Here, only the personal pronouns ‘I’, ‘youSG’, ‘he/she’, ‘we’, ‘youPL’, ‘they’ and the interrogative pronoun ‘who’ have a special form of the accusative, expressed by the unambiguous suffix -t; nouns and all the other pronouns do not have it. How then is a nominal DirO marked? In many cases, the DirO is in the partitive, which is determined either by the governing verb or the meaning of the DirO itself. More specifically, the DirO is in the partitive, if:

- the governing verb is negated;
- the governing verb belongs to a particular semantic class—for instance, a verb of emotion (e.g., ‘[to] love’);
- the action denoted by the verb is irresultative;
- the DirO denotes an indeterminate quantity/part of something; etc.

If the DirO is not in the partitive, three possibilities are open:

- if the DirO is a personal pronoun or ‘who’, it is in the accusative (with -t);
- if the DirO is a noun or any other type of pronoun, then: if the DirO is in the plural or the governing verb is in the imperative, the DirO is in the nominative; otherwise, the DirO is in the genitive. Thus, we have:

<table>
<thead>
<tr>
<th>DirO = pronoun</th>
<th>DirO = noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (i) Pirkko vie+Ø minu+t kotiin. (ii) Pirkko vie+Ø tuo+n naise +t+n kotiin.</td>
<td>Pirkko is taking me home. Pirkko is taking that woman home.</td>
</tr>
<tr>
<td>Pirkko take 3SG I ACC home-ILL. that GEN woman SG GEN</td>
<td></td>
</tr>
<tr>
<td>b. (i) Pirkko vie+Ø heidät+t kotiin. (ii) Pirkko vie+Ø tuo+n naise +t+n kotiin.</td>
<td>Pirkko is taking them home. Pirkko is taking those women home.</td>
</tr>
<tr>
<td>Pirkko take 3SG they ACC home-ILL. those NOM woman PL NOM</td>
<td></td>
</tr>
<tr>
<td>c. (i) Vie+Ø minu+I kotiin! (ii) Vie+Ø tuo+n naise +t+n kotiin!</td>
<td>Take me home! Take that woman home!</td>
</tr>
<tr>
<td>take IMPER I ACC home-ILL. that NOM woman SG NOM</td>
<td></td>
</tr>
<tr>
<td>d. (i) Vie+Ø heidät+t kotiin! (ii) Vie+Ø tuo+n naise +t+n kotiin!</td>
<td>Take them home! Take those women home!</td>
</tr>
<tr>
<td>Vie take 3SG they ACC home-ILL. those NOM woman PL NOM</td>
<td></td>
</tr>
</tbody>
</table>

The problem here is that if we wanted a single case system for nouns and pronouns in Finnish, we would have to postulate an accusative in such a system, since for pronouns it has an unambiguous suffix, -t. But this would mean that:
5. External autonomy of case forms

− All nouns, without exception, would have an accusative whose suffixes would always be homophonous with those of the nominative or the genitive.
− The choice of the accusative suffix on the noun would be imposed by the external governing context—as in (14a-ii) vs. (14c-ii), where the case form of the noun would depend on the mood of the verb (indicative vs. imperative).

This, however, is expressly forbidden by the EACF Principle.

Most importantly, a noun N in the ‘dubious’ accusative cannot appear as an apposition to a PRON(oun) in the ‘genuine’ accusative, since such a PRON and the N must be in the same case.

c. (i) Vie+Ø tvo +Ø saíras+Ø+nainen+Ø kotiin!
    take IMPER that NOM sick SG NOM woman SG NOM home-ILL

    "Take that sick woman home!"

    vs.

    (ii) *Vie+Ø häne+ø saíras+Ø kotiin!
    take IMPER she ACC sick SG NOM home-ILL

    "Take sick her/him home!"

f. (i) Kuka saíras+Ø+menee kotiin?
    who-NOM sick SG NOM go-PRES.IND.3SG home-ILL

    "Who [being] sick is going home?"

    vs.

    (ii) *Kene+ø saíras+Ø+vie+dään kotiin?
    who ACC sick SG NOM take SBJL.SUPPR home-ILL

    "Whom [being] sick ["they"] are taking home?"

[SBJL.SUPPR = ‘subjectless suppressive’ is a particular grammatical voice that has no
Subject and takes a DirO: see Chapter 3, 4.2, Item 5, pp. 203–205.]

In (14e-ii) and (14f-ii), the pronouns ‘s/he’ and ‘who’ must be in the accusative, but the non-pronominal adjective ‘sick’ does not have an accusative, which makes the phrases *hänet saíras and *kenet saíras ungrammatical. Therefore, if we posit an accusative for non-pronominal Finnish nouns and adjectives, we will have to formulate additional—absolutely unmotivated—rules to block this type of expression.

(Incidentally, today’s Finnish descriptive grammars, such as, e.g., Karlsson 1999, do not include the accusative among the cases L.1b of the noun. But for personal pronouns an accusative is, of course, posited, which makes the Finnish accusative a partial case, see below. More traditional Finnish grammars have, however, falsely described the noun as having an accusative as well. On the Finnish case L.1a, see Kiparsky 2001.)
Do cases I.1b have meanings?

The answer to this question, which has concerned linguists for a long time, seems trivial. It parallels a Soviet-era joke in which an announcer from Radio Yerevan responds to the question of a naïve listener:

[Q.] – *Budut li den’gi pri kommunizme?* ‘Will there be money under communism?’

[A.] – *U kogo budut, a u kogo net,* lit. ‘With some people it will, and with some it won’t’ = ‘Some people will have it, and some won’t’.

In the same way, we can reply to the question about cases I.1b: some do have meaning, and some don’t.

– First, there are cases I.1b (in some languages) which never have meaning, such as the Russian nominative or the prepositional. These are **syntactic** cases I.1b (see Section 3, Comment 1, p. 114).

– Second, there are cases I.1b (in some languages) which always have meaning, such as the Finnish abessive, which always means ‘without’ (*raha+tta* ‘without money’, *syy+ttä* / *süttä* / ‘without cause’).

– Third, there are also cases I.1b which have meaning in some contexts, while in other contexts they do not. For example, the Russian partitive conveys the meaning ‘some’ [= ‘an indefinite amount of …’] with the DirO of several verbs (*Prinesi saxar+Ø!* ‘Bring the sugar!’ vs. *Prinesi saxar+u!* ‘Bring some sugar!’), but is devoid of meaning in such idiomatic expressions as *bez tolku* ‘to no avail’ or *dlja smexu*, lit. ‘for laugh’ = ‘to amuse people’.

Cases I.1b of the second and third type are **semantic** cases I.1b (see 3, Comment 1, p. 114). Note that for a case I.1b c to be semantic, it is sufficient that c has meaning at least in some contexts.

With respect to meaningfulness, cases I.1b are similar to **structural**, or **function**, words. Take, for instance, prepositions and conjunctions: some of them never have meaning (such as Rus. *čto* ‘that’), some of them always have meaning (such as Rus. *esli* ‘if’ or *po napravlenju K* ‘in the direction of’), and some have meaning in one type of context but not in another. An example of the last type is Rus. *valjať sja na stole* ‘[to] be scattered on the desk’, where NA ‘on’ contrasts with the possible V ‘in’, POD ‘under’ or ZA ‘behind’ and therefore carries meaning. The phrase *valjať sja na stole*, where NA is semantic, is opposed to the phrase *derżać sja na etom argumente* ‘[to] hinge on this argument’, where NA is automatic and therefore meaningless.
Naturally, any discussion of the statement ‘The case I.1b (or an occurrence of the case I.1b) \( \text{\textsuperscript{\textit{c}}i} \) has no meaning/has meaning’ depends crucially on the way in which thus statement is construed. In Meaning-Text Theory the issue is addressed as follows:

(i) A case I.1b \( \text{\textsuperscript{\textit{c}}i} \) which conveys no real meaning of its own marks, on the morphological level of representation, a particular syntactic relation present on a deeper level (in the Surface-Syntactic Structure); therefore, this case I.1b does not appear in the syntactic structure of the sentence. Consider, for example, the Deep-/Surface-Syntactic and the Deep-Morphological structures of the Russian sentence (15):

(15) *On ljubovalsja Mary* \( \text{\textit{\textsuperscript{\textit{INSTR}}}s} \) ‘He was admiring Mary’

(15') a. Deep-Syntactic Structure of (15)  

\[
\begin{array}{c}
\text{LJUBOVAT\textsuperscript{\textit{SJA}}} \text{imperf, ind, past} \\
\text{I} \quad \text{II} \\
\text{ON} \text{masc, sg} \quad \text{MARIJA} \text{sg} \\
\end{array}
\]

b. Surface-Syntactic Structure of (15)  

\[
\begin{array}{c}
\text{LJUBOVAT\textsuperscript{\textit{SJA}}} \text{imperf, ind, past} \\
\text{subjective} \\
\text{ON} \text{masc, sg} \quad \text{MARIJA} \text{sg} \\
\end{array}
\]

c. Deep-Morphological Structure of (15)  

\[
\begin{array}{c}
\text{ON} \text{masc, sg, nom} \quad \text{LJUBOVAT\textsuperscript{\textit{SJA}}} \text{imperf, ind, past, masc} \quad \text{MARIJA} \text{sg, instr} \\
\end{array}
\]

Neither the nominative on ON \( \text{\textit{he}} \) nor the instrumental on MARIJA should appear in a syntactic structure–either Deep- or Surface-Syntactic. In this sense, the Russian nominative and instrumental are meaningless in (15). The syntactic roles of the corresponding lexemes (as Deep-Syntactic Actants I and II of LJUBOVAT\textsuperscript{\textit{SJA}}, respectively) fully determine their case I.1b marking under synthesis. Under analysis, these syntactic roles fully and univocally determine the amalgamation of the meanings of the corresponding lexemes into the Semantic Structure of the sentence.

In this sense, a meaningless case I.1b does contribute to the meaning of the sentence, but only indirectly–through the syntactic structure of the sentence.

(ii) A case I.1b \( \text{\textsuperscript{\textit{c}}i} \) which conveys meaning must appear in the syntactic structure. For instance:

(16) Rus. *On prinës saxar+u* \( \text{\textit{\textsuperscript{\textit{INSTR}}}s} \) ‘He brought some sugar’.
Here the partitive of SAXAR expresses the meaning ‘some’; neither the DSynt-, nor the SSynt-role of SAXAR (= the DSynt-Actant II of PRINESTI, Surface-Syntactic DirO) univocally determines the case marking (under synthesis: it could be the accusative or the partitive) or the corresponding portion of the Semantic Structure (under analysis: ‘some’ vs. ‘all the’). Thus, a meaningful (i.e., semantic) case contributes to the meaning of the sentence simultaneously in two ways:

- directly, via a straightforward link to a configuration of semantemes (in the Semantic Structure), as in L_{part(itive)} \Leftrightarrow \text{‘some L’} (in an appropriate context); and
- indirectly, via the Surface-Syntactic relation it marks.

To put it in different terms: under text synthesis, a meaningful case \text{l.1b} is selected according to a meaning present in the Sem-Structure (and, of course, according to syntactic context—specifically, government), in much the same way full lexemes are selected: \text{l.1b} appears in both the Deep- and the Surface-Syntactic structure of the sentence. A meaningless—‘empty,’ or syntactic—case \text{l.1b} is selected by syntactic context only, exactly as are empty lexemes (i.e., structural words); it is not included in syntactic structures, appearing only in the Deep-Morphological Structure of the sentence. (Here the analogy between empty cases \text{l.1b} and empty lexemes stops: unlike the former, the latter do appear in the Surface-Syntactic structure of a sentence—for several reasons, which are irrelevant here.)

Prototypical examples of meaningful cases \text{l.1b} are easily found in languages like Lezgian, where all locative cases \text{l.1b} are meaningful (see Mel’čuk 1981c: 266–269, 1988a: 224–227; Haspelmath 1993: 74ff). Locative cases \text{l.1b} express such semantemes as ‘in’, ‘on’, ‘under’, ‘over’, ‘behind’, etc.

A more complicated situation involves cases \text{l.1b} that mark semantic contrasts, yet cannot themselves be assigned the particular meaning involved in this contrast: such a case \text{l.1b} on a noun \text{N} signifies what it signifies only in the con-
6. Do cases I.1b have meanings?

The text of the surface-syntactic relation subordinating N—that is, only in a particular surface-syntactic construction. The following example will make this idea clear. In Japanese, with the causative of an intransitive verb \( V_{\text{intr}} \), the Causee Agent (i.e., the Subject of the underlying \( V_{\text{intr}} \)) is marked either with the accusative or the dative (Shibatani 1990: 308–309):

(17) a. \( \text{Hanako} + \text{ga Tarō+o ika+se } +ta \approx \text{Hanako made Taro go} \).
   \( \text{Hanako SUBJ Tarō ACC go CAUS PAST} \)

   b. \( \text{Hanako} + \text{ga Tarō+ni ika+se } +ta \approx \text{Hanako let Taro go} \).
   \( \text{Hanako SUBJ Tarō DAT go CAUS PAST} \)

There is a semantic contrast: the use of the accusative “implies that the intention of the Causee is ignored by the Causer,” while the use of the dative indicates that “the Causer typically appeals to the Causee’s intention to carry out the caused event” (Shibatani 1990: 309). (The contrast between, roughly speaking, the make-causative and the let-causative in Japanese was explicitly described in Kuroda 1965: 34ff; cf. also the remarks in Kuno 1973: 327–328, 341–345 and Wierzbicka 1988: 238–239.) However, it is impossible to say that the Japanese accusative means (among other things) “there is no mention of the Causee’s desire to do P” and that the Japanese dative means “the Causee wants to do P” — these meanings are carried by these cases I.1b only in the causative construction with an underlying intransitive verb. As a result, the corresponding meanings must be ascribed to the whole syntactic construction, not to a particular case I.1b.

For meaningful cases I.1b and meaningless cases I.1b used in a semantic capacity, language \( \mathcal{L} \) should have a set of semantic rules that specify the appearance of such cases I.1b in the DSyntS of the sentence, something of the following form:

**Semantic rules**

(18) a.  

<table>
<thead>
<tr>
<th>( \sigma' )</th>
<th>( \mathcal{L}(X') \mathcal{e}(\sigma') )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \sigma' )</td>
<td>( \mathcal{L}(P)'_{\text{caus}} )</td>
</tr>
</tbody>
</table>

b.  

| \( \sigma' \) | \( \mathcal{L}(X') \mathcal{e}(\sigma') \) |

Here, ‘\( \sigma' \)’ stands for the meaning of the case I.1b or for the meaning expressed by c together with a syntactic role. For instance, if c is the Russian partitive, then ‘\( \sigma' \) = ‘an indefinite amount of ...’, and the partitive has this meaning. If c is the Japanese dative on a Causee, then ‘\( \sigma' \) = ‘[the Causee] wants [to do P]’; but, generally speaking, the Japanese dative does not have this meaning. (18a) represents the
Sem-rule for a prototypical meaningful case \(I.1b\), and (18b), for a meaningless case \(I.1b\) in a semantic capacity (the Japanese accusative and dative in (17)).

The phenomenon of a case \(I.1b\) whose grammeme does not include a meaning (the set \(\{\sigma_n\}\) – see Definition 2.1, Condition 1b, p. 112 – is empty), but which nonetheless is used to mark semantic contrasts is widespread. Therefore, a researcher should carefully distinguish between genuinely semantic cases \(I.1b\) and syntactic cases \(I.1b\) pressed into service to mark a semantic contrast (see also a Polish example of A. Wierzbicka in Note 21, p. 177).

At this point, an obvious question arises: where do the famous Jakobsonian (1936/1971) case features fit into the picture? Should we state somewhere (and, if so, where?) that the Russian genitive and the prepositional are ‘quantified,’ the dative and the accusative are ‘directional,’ etc.? My answer is affirmative, but I think that Jakobsonian case features are not descriptive statements—that is, not part of a linguistic model: they are, as far as I can see, meta-descriptive statements—part of the description of a linguistic model. In a Meaning-Text type model of Russian, we do not find semantic rules correlating a case \(I.1b\) label and a bundle of Jakobsonian features. We will have for cases \(I.1b\) only semantic rules such as (18), and these rules will not exist for all cases \(I.1b\) but exclusively for those that are held to be meaningful (according to our interpretation of case \(I.1b\)’s meaningfulness). Now, in a description of our model of Russian (and not in the description of Russian!)—or, if you like, in a linguistic model of second order (= a meta-model)—we will characterize the behavior of Russian cases \(I.1b\) within the model, using Jakobsonian features (or something very similar). These features serve an explanatory purpose, providing a common denominator for many case-related phenomena which otherwise seem disparate and anti-systematic.

7. **Taxonomy of cases \(I.1b\)**

I know of six properties, or oppositions, which can be used to classify nominal cases \(I.1b\). These properties are binary and mutually independent, thus generating \(2^6 = 64\) theoretically possible classes of cases \(I.1b\). (The actual number is smaller, since there are several linguistic incompatibilities.) Two of these oppositions belong to the content plane and four to the expression plane.

**Content plane**

1. **Syntactic vs. Semantic Cases \(I.1b\)**: This distinction, also known as Abstract/Grammatical vs. Concrete/Adverbial Cases \(I.1b\), was established and studied by J. Kuryłowicz (1949/1960). As we saw in Section 3, a syntactic case \(I.1b\)
marks the dependent SSynt-role of the noun or, more precisely, it specifies for N the set of its potential dependent SSynt-roles (= N’s passive SSynt-va-

cence), but it does not express any meaning directly. As opposed to a syntac-
tic caseI.1b, a semantic caseI.1b, while fulfilling the same functions, also conveys a meaning (always or in some contexts only)—that is, it expresses a fragment of the Semantic Structure of the sentence directly.

2. Complete vs. Partial CasesI.1b (Zaliznjak 1973: 84 – 86). A complete caseI.1b embraces all nouns of L and can appear on a noun in all its paradigmatic forms—that is, in the singular and the plural, in the definite and the indefi-

nite, in the possessed and the non-possessed (with the exception the non-systematic and purely formal defectiveness: for example, in Russian, neither the plural genitive *meči ‘of dreams’ nor any of the plural forms of NÉBO ‘pal-

cabbage soup’ exists only in the plural genitive). A partial caseI.1b, however,

applies to a subset of nouns or to a part of some noun’s paradigm only (say, only in the singular or only in the plural); sometimes this happens for purely semantic reasons, sometimes not. Three examples of partial casesI.1b follow:

- In Russian, the partitive is possible only in the singular and only for some masculine mass nouns. The Russian adnumerative is even ‘more’ partial: it is possible only for a few nouns in the singular (the adnumerative čas’tá ‘hour’, šag’tá ‘step’, rjad’tá ‘row’ contrasts with the genitive čas’ta, šag’ta, rjad’ta) and for some dozen nouns in the plural (the adnumerative [10] čelovek+Ø ‘men’, gramm+O ‘gram’, volt+Ø ‘volt’ contrasts with the genitive ljud+ej, gramm+ov, volt+Ø; cf. Mel’čuk 1985: 430 – 437). A further example is the intimate vocative such as Ol´! or Alëš! (for OL´GA and ALEKSEJ, respectively: Chapter 9, 5.4, (25), p. 503.

- Finnish has two partial cases—the accusative and the comitative. The accusa-

tive is possible only for personal pronouns and the interrogative pronoun ‘who’, see above, p. 132. The comitative is limited to the possessive form of the noun in the plural. Thus, we find hirsi+ne+nsä ‘with his/their

log/logs’, where hirsi is the plural stem (the singular stem being hirte),

-ne is the suffix of the comitative, and -nsä, the 3rd person possessive suf-

fix of both numbers; but the forms *hirsi+ne (without the possessive suf-

fix) or *hirte+ne+nsä (with the singular stem) are ungrammatical. Being formally plural, the comitative form denotes both singularity and plurali-

ty of the entity denoted by the stem.

- In Armenian, the locative does not occur on human nouns and on the

nouns of the -an-declension (type tun ‘house’).
Chapter 2. Case

Expression plane

3. Synthetic vs. Analytical Cases

A synthetic case is expressed within the corresponding wordform – i.e., by morphological means. Most commonly, case markers are affixes – in fact I only know of case suffixes and, in a few languages, of case circumfixes. Since circumfixes that mark cases are not widespread, it is worthwhile to give an example.

(19) Chukchee

\[
\begin{array}{lclcl}
\text{SG.NOM} & \text{SG.COMITATIVE} & \text{SG.SOCIATIVE} \\
\text{‘nomad’} & \text{čawčow} & \text{γa+čawčow+t} & \text{γa+čawčow+ma} \\
\text{‘friend’} & \text{tumy+on} & \text{γe+tumy} & \text{+e} & \text{γa+tumyγ} & \text{+ma} \\
\text{‘polar bear’} & \text{umqγ} & \text{γ} & \text{+umqγ} & \text{+te} & \text{γ} & \text{+omqγ} & \text{+ma} \\
\text{‘[hunting] gun’} & \text{milyer} & \text{γe+milyer} & \text{+e} & \text{γa+melyar} & \text{+ma} \\
\end{array}
\]

[Interestingly, the comitative circumfix γa-...-ta shows vowel harmony as a function of the stem, as well as vocalic/consonantal variation in the suffixal part; the sociative circumfix γa-...-ma, on the contrary, does not change, but triggers vowel harmony in the stem.]

A very similar situation holds with the same cases in closely related Korean and Alutor.

Rather rarely, a case can be expressed by an apophony:

– Segmental apophony

(20) a. Estonian

\[
\begin{array}{lcl}
\text{SG.NOM} & \text{SG.GEN} \\
\text{‘room’} & \text{tuba} & \text{toa} \\
\text{‘knife’} & \text{nuga} & \text{noa} \\
\text{‘pig’} & \text{siga} & \text{sea} \\
\text{‘line’} & \text{riga} & \text{rea} \\
\end{array}
\]

b. Berber

\[
\begin{array}{lcl}
\text{NOM} & \text{OBL} \\
\text{‘camel’} & \text{alγum} & \text{alγum} \\
\text{‘camels’} & \text{iliγman} & \text{iliγman} \\
\text{‘she-camel’} & \text{t+alγum+t} & \text{t+ilγum+t} \\
\text{‘she-camels’} & \text{t+ilγmin} & \text{t+ilγmin} \\
\text{‘horse’} & \text{agmar} & \text{wagmar} \\
\text{‘man’} & \text{argaz} & \text{urgaz} \\
\end{array}
\]

For more on the case 1a in Berber, see Chapter 4, 3, (6), p. 273. Further examples of case-marking apophonies are found in the inessive in Lezgian (see below, before (24), p. 144) and in the oblique in Nias (see Chapter 4, 3, p. 275).
7. Taxonomy of cases I.1b

– Suprasegmental apophony

(21) Maasai

<table>
<thead>
<tr>
<th>'person'</th>
<th>SG.NOM</th>
<th>SG.OBL</th>
</tr>
</thead>
<tbody>
<tr>
<td>'child'</td>
<td>kéráí</td>
<td>keráí</td>
</tr>
<tr>
<td>['a] Maasai</td>
<td>Máásaní</td>
<td>Maásaní</td>
</tr>
<tr>
<td>'chest'</td>
<td>goó</td>
<td>góò</td>
</tr>
</tbody>
</table>

An *analytical* case **I.1b** is expressed outside the corresponding wordform – by an auxiliary (= structural) word, which is a special particle different from a preposition/postposition. The following two conditions must be met simultaneously for a structural word appearing with an NP and marking its SSynt-role to be interpreted as an analytical case **I.1b** marker, rather than a pre- or post-position:

(i) The language considered should have other structural words of the same type that mark MAJOR syntactic roles as well. That is, if English had, along with TO, OF, WITH, etc., special ‘prepositions’ obligatorily introducing the Synt-Subject and the DirO, English prepositions could be treated as case **I.1b** markers. In Persian, the postposition -rā, which marks definite DirOs, is not a case **I.1b** (= accusative) marker because Persian has no other postposition that would mark other major (= actantial) SSynt-roles.13

(ii) The noun following or preceding a ‘suspect’ structural word should not itself be in a synthetic case **I.1b**. If this were so, this structural word would govern a case **I.1b** and therefore behave as a preposition or a postposition. This means that in a given language all cases **I.1b** are either synthetic or analytic: the mixture is logically excluded (a different situation than what we find, for example, in tenses). If indeed we have, in **L**, at least two synthetic cases **I.1b**, then the noun introduced by the ‘suspect’ structural word would automatically be in a case **I.1b**, which contradicts Condition (ii) and makes the ‘suspect’ word a preposition/postposition governing its actant for case **I.1a**.

Analytical cases **I.1b** exist, for instance, in Tagalog, where any non-pronominal NP is obligatorily introduced by a particle specifying its SSynt-role:

– Syntactic subject: ang (common nouns) or si (proper nouns) = the subjective case **I.1b**;
– Direct Object, Agent or Complement of Means, Adnominal or Possessor’s attribute: ng /nay/ or ni = the oblique case **I.1b**;
– Indirect Object, Adverbial of Location/Destination, Object of preposition: sa or kay = the lative (or the dative).
Consider the following examples (the particle *ay* introduces a non-initial Main Verb):

(22) Tagalog

a. *Ang apó ay sumulat ng liham*  
   SUBJ grandson wrote OBL letter  
   ‘[My] grandson wrote the-letter’.

b. *Ang Tagalog ay inaaral ng aking apó*  
   SUBJ is.studied OBL my grandson  
   ‘Tagalog is studied by my grandson’.

c. *Nagpadalá akó ng aklát sa aking apó sa Manila*  
   sent SUBJ book DAT my grandson DAT  
   ‘I sent the-book to my grandson to Manila’.

d. *Ang aklát ay arí ng paaklaan.*  
   SUBJ book belong OBL library  
   ‘The-book belongs to the-library’.

e. *Para sa aking apó ang paanyayang itó*  
   for DAT my grandson SUBJ invitation this  
   ‘This invitation [is] for my grandson’.

(22e) shows the government of the dative by the preposition PARA; this is the proof that the analytical case markers in Tagalog are not prepositions. The obligatory place of the adjective (in this case, AKING ‘my’) between the case marker and the noun constitutes the proof that they are not prefixes, but separate wordforms. 

In Chamorro the situation is similar, although slightly different. The Chamorro analytical case markers are as follows:

<table>
<thead>
<tr>
<th>Case</th>
<th>Common Noun</th>
<th>Proper Noun</th>
<th>Forms of 3rd Pers. Pronoun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subj</td>
<td>---</td>
<td><em>si</em></td>
<td>---</td>
</tr>
<tr>
<td>Oblique</td>
<td><em>ni</em></td>
<td><em>as</em></td>
<td><em>nu</em></td>
</tr>
<tr>
<td>Locative</td>
<td><em>gi</em></td>
<td><em>giyas</em></td>
<td><em>giya</em></td>
</tr>
</tbody>
</table>

Here are some examples (note that the DirO and the complements of certain prepositions are in the subjective; other prepositions require the oblique or the locative):

(23) Chamorro (Chung 1998: 50–52)

a. *I tāta ni +nā=māguf nu esti*  
   DEF Father PASS make.unhappy OBL this  
   ‘Father was made unhappy by this’.

b. *Pāra rigaku +hu nu hagu*  
   for present 1SG OBL youSG  
   ‘As my present to you...’
7. Taxonomy of cases.1b

Analytical cases.1b are also known in Polynesian languages (see Chung 1978). Very roughly, Polynesian case markers are: ?a SUBJ, e ERG, i ACC, and ki DAT; cf. Chung’s (1978) discussion of the problem ‘case markers vs. prepositions’ (pp. 289 – 290).

4. Primary vs. Secondary Cases.1b. A primary case.1b is built on the basic stem of the noun, whereas a secondary case.1b is built on the form of a primary case.1b. Thus, in Tocharian A the nominative, the accusative and the genitive are built directly on the stem. For instance, the noun *kašši- ‘teacher, guru* has the following forms: NOM *kašši* ~ ACC *kašši+n ~ GEN *kašši+ydp*; these are primary cases.1b. All other cases.1b are built on the form of the accusative:

    INSTR *kašši+n+yo, DAT *kašši+n+ac, LOC *kašši+n+an*, etc.

In the form of a secondary case.1b, c, the case ending M consists of two case.1b markers:

    $M = m_1 + m_2,$

of which only $m_2$ expresses the case.1b c; $m_1$ taken by itself expresses a different case.1b, c', but in this context it appears as an empty morph, a sort of ephenthesis.

    One finds even tertiary cases.1b, whose suffix is added to two case.1b suffixes. Thus, in Dargwa, we find as many as three layers of case.1b markers:

      – the primary ergative, built directly on the stem:
        $’$book’, NOM $zuz$ ~ ERG $zuz+li$;
      – the secondary dative and allative, built on the form of the ergative:
        DAT $zuz+li+s$, ALL $zuz+li+ĉi$;
      – and the tertiary comitative and themative, both built on the form of the allative:

    \[
    \begin{align*}
    \text{COM } & zuz \quad +li \quad +ĉi \quad +l \quad ’\text{together with [the] book'}, \\
    \text{THEM } & zuz \quad +li \quad +ĉi \quad +la \quad ’\text{about [the] book'}.
    \end{align*}
    \]
Remarks

1. There is another logical possibility—to describe the string of suffixes that marks a secondary or a tertiary case. I cannot discuss this possibility here in detail.

2. For more data on Dargwa cases, see Abdullaev 1967 and 1986.

Secondary cases are widespread in the languages of Daghestan. For instance, in Lezgian, the ergative, a primary case, is built by adding its suffix directly to the stem—lam ‘donkey’ \( \sim \) ERG lam+\( \text{ra} \) or Afrika \( \sim \) ERG Afrika+\( \text{di} \). All the other cases, being secondary, are built by adding corresponding suffixes to the form of the ergative—GEN lam+\( \text{ra}^-\text{n} \), DAT lam+\( \text{ra}^-\text{x} \), ADESS lam+\( \text{ra}^-\text{w} \), etc. (The only exception is the inessive. It is also built on the ergative, but not by adding a suffix: its marker is the lowering of the last vowel of the ergative form—i.e., a meaningful alternation, or an apophony, as in ERG Afrika+\( \text{di} \) \( \sim \) INESS Afrika+\( \text{da} \), ERG \( \text{qül+ú} \) ‘rock’ \( \sim \) INESS \( \text{qarl+á} \), ERG \( \text{qül+ë} \) ‘wheat’ \( \sim \) INESS \( \text{qarl+é} \), etc.) All latives and elatives of Lezgian (allative, postlative, superlative, ..., adative, postelative, superrelative, etc.) are secondary compound cases, which will be considered in the next subsection. A partial paradigm for a Lezgian noun is given in (24).

\[
\begin{array}{ll}
\text{NOM} & \text{ERG} \\
\text{ERG} & \text{GEN} \\
\text{DAT} & \text{ADL} \\
\text{ADL} & \text{ADEF} \\
\text{ADEF} & \text{POSTESS} \\
\text{POSTESS} & \text{POSTLAT} \\
\text{POSTLAT} & \text{POSTEL} \\
\text{POSTEL} & \text{SUPERESS} \\
\text{SUPERESS} & \text{SUPERLAT} \\
\text{SUPERLAT} & \text{SUPEREL} \\
\text{SUPEREL} & \text{SUBESS} \\
\text{SUBESS} & \text{SUBLAT} \\
\text{SUBLAT} & \text{SUBEL} \\
\text{SUBEL} & \text{INESS} \\
\text{INESS} & \text{INELAT} \\
\end{array}
\]

The phenomenon of secondary case is a parasitic formation, which is a particular instance of what is known as a parasitic formation. It must not be confused with the oblique
7. Taxonomy of cases I.1b

stem. In some languages, the nominative is built on the simple, or ‘direct,’ stem, while all the other cases require the oblique stem, marked by a special suffix. However, the oblique stem itself—without a case suffix following it—cannot be used in utterances: it cannot constitute a complete wordform. Such is the situation in Lak:

(25) Lak

<table>
<thead>
<tr>
<th>Direct Stem</th>
<th>Oblique Stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>(nom)</td>
<td>(all other cases I.1b)</td>
</tr>
<tr>
<td>'son'</td>
<td>ars</td>
</tr>
<tr>
<td>'head'</td>
<td>bak</td>
</tr>
<tr>
<td>'rooster'</td>
<td>ažari</td>
</tr>
<tr>
<td>'door'</td>
<td>nuz</td>
</tr>
<tr>
<td>'snow'</td>
<td>marxala</td>
</tr>
</tbody>
</table>

Here the boldfaced suffixes are empty morphs which obligatorily precede case I.1b suffixes: arsna-, bakra-, etc., are not wordforms (cf. gen ars+na+l; dat ars+na+n; abl ars+na+šša, etc.). This is in sharp contrast to Lezgian, where the ‘stem’ of an oblique case I.1b is a genuine ergative wordform. Therefore, all Lak oblique cases I.1b are primary.

Tsakhur, another Daghestanian language, shows the same pattern as Lak (/g/ marks the pharyngealization of the whole wordform):

(26) Tsakhur

<table>
<thead>
<tr>
<th>Direct Stem</th>
<th>Oblique Stem</th>
</tr>
</thead>
<tbody>
<tr>
<td>(nom)</td>
<td>(all other cases I.1b)</td>
</tr>
<tr>
<td>'way'</td>
<td>jaq</td>
</tr>
<tr>
<td>'work'</td>
<td>iš</td>
</tr>
<tr>
<td>'father'</td>
<td>dek</td>
</tr>
<tr>
<td>'scholar'</td>
<td>alim+ar</td>
</tr>
</tbody>
</table>

All the oblique cases I.1b, including the ergative, are built on the oblique stem (which cannot be used in the sentence as such—that is, without an overt case I.1b suffix): thus, erg jaqq+i+n, dat jaqq+i+s, com jaqq+i+k+a, etc. As a result, Tsakhur oblique cases I.1b also are all primary. A special oblique stem is found also in the declension of nouns in Hindi, see below, Note 24, p. 177.

Secondary cases I.1b should not be confused with compound cases I.1b: see Item 5.

5. Simple vs. Compound Cases I.1b. A simple case I.1b is a (part of a) simple signified expressed by a simple unanalyzable marker; a compound case I.1b is a compound signified

\[ \sigma' = \sigma_1 \oplus \sigma_2 \oplus \ldots \oplus \sigma_n \]
expressed by a compound marker (= signifier)

\[ M = m_1 \oplus m_2 \oplus \ldots \oplus m_n \]

such that \( m_1 = m_1(\sigma_1) \), \( m_2 = m_2(\sigma_2) \), \ldots , \( m_n = m_n(\sigma_n) \), i.e., each component of the compound case marker expresses a component of the compound case signified.

The most typical instance of compound cases \( I.1b \) are locative cases \( I.1b \) in several Dagestani languages; here \( \sigma_1 \) (expressed by \( m_1 \)) is the localization (‘in’, ‘on’, ‘under’, ‘over’, ...) and \( \sigma_2 \) (expressed by \( m_2 \)), the orientation (‘moving to/towards’ \( \sim \) ‘moving from’ \( \sim \) ‘moving through’), as in Lezgian:

(27) Lezgian

a. postessive \( vax+a+qh \) ‘behind the sister’
   postlative \( vax+a+qh+di \) [moving] to ‘behind the sister’
   postelative \( vax+a+qh+aj \) [moving] from ‘behind the sister’
b. subessive \( vax+a+k \) ‘under the sister’
   sublative \( vax+a+k+di \) [moving] to ‘under the sister’
   subelative \( vax+a+k+aj \) [moving] from ‘under the sister’

The names of compound cases \( I.1b \) reflect their internal structure: these names are also compound. Namely, the first component of a compound case \( I.1b \) name specifies the localization (POST = ‘behind’, SUB = ‘under’), and the second, the orientation (-ESSIVE ‘being in’, -LATIVE ‘moving to’, -ELATIVE = ‘moving from’); cf. below, Section 9, p. 155, local semantic cases \( I.1b \).

The oppositions ‘primary vs. secondary’ and ‘simple vs. compound’ are logically independent; thus, we have four possible combinations:

- Primary simple cases \( I.1b \) as in the Lezgian ergative:
  \( vax \) ‘sister’ \( \sim \) ERG \( vax+a \).
- Primary compound cases \( I.1b \) as in Tsez locative cases \( I.1b \) (built directly on the stem):

<table>
<thead>
<tr>
<th>Case</th>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOM</td>
<td>hon</td>
<td>‘mountain’</td>
</tr>
<tr>
<td>SUPERESS</td>
<td>hon+( i )o</td>
<td>‘on the mountain’</td>
</tr>
<tr>
<td>SUPERLAT</td>
<td>hon+( i )+ar</td>
<td>‘onto the mountain’</td>
</tr>
<tr>
<td>SUPERELAT</td>
<td>hon+( i )+aj</td>
<td>‘from the mountain’</td>
</tr>
<tr>
<td>SUPERPROLAT</td>
<td>hon+( i )+aza</td>
<td>‘over the mountain’</td>
</tr>
</tbody>
</table>

- Secondary simple cases \( I.1b \) as in the Lezgian genitive and dative:
  \( vax+a+n \) \( \sim \) \( vax+a+z \).
- Secondary compound cases \( I.1b \) as in Lezgian locative cases \( I.1b \) (built on the form of the ergative), such as postlative, postelative, etc.:
  \( vax+a+qh+di \) [moving] to behind the sister \( \sim \) \( vax+a+qh+aj \) [moving] from behind the sister, cf. also (27) above.
Tsakhur actually has triple compounding in its locative cases I.1b (Kibrik 1999: 55 – 56):

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUPERESSIVE</strong></td>
<td>‘on Y’</td>
<td>: -l</td>
</tr>
<tr>
<td><strong>DIR-SUPERESSIVE</strong></td>
<td>‘towards a point on Y’</td>
<td>: -l+qa</td>
</tr>
<tr>
<td><strong>SUPERLATIVE</strong></td>
<td>‘into a point on Y = onto Y’</td>
<td>: -l+qa+ma</td>
</tr>
</tbody>
</table>

Here, the suffix -ma marks the ‘direct,’ ‘immediate’ character of the movement—not simply in the direction of a point, but directly into this point. Thus, with jk+i ‘bridge’ we have:

- jk+i+l ‘on the bridge’
- jk+i+l+qa ‘[moving] towards on the bridge’
- jk+i+l+qa+ma ‘[moving] to on the bridge’

[-i- is a marker of the oblique stem]

The concept of compound case I.1b calls for the following three remarks.

1. A compound case I.1b is not a secondary case I.1b: the components of a compound case I.1b are not cases I.1b, while the components of a secondary case I.1b are necessarily cases I.1b. In the Lezgian example (27), as well as in Tsakhur, the first component of a compound case I.1b is a grammeme of the category of localization, and the second one, a grammeme of the category of orientation. (In Tsakhur, as we see, there is a third component: a grammeme of the category of attainment.) These grammemes only constitute a case I.1b when taken together. We have here a paradoxical situation: a grammeme of a compound case I.1b consists of two grammemes of two different inflectional categories! I will analyze this situation in Remark 3 below.

2. There is no zero suffix of orientation meaning ‘being at rest’ = ‘no movement’ in the markers of the essive compound cases I.1b of the Lezgian type: this meaning is included in the signified of the localization grammeme. [The book in the box means ‘the book is-localized in the box’, while [to put the book] into the box means ‘to cause that the book] begins to be-localized in the box’, and [to take the book] out of the box means ‘to cause that the book] ceases to be-localized in the box’. As one can see, the orientation (‘moving to’ ~ ‘moving out of’ ~ ‘moving over/through’) simply adds meaning (‘[to] begin’ ~ ‘[to] cease’) without replacing anything.

3. Compound cases I.1b create an interesting theoretical dilemma:
   - either we admit compound cases I.1b and thereby accept non-elementary grammemes composed of other, ‘smaller,’ grammemes (since, according to our definition, a compound case I.1b is a grammeme);
   - or we ban compound cases I.1b altogether and analyze forms such as the Lezgian postlative vax+a+q+d ‘[moving] to behind the sister’ as manifesting two different inflectional categories: the (simple) case I.1a, which...
expresses the localization (‘in’, ‘on’, ‘behind’, ‘under’, ...), and another inflectional category—the orientation, which expresses the orientation of the movement (‘moving to’, ‘moving from’, ...).

It is impossible to discuss this problem here in depth, and I will do no more than outline my case in favor of the first position.

Following the traditional view, I prefer to admit the existence of compound cases I.1b and eo ipso of compound grammemes. My reasons are that compound cases I.1b belong to the same paradigm as simple cases I.1b and behave, on the syntactic level, exactly as simple cases I.1b do. In particular, a compound case I.1b is often governed (by a verb) as a whole, completely independently of the components of its signified. Thus, we find that in Lezgian a verb or a verbal expression can govern a compound case I.1b as such—exactly as it governs simple cases I.1b. For instance, the expression INANMIŠ TIR “[to] believe [in]” governs the postessive, which is a simple case I.1b. On the other hand, the verbs REFÜDA “[to] feel shy [in front of]” and KUĈEDA “[to] be afraid of” govern the compound cases I.1b, postelative and subelative, respectively:

(28) Lezgian

\[\begin{align*}
a. & \quad \text{Xalk} + \Theta + \Theta \quad \text{vičin} \quad \text{kuvat} + \Theta + \text{di} + qh \quad \text{inanmiš tir} \\
& \quad \text{people SG NOM own force SG ERG POSTESS believe-PRES} \\
& \quad \{\text{The people believes in its own force}\}.
\end{align*}\]

\[\begin{align*}
b. & \quad \text{Fatima} + \Theta \quad \text{mualim} + \Theta + \text{di} + qh + aj \quad \text{refüda} \\
& \quad \text{Fatima NOM teacher SG ERG POSTESS feel.shy-PRES} \\
& \quad \{\text{Fatima feels shy in the presence of the teacher}\}.
\end{align*}\]

\[\begin{align*}
c. & \quad \text{Fatima} + \Theta \quad \text{mualim} + \Theta + \text{di} + k + aj \quad \text{kuĉeda} \\
& \quad \text{Fatima NOM teacher SG ERG SUBEL be.afraid-PRES} \\
& \quad \{\text{Fatima is afraid of the teacher}\}.
\end{align*}\]

Leafing through the section describing Lezgian locative cases I.1b in Haspelmath 1993: 90–104, we find again and again formulations such as: “[The postessive] originally expresses the localization ‘behind’, but it is now rarely used in that function (usually expressed by the postpositions qukuq and gügüna...)” (p. 92). Most compound cases I.1b of Lezgian are characterized in this way; their modern use is governed by particular verbs.

On the other hand, in genuine locative contexts (“[to] run to behind the tree’, “[to] crawl out from under the stone’, ...) the uses of compound cases I.1b follow from the semantic components of their signifieds. This ‘duplicity’ of compound cases I.1b makes one think of lexical idiomatic expressions and their relationships to simple lexemes. Thus, the expression kick the bucket is normally used as a non-decomposable whole, meaning “[to] die’ (with a note of flippancy with regard to the person who died) – just as a governed compound case I.1b
is; but it also can be understood and used in accordance with its compositional meaning (= [to] kick \( \oplus \) ‘the bucket’), as in *He angrily kicked the bucket full of dirty water, swore and stepped out of the cabin*. Something very similar seems to be true of compound cases \( I.1b \): the signified of a compound case \( I.1b \) is an easily ‘phraseologizable complex’ of grammemes. The concept of grammeme can thus be seen to subsume phraseologized (or phraseologizable) complexes of grammemes.\(^{17}\)

6. Autonomous vs. Non-autonomous Cases \( I.1b \) (Zaliznjak 1973: 69–74). A case \( I.1b \) is (morphologically) autonomous if and only if it has at least one marker that does not coincide with a marker of another case \( I.1b \) which can appear on the same stem as \( c \); otherwise, \( c \) is non-autonomous. The Russian dative is autonomous, since it has the marker -u that unambiguously signals the dative singular with derev- ‘tree’ or okn- ‘window’; it also has the unambiguous marker -am in the plural. But the Russian partitive is non-autonomous, since its only marker -u always coincides with the dative -u of the same stem: \( \text{snég}+u \) can be the dative or the partitive of ‘snow’, and this is true of all nouns which have the partitive.\(^{18}\)

A further example of a non-autonomous case \( I.1b \) is the Latin locative (which also happens to be a partial case: only proper names of cities and islands have it). In some nouns the locative coincides with the genitive (vivo Rome/Corinth+i/Cypr+i ‘I live in Rome/in Corinthus/on Cyprus’), while in others it coincides with the ablative (vivo Athen+i/Carthagin+i ‘I live in Athens/in Carthago’ (Zaliznjak 1973: 71).

In a morphological description, it is always possible to do without any non-autonomous case \( I.1b \), using instead the case(s) \( I.1b \) with which our non-autonomous case \( I.1b \) is homophonous. This will entail, though, an increase in the complexity of the corresponding SSynt-rules, so that there is a trade-off between the complexity of the case system in \( L \) (in particular, the presence/absence of non-autonomous cases \( I.1b \)) and the complexity of \( L \)’s SSynt-rules (as explicitly stated in Zaliznjak 1973: 69). For instance, we can reject the Russian partitive altogether, treating the forms such as [nemnogo] sneg+u (saxar+u, pesk+u, ...) as dative forms, and include in the SSynt-rules of Russian several rules allowing the dative (of a lexically specified subset of masculine nouns) to appear in the three types of context mentioned in Section 5, p. 127. However, these rules would be more complex than the corresponding rule for the partitive. The latter simply says “In context C you may use the partitive of N,” while the former have to say much more: “In context C you may use the dative of N if N belongs to the following set of nouns: …”. Whether or not a particular noun has the partitive is quite naturally specified in its morphological characterization (in the lexicon), and there is no
need to mention the fact in SSynt-rules again. But it is logically unacceptable to specify in the morphological characterization of a noun whether or not it takes a special dative in a few restricted syntactic contexts C: such a strange ‘dative’ would in fact be not a dative, but a different case I.1b, i.e., the partitive (≈ ‘the partitive use of the dative’).

8. **Internal autonomy of cases I.1b**

With the above considerations as our guide, we can ensure that a decision concerning the admission of a non-autonomous case I.1b into the case I.1b inventory of language \( L \) is made on a principled basis. To do this, I propose the Principle of internal autonomy of cases I.1b. This principle is, in a rather loose sense, the inverse of the Principle of External Autonomy of Case I.1b Forms, p. 128. There, the choice of a case I.1b marker in the wordform \( w \) should not be contingent upon a different wordform \( w' \) – with a few exceptions; here, the choice of a case I.1b for \( w \) (made as a function of another wordform \( w' \) – the SSynt-Governor of \( w \)) should not be contingent on idiosyncratic properties of the stem of \( w \).

**Principle of Internal Autonomy of Cases I.1b (= IAC Principle)**

A morphologically non-autonomous case I.1b should be admitted into the case I.1b inventory of \( L \) if and only if otherwise the SSynt-rules which state the selection of cases I.1b would have to mention individual properties of the noun to be inflected.

Let me illustrate the IAC Principle by showing first how it imposes the introduction of a non-autonomous case I.1b. Suppose we do not admit the partitive into the case I.1b inventory of Russian (and use the dative instead); then the SSynt-rules that specify the contexts for these ‘partitive’ datives unavoidably have to refer to individual nouns; thus, \( \text{SUP} \) ‘soup’, but not \( \text{BORŠČ} \) ‘borshht’: \( \text{Nalej sup+u} \) (≈ \( \text{boršč+u} \) [correct form: \( \text{boršč+a gen} \)]) ‘Give (me) some soup (borshht)’; \( \text{PESOK} \) ‘sand’, but not \( \text{GRANIT} \) ‘granite’; \( \text{LUK} \) ‘onion’, but not \( \text{OGUREC} \) ‘cucumber’; etc. With the partitive in the case inventory, on the other hand, the Russian SSynt-rules simply require the partitive (in the appropriate context) or the genitive, the former being selected – on the syntactic level – if the noun in question has it.

The information as to whether a noun has the partitive or not is stored in the morphological zone of its dictionary entry. Thus, all individual declension-related lexemic peculiarities of a lexical unit \( L \) are included in \( L \)'s morphological description. This is exactly the idea behind the IAC Principle: to keep the syntax as free as possible of all morphological deviances and caprices. Where such deviances do not appear, there is no reason to postulate a non-autonomous case I.1b.
Now, an example of how the IAC Principle forbids a non-autonomous case. In Lak, the Subject of a transitive verb is marked by the nominative if it is a 1st or 2nd person pronoun and by the genitive otherwise (without a single exception):

\[(29)\] Lak

\begin{align*}
\text{a. } & \text{Na } \langle \text{Ina} \rangle \quad \text{lu } +\emptyset \quad \text{bukka } +\text{ra} \\
& \text{1-NOM youSG-NOM book NOM read-PRES 1/2PERS} \\
& \text{‘I (YouSG) read [the] book’.} \\
\text{b. } & \text{Uss+i } +\text{i} \quad \langle \text{Ars+na } +\text{i} \rangle \quad \text{lu } +\emptyset \quad \text{bukka } +\text{j} \\
& \text{he OBL GEN son OBL GEN book NOM read-PRES 3PERS} \\
& \text{‘He ([The] son) reads [the] book’.}
\end{align*}

[Here ‘OBL’ is a marker of the oblique stem—an empty morph, not a case maker; cf. (25), p. 145.]

Logically, one could postulate for Lak a morphologically non-autonomous ergative, whose forms coincide with the nominative forms in 1st/2nd person pronouns and with the genitive forms in all other nominals (= 3rd person pronouns and nouns). However, the IAC Principle does not allow us to do this, since the SSynt-rules of Lak that specify the choice of the nominative vs. the genitive for a transitive subject need not mention individual lexemic properties. To posit a SSynt-rules that assign the Subject noun/pronoun the NOM or GEN case based on the person of the Subject is more economical than to postulate a non-autonomous ergative, whose form is redundantly specified for every noun and pronoun in the language.

9. Illustrative inventory of possible cases

The number of cases varies from language to language. Without claiming that my count is definitive (since many cases are problematic in several languages), I illustrate the astonishing variety of cases in Table 1 on page 152.

The last figure—48—is the empirical maximum known to me for a particular language; it is obviously impossible to establish a theoretical maximum. (The general list of cases that is offered below, pp. 155–157, contains 77 cases.) As for the theoretical minimum of cases in a language, this is obviously two (as follows from the definition of inflectional category, Introduction, Definition 0.1, p. 22).

This section offers a list of cases known in languages of the world. It indicates only the most important SSynt-roles (and meanings, if any) marked by each case; this rough characterization should not be misconstrued as an attempt at a definition of the terms employed to name individual cases. The list is proposed only as some practical guidelines for the assignment of case names so as to achieve maximal generality across descriptions of diverse languages.
Table 1: Number of cases in particular languages

<table>
<thead>
<tr>
<th>Number of cases</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Old French, Kurdish, Maasai, Esperanto</td>
</tr>
<tr>
<td>3</td>
<td>Classical Arabic, Kabardian, Romanian</td>
</tr>
<tr>
<td>4</td>
<td>Adyghe, German, Modern Irish</td>
</tr>
<tr>
<td>5</td>
<td>Ancient Greek</td>
</tr>
<tr>
<td>6</td>
<td>Osmanli Turkish</td>
</tr>
<tr>
<td>7</td>
<td>Latin, Georgian, Kannada</td>
</tr>
<tr>
<td>8</td>
<td>Sanskrit, Tamil</td>
</tr>
<tr>
<td>9</td>
<td>Tocharian A</td>
</tr>
<tr>
<td>10</td>
<td>Tocharian B, Russian</td>
</tr>
<tr>
<td>14</td>
<td>Estonian</td>
</tr>
<tr>
<td>15</td>
<td>Finnish</td>
</tr>
<tr>
<td>16</td>
<td>Chechen</td>
</tr>
<tr>
<td>17</td>
<td>Basque</td>
</tr>
<tr>
<td>18</td>
<td>Lezgian</td>
</tr>
<tr>
<td>21</td>
<td>Hungarian</td>
</tr>
<tr>
<td>22</td>
<td>Bats</td>
</tr>
<tr>
<td>24</td>
<td>Tsakhur (Kibrik 1999b: 54–56)</td>
</tr>
<tr>
<td>26</td>
<td>Andi, Archi</td>
</tr>
<tr>
<td>27</td>
<td>Dargwa</td>
</tr>
<tr>
<td>35</td>
<td>Tsez</td>
</tr>
<tr>
<td>42</td>
<td>Lak</td>
</tr>
<tr>
<td>48</td>
<td>Tabassaran</td>
</tr>
</tbody>
</table>

The first ten cases on the list below are often called ‘grammatical,’ or ‘abstract.’ I will refer to them as syntactic cases. As a rule, they do not express meanings, and, if they do, they do not do so in a very systematic way. (Their meanings, for example, depend on the construction in which they appear or on other factors.) In general, it is difficult and sometimes impossible to ascribe a particular well-defined meaning or a set of well-defined meanings to a particular syntactic case as such.

Syntactic cases

1. Nominative: is used to designate entities and facts outside of any syntactic context; this is the case of naming (Lat. nominatio). For this reason, in a case language, the nominative is the case of the citation, or lexicograph-
ic, form. Other frequent SSynt-roles marked by the nominative are: the Syntaxic Subject (in what is known as nominal construction, as in Latin, Russian, Turkish, etc.); the DirO (in the ergative construction, as in Georgian or Chukchee); the predicative nominal; adverbials of duration (for instance, in languages with the ergative construction); several types of attributes.

2. **Subjective**: marks the Synt-Subject, but cannot be used as the designation of a thing; for instance, Japanese -**ga**-case and Korean -**ka**-case.

3. **Ergative**: marks either the ‘agentive’ Synt-Subject of a transitive verb or the Agentive Complement, as with the passive. The ergative may be more or less directly related to the semantic component of ‘causation’.

4. **Accusative**: marks the DirO—i.e., the ‘patient’ Synt-Object of a transitive verb. The accusative may also be related to ‘causation’; very roughly, it marks the name of the entity affected by causation. Other frequent SSynt-roles are: adverbials of duration (Rus. ėtátʼ celyj [ACC] [to] read the whole day) or of relation (≈ ‘with respect to’), as in Ancient Greek:

(30) Ancient Greek

a. Kámn +ö iën kephalé+n (tois ophtalmoi),
   have.pain 1SG the-ACC head ACC the-PL.ACC eyes ACC
   lit. ‘I ache with respect to the head (to the eyes)’. = ‘I have headache (eye-pain)’.

b. Athēnaios tó gémos [He is] Athenian by birth [lit. ‘with respect to birth’].

Athenian the-ACC birth-ACC

c. Anépesan ouṁ hoi ándres tòn arithmò+n hós pentakiskhílioi
   sat.down then the-NOM men-NOM the-ACC number ACC about five.thousand
   lit. ‘Then the men, [being] with respect to the number about 5,000, sat down’.

This type of use is known in Latin grammar as ‘Accusativus Graecus.’

In some languages, the ‘Double accusative’ construction is possible: the first accusative marks the DirO that is affected, while the second marks a circumstantial of relation and indicates in what respect the DirO is affected. Cf.:

(31) Korean

a. Ku kay+nun Nami+lul tali+lul mwul+ess +ta
   the dog THEME ACC leg ACC bite PAST DECLAR(ative)
   ‘The dog bit Nami’s leg’. = lit. ‘The dog bit Nami [with respect to] leg’.

b. Na+nun cvi+lul twu mali +lul kkoli+lul cal+ass +ta
   I THEME rat ACC two CLASSIF ACC tail ACC cut PAST DECLAR
   ‘I cut tails to two rats’. = lit. ‘I cut two rats [with respect to] tail’.

The accusative—like the dative, the instrumental, and the genitive—also marks the Complement of some prepositions.

6. **Dative**: marks the IndirO of a verb (Destination, Addressee, Experiencer), especially of verbs of ‘giving’ (hence the name: Lat. *dāre* means ‘give’). Other SSynt-roles: the Complement of some prepositions; Dativus Ethicus and the like; the IndirO expressing a ‘raised’ Possessor (Ger. *Er klopfte mir auf die Schulter*, lit. ‘He tapped to-me on the shoulder’); the Subject in the so-called *affective construction* (‘to-me is-visible he’, meaning ‘I see him’); the DirO in the nominative construction of an ergative language (as in Hindi and Georgian).

7. **Instrumental**: marks the Instrument or the Means. Other SSynt-roles: the Agentive Complement with the passive; the predicative nominal (cf. in Russian: *On byl student+om* ‘He was [a] student-INSTR’; the Subject in an ergative construction; several adverbials; the Complement of some prepositions. (The instrumental is close to the comitative, No. 65, p. 157, whose main meaning—‘together with ...’—is often combined with the instrumental meaning.)

8. **Genitive**: marks the adnominal Attribute (e.g., Possessor) or Complement (the transform of the Subject or of the DirO: Benveniste 1961/1966, especially p. 148). Other SSynt-roles: the DirO of a negated transitive verb; the Main Object of some verbs; the Complement of some prepositions; the Agentive Complement with the passive (Lithuanian); and the Synt-Subject in an ergative construction (as in Lak).

9. **Partitive**: marks (almost) the same SSynt-roles as the accusative and the nominative but adds the meaning of indeterminacy (‘some’, ‘part of ...’). Thus, in Basque, it appears on an indefinite Synt-Subject (of an intransitive verb) and on an indefinite DirO in a negative or interrogative sentence. It also marks nouns depending on a quantitative expression (as in Russian *pobol’se (polkilo) saxar+u* ‘a bit more (half a kilo of) sugar’; cf. also the Finnish examples above.

10. **Oblique**: marks the same SSynt-roles as the cases I.1b from the accusative through the partitive, i.e., all SSynt-roles except the Subject in the nominative construction and the DirO in a certain type of ergative construction.

As opposed to the above, all the following cases I.1b (beginning with No. 11 and on) are ‘adverbial,’ or ‘concrete;’ they are called *semantic* cases I.1b. Each of these, in addition to marking a noun in a SSynt-role (most often a circumstantial or, less frequently, a governed object or complement), expresses a particular meaning.
Semantic cases I.1b

I begin with \textit{local} semantic cases \textbf{I.1b}, which constitute the most systematic subset of semantic cases \textbf{I.1b}. A local case \textbf{I.1b c} expresses \textit{localization} of something with respect to the object denoted by the nominal stem on which \textit{c} is marked. One can think of nine common localizations, which are designated below with Latin prepositions:\textsuperscript{23}

1) within the object : \textit{in-}
2) on/over its upper surface (outside) : \textit{super-}
3) on/under its lower surface (outside) : \textit{sub-}
4) on its lateral surface (outside) : \textit{ad-}
5) in front of it : \textit{ante-}
6) behind it : \textit{post-}
7) near it : \textit{apud-}
8) around it : \textit{circum-}
9) between two objects : \textit{inter-}

At the same time, the idea of localization can be specified with respect to movement, so that six common types of movements, or \textit{orientations}, are distinguished; they also are designated below with Latin terms:

1) rest (‘being there’) : \textit{-essive}
2) moving to : \textit{-lative} \hfill \textsuperscript{[‘moving to $X’ \approx ‘moving in such a way that the endpoint of the movement is in contact with $X’]}
3) moving out of/from : \textit{-elative}
4) moving through : \textit{-prolative}
5) moving towards : \textit{-directive} \hfill \textsuperscript{[‘moving towards $X’ \approx ‘moving in the direction of $X$ in such a way that the endpoint of the movement is not in contact with $X$’]}
6) moving up to : \textit{-terminative} \hfill \textsuperscript{[‘moving up to $X’ \approx ‘moving in the direction of $X$ in such a way that the endpoint of the movement is almost in contact with $X$’]}

The combination of nine localizations with six orientations produces 54 theoretically possible local cases \textbf{I.1b}, of which only a few, selective examples are given here (this list continues the list of cases \textbf{I.1b} interrupted on the previous page):

11. \textit{Inessive} : ‘[being] within ...’
12. \textit{Illative} : ‘[moving] to within [= ‘into’] ...’
13. \textit{Inelative} : ‘[moving] from within [= ‘out of’] ...’
14. \textit{Improlative} : ‘[moving] through within ...’
15. \textit{Indirective} : ‘[moving] towards within ...’
16. Superessive: ‘[being] on/over the upper surface of...’
17. Superlative: ‘[moving] to on/over the upper surface of...’
18. Superrelative: ‘[moving] from on/over the upper surface of...’

48. Interrelative: ‘[moving] from between/among...’
49. Interprolative: ‘[moving] through between/among...’
50. Interdirective: ‘[moving] towards [a point] between/among...’

64. ... ...

Remarks

1. This is by no means a maximal scheme of all possible local casesL1b. More distinctions may be made and are actually made in various languages. First, there can be casesL1b distinguishing ‘[being] on a vertical surface’ vs. ‘[being] on an inclined surface’, ‘[being somewhere] with contact’ vs. ‘[being somewhere] with no contact’, ‘[being] on an inner surface’ vs. ‘[being] on an outer surface’, etc. Second, there can be more localizations: e.g., ‘[moving] back and forth close to’.

2. Wild as some of the quoted casesL1b may seem, they do actually occur. I will illustrate one of the local casesL1b – the postdirective – from Lak, using the noun QQATTA ‘house’ (Žirkov 1955: 41):

(32) Lak qqat+lu+x+un+m+aj ‘in the direction to behind the house’, i.e., ‘towards the rear of the house’.

Here:
- qqat is the stem of qqatta ‘house’;
- lu is one of a series of suffixes that are added regularly to a nominal stem before a case ending: they mark the oblique stem (see 7, p. 144ff);
- x is the marker of the grammeme ‘behind’ (= post--; localization);
- un is the marker of the grammeme ‘[moving] to’ (= -ative; orientation); the form qqatluxun exists and means ‘to go behind the house’: the final point of this movement is ‘behind the house’;
-m is the assimilated variant of the noun class marker -v (classes I and III), which reflects the class I of the noun that refers to the object moving towards the space behind the house [instead of -m-, we could get -n- \( \Leftarrow \) -d- (classes II and IV)];

-aj is the marker of ‘not necessarily arriving at the destination’; -un and -aj, taken together, mean ‘[moving] towards’ (\( \Leftarrow \) -directive).

3. In less developed case systems, more general case \( \text{I.1b} \) names are used; the most common ones are:

- Locative, used instead of all particular essives (Inessive + Adessive + Superessive +...)
- Ablative, used instead of all particular elatives (Inelative + Adelative + Apudelative +...)
- Delative, used instead of all particular delatives (Indelative + Addelative + Apudelative +...)
- Translative, used instead of all particular prolatives (Improlative + Superprolative +...)

Now, continuing the same numbering, I will list several further semantic cases \( \text{I.1b} \), which do not form such a nicely organized system:

65. Comitative
   (also called sociative) : ‘(together) with ...’, ‘accompanied by ...

66. Privative
   (also called abessive) : ‘without ...’

67. Causal : ‘because of ...

68. Motivative : ‘for the sake of ...

69. Distributive : \( n \) [= a number] X each’ [They received a book each]

70. Comparative : ‘compared to ...’ [= ‘than’] or ‘like ...
   (cf. Awngi, (36b), p. 162)

71. Themative : ‘[speaking] about ...
72. Modal/Equative : ‘as ...

73. Temporal : ‘in the time of ...

74. Pretemporal : ‘before ...

75. Posttemporal : ‘after ...

76. Prottemporal : ‘during ...

77. Vocative : marks the direct address (normally, to a person)
10. The Russian genitive in numeral phrases: a problematic situation

As is well known, in Russian, a numeral (DVÁ 2, TRI 3, ČETYRÉ 4, PJAT´ 5, ..., DESJAT´ 10, ..., STO DVADCAT´ 120, ...) standing in the nominative or the accusative (the latter with inanimate nouns only), requires a noun to be in the genitive (singular or plural): dva stakan+u ‘two glasses’, tri sestr+ь ‘three sisters’, or dešyat´ okon+Ø ‘ten windows’. In my analysis of Russian numeral phrases NUM+N, it is the numeral that syntactically depends on the noun (Mel’čuk 1985: 59 – 102): NUM→synt→N. Therefore, it might seem that in such phrases the genitive of the noun marks its role as the SSynt-governor (of the respective numeral); this, however, contradicts our definition of case I.1a as the category called upon to mark the dependent SSynt-roles of nominals. Even if my proposal for the direction of dependency in the Russian NUM+N phrases is not accepted, the problem nevertheless remains, since it is logically feasible that in some other construction a SSynt-dependent of a noun influences the choice of its case I.1b. The solution to the problem, however, seems to be quite straightforward: the case I.1b of the head noun N in phrases of this type still marks the dependent role of N (with regard to its own SSynt-governor), but conditionally; namely, if and only if N itself has a particular type of dependent. Thus, in a Russian NUM→synt→N phrase, the genitive on N marks its role as the Subject or the DirO under the condition that N syntactically subordinates a numeral. Such conditional case-marking of SSynt-roles is not extremely widespread but it does occur, and the possibility of its occurrence must be accounted for in a general theory of case I.1a.

Conditional case-marking means that, during the synthesis of a text from a given Semantic Representation, cases I.1b can be ascribed to nouns not necessarily in one step but in a more complicated way. Suppose that a Russian transitive verb V syntactically subordinates the noun N as its Direct Object; this N must be in the accusative. But N subordinates, in its turn, a numeral NUM, which, as we know, requires the genitive of N. Then the following happens: one surface-syntactic rule ascribes the accusative to the entire phrase NUM→synt→N (it is this phrase that as a whole plays the SSynt-role of DirO); then a second SSynt-rule ‘distributes’ this accusative among the constituents of the phrase: namely, the accusative ‘permeates’ to NUM, and N receives the genitive. The result is as follows:

Ja vižu kniģ+u. ~ Ja vižu dv+e kniģ+i.

I see-PRES.1SG book SG.ACC I see-PRES.1SG two FEM.ACC book SG.GEN

(This hasty description does not, of course, properly represent the two-step case marking; for more details, see Mel’čuk 1985: 162 – 210.)
11. ‘Multiple Case’

To complete the general picture of cases I.1a and cases I.1b, I should touch upon the topic of *Multiple Case*, which has become a hot issue in the last decade (see Plank (ed.) 1995). This cover term refers to the appearance, on one nominal wordform, of two or more signs that express cases I.1b. (Of course the expression of one particular case I.1b by a combination of markers – e.g., by a prefix and a suffix, or by a suffix and an alternation – should not be considered an instance of Multiple Case.)

This rather simplistic formulation, however, lumps together five different linguistic phenomena, related to multiple case. I will analyze them one by one as follows:

1. Nominal agreement in case I.2a (where case I.2a stands for ‘agreeing case;’ see 1, p. 110).
2. Hypostasis.
4. Compound cases I.1b (Localization + Orientation).
5. Case I.1a in group inflection.

11.1. Nominal agreement in case I.2a

Typically, a case I.1b on an N is governed – that is, it is determined by the SSynt-relation between N and its governor X (X–r→N) as well as by certain properties of X and, perhaps, by some relevant semantic elements (see Chapter 1, 4, p. 83ff). However, in some languages, an N1 has, along with its ‘normal’ case marker, an additional marker physically identical with (or similar to) the marker of a case I.1b but fulfilling quite a different function: this second case marks the AGREEMENT of N1 with another noun N2 such that N1 belongs to the NP headed by N2 (i.e., N1 ∈ NP(N2)). In this way, N1 receives two (or even more, as we will see) consecutive case markers, the first of which is a GOVERNED case I.1b, marking the dependent SSynt-role of N1 within NP(N2) and, perhaps, its semantic role, while the other one is an AGREEMENT case, or case I.2b, which automatically reflects the case I.1b of N2. Let me give two examples (agreeing cases I.2b and other agreement grammemes, as well as their markers, are boldfaced; governed cases I.1b and the other grammemes that impose the agreement are boxed):

(33) Old Georgian

\[
\begin{align*}
\text{a. } & \text{saxel} + \emptyset + \text{man} & \text{man} + \emptyset + \text{isa} + \text{man}. & \text{lit. ‘name of-Father’}
\end{align*}
\]

\[
\begin{array}{ll}
\text{name} & \text{SG ERG} \\
\text{Father} & \text{SG GEN ERG}
\end{array}
\]
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b. saxel+Ø +ita mam+Ø+isa +jta. lit. ‘by-name of-Father’
   name SG [INSTR Father SG GEN [INSTR

c. ’cinamsrbol+n+i lažkar+ta +n + i. lit. ‘forerunners of-armies’
   forerunner PL [NOM army PL GEN PL [NOM

For other examples of agreement in case I.2 in Old Georgian, see Chapter 1, 3.3, (19), pp. 69–70.

(34) Hurrian (Gernot 1995)

a. ṣen(a)+Ø+iffu+ue +n‡ +ž ašti+Ø+i +ž
   brother SG 1SG GEN OBL SG ERG wife SG 3SG [ERG
   ‘My brother’s wife ... [did something]’.

b. en(i)+n(a) +až +už attani+Ø+ve +n(a) +ažuž
   God OBL PL [PL ERG father SG GEN OBL PL PL [ERG
   ‘Father’s gods [did something]’.

c. tevi +n(a) +až +už en(i)+n(a) +až+(v)e +n(a) +až+už
   word OBL PL [PL ERG God OBL PL PL GEN OBL PL PL [ERG
   ‘Words of gods ... [did something]’.

d. tev+Ø +āī Teššop+Ø+(p)e+āī
   word SG [INSTR Teššob SG GEN [INSTR
   ‘by the word of [the weather-god] Teššob’

The noun N₁ in the genitive agrees with its SSynt-governor N₂ in case I.2b and in number. Moreover, if N₂ has the suffix of the oblique stem, N₁ copies this suffix, too. N₁ can both precede and follow N₂.

The prototypical example of nominal agreement is a noun N₁ in the GEN(itive) case I.1b which agrees with another noun N₂, its Synt-governor, in case I.2a. Thus, in the construction

\[ N₁_{GEN}, c \leftarrow synt \rightarrow N₂ \]

the attributive noun N₁ reflects, in addition to its own GEN, also the case c of N₂. This phenomenon has been known in European linguistics for more than a century and a half (F. Bopp made public his observations concerning double case in Old Georgian in 1842, see (33) above). This is a genuine instance of Multiple Case; it is often denoted by a misleading, but popular German term
Suffixaufnahme (which we owe to N. Finck; literally, ‘inclusion/reception of suffixes’).

The construction \(N_1^{\text{GEN}} \leftarrow \text{synt} \rightarrow N_2^c\) is of course not the only representative of nominal agreement. The agreeing noun \(N_1\) need not be in the genitive: it can be in any case used to mark nominal attributes in \(L\). Furthermore, \(N_1\) need not agree with its Synt-governor: it can agree with other nouns. \(N_1\) need not even agree with a noun: it could agree with a verb. Finally, it need not agree (only) in case I.2a. So, in theory, a noun can agree with many other items in the clause, this agreement being carried out according to different inflectional categories—e.g., number and gender or, however strange this might seem, tense. And all these theoretical possibilities are realized in language! It is clear that the typology of nominal agreement is very complex. Without trying to develop it here, I will limit myself to a telling example.

(35) Hindi (Payne 1995)

A genitive noun \(N_1^{\text{GEN}}\) agrees with the governing noun \(N_2\) in gender, number, and stem form (direct vs. oblique stem):\(^{24}\)

\[
\begin{array}{lll}
\text{Rani} & +kā & \text{bhaē} + \emptyset \\
\text{R.OBL} & \text{GEN.MASC.SG.DIR} & \text{brother(MASC) SG.DIR.NOM}
\end{array}
\]

‘Rani’s brother [is here]\(^1\).’

\[
\begin{array}{lll}
\text{Rani} & +ke & \text{bhaē} + \emptyset + \ldots \\
\text{R.OBL} & \text{GEN.MASC.SG.OBL} & \text{brother(MASC) SG.OBL} \ldots \\
& & \text{‘to/for/with/… Rani’s brother’}
\end{array}
\]

\[
\begin{array}{lll}
\text{Rani} & +ke & \text{bhaē} +yō + \ldots \\
\text{R.OBL} & \text{GEN.MASC.PL.OBL} & \text{brother(MASC) PL.OBL} \ldots \\
& & \text{‘[to/for/with/…] Rani’s brothers’}
\end{array}
\]

\[
\begin{array}{lll}
\text{Rani} & +kt & \text{bhan} + \emptyset \\
\text{R.OBL} & \text{GEN.FEM.SG.DIR} & \text{sister(FEM) SG.DIR.NOM}
\end{array}
\]

‘Rani’s sister [is here]\(^1\).’

\[
\begin{array}{lll}
\text{Rani} & +kt & \text{bhan} + \emptyset + \ldots \\
\text{R.OBL} & \text{GEN.FEM.SG.OBL} & \text{sister(FEM) SG.OBL} \ldots \\
& & \text{‘[to/for/with/…] Rani’s sister’}
\end{array}
\]

\[
\begin{array}{lll}
\text{Rani} & +kt & \text{bahn} + \emptyset \text{ē} \\
\text{R.OBL} & \text{GEN.FEM.PL.DIR} & \text{sister(FEM) PL.DIR.NOM}
\end{array}
\]

‘Rani’s sisters [are here]\(^1\).’
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What we see here is by no means an instance of *Suffixaufnahme*: no suffix is transferred from $N_2$ to $N_1^\text{GEN}$. Yet there is no doubt that this is agreement of a noun in the genitive with the modified noun. The genitive noun in Hindi expresses three inflectional categories of agreement: gender, number, and stem form of its SSynt-governor. This agreement is not recursive:

$\text{Rani} +k\tilde{t}$  $\text{bahn} +\tilde{\theta}$  $+\ldots$

\begin{itemize}
  \item R.OBL  GEN.FEM.PL.OBL sister(FEM)  PL.OBL  \ldots
  \item [to/for/with/\ldots]  Rani’s sisters
\end{itemize}

A similar, but even more complex situation is attested in Cushitic languages: the genitive form of the noun $N_1^\text{GEN}$ agrees with $N_2$ in gender and number (similar to Hindi), but then it takes a second case suffix, reflecting the case I.1b of $N_2$.

(36) *Awngi* (Hetzron 1995; the symbol \` shows the high tone)

\begin{itemize}
  \item a. \textit{muri} $+\text{w}$  $+\emptyset$ \textit{aqi} $+\emptyset$  ‘man of-village\textsuperscript{3}
    \begin{itemize}
      \item village  MASC.GEN  NOM  man(MASC)  NOM
      \item \textit{muri} $+\text{t}$  $+\emptyset$ \textit{guna} $+\emptyset$  ‘woman of-village\textsuperscript{3}
    \end{itemize}
  \item b. \textit{wolijí} $+\text{w}$  $+\text{des}$ \textit{aqi} $+\text{w}$  $+\text{des}$ \textit{\`u}n $+\text{des}$
    \begin{itemize}
      \item old  MASC.GEN  ABL  man  MASC.GEN  ABL  house(MASC)  ABL
      \item \textit{wolijí} $+\text{w}$  $+\text{sta}$ \textit{aqi} $+\text{w}$  $+\text{sta}$ \textit{\`u}n $+\text{ta}$
    \end{itemize}
  \end{itemize}

After the genitive suffix, some markers of cases I.1b have special allomorphs; thus, in (36b), the comparative case I.1b has $\text{-sta}$, instead of $\text{-ta}$. This agreement is recursive:

\begin{itemize}
  \item c. \textit{gud} $+\text{w}$  $+\text{skw}$  $+\text{da}$ \textit{guna} $+\text{w}$  $+\text{skw}$  $+\text{da}$ \textit{\`u}n $+\text{okw}$  $+\text{da}$
    \begin{itemize}
      \item good  FEM  MASC.GEN  PL.GEN  LOC  woman  GEN.MASC  PL.GEN  LOC  house  PL.GEN  LOC
    \end{itemize}
  \end{itemize}
In connection with the agreement of the nominal genitive form, a legitimate question is often asked: How does one know that one is dealing with the genitive case\textbf{L.1b} form of a noun and not with a derived adjective, which agrees with the modified noun in quite a regular way? This is especially problematic, since often the markers of agreement in the genitive noun are identical or very similar to the markers of agreement in the adjective (such is, for instance, the situation in Hindi). The answer is that one has to check whether $\text{NGEN}$ preserves the properties that in language under consideration accrue only to nouns. Here is a tentative list of such properties.

**Morphological properties**

1) An $\text{NGEN}$ can be pluralized to express the plurality of the Possessor while a derived (possessive) $\text{Aposs}$, as a rule, does not admit such pluralization. Thus, in Hurrian an $\text{NGEN}$ is pluralized by the same plural suffix $-a\tilde{\text{a}}$ as all nouns in all other cases are (see (34b-c)). In other words, an $\text{NGEN}$ can distinguish singular and plural to express the number of the Possessor, but an $\text{Aposs}$ cannot and, therefore, such an $\text{A}$ is possible only for singular Possessors (cf. Upper Sorbian, Note 25, p. 178).

2) An $\text{NGEN}$ can have possessive suffixes ‘my’, ‘yours’, etc. – as all other nouns, while an $\text{A}$ cannot (cf. Hurrian again, (34)).

3) An $\text{NGEN}$ can differ from an $\text{Aposs}$ by the absence of a special marker (before the genitive suffix), while a derived adjective necessarily has an adjectivizing suffix (before the agreement markers). Thus, in Hurrian, the $\text{N}$ has nothing before the genitive suffix $-\text{ve}$, and a derived $\text{Aposs}$ has the adjectivizing suffix $-o/-u$.

**Syntactic properties**

4) An $\text{NGEN}$ can play other passive SSynt-roles unavailable to an $\text{A}$. Thus, in Hindi, an $\text{NGEN}$ can also be:

(i) The Agent with a passive participle:

\[
\text{Rānī} + \text{kit} \quad \text{likhtā} \quad \text{hū} \quad \text{kitāb} \quad +\emptyset
\]

R.OBL GEN.FEM.SG.DIR written been book(FEM) SG.DIR.NOM

‘book written by Rani’

This $\text{NGEN}$ agrees with the nominal governor of the participle in gender and stem form.

(ii) The Subject of a ‘possessive’ sentence:

\[
\text{kamre} + \text{kit} \quad \text{tīm} \quad \text{hī} \quad \text{divār} \quad +\tilde{e} \quad \text{hāī}
\]

room-OBL GEN.FEM.PL.DIR three only wall(FEM) PL.DIR.NOM are
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‘[The] room has only three walls’, = lit. ‘Of the room three only walls are’.

Here too, the N\textsubscript{GEN} agrees with the Subject in gender and stem form.

(iii) A complement of an A:
The N\textsubscript{GEN} can be governed by an A, as, for instance, in Gujarati:
\textit{bag + ne phORTH\(h\) UDA\(l\) che}
garden GEN.MASC.SG.OBL surrounding circle is ‘There is a circle around the garden’.

[The A phORTH\(h\) governs the noun bag.]

(iv) A complement of a pre- or post-position, as again in Gujarati:
\textit{PoIJ\(a\) + de vicc}
GEN.MASC.SG.OBL in
The suffixes -ne/-de are the default variants: they are used where there is nothing to agree with.

5) An N\textsubscript{GEN} can play an active SSynt-role unavailable to an A: it can govern adjectives.

6) An N\textsubscript{GEN} keeps its normal linear position, which may be different from that of an A. This happens in Hindi, where an N\textsubscript{GEN} precedes the DET(erniner), while an A follows it:

\text{N\textsubscript{GEN} + DET + A + N}

\text{R\textsuperscript{ani\textsuperscript{t}} + k\text{I} ve do l\text{\textsuperscript{al}} kit\text{a\textsuperscript{b}} + \text{\textsuperscript{\textdialed{e}}}}
R.OBL GEN.FEM.PL.DIR those two red book(FEM) PL.DIR.NOM
‘Rani’s those two red books’

Now the time has come to illustrate more complex phenomena.

– In some languages, a noun in a case\textsuperscript{I.1b} other than genitive agrees in case\textsuperscript{I.2a} with a noun that is not its SSynt-governor:

(37) Warlpiri

\begin{enumerate}
\item a. \textit{ngarka+O ka +/la malu +ku daalpanka}
\quad man NOM NON-PAST 3SG.IND.OBJ kangaroo DAT intercept
\quad \text{yuwurku+wana+ku}
\quad scrub PERL DAT
\quad ‘The man is intercepting the kangaroo it going through the scrub’.
\item b. \textit{ngarka+O ka +/la malu +ku daalpanka}
\quad man [NOM] NON-PAST 3SG.IND.OBJ kangaroo DAT intercept
\quad \text{yuwurku+wana+O}
\quad scrub PERL NOM
\quad ‘The man is intercepting the kangaroo he going through the scrub’.
\end{enumerate}
The circumstantial, according to its meaning, is in the perlative (a case in meaning (through)); its agreement in case I.1b with the Object or the Subject shows the semantic difference.

– There can also be recursive agreement in case I.2a where the target noun is not in the genitive and it agrees with some other Ns—in addition to agreeing with its SSynt-governor:


a. *ŋada yalawu+dara yakuri+Ø+na ũbudu+kara+guni+na midil+guni+na*
   I-NOM catch PAST fish NOM ABL brother GEN INSTR nom INSTR ABL
   ‘I caught [the] fish with brother’s net’.

b. *ŋada yalawu+para yakuri+Ø+pda ũbudu+kara+guni+pda midil+guni+pda*
   I-NOM catch APPREH fish NOM OBL brother GEN INSTR OBL net INSTR OBL
   ‘I might (and this would be bad) catch [the] fish with brother’s net’.  
   [APPREH(ensive) is a verbal mood meaning ‘[action] is bad for the Agent’.]

c. *ŋada yalawu+d u yaku ri+Ø+wu ũbudu+kara+gun+u midil+gun+u*
   I-NOM catch FUT fish NOM PROP brother GEN INSTR PROP net INSTR PROP
   ‘I will catch [the] fish with brother’s net’.

All NPs in a clause, except for the Subject, agree in case I.2a with the Main Verb, according to the latter’s tense/mood/aspect: roughly, ‘PAST’ ⇒ ablative, ‘APPREHENSIVE’ ⇒ oblique, and ‘FUTURE’ ⇒ proprietive. (Evans has dubbed these agreeing cases I.2b modal, since they express the modality of the clause.) Note that:

– *N_Gen ‘brother’s’ reflects the case I.1b of its governor (‘net’), so that in (38) the wordform *ũbudu+kara+guni+*... ‘brother’s’ has three case suffixes: the governed genitive -kara, the first-layer agreement-marking instrumental -guni, and the second-layer agreement-marking ablative/oblique/proprietive -na/-nda/-u.

– A nominal wordform in Kayardild can include four layers of case suffixes: case I.1b, or governed case; and three layers of agreement cases I.2b: case I.2b-I, or ‘governor-reflecting case;’ case I.2b-II, or ‘modal case;’ and case I.2b-III, not shown in (38), which marks the relation to previous discourse, or ‘discourse-bound case’ (for example, the purposive in -nfa, appearing on all the words of the sentence, indicates a refutation of a previous remark by the interlocutor—something like Fr. *mais si*, or Ger. *doch*).
Nominal agreement in case **I.1b**, shown in (38), is obligatory.

A general theory of nominal case has to consider both case **I.1**, or government case, with the subdivisions we have introduced: case **I.1a**, case **I.1b** and case **I.1c**; and case **I.2**, or agreement case, with analogous subdivisions—case **I.2a** (the category), case **I.2b** (specific cases **I.2**) and case **I.2c** (the form of a case **I.2b**). As mentioned in Section 1, agreement nominal case **I.2a** is not systematically discussed in the present chapter. As for modal and discourse-bound cases, they can be left aside because of their rarity. However, the most important fact is the possibility of several different inflectional categories of agreement case **I.2a**: since their grammemes cooccur in the same wordform they are different categories; since they are very similar to each other and share the same markers, I prefer to call them by the same term.

### 11.2. Hypostasis

In some languages, the genitive or the relative case **I.1b** form of the noun N can have the meaning of ‘that of N’. This phenomenon is called hypostasis. The hypostatic genitive/relative form can then be declined in a regular way—as any ‘normal’ noun. Thus, in Basque, the form \textit{gizon+aren} is the normal genitive of \textit{GIZON} ‘man’, but it can also mean ‘that of the man’. Therefore, nothing prevents other case **I.1b** suffixes being added to this form—hence \textit{gizon+aren+ari} \textit{DAT} ‘to that of the man’, etc. The same is possible with the relative form \textit{gizon+ko} ‘that of the man’. This pattern is also found, in addition to Basque, in Modern Georgian and Kalkatungu:

(39) a. Basque

\begin{tabular}{llll}
\textit{Bilbo+ko} & \textit{gizon+arekin} & ‘with the man from Bilbao’ \\
Bilbao & REL & man & COMIT \\
& and & & \\
\textit{Bilbo+ko} & +arekin & ‘with [that] from Bilbao’ \\
Bilbao & REL & COMIT
\end{tabular}

b. Georgian

\begin{tabular}{llllllll}
– \textit{Vi} & +s & \textit{sax+s} & \textit{e3ebs} & ‘Whose house is he looking for?’ \\
& who & GEN & house & DAT & he.looks.for \\
– \textit{Čemi} & \textit{amxanag+isa} & +s & ‘For [that] of my friend’. \\
& my & friend & GEN & DAT
\end{tabular}

c. Kalkatungu

\begin{tabular}{llllllll}
\textit{kupapuru+u} & +ya & +\textit{fu} & +\textit{qa} & \textit{icayi} & ‘Old man’s [one = dog] bit me’. \\
old.man & GEN & ligative & ERG & I-NOM & bite-PAST
\end{tabular}
In some languages, as we see in (39c), the sequence of case I.1b suffixes must be separated by empty suffixes, called *ligatives*.

Hypostasis is a completely different phenomenon from agreeing case I.2a, but here as well we have to speak of two different inflectional categories: hypostatic case I.1a and normal governed case I.1a. Alternatively, one could consider the hypostatic markers of the genitive/relative as autonomous derivational suffixes, and thus exclude hypostasis of the type described from the domain of case I.1a.

11.3. Semantic-syntactic case I.1b combinations

A classic example of a semantic-syntactic case I.1b combination is provided by Basque: if a noun N1 in a semantic case I.1b c1 depends syntactically on another noun N2, N1 has to be marked for the syntactic relative case I.1b (with the marker -ko), which obligatorily signals any dependence of an N1 on another N2:

(40) Basque

<table>
<thead>
<tr>
<th>stone</th>
<th>INDEF.INSTR REL</th>
<th>house</th>
<th>DEF SG.NOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>harri+ko etxe+a+Ø</td>
<td>= house [made] with-stone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>lagun+Ø+eki</td>
<td>= relation with friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eliza+ra</td>
<td>= on the road to the church</td>
<td></td>
<td></td>
</tr>
<tr>
<td>harreman+ak</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Once again, we are seeing two different inflectional categories – ‘normal’ case I.1a and relative case I.1a (the latter having two grammemes, ‘NON-RELATIVE’ and ‘RELATIVE’). An alternative description would consider the second marker not to be a marker of case I.1a at all, but that of a special relative form (something similar to the English possessive form in ‘s).”

11.4. Compound cases I.1b

Compound cases I.1b have been discussed in Section 7, Item 5, p. 145ff, and there is no need to return to this discussion.

11.5. Case I.1a in group inflection

The suffix -suf of the case I.1b on the noun N2 that is the head of a nominal phrase can be ‘physically’ attached to the last item in the phrase, rather than to N2 itself: this -suf characterizes, so to speak, the whole phrase. (The situation is
similar to what happens with the English possessive marker -s: in *the colleague I worked with yesterday’s computer*, the suffix -s marks the noun COLLEAGUE as the Possessor, but is detached from this noun and transferred to YESTERDAY, which is not even a noun.) This is a well-known phenomenon of migrating affixes, when an affix that expresses a category of wordform A is linearly included in another wordform B.

Under the circumstances, if the rightmost item in the phrase happens to be a noun N₁ in its own case I.1b, N₁ receives an additional case suffix -suf from its SSynt-Governor N₂, so that N₁ has two case markers. Here are four examples.

(41) Aranda

\[
\text{wora} \quad \text{ingata}+\text{kana}+\text{la} \quad \text{[The] son of-the-chief ... [did something]}.
\]

In (41), it is the head of the NP, WORA ‘son’, that is inflected in the ergative, not the N\(_{\text{GEN}}\) ‘chief’, but it is the wordform *ingkatakana* that receives the ergative suffix -la—this suffix has migrated to the last item of the NP.

(42) Alyawarra

\[
\text{ayliyla} \quad \text{artwa} \quad \text{ampu}+\text{kip}+\text{ila} \quad \text{‘with the boomerang of the old man’}
\]

In (42), the head of the NP, the noun AYLIYLA ‘boomerang’, is inflected in the instrumental, and ARTWA ‘man’ is inflected in the genitive; however, the adjective AMPU ‘old’ receives two case I.1b suffixes:

– first, the genitive suffix -kip, which migrates to it from its syntactic Governor, ‘man’;
– and second, the instrumental suffix -ila, coming from ‘boomerang’, the SSynt-Governor of ‘man’.

(43) Sumerian (Plank 1995: 40)

\[
\text{é} \quad \text{šeš} \quad \text{lugalu}+\text{ak}+\text{ak}+\text{a} \quad \text{‘in the house of a brother of the king’}
\]

(44) Kanuri (Plank 1995: 41)

\[
\text{tátà kámu} +\text{vè} +\text{qa} \quad \text{rúsknà} \quad \text{‘I have seen the son of [this] woman’}.
\]

These are typical instances of group inflection, where a case affix launched by the noun N attaches to the whole phrase of which N is the head rather than to N itself. Therefore, in (41)–(44), we do not have instances of Multiple Case: what we see are Multiple Case-Markers. (Another German term is used here: Suffixhäufung, lit. ‘suffix piling.’) Wordforms with several case markers do not represent different case I.1a categories, as we have seen above: here we are dealing
12. Main tendencies in the study of case

Two main theoretical approaches can be distinguished in linguistic investigations of case I.1a. (For a theory-independent and detailed description of case I.1a in world languages, see Blake 1994; see also Siewierska and Song (eds.) 1998.)

1. The first approach is based (at least primarily) on syntagmatic considerations and tends to treat a case I.1b as the class of all nominal forms mutually substitutable in certain specified governing contexts (see Revzin 1967: 139–55, Marcus 1967, Zaliznjak 1967: 36–55 and 1973, Gladkij 1973, Van Helden 1993). Case I.1a is considered a purely syntactic category, virtually meaningless. The goal is to establish the set of relevant contexts in which a given case I.1b appears and to develop reliable procedures that return the inventory of cases I.1b of a given language, based on the ability of several nominal forms to be governed—that is, to be admitted or excluded by diagnostic context frames—in an identical way. As can be expected, this method ensures best results in the domain of syntactic cases I.1b.

2. The second approach is based primarily on paradigmatic considerations and tends to treat a case I.1b as a specific meaning, so that a system of cases I.1b can be represented in terms of several semantic features (see, in particular, the work of L. Hjelmslev (1935–37/1972) and R. Jakobson (1936/1971, 1958/1971)). Case I.1a is considered a semantic category, virtually always meaningful. The goal is to establish the set of case contrasts within nominal paradigms, to isolate the ‘nuclear,’ or ‘underlying,’ meaning of each case I.1b (= Jakobson’s Grundbedeutung) and to describe the semantic content of all specific cases I.1b. (Here the work of A. Wierzbicka—e.g., 1980 and 1983—is of particular interest.) This method is especially good in the domain of semantic cases I.1b, primarily when applied to local cases I.1b.
Personally, I am convinced that only an appropriate combination of both approaches is capable of yielding fully satisfactory results. Case I.1a is mainly a syntactic inflectional category, and cases I.1b are there, before all, to mark passive SSynt-roles of nominals. At the same time, though, they very often convey a meaning, so that it is impossible to describe them without accounting for their semantic load. Yet one cannot abstract from their basically syntactic nature, either: the majority of cases I.1b cannot be described exclusively in terms of their semantic content. They are, as a rule, entailed by particular syntactic constructions or by particular lexical items in particular constructions. Therefore, a double-faceted description, put forth in our definition of case I.1a, imposes itself.

Now, as a coda to this chapter, I will touch upon the notion of ‘deep case,’ as launched and developed by Charles Fillmore (1968 and 1977). As a matter of fact, Fillmore’s ‘deep cases’ are semantic relations obtaining between lexeme occurrences in a clause—more precisely, those between a predicate lexeme and its semantic arguments. These relations can be expressed (on the morphological surface) by cases I.1b, by prepositions/postpositions, or even by word order (as Fillmore himself has repeatedly stated). Just for this reason, I do not think the term deep case is felicitous. To me, it is rather a misnomer: if linguists are to use it, they should use it cautiously. I, for one, would prefer to call semantic relations simply semantic relations.

As for the notion of deep case as such, it has proven extremely fruitful, bringing about a new dimension in semantic research and contributing to the shift from the completely syntax-centered transformationalism of the 60’s to the semantically-based studies of today. True, deep cases in the sense of Fillmore are only tangentially related to case I.1a as understood in this chapter and, consequently, they need not be discussed here. However, given the popularity and the importance that the notion ‘deep case’ has enjoyed and is enjoying in modern linguistics, it would be useful to add the following three remarks.

1. A Fillmorean ‘deep case’ is a semantic relation between a predicate and one of its arguments, stated with respect to the complements of the verb and the verb itself:

(45) I cut my foot on a rock:

| EXPERIENCER(I, cut) | = | ‘I am the Experiencer of cutting’. |
| PATIENT(foot, cut) | = | ‘My foot is the Patient of cutting’. |
| THEME(foot, movement) | = | ‘My foot is the Theme of the movement’. |
| GOAL(rock, movement) | = | ‘The rock is the Goal of the movement [of my foot]’. |

But ‘[to be] experiencer of’, ‘[to be] patient of’ and ‘[to be] goal of’ (and in general all semantic relations) are, in their turn, predicates. If we strive for a
homogeneous semantic representation, then the relation of such a predicate to each of its arguments should be expressed as well by a ‘deep case’ $dc$ of second order:

$$EXPERIENCER\rightarrow \text{dci} \rightarrow A \text{ and EXPERIENCER}\rightarrow \text{dcj} \rightarrow \text{CUT}, \text{etc.}$$

These second-order deep cases will face the same problem: how to express the relations between them and their arguments? We will need third-order ‘deep cases,’ and in this way, we will enter into an infinite regression. The only way to avoid this is to draw arbitrarily a line somewhere—for example, just after the ‘deep cases’ of the first order. However, such a solution is not to be recommended for a consistent semantic representation. A preferable solution would be never to characterize the relations between a predicate and its arguments semantically. These relations will be fully specified by the semantic decomposition of the predicate itself. It is sufficient to differentiate the arguments of the same predicate and indicate their respective positions in its semantic decomposition.

2. If a deep case is a genuine meaning—i.e., a full-fledged semanteme—then it could be expressed by an English lexeme or phrase: there are, after all, such English lexemes as EXPERIENCE or GOAL. In this event, the question arises: how should the deep cases of these lexical units be represented? For instance, John has experienced hunger and need:

$$EXPERIENCER(\text{John} ; \text{experience}),$$

$$\text{OBJECT}(\text{hunger and need} ; \text{experience})?$$

What is in general the respective status of ‘deep case’ and lexemes synonymous to them? Or is a ‘deep case’ never completely synonymous with at least one (sense of an) English lexical unit? A possible solution would be to express all meanings in the same manner, thus providing for a homogeneous semantic representation—which, once again, implies the rejection of ‘deep cases’ as entities with a particular, independent status.

3. Fillmore has of course seen all of the above-mentioned difficulties and has insisted that ‘deep cases’ belong to a special level of utterance representation: an intermediate level between the genuine semantic representation and the (deep-) syntactic representation (e.g., Fillmore 1977: 60). I think what is meant is a level where all full lexemes of the sentence appear as such—in other words, semantically not decomposed, but with their interdependencies stated in semantic, rather than syntactic, terms. Impressionistically, such a level seems justifiable; it can be, for instance, something called ‘reduced semantic structure.’ Still, I see several problems in this connection, of which I will mention three:
Some relations between lexeme occurrences in a sentence are utterly ase-
monic. Notorious instances are the Synt-Subject and the DirO. It seems
very problematic that such relations could be reduced to a common se-
monic denominator with other, actually semantic, relations.

The number of semantic relations obtaining in natural sentences is high-
er than Fillmore’s examples imply. If these relations are really seman-
tic (and not simply conventional labels for disjunctions of semantic ele-
ments), then what is needed is at least several dozen of them (see, for
example, a list of ‘semantic valence slots’ in Apresjan 1974: 125–126,
where 25 of such relations are enumerated; the author insists that the list
is far from complete and several among these valences “are in fact semi-
syntactic”).

Some semantic relations hold between (the meaning of) a lexeme and
a part of the meaning of another lexeme—cf. (44) above, where foot
is GOAL of the ‘movement’, which is a semantic component of cut (or
maybe not of cut, but rather of the overall meaning of the sentence).

How can we ensure a more or less homogenous representation in such
situations?

Summing up the above considerations, I conclude that ‘deep cases’ are not cases
in any sense, so that they need not be analyzed in connection with case1.1a.

*        *

There are, no doubt, more questions to be asked concerning case1.1a and
cases1.1b, but I will only mention, by way of conclusion, several relevant prob-
lems that have not been touched upon in this chapter:

Case1.1a and paradigmatically related categories in other parts of speech
(for example, the category of caseII and attributivity in adjectives, or mood
in verbs—that is, categories that mark passive SSynt-roles of adjectives and
verbs, respectively).

Case1.1a and syntagmatically related categories in nominals (determinacy,
number, animacy—that is, categories that tend to be marked together with
case1.1a by the same cumulative markers).

Case1.1a and government, in particular, case1.1a and verbal diathesis (cf.
Chapters 3 and 4).

Case1.1a vs. phrases ‘noun + postposition/preposition.’

Case1.1b marking in particular syntactic constructions (i.e., the choice of
cases1.1b as a function of the context).

Case1.1b syncretism, i.e., systematic coincidence of the surface forms of
some particular cases1.1b (Baerman et al. 2001).
Notes

1 (1, p. 110) For agreement and government, see Chapter 1, p. 31ff.

2 (1, p. 111) The present chapter is based on Mel’čuk 1986; for a more recent discussion of the concept of grammatical case, see Plungjan 2000: 161–184.

3 (2, before Def. 2.1, p. 111) Interestingly, Hockett (MS: 17–8) also insisted that marking subject-predicate-object relations is “the quintessence of a case-system.” As far as I know, he was the first linguist to promote the importance of major SSynt-relations for the definition of case I.1a.

4 (3, 2, p. 115) The relative clause in Persian requires another marker on the governing noun: the suffix -i. This, however, is a special topic, marginal in the present context.

5 (3, after (2), p. 116) Chung 1998: 44ff, 231ff describes the category of state in Chamorro (she calls the corresponding morph a linker). If a noun N has a modifier, N has to be marked with the prefix na- (if the modifier precedes it) or with the suffix -n/-O (if the modifier follows):

(i) a. i agāga? na+kareta ~ i kareta+n agāga? ‘the red car’
   b. haga+n otra taotao ‘daughter [of] another person’
   c. dos na+lugāt ‘two places’

If N has two modifiers—one preceding and one following—it is marked with both the prefix and the suffix:

(ii) Hafa na+klasi+n trongku? ‘What kind [of] tree?’

6 (3, Comment 7, p. 119) The correct analysis of case-like nominal forms is, in many cases, far from clear-cut. Thus, in Abkhaz, the SsSynt-roles of Subject and of both DirO and IndirO are always expressed by the same (= invariable) form of the noun. This form is also used with postpositions. However, any Abkhaz noun N has three case-like forms (expressed by specific suffixes):
– transformative (= ‘transformed into N’);
– instrumental (= ‘by means of N’);
– privative (= ‘without N’). For instance:

(i) a. Dara jara šurš’man+s d+qarceit
    they he interpreter into they him-made
    ‘They made him an interpreter’.

   b. Sara laba+la ala s+asi’t
    I stick with dog I it-hit
    ‘I hit the dog with a stick’.

These three forms are traditionally considered to be nominal derivations (or nouns with postpositions), not forms of cases I.1b, because they are never governed by particular verbs and are obviously semantic entities. Intuitively, I agree with this analysis, but I realize that a serious study is needed to substantiate it.
I reject (without discussion) an older approach, which saw in the English noun at least three cases: the nominative, the accusative, and the dative, distinguished by word order, as in (i):


For me, word order in principle cannot mark cases. Word order and case are two types of linguistic expressive means used to mark SSynt-dependencies between wordforms in the clause; they are on equal footing. I refer the reader to R. Jakobson, who, as far back as 1936, emphasized: “... we have no right to say that word order can express case, since word order can express only syntactic functions of words; and case and syntactic function are by no means the same” (Jakobson 1936 [1971]: 281; the translation is mine. – IM.).

By the same token, I do not accept ‘Latinizing’ attempts to interpret English prepositions as markers of cases: of = GEN, to = DAT, with = INSTR, etc.

Forms of the type my three sister-in-laws are frequently heard in American English, but here the expression is being reanalyzed as monomorphemic.

This also happens in German with a preposed genitive: (*die Spaniens Justiz vs. die Justiz Spaniens).

The EACF principle seems to lend itself to a more general formulation: it might hold not only for cases but for all grammemes induced by a syntactically governing context – i.e., for all grammemes imposed by government or agreement. However, since such a generalization requires special research, I prefer to limit myself to a more cautious statement.

Governed prepositions and, in an analogous manner, governed cases can be meaningful in the sense that they can express semantic contrasts if the governing item does not specify the preposition or the case uniquely. Here is a telling illustration. The Oblique Object of the Russian verb KOLOTIT’ ([to] pound) can be expressed by one of the three prepositions V (in(to)), PO (all over), and O(B) (on), with the corresponding differences in meaning:

(i) a. Marija kolotila butylkoj v dver´ Mary was pounding the door with a bottle – in order to be heard from inside (and admitted).

b. Marija kolotila butylkoj po dveri Mary was pounding on the door with a bottle – in order to damage the door or make noise.

c. Marija kolotila butylkoj o dver Mary was pounding the bottle on the door – in order to damage the bottle.

Contrasts such as these are equally possible between governed cases. Thus, ‘being governed’ does not mean ‘being completely meaningless’: a structural word or a case becomes semantically empty, i.e. completely meaningless, if and only if it is governed and is unique in the given context.

Quite a similar situation exists in Hindi with the causative verbs (Saksena 1982): the meaningless dative vs. instrumental cases are used to express the different communicative organizations of the starting SemS. If the Causative Agent (= the Subject of the underlying transitive verb) is the Communicative Theme
of the embedded clause it is marked with the Dative, which is the case \textbf{I.1b} of the
definite DirO in Hindi; if the Patient (= the DirO of the underlying transitive verb) is the
Communicative Theme, the Causee Agent is marked with the Instrumental:

(i) \textit{Māĩ+ne Rām+ko kitāb+Ø parh+vā +ī}
1 ERG Ram DAT book NOM read CAUS IND.PAST.1SG
I made Ram read the book\textsuperscript{2}
[‘Ram\textsubscript{T} is the Theme of the embedded clause: ‘Ram\textsubscript{T} reads the book’].

\textit{Māĩ+ne Rām+se kitāb+Ø parh+vā +ī}
1 ERG Ram INSTR book NOM read CAUS IND.PAST.1SG
lit. ‘I made the book read by Ram’
[‘book\textsubscript{T} is the Theme of the embedded clause: ‘The book\textsubscript{T} is read by Ram\textsubscript{T}’].

The contrast is similar to what we find in French, the difference being that in French
the contrast is marked by prepositions rather than cases \textbf{I.1b}:

(ii) \textit{Je fais lire le livre à Ram}
‘I make Ram read the book\textsuperscript{2} [the Theme of the embedded clause is ‘Ram’].

\textit{Je fais lire le livre par Ram},
lit. ‘I make the book [to be] read by Ram\textsuperscript{2} [the Theme of the embedded clause is
‘book’].

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13 (7, after (21), p. 141) Also, if we take the marker -\textit{rā} to be the suffix of the accusative,
the unmarked form must be considered the nominative. But the DirO, if indefinite,
is in the unmarked form – i.e., in the ‘nominative’! This state of affairs
contradicts Condition 2a of Definition 2.1, p. 112, because then the ‘nominative’ marks all
major SSynt-roles in Persian, which is not allowed for a case \textbf{I.1b}. This buttresses our
decision not to grant the element -\textit{rā} the status of a case suffix. In addition,
-\textit{rā} is not
at all involved with the morphology of Persian: it does not participate in agreement,
does not cumulate with any grammeme, and does not trigger any morphonological
transformations.

14 (7, 3, after (22), p. 142) My presentation of Tagalog case data is oversimplified. In fact,
Tagalog case markers fulfill further important functions: they are, so to speak, noun
actualizers having to do with determination, specificity, etc. – that is, they double as
articles (in traditional grammars of Tagalog they are called ‘articles’). Note also that
every personal and deictic pronoun in Tagalog has three SYNTHETIC case forms; thus
AKÓ ‘I’ distinguishes the subjective \textit{akó}, the oblique \textit{ko}, and the lative \textit{akin}.

15 (7, 4, p. 144) For an in-depth discussion of the concept ‘parasitic formation,’ see Aro-
noff 1994: 31 ff. See also this volume, Chapter 9, 3.5, p. 480.

16 (7, 5, Remark 3, p. 148) The consequences of such a decision are not entirely clear.
However, in the presentation of the preliminary notions in the Introduction, it was not
required that a grammeme should be elementary, i.e., ‘simple.’

17 (7, 5, the end, p. 149) Sometimes, one has to deal with grammatical elements ‘smaller’
than grammemes, which I suggest calling \textit{subgrammemes}. Subgrammemes could
be introduced in parallel with submorphs to be distinguished in such well-known instances
as Rus. za-by(-’t) [to] forget’ (no longer related semantically to by(-’t) [to be’] or
\textit{s-uma-s-šed(-uij)} ‘mad, crazy’ = in. ‘from-reason-having-descended’, etc. This concept
of subgrammemes corresponds to one of R. Jakobson’s favorite principles: to look for and state all minimal correspondences between meaning and sound, even those that lie deep under the ‘normal’ morphic level. However, the description of minimal meaning–sound correspondences does not belong to a linguistic model, that is, it is not part of the description of a language. Just like Jakobsonian case features, subgrammemes should be treated in a meta-linguistic model—in the description of our description of L.

Therefore, if we keep the model and the meta-model strictly separated, the problem of compound cases I.1b is solved: they are compound in the meta-model, and in the model itself they are described in exactly the same way as simple cases I.1b.

Even if we do not accept the analysis of the Russian partitive as a partial case I.1b, valid for a subset of masculine mass nouns and some abstract nouns only, and treat the partitive instead as a full case I.1b, valid for all nouns, its status as a non-autonomous case I.1b is not affected: its form would merely coincide either with the dative form or with the genitive form of the same stem.

This number appears in The Guinness Book of Records for 1997 (p. 249). A relatively recent paper Comrie and Polinsky 1998 claims that Tsez has more cases I.1b than Tabassaran: namely, 7 grammatical cases I.1b + 56 local cases I.1b (7 localizations × 4 orientations × 2 distalities [‘here’ vs. ‘over there’]) = 63 cases I.1b! The paper also provides a detailed discussion of whether compound cases I.1b should be counted in the same way as simple ones.

In many countries, since time immemorial, students have composed doggerels or little stories (usually, not very decent) to remember the case I.1b names better. Here is a 16th century French ‘poem’ of this type:

Soyez de volonté dative  ‘Be of a giving [= dative] will
À moy, votre amant optatif,  To me, your optative lover,
Qui, par un soupir vocatif,  Who, by a vocative sigh,
Demande la copulative  Requires the copulative
Et conjonctif sans exitif  And the conjunctive without exitive
Pour avoir force génitive !  In order to have the genitive force?

(Tabourrot des Accords, « Bigarrures », 1582; quoted in Langages 92, 1988: 65)

A similar Russian ‘short story’ follows: Ja eë zvatel’nyj i predložnyj; ona mne datel’nyj. My vmeshe tvoritel’nyj. Čem že ja vinitel’nyj, čto ona roditel’nyj?, lit. ‘I vocative her and propositive [= prepositional] to her; she dative (herself) to-me. We two together creative [= instrumental]. Why do they accusative me that she birthitive [= genitive]?

Suppose, for instance, that we claim that in Georgian there is a semantic difference between the nominative and the ergative, on the one hand, and between the dative and the nominative on the other. This claim seems problematic in that (i-a) and (i-b) do not show the slightest semantic difference, beyond the obvious difference in tense:

(i) a. Student+Ø+i čeril+Ø+s čer +s
   student   SG NOM letter SG DAT write PRES.IND.3SG
   ‘The student is writing a letter’.

b. Student+Ø+ma čeril+Ø+i da +čer +a
   student   SG ERG letter SG NOM PERF write AOR.IND.3SG
   [PERF stands for ‘perfective aspect’]
   ‘The student wrote a letter’.
The alternations ‘nominative ~ ergative’ (in the Subject) and ‘dative ~ nominative’ (in the DirO) is a function of verbal tense: the nominative and the dative occur in the present tense, the ergative and the nominative in the aorist. These trivial facts obviously contradict the hypothesis of the semantic differentiation of these cases. A further example is provided by Lak, where the Subject of a transitive verb in all tenses and moods is in the genitive if it is a noun or a 3rd person pronoun and in the nominative otherwise (i.e., if it is a 1st or 2nd person pronoun: see (29) on p. 151. The choice of the Subject case is thus also quite automatic in Lak (although contingent on different factors); I do not see how this fact is compatible with the hypothesis of cases always being semantically loaded. Nevertheless, as was shown in Section 6, p. 134ff, a syntactic case can express semantic contrasts in some contexts – as part of a particular construction. Let me mention here an insightful analysis by A. Wierzbicka (following the trail blazed by R. Jakobson) – namely, her description of the genitive ‘of quick use’ in the DirO in Polish, which means ‘I don’t think of it as such a big thing’ (Wierzbicka 1983: 258ff):

(ii) a. Daj mi świeczk+ę!
Give me candle

This sentence implies that the speaker wants to do something not very serious and needs a light just for a moment, while

b. Daj mi świeczk+ę!
Give me candle

presupposes that the speaker wants the candle as such. Cf. also her description of the possible meanings of the Polish dative (Wierzbicka 1986).

22 (9, p. 152) An interesting (but seemingly extremely rare) exception is provided by Yukagir. This language names entities using the predicate case, which is different from the unmarked nominative. For instance, here is the title of a Yukagir book:

(i) N‘ied‘+pe+lek uør+pe+nin ‘stories for children’

It is as if all naming were done in Yukagir in the frame ‘This is X’, which legitimately requires the predicative. (I thank E. Maslova for this information and accompanying explanations.) For more on Yukagir cases, see Chapter 3, 7.2, (50), p. 237.

23 (9, p. 155) The proposed system of local cases, including the nomenclature of case labels, is essentially borrowed from the famous work Hjelmslev 1935-37/1972, with a few changes aimed at rationalization and simplification.

24 (11.1, (35), p. 161) For a better understanding of this example, the following data might be useful:

1. A Hindi noun has three layers of signs related to marking its syntactic role – that is, (roughly speaking) to case:

   - Layer I markers: direct vs. oblique stem; the direct stem underlies the nominative, the oblique stem all other cases. The oblique stem itself is not a case form: it cannot be used without a Layer II marker.
   - Layer II markers:
The final vowels in the suffixes of the genitive – /ă/, /e/, /Ħ/ – show the agreement of the NGEN with its syntactic governor; they are the same as in the adjective.

Layer III markers are postpositions that govern Layer II markers.

25 (11.1, p. 164) It is not always so easy to distinguish between an NGEN and a possessive APOSS. Let me consider two cases.

1) Upper Sorbian (Corbett 1995: 275):
   - An APOSS is (almost) obligatorily used instead of an NGEN. Thus, ‘kniha Jan+a  
   ‘John’s book’ is unusual, the correct form being: Jan+ow+a kniha, lit. ‘John-
   nial book’, where -ow is an adjectivizer.
   - An APOSS can have a syntactically dependent adjective:
     *naš+icho synt—wučerj+ow+a zahrodk +a
     our MASC.SG.GEN teacher ADJ FEM.SG.NOM garden(FEM) SG.NOM
     ‘our teacher’s garden’
   - An APOSS can be referred to by a pronoun, including relative pronouns:
     slyšetaj Wičaz+ow+y hlós, kotryž je zastupil
     hear-PRES.IND.3PL Vityaz ADJ MASC.SG.NOM voice-SG.NOM which is entered
     [*They] hear [the] voice of Vityaz, who has [just] entered².

As can be seen, the APOSS in Upper Sorbian has some properties that are commonly restricted to nouns. It remains, however, an adjective: it is declined and it agrees with a modified noun as a typical A. Moreover, it cannot replace the NGEN when this is in the plural (i.e., with a plural Possessor):

\[ \text{muž}+ow+e \text{ prawo+o } \text{ vs. prawo muž}+ow \]

lit. ‘husband-al right’³  
‘[the] right of [the] husbands’³

Thus, we do not get *
\[ \text{naš}+ich \text{muž}+ow+e \text{ prawo } \] lit. ‘our husband-al right’, but only
\[ \text{prawo+o naš}+ich \text{muž}+ow+e \text{ prawo } \]

‘[the] right of our husbands’³.

2) German Romany (Plank 1995: 11–12, after N. Finck)

\[ o \text{ čaw } +ś +kör +o \text{ dād } +Ø \]

the-MASC.SG.DIR boy(MASC) SG.OBL GEN MASC.SG.DIR father SG.DIR

‘the father of [the] boy’³

\[ i \text{ čaw } +ś +kör +i \text{ dāi } +Ø \]

the-FEM.SG.DIR boy(MASC) SG.OBL GEN FEM.SG.DIR mother SG.DIR

‘the mother of [the] boy’³

\[ i \text{ čaw } +ś +gor +e \text{ dād } +a \]

the-MASC.PL.DIR boy(MASC) PL.OBL GEN MASC.PL.DIR father PL.DIR

‘the fathers of [the] boys’³

\[ i \text{ čaw } +ś +kör +a \text{ daj } +a \]

the-FEM.SG.OBL boy(MASC) SG.OBL GEN FEM.SG.OBL mother SG.OBL

‘[to] the mother of [the] boy’³

\[ i \text{ čaw } +ś +gor +a \text{ daj } +a \]

the-FEM.SG.OBL boy(MASC) PL.OBL GEN FEM.SG.OBL mother SG.OBL

‘[to] the mother of [the] boys’³
Here, the N\textunderscore GEN has many properties of an A:

- The N\textunderscore GEN cannot be definitized: the articles O and t ‘the’, which we see in the examples, bear on the head noun of the phrase, not on the N\textunderscore GEN.
- The N\textunderscore GEN agrees with its syntactic governor as if it [= N\textunderscore GEN] were an A.
- The N\textunderscore GEN cannot have an agreeing A depending on it; if need be, such an A is incorporated into the N\textunderscore GEN:

\[
\begin{array}{c}
o bār+o  \\
\text{the-MASC.SG.NOM}   \text{big MASC.SG.NOM boy(MASC) SG.DIR}  \\
\end{array}
\]

\[\text{‘the big boy’}\]

\[
\begin{array}{c}
i bāre+čāw  +\bar{e}s  +\bar{κ}r +i  \\
\text{the-FEM.SG.NOM} \text{big boy(MASC) SG.OBL GEN FEM.SG.NOM mother SG.DIR}  \\
\end{array}
\]

\[\text{‘the mother of [the] big boy’}\]
Chapter 3. Voice

C.J. Cela: – No estoy dormido, sino que estoy durmiendo.

El ministro: – ¿Pero qué diferencia hay entre estar durmiendo y estar dormido?

C.J. Cela: – La misma que entre estar jodiendo y estar jodido.1

1. Introductory remarks

The category of voice has been the focus of attention for linguists for more than thirty years now. See, for instance, Xolodovič (red.) 1974, Xrakovskij (red.) 1977, 1978 and 1981, Siewierska 1984, CLAIX 1984, Shibatani (ed.) 1988, Fox and Hopper (eds.) 1994, Givón (ed.) 1994, Plungjan 2000: 191ff. To these, I would like to add the clear and well-documented studies in Keenan 1985, Shibatani 1985 and Givón 1990: 563–644, all of which deeply influenced my own understanding of voice. More recently, Dixon and Aikhenvald 1997 have proposed a typology of voices and structurally similar phenomena involving manipulation of syntactic actants; see as well Dixon and Aikhenvald (eds.) 2000. The relevant literature is really huge, and I must limit myself to mentioning just the milestones.

The interest in voice is quite understandable: the well-known correlation (1)

(1) John killed the dog. ~ The dog was killed by John.

touches on the most difficult and most relevant aspects of modern linguistics—semantics and syntax (both deep and surface; actants and their expression, elements of the clause, etc.), morphology (analytical vs. synthetical forms, inflection vs. derivation), communicative and rhetorical organization of the text, what is frequently called pragmatics, and lexicography as well. Voice is fairly prevalent cross-linguistically—more than one third of the world’s languages have it (Haspelmath 1990: 28). Small wonder, then, that there is so much interest—but, at the same time, so much conceptual and terminological confusion (‘cavalier deployment of terminology,’ as Dixon and Aikhenvald 1997: 108 put it), even in the best of studies.

Chapter 3 proceeds from the ideas established in Mel’čuk and Xolodovič 1970 and Mel’čuk 1974a: 138–139, and then developed in Mel’čuk 1988a: 184–192, 1993b and 1997a–b. I have not changed my mind on the topic, although I have, I hope, acquired a more precise understanding of some relevant concepts.
Following the overall methodology set out for \textit{ATM}, I will take the opposition ‘active \sim passive’ in Latin and English as the prototypical case of a voice distinction. The definition of voice proposed in this chapter is constructed to accommodate this prototypical distinction and whatever seems close enough to it. (Cf. the relevant remarks on the \textit{ATM}’s orientation towards the prototypical phenomena in Introduction, \textbf{3.1}, p. 15.)

Like \textit{case}, the term \textit{voice} is three-way ambiguous, and the same dividing lines can be drawn here as in Chapter 2 with \textit{case}:

\begin{itemize}
  \item \textit{voice} \textsc{a} = the inflectional category of voice;
  \item \textit{voice} \textsc{b} = a grammeme of \textit{voice} \textsc{a}, i.e., a particular voice;
  \item \textit{voice} \textsc{c} = a marker or form of a \textit{voice} \textsc{b}.
\end{itemize}

However, the terminological confusion with \textit{voice} in this respect is much less serious than it is with \textit{case}: there are no differences parallel to the differences, say, between nominal \textit{case} \textsc{I} and adjectival \textit{case} \textsc{II} or between nominal governed \textit{case} \textsc{I.1} and nominal agreeing \textit{case} \textsc{I.2}. This allows me to use the term \textit{voice} indiscriminately without distinguishing indices, hoping that context will make the necessary distinctions quite clear.

\section{2. Auxiliary concepts: Definitions 3.1 – 3.6}

Any discussion of voice crucially depends on the general linguistic framework in which it is discussed—in particular, on the way the meaning and the syntactic structure of sentences is described. As in the rest of this book, I frame my discussion in Meaning-Text theory, and my voice-related proposals follow directly from basic Meaning-Text concepts, methodology, and formalisms. I present below—without justification and serious discussion—only those underlying concepts that are more or less specific to the notion of voice: \textit{semantic actant}, \textit{deep-syntactic actant} and \textit{surface-syntactic actant} of a lexical unit [= LU], \textit{diathesis} and \textit{basic diathesis} of a lexical unit, and \textit{transitive verb}. These concepts are really central to this chapter: they are needed to express the \textit{differentia specifica} of voice.

Consider a lexical unit \( L \) (of language \( L \)) whose meaning is the predicate \( \{ L \} \); to simplify the discussion, let us suppose that \( L \) is a finite verb. (This supposition does not interfere with the generality of the concepts introduced.)

\textbf{Definition 3.1: Semantic actant of \( L \)}

A \textit{semantic actant} [= \textit{SemA}] of a lexical unit \( L \) is an argument of the predicate \( \{ L \} \).

Semantic actants are represented by variables \( X, Y, Z \), etc.: the notation \( \{ L(X, Y, Z) \} \) stands for a three-place predicate and its SemAs (= its arguments). I will also use expressions of the form \( X \text{ sends } Y \text{ to } Z \) or \( X \text{ communicates } Y \text{ to } Z \) to represent
a lexical unit with its SemAs: these are so-called propositional forms. In this chapter, the term argument is replaced with completely synonymous semantic actant in order to ensure a better parallelism with syntactic actants.

The term semantic actant is two-way ambiguous; it can refer to:

- either to the slot X in the lexicographic definition of L which is open for the meaning 'A' / the expression of 'A';
- or to the meaning 'A' / the expression of 'A' that occupies the slot X of L in a particular utterance.

In other words, we have to distinguish a virtual actant – i.e., a (valence) slot, and an actual actant – a linguistic expression that fills this slot.

In what follows I use the term (semantic) actant in both senses. Without an explicit mention to the contrary, it refers to the slot – that is, to the variable filled by a chunk of meaning or its expression. I will indicate explicitly the cases where the term actant refers to the actual actant that fills the slot.

Neither the choice of the variables used to denote SemAs of a lexical unit L, nor the way to decide what exactly the SemAs of L are, nor how they are ordered can be discussed here. However, it must be emphasized that a variable in a definition does not itself specify the semantic role of the corresponding SemA: thus, the variable X with the LU L₁ and the variable X with L² are not reserved for the same semantic role. The actual semantic role of a SemA(L) with respect to L is given by the lexicographic definition of L, which is a semantic decomposition of 'L'. For instance:

\[ X \text{ communicates } Y \text{ to } Z \text{ by } W = 'X \text{ consciously causes that information } Y, \text{ which is in } X \text{'s psyche, is explicitly transferred to } Z \text{ in order to be entered into } Z \text{'s psyche, by doing } W'. \]

Therefore, the SemA X of [to] COMMUNICATE is the Causer of the transmission of information Y, Y is the (Information) Transferred, Z is the Receiver of Y (= the person into whose psyche the information is entered), and W is the Means by which this transmission is performed. The name of the semantic role (in this case, Causer, Transferred, Receiver, Means) is simply a convenient abbreviation for a particular configuration of semantemes in the definition of L. Thus, the Causer is the SemA 1 of '[to] cause', the Transferred is the SemA 2 of '[to] transfer', and the Receiver is the SemA 1 of 'psyche' [where something is entered].

The SemAs of a lexical unit are consecutively numbered, so that X = 1, Y = 2, etc. These numbers distinguish semantic relations of the argument-to-predicate type. Roughly, the numbering is done according to the surface-syntactic roles of the surface realizations of the SemAs; recall that we are considering here only the case where 'L' is manifested by a finite verb. Thus, prototypically, the SemA X = 1 corresponds to the (syntactic) Subject of the finite verb L in Z; the SemA Y = 2 corresponds to the most important object of L, in particular to the Direct
Object [\(= \text{DirO}\)], when the latter is present; the SemA \(Z = 3\) corresponds to L’s Indirect Object [\(= \text{IndirO}\)]; etc. However, the numbers assigned to the semantic relations have no meaning of their own: SemA \(1\) of ‘support’ is unrelated to SemA \(1\) of ‘amaze’, etc. (In other words, the role of the SemA \(1\) of ‘support’ with respect to ‘support’ is not the same as the role of the SemA \(1\) of ‘amaze’ with respect to ‘amaze’. The SemA \(1\) of ‘support’ is the Causer, while the SemA \(1\) of ‘amaze’ is the Cause/the Object.) The values of numbers, like the particular variables used to represent SemAs, are purely distinctive.

An important corollary: Our semantic representation has no semantic relations, or semantic roles, such as “Subject,” “Object,” “Goal,” “Theme,” etc., or “Agent/Actor,” “Patient,” “Causer,” “Experiencer,” etc. (also known as ‘Thematic Roles’ or ‘Deep Cases,’ cf. Chapter 2, \textit{ibid.}, p. 170 ff). Therefore, these concepts are not available for the formal definition of voice: they simply do not exist in the adopted system of linguistic representations of utterances (see Mel’čuk 1988a: 88 – 89, Note 6).

Since in most treatments of voice known to me semantic roles play a crucial part, their absence constitutes an important and distinctive feature of the approach outlined in this chapter.

I will, however, use the names of semantic roles as convenient abbreviations: the element that is the SemA \(1\) of the predicate ‘[to] cause’ in the semantic decomposition of a LU is called the Causer, the element that is the SemA \(1\) of the predicate ‘[to] perceive’ is the Perceiver, etc. This practice allows for compact and clear formulations.

\textbf{Definition 3.2: Deep-Syntactic actant of L}

A Deep-Syntactic actant [= DSyntA] of a lexical unit L is another lexical unit that syntactically depends on L in a DSynt-Structure and corresponds to a SemA of L or to a Surface-Syntactic Actant [= SSyntA] of L.

Again, as is the case with SemAs, when speaking of a DSyntA, I refer either to a slot in the Government Pattern [= GP] of L (i.e., in its lexicographic entry) or to a lexical unit [= LU] that occupies this slot in a particular utterance. Similarly to SemAs, by default, the term \textit{Deep-Syntactic Actant} refers to the slot; when it refers to the LU that fills in the slot, this fact is explicitly indicated.

Deep-Syntactic Actants are denoted by Roman numbers, which thereby specify DSynt-relations that subordinate DSyntAs to their Governors. In sharp contrast to semantic numbers (= pure distinguishers), the DSynt-numbers are meaningful: each of them corresponds to a family of concrete syntactic constructions brought together because of their similarity. Thus:
1) DSyntA I stands for the family of syntactic constructions that include the subjectival (= predicative) construction—i.e., the SSynt-Subject and all its ‘transforms’ with non-verbal lexical units, such as *Genitivus Subjectivus* and other nominal complements/modifiers:

\[ \text{John} \leftarrow \text{I-loves}, \text{Father’s} \leftarrow \text{I-arrival} \text{ or } \text{American} \leftarrow \text{I-help}. \]

2) DSyntA II represents:
- the DirO and all its transforms (like *Genitivus Objectivus*):
  \[ \text{loves} \leftarrow \text{II-Mary}, \text{[his]} \text{ love} \leftarrow \text{II-for Mary}, \text{destruction} \leftarrow \text{II-of the city}, \]
  \[ \text{Mary’s} \leftarrow \text{II-decapitation}; \]
- the most important Indirect or Oblique object of L, if L does not admit a DirO:
  \[ \text{insist} \leftarrow \text{II-on Y, belong} \leftarrow \text{II-to Y, differ} \leftarrow \text{II-from Y, equal} \leftarrow \text{II-to Y}; \]
- the complements of prepositions and conjunctions:
  \[ \text{for} \leftarrow \text{II-Mary, on} \leftarrow \text{II-leave, if} \leftarrow \text{II-come} \leftarrow \text{[= If Mary comes...;]} \]
- the Agentive complement [= AgCo] with the passive form of a transitive verb:
  \[ \text{The letter} \leftarrow \text{II-written by John; } \]
- nominal complements of various types:
  \[ \text{father} \leftarrow \text{II-of Mary, Mary’s} \leftarrow \text{II-father, belongings} \leftarrow \text{II-of the students.} \]

3) DSyntA III covers all constructions with the ‘second’ (= less important) object or complement.

4) DSyntA IV - VI represent still more oblique objects/complements:

\[ \text{rented} \leftarrow \text{IV-for$300, rented} \leftarrow \text{V-for two weeks.} \]

As can be seen, the DSyntAs are numbered in the order of decreasing obliqueness. In other words, the order of DSyntAs roughly corresponds to the hierarchy of SSyntAs, which can be established through the analysis of their observable properties (Keenan and Comrie 1977, Jordanskaja and Mel’čuk 2000, Van Valin 2001: 33ff; Mel’čuk 2004b; see 7.1.1, p. 231). However, different surface-syntactic constructions are subsumed under one DSynt-relation not only because of the similarity of their syntactic properties and behavior, but also as a function of the similarity of their relationships to Semantic Actants. Therefore, the fact that an AgCo is more oblique than an IndirO does not interfere with my treating the AgCo as DSyntA II, while the IndirO is DSyntA III (cf. Kahane 1998: 327, where this circumstance is mentioned as a problem). Note that semantically empty SSynt-elements (i.e., dummy Subjects and Objects, such as Eng. *It* in *It rains, It is easy to see ...*, *It can be recurred to this method, This method makes*
it possible to neutralize the consequences, etc.) are not represented at the DSynt-level and thus do not correspond to any DSyntAs.

In the lexical entry of a given LU L—that is, in its GP—DSyntAs must be numbered:

1. Consecutively (= without gaps): I+II+III, etc.; the GPs with numberings such as *I+III or *I+II+IV are disallowed.³
2. Beginning with I or II—or having no DSyntAs at all; GPs with numberings such as *III+IV are disallowed.⁴
3. Without repetitions: GPs with numberings such as *I+I or *I+II+II are disallowed.

Let me emphasize that the above requirements concern the numbering itself, not the linear order in which L’s DSyntAs appear in its GP or in the sentence.

If we leave aside coordination and extra-structural elements (interjections, vocatives and the like), all syntactic elements of the sentence that are not DSyntAs are taken to be ATTR(ibutives); ATTR is thus a cover name for all Deep-Syntactic modifiers, adverbials and attributes.

An important feature of DSyntAs in general is their intermediate character: they are determined either semantically or surface-syntactically and thus constitute an interface of sorts between the SemAs and the DSyntAs of an LU.

– On the one hand, any expression that syntactically depends on L and manifests a SemA of L—no matter what the SSynt-role of this expression is—is a DSyntA of L. Thus, in popular support, the adjective popular is the DSyntA I of support, since the meaning of the phrase is “[the] people←-I-support”; however, popular is by no means a SSyntA of support: it is a SSynt-modifier.

– On the other hand, any expression that is a SSyntA of L is also L’s DSyntA, even if it does not correspond to one of L’s SemAs (with the exception of empty auxiliary elements, mentioned above). Thus, the Dative of Beneficiary with [to] bake is considered to be its IndirO; therefore, it is one of its DSyntAs as well, so that She baked Peter a pie must appear on the DSynt-level as

```
          BAKE_past
            |     |
            I   II
            |     |
SHE      PIE_sg  PETER_sg
```

Semantically, though, [to] bake (in the intended sense: bake1a in Ilson and Mel’čuk 1989: 327) has only two actants, corresponding to she and pie. The
2. Auxiliary concepts: Definitions 3.1-3.6

DSyntA \textbf{III} is added by a general syntactic rule of English applicable to all ‘creation’ verbs (with the exception of certain Latinate verbs not stressed on the initial syllable: \textit{op. cit.}, p. 340).

A DSyntA of \textit{L} which does not correspond to a SemA of \textit{L} can be called \textit{displaced}. Another example of a displaced DSyntA is found in what is known as Inalienable Possession constructions in many languages, for instance:

\begin{enumerate}
\item Fr. \textit{Je lui ai vu une cravate jaune}, lit. ‘I have seen to-him a yellow tie’, = ‘I have seen a yellow tie on him’.
\end{enumerate}

\textit{LUI} is the DSyntA \textbf{III} of \textit{VOIR}, although it manifests a SemA of CRAVATE and not of \textit{VOIR} – so that it is a displaced DSyntA of \textit{VOIR}.

The fact that a DSyntA of a lexical unit \textit{L} can be introduced by semantic rules independently of the presence of the corresponding SemA in the lexicographic description of \textit{L} is irrelevant to the description of voice and is mentioned here just for the completeness of the picture.

Since in most treatments of voice known to me, voice is defined by a correspondence between SemAs and SSyntAs of the verb, the exclusive use of Deep-SyntAs in the discussion of voice constitutes the second important and distinctive feature of the proposed approach.

For a good discussion of actants in syntax, see Lazard 1994a.

\textbf{Definition 3.3: Surface-Syntactic actant of \textit{L}}

A Surface-Syntactic actant \textit{[= SSyntA]} of a lexical unit \textit{L} is a wordform that is the Subject (only with a finite verb), an O(bject) or a Co(mplement) of \textit{L}.

The SSyntAs – the Subject, the DirO, the IndirO, the OblOs and different Cos – are defined (in each language) by strictly syntactic criteria – that is, by sets of specific surface-syntactic properties: omissibility, linear position, agreement, cooccurrence with structural words, ability to be replaced by clitics, participation in different transformations, etc. (Iordanskaja and Mel’čuk 2000, Van Valin 2001: 33ff). For more details on the three types of actants see Mel’čuk 2004a, b.

I am now in a position to introduce the most important auxiliary concept I need for the definition of voice: \textit{diathesis}.

\textbf{Definition 3.4: Diathesis of a wordform}

The diathesis of a wordform \textit{w} is the correspondence between \textit{w}’s Semantic and Deep-Syntactic Actants.

What is meant here is, of course, the correspondence between the Sem-Actant slots and the DSynt-Actant slots in the lexicographic description of \textit{w} – that is, in \textit{w}’s Government Pattern.

Thus, the Russian verb \textit{PRIČĖSYVAT´} ‘[to] comb someone’s hair’ has the following lexicographic definition:
\(X\ \text{pričēsvaet}\ Y\text{-a Z-om, lit.}\ 1'X\ \text{is-combing Y with Z}\ 2'X\ \text{causes Y’s hair to become straight and neatly arranged by causing a tool Z to move repeatedly through Y’s hair.}\)

The corresponding diathesis is

\[
\begin{array}{ccc}
X & Y & Z \\
I & II & III \\
\end{array}
\]

A diathesis characterizes particular inflectional forms of a lexical unit \(L\), rather than \(L\) as a whole; it can be changed by the application of some inflectional means (to the stem of \(L\)). Various modifications of the diathesis of \(L\) by various morphological techniques constitute the core of voice and voice-related phenomena.

A convenient way to represent a diathesis is, as we have just seen, by a two-row matrix, the upper row representing the (slots for the) SemAs, and the lower one, the (slots for the) DSyntAs; the matrix has \(n\) columns, where \(n\) is equal to the number of SemAs or DSyntAs, whichever is higher. Consider the verb \([to]\) \(\text{SEE}\); its meaning can be represented by the following expression:

‘\(X\ \text{perceives Y with X’s eyes [Z], this perception being made possible by light.}\)’

Since we say \(I\ [I, \text{Subject}] \text{see you [II, DirO]}\), the diathesis of \([to]\) \(\text{SEE}\) is as follows:

\[
\begin{array}{ccc}
X & Y \\
I & II \\
\end{array}
\]

The Lezgian verb \(\text{AKUN ‘[to] see}^3\) has the same meaning—i.e., the same definition and the same SemAs as \([to]\) \(\text{SEE}\) in English. But in Lezgian, ‘I see you’ is

\((3)\)

\[
\begin{array}{ccc}
\text{Izaz} & \text{vun} & \text{akw} + \text{azva}, \\
\text{I DAT yousg NOM see PRES} \\
\end{array}
\]

where \(\text{izaz ‘to-me}^2\) is an IndirO and \(\text{vun ‘yousg}^1\) is the Subject (so that \(\text{AKUN actually is construed as ‘[to] to be visible to’}.\). Therefore, if we keep the same variables to refer to the same Sem-roles (in this example, \(X\) is the Perceiver, and \(Y\), the Perceived) the diathesis of \(\text{AKUN}\) turns out to be \textit{converse} with respect to that of \(\text{SEE}\):

\[
\begin{array}{ccc}
X & Y \\
II & I \\
\end{array}
\]

The English verb \([to]\) \(\text{LIKE}\) and its French equivalent \(\text{PLAIRE}\) have the same SemAs (\(X\), who feels the pleasure = the Perceiver, and \(Y\), who is the Source and the Object of this pleasure), but their respective diatheses are again converse with respect to each other in the same way as those of \([to]\) \(\text{SEE}\) and \(\text{AKUN}\):
since

\[ I \big[ X, I, \text{Subject} \big] \text{like} \big[ Y, II, \text{DirO} \big]. = \]
\[ II \big[ Y, I, \text{Subject} \big] \text{me} \big[ X, II, \text{IndirO} \big] \text{plait}. \]

Another pair of the same type is Eng. \[to\] MISS vs. Fr. MANQUER:

\[ I \big[ X, I, \text{Subject} \big] \text{miss} \big[ Y, II, \text{DirO} \big]. = \]
\[ II \big[ Y, I, \text{Subject} \big] \text{me} \big[ X, II, \text{IndirO} \big] \text{manque}. \]

When comparing the diatheses of two verbs (of the same or of two different languages), one has to make sure that the corresponding SemAs are indexed in the same way—that is, that the corresponding variables stand for the same semantic roles. Otherwise, the diatheses may turn out to be incommensurate.

**Definition 3.5: Basic diathesis of a lexical unit**

The basic diathesis of a lexical unit \( L \) is the lexicographic diathesis of \( L \), i.e., the diathesis which corresponds to the citation form of \( L \) and which must be stored in \( L \)'s lexical entry (in its syntactics).

The diathesis quoted for PRIČĘSYAT´ above is its basic, or lexicographic, diathesis.\(^7\)

I take it for granted that the basic (= underlying, lexicographic, or citation) form of every lexical unit \( L \) of a language can always be established beyond reasonable doubt; therefore, the basic diathesis of \( L \) can also be established.

The last concept that will be needed in the subsequent discussion is transitivity.

**Definition 3.6: Transitive verb**

The transitive verb is either a verb \( L \) whose meaning includes the component \( \{X, \text{by} X's \text{action, causes that} P(Y) \text{take place}\} \) or a verb \( L' \) whose syntactic behavior in \( L \) is sufficiently similar to that of \( L \) to be considered of the same syntactic type (Mel’čuk 1988a: 179).

Thus, some transitive verbs \( V_{\text{trans}} \) have their transitivity determined semantically—these are prototypical transitives: such as \([to] \text{KILL}\) or \([to] \text{BUILD}\)/\([to] \text{DESTROY}\). In a particular language, other \( V_{\text{trans}}\), which do not have the semantic component of causation, share, to varying degrees, the syntactic and morphological properties of the prototypical \( V_{\text{trans}}\). For instance, the English verbs \([to] \text{KNOW}\) and \([to] \text{LOVE}\) are transitive because they behave syntactically in a similar way to prototypical transitive verbs, but not because of their semantics.
Chapter 3. Voice

As Brus 1992: 46–47 puts it, a prototypical $V_{(\text{trans})}$ denotes a Standard Transitive State of Affairs, the latter being characterized by:

- a highly transitive action (Hopper and Thompson 1980; this means, more or less, causation of a change of state) with two different participants, Agent (= Causer) and Patient (= Causee);
- an individuated Agent who is most salient communicatively and controls the action;
- an affected Patient.

The DSyntA of a transitive verb is realized, on the surface, as a Direct Object [= DirO]. This element of the sentence is characterized by a set of particular SSynt-properties, specific for each language; along with the SSynt-Subject, the DirO has a prominent place in the discussion of voices and related phenomena.

3. The concept of voice: Definition 3.7

With all auxiliary concepts in place, the definition of voice can now be formulated. However, before doing that, I have to indicate the limits I have set myself. To make sure that my task can be fulfilled, I have to ignore two important aspects of voice—its functions and its expression.

First, the following three essential questions are not touched upon, even cursorily:

1) The use of voices—that is, exactly what they are doing in discourse or with what purpose they are used. (Two main reasons for which the passive voice is selected in many different languages are carefully analyzed in Siewierska 1984: 217–254; for the discourse functions of voice in general, see Givón (ed.) 1994 and Mithun 1994.)

2) The semantic nuances associated with particular voices such as human agency, degree of control and affectedness, adversative character of the action, stativity/processivity, honorifics, potential, and the like. (See Shibatani 1985 for various semantic ‘configurations’ associated with the passive.)

3) The relations of voice to other grammatical phenomena—voice and aspect, voice and control, voice and transitivity, etc. (See, among others, Fox and Hopper (eds.) 1994.)

Second, I will not examine how voice grammemes are expressed cross-linguistically, what are typical syncretisms in the domain of voice (e.g., reflexive forms being often used to express the passive or the reciprocal), etc. A good review of relevant facts can be found in Haspelmath 1990.
Definition 3.7: Voice

*Voice* is an inflectional category whose grammemes specify such modifications of the basic diathesis of a lexical unit L that do not affect the propositional meaning of L.

(For a definition of inflectional category, see Introduction, Definition 0.1, p. 22.)

**Comments on Definition 3.7.**

1. **Broadness of the proposed concept of voice**
   
   I am trying to define as broad a concept as possible. Therefore, Definition 3.7 includes only the properties sufficient to delineate all voices with respect to similar, but non-identical phenomena. Such features of particular voices, as, for instance, lower frequency of passives in texts, their intransitivity, or their agentivity, etc., are excluded from the definition: they will specify subclasses of the corresponding voices. Because of this approach, I will treat as manifestations of voice several linguistic phenomena that many other researchers—who proceed from a narrower concept of voice—do not consider to be voices.

2. **Voice changes the basic diathesis of L**

   I require that voice change the basic diathesis of L. In fact, I proceed from the postulate that a modification of the basic diathesis of the verb is a necessary property of voice. Consider, for example, such constructions as those in (4):

   (4)  
   a. Fr. *On a considéré les conséquences*  
   ‘Consequences have been considered’,  
   lit. ‘(‘They’)/‘People’ have considered the consequences’.  
   *Ça vend bien aujourd’hui* ‘The sales are good today’,  
   lit. ‘This sells well today’.

   b. Rus. *Tak ne delajut* ‘This is not done’, =  
   lit. ‘(‘They’)/‘People’ do not do so’.  
   *Ego ubilo molniej* ‘He was killed by lightning’, =  
   lit. ‘It killed him with lightning’.

   These constructions do not represent special voice forms, as is sometimes claimed: although such constructions are used very much like passive constructions of some languages (e.g., of English), the verb in them is in the normal active voice. What is special in (4) is the lexeme that appears in the role of the Surface-Syntactic Subject: *ON* and *ÇA* in French, zero lexemes *Ø*\(^{PEOPLE}\) (semantically similar to Fr. *ON*) and *Ø*\(^{ELEMENTS}\) (similar to Eng. *IT*, Fr. *IL*) in Russian (Mel’čuk 1988a: 303ff).
Chapter 3. Voice

The following two phenomena do not represent a modification of L’s basic diathesis:

– An added displaced DSyntA is by definition unrelated to any of L’s SemAs and therefore cannot modify the diathesis of L. (But blocking the expression of a ‘proper’ DSyntA without touching the corresponding SemA is a legitimate modification of L’s basic diathesis: it represents a case of suppression, see below.)

– Changing only the surface-syntactic rank (see 7.1.1, p. 230) of an L’s SSyntA – without changing its DSynt-role – is not a modification of the diathesis of L. For instance:

(5) a. Russian

\[\text{švy} \text{rjat’} \text{ kamn} \quad [\text{II}, \text{DirO, ACC}] \quad \text{‘[to] toss stones’} \sim \]

\[\text{švy} \text{rjat’} (\text{+sja}) \text{ kamnjami} \quad [\text{II}, \text{OblO, INSTR}], \text{lit. ‘[to] toss(-oneself)}
\text{with-stones’} \]

b. Lithuanian

(i) \[\text{lankyti} \quad \text{Kaun} \quad [\text{II}, \text{DirO, ACC}] \quad \text{‘[to] visit Kaunas’} \sim \]

\[\text{lankyti+s} \quad \text{Kaune} \quad [\text{II}, \text{OblO, LOC}], \text{lit. ‘[to] visit-oneself in Kaunas} \]

(ii) \[\text{naudoti} \quad \text{elektr} \quad [\text{II}, \text{DirO, ACC}] \quad \text{‘[to] use electricity’} \sim \]

\[\text{naudoti+s elektra} \quad [\text{II}, \text{OblO, INSTR}], \text{lit. ‘[to] use-oneself with-electricity} \]

The propositional meaning of the verb is the same in all pairs of expressions in (5) and the verb’s basic diathesis remains unchanged: what is different is the SSynt-role of the Patient phrase and subsequently its morphological marking. Therefore, the phenomenon observed here is very different from voice; it is an example of a detransitivizer, see 7.1.2, p. 232.

NB: Definition 3.7 has the modifier basic with diathesis: it foresees the application of grammemes of voice only to the basic diathesis of the verb considered. In other words, Definition 3.7 does not allow for the combination of several voice grammemes within one wordform (the first grammeme of voice, when applied, changes the basic diathesis; the second voice grammeme, then, would have to apply to a non-basic diathesis). However, combinations of voice grammemes inside one wordform are possible (see below, p. 208). Therefore, later on I will introduce a more general formulation of Definition 3.7: see 6, p. 229.

3. Voice does not change the propositional meaning of L

Voice does not change the propositional (= ‘objective,’ or situational) meaning of the verb, because I require that my definition of voice reflect the properties of prototypical voices – passives in Latin and English, and these prototypical voices are exactly like this: the Latin sentences Miles hostem occidit ‘The warrior is killing the enemy’ and A milite hostis occiditur ‘The enemy is being killed by the
warrior refer to the same situation, so that their propositional meanings are identical. I am not saying that active and the corresponding passive sentences are synonymous: since (at least) Roman Jakobson’s 1966 paper “Signatum and Designatum” (International Conference on Semiotics, Kazimierz-Dolny, Poland) it is well known that they are not. Such sentences differ in their communicative structure (theme ~ rheme division, focusing, etc.). Thus, voice is a semantic inflectional category; yet the semantic contribution of particular voices concerns only the communicative (and referential) organization of messages, rather than their propositional meaning. Different voices are used to help construct different messages about the same situation.

NB: Again, Definition 3.7 is a bit too rigid: some voices can express semantic nuances, so that it would be wiser to require that voices do not essentially change the propositional meaning, thus allowing for ‘non-essential’ changes. The problem is that it is not easy to define what constitutes a non-essential semantic change: it must be a change that does not entail switching to a different situation. Later, I will try to come up with a reasonable approximation to the notion of non-essential semantic change.

Addition/subtraction of a SemA is considered to be an essential change in the propositional meaning of the LU involved and is therefore disallowed for genuine voices. Three major cases of adding/subtracting SemAs, also known as Increasing/Decreasing semantic valence of L, can be pointed out: causatives, decausatives, and applicatives.

- A causative corresponds to the formula
  \[ L \cdot X \text{ L-s} (Y) \sim L \cdot \text{caus} \cdot Z \text{ causes that } X \text{ L-s} (Y); \]
  cf. Hung. \( \text{ir} \cdot X \text{ writes} (Y) \sim \text{ir} + \text{at} \cdot Z \text{ causes that } X \text{ writes} (Y). \)

- A decausative is, in a sense, the inverse of a causative:
  \[ L \cdot Z \text{ causes that } \alpha \text{ happens} \sim L \cdot \text{decaus} \cdot \alpha \text{ happens}; \]
  cf. Rus. \( \text{otkryvat} \cdot Z \text{ opens } X = Z \text{ causes that } X \text{ becomes open} \sim \text{otkryvat} + \text{sja} \cdot X \text{ opens} = X \text{ becomes open}. \]

The causative and the decausative presuppose addition or subtraction, respectively, of the propositional meaning ‘Z causes ...’.

- An applicative stands for the correspondence
  \[ L \cdot X \text{ L-s} (Y) \sim L \cdot \text{appl} \cdot X \text{ L-s} (Y) \text{ involving } Z. \]

Applicatives are found in many Bantu languages, e.g., Kuria \( N\text{doondek+ande ebaruba} \cdot \text{I-write a-letter} \sim N\text{doondek+er+ande ebaruba muraomoto} \), lit. ‘I-write-to a-letter my-brother’. Another example can be taken from Yi-diny: \( W\text{agå\text{\`a}+Ø}[\text{sg.nom}] nyina+h\ [\text{pres; intrans}] (wagal+ži[\text{sg.comit}]) \cdot \text{The man is sitting (with [his] wife)} \sim W\text{agå\text{\`a}r+ngu} [\text{sg.instr}] nyina+h\text{ja}+l [\text{pres; trans}] wagal+Ø [\text{sg.nom}], \) lit. ‘The man is sitting-with [his] wife [an ergative construction]’ (Dixon and Aikhenvald 1997: 79.) The applicative adds to the
propositional meaning of the verb the semantic component ‘... involving Z’.

(On applicatives in Iroquoian languages, see Mithun 2001.)

Causatives, decausatives and applicatives are similar to voices in that they also entail a modification of the basic diathesis of L. However, even if they use the same morphology as voices do they are not voices, since they express some (essentially additional) propositional meaning. More precisely, they change the situation denoted by the underlying verb. If we want to avoid confusion, such formations should be strictly separated from voices in our description.

4. Voice has special markers
Since voice is an inflectional category, its grammemes must be marked in the wordform. Thus, consider English verbs of the type Those chocolates sold quickly, The thick cream does not pour, Nylon carpets wear well (from Dixon and Aikhenvald 1997: 94–95). Each of them shows a modification of the basic diathesis similar to what we find in genuine voices (II ⇒ I); however, this modification has no marker, and therefore cannot represent a voice. The verbs in question manifest regular polysemy – a lexicographic phenomenon related to derivation.

The same is true of such well-known pairs as [to] load the hay on the wagon ~ [to] load the wagon with hay, [to] spray the paint on the wall ~ [to] spray the wall with paint, etc.: in English, these pairs are different lexemes of the same vocable (regular polysemy), because the modification of the diathesis is not marked. But in Indonesian, where the same modification is marked by a suffix, this is a voice (= the 2/3-permutative, see 5.2.2, p. 223).

4. Calculus of possible voices in bi-valent verbs

4.1. General remarks
To establish a possible inventory of voice grammemes, I will consider the simplest basic diathesis of a transitive verb – a diathesis with two Semantic and two Deep-Syntactic Actants – i.e., the binary basic transitive diathesis:

<table>
<thead>
<tr>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
</tr>
</tbody>
</table>

In this subsection, I consider only bi-valent transitive verbs (cf. Definition 3.6 above), although the concept of voice is, of course, applicable to mono- or tri-valent transitive verbs and to intransitive verbs as well. I do this exclusively for simplicity’s sake: as soon as the calculus of possible voices particular to bivalent transitive verbs is established, I will generalize the result with respect to all other verbs (Section 5, p. 218).
4. Calculus of possible voices in bi-valent verbs

A calculus of grammemes of voice is based on possible diathesis modifications. A given diathesis can be modified only by one of the following three elementary operations:

- **Permutation** of the DSyntAs with respect to the corresponding SemAs, for instance:

\[
\begin{array}{cc}
X & Y \\
I & II
\end{array} \quad \Rightarrow \quad \begin{array}{cc}
X & Y \\
II & I
\end{array}
\]

‘Permuting a DSyntA (expressed by P)’ simply means changing the DSynt-role \(i\) of \(P\)—that is, giving \(P\) a different DSynt-role \(j\). Permutation can be bilateral (when two DSyntAs exchange their roles) or unilateral (when only one DSyntA has its DSynt-role changed). For instance, let \(P_1\) express SemA X and \(P_2\), SemA Y; \(P_1\) is DSyntA I, and \(P_2\) DSyntA II. ‘To permute \(P_1\) and \(P_2\) means ‘to change their DSynt-roles:’ \(P_1\) becomes II, and \(P_2\) I. This is a bilateral permutation. If, however, \(P_1\) becomes III, but \(P_2\) remains II, this is a unilateral permutation. Another way to look at the permutation of DSyntAs is to consider the linking of SemAs to DSyntAs. Suppose that SemA X is expressed by DSyntA I: X \(\leftarrow\) I; changing this linking to X \(\leftrightarrow\) II is the same as permuting DSyntAs I and II. Permutation of DSyntAs is nothing other than a reassignment of DSyntAs to SemAs, or a renumbering of DSyntAs.

- **Suppression** of DSyntAs, for instance:

\[
\begin{array}{cc}
X & Y \\
I & II
\end{array} \quad \Rightarrow \quad \begin{array}{cc}
X & Y \\
II & –
\end{array}
\]

Suppressing a DSyntA means forbidding the appearance of the corresponding expression in the sentence along with \(L\), such that the SemA involved cannot be manifested syntactically as a direct syntactic dependent of \(L\). Technically, this means blocking the slot of this DSyntA.

**NB1**: The optional non-expression of a DSyntA in a particular sentence is not suppression. In the sentence *John was reading* it is syntactically possible to add a DirO—e.g., *a novel*; so there is no suppression in the sense defined.

**NB2**: The term *suppression* by no means presupposes the removal of some material that previously was present somewhere. Suppression takes place when a particular Sem-Actant slot of ‘\(L\)’ is not filled in the starting Semantic Representation. Then suppression can be applied to the diathesis of \(L\) to make it better suited to express ‘\(L\)’ in the given context.

- (Referential) **identification** of two SemAs, with obligatory suppression of at least one DSyntA, for instance:
A specific grammeme of voice can be named according to the type of modification of the basic diathesis it specifies. This allows me to formulate the following definitions:

**Definitions 3.8-3.11: active, passive, suppressive, reflexive**

*Active* is a grammeme of voice that specifies zero modification of the basic diathesis.

*Passive* is a grammeme of voice that specifies any non-zero permutation of DSyntAs that involves the DSyntA I.\(^{10}\)

*Suppressive* is a grammeme of voice that specifies suppression of one or more DSyntAs.

*Reflexive* is a grammeme of voice that specifies referential identification of two SemAs.

The active is for a verb what the nominative is for a noun: it is the basic morphological form of the verb, which is characterized by its basic diathesis. It is also the naming form (of an action, of a process, of a state, etc.) and the (lexicographic) citation form of the verb.

The passive marks:

- Either the assignment of another DSynt-role (II or III) to the expression that fills the DSynt-role I in the active (= in the basic diathesis) – that is, demotion.
- Or, conversely, the assignment of DSynt-role I to the expression which has another DSynt-role (II or III) in the active – that is, promotion. The promotion is necessarily accompanied by a demotion (because promotion entails a reciprocal exchange of DSynt-roles).

Giving this type of permutation a special name of _passive_ reflects the fact that the DSyntA I occupies a very special, privileged place in syntax; this practice corresponds to a well-established grammatical tradition.

I will use the following adjectives as modifiers of the names of the voice grammemes:

**For the passive**

- *Full*, if both DSyntAs of L are affected (I ⇒ II and simultaneously II ⇒ I).
- *Partial*, if only one of the DSyntAs of L is affected (I ⇒ III, while II remains in place and nothing becomes I).
- *Promotional*, if the passive promotes the DSyntA II to I, automatically demoting the DSyntA I.
4. Calculus of possible voices in bi-valent verbs

Demotional, if the passive demotes the DSyntA involved, without promoting anything.

Agentless, if the passive in question does not allow for an Agentive Complement; the other name current in the literature is truncated, or short, passive.

A full passive is necessarily promotional, and vice versa. A partial passive is necessarily demotional, but the converse is not true: a demotional passive can be full or partial.

For the suppressive and the reflexive

Subjectless, if the suppressive/reflexive allows only for the expression of the Patient/Perceiver, but not of the Agent.

Objectless, if the suppressive/reflexive allows only for the expression of the Agent, but not of the Patient/Perceiver.

Absolute, if the suppressive/the reflexive blocks the expression of both DSyntAs of L.

For instance, objectless reflexive denotes a reflexive form which only allows the expression of the Agent as the Subject (Fr. _Il se rase_ ‘He shaves himself’), while in subjectless reflexive, the Agent is expressed as a DirO or an AgCo (see below, 4.2, Items 10 and 11, pp. 207–208); etc.

Before I proceed, the following important point must be emphasized. The three operations that modify the diathesis of a verb are not of the same nature. Thus, suppression and referential identification are semantically-driven—they reflect a particular semantic state of affairs (a SemA is not specified, the Agent acts upon himself, etc.); in some sense, they are opposed to permutation, which is communicatively-driven. Therefore, it is semiotically feasible (and does happen in reality) for suppression and referential identification to specify different inflectional categories than permutation does. In other words, if we decide to say that the passive is a voice, in some languages the suppressive and/or the reflexive may not be voices. And indeed, there are languages where the grammemes ‘PASsive’ and ‘REFLEXive’ can combine within one verbal wordform, see below, p. 208.

This means that they belong to different inflectional categories. On the other hand, the passive, the suppressive and the reflexive are, more often than not, not combinable and have identical or similar forms. They can be related semantically via the idea of the action being oriented towards or ‘concentrated within’ the Patient. In such a situation, it seems more natural to consider the passive, the suppressive and the reflexive as being grammemes of the same category of voice. To solve this contradiction, I will operate with something of double standard in my approach to voices:

In the context of a general outline of a calculus of theoretical voices, I ignore the possibility of having several voice-like categories and describe a unified
category of voice, which includes all feasible voices – without paying attention
to substantial differences between the three diathesis-modifying operations.

– When undertaking the description of the voice system in a PARTICULAR lan-
guage, I take into account the differences between diathesis modification op-
erations and propose different voice-like categories – where this is necessary
(see 6, p. 227ff).

And now, to the calculus of voices. Let there be a bi-actantial verb – such as, for
instance, [to] DRESS or [to] SHAVE, with a basic, or lexicographic, diathesis as
follows:

<table>
<thead>
<tr>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
</tr>
</tbody>
</table>

Applying all possible diatheses-modification operations to this diathesis we can
have, ideally, a total of sixteen diatheses: the starting diathesis itself + fifteen de-
ved ones:

– Four possible diatheses are obtainable from the basic diathesis via permuta-
tion only (including zero permutation):

1. X Y
   I II

2. X Y
   II I

3. X Y
   III II

4. X Y
   II III

– For each of these, three variants are obtainable via suppression (from top to
bottom), first of one DSyntA, then of the other DSyntA, and finally of both
DSyntAs:

5. X Y
   I –

6. X Y
   II –

7. X Y
   III –

8. X Y
   II –

9. X Y
   – II

10. X Y
     – I

11. X Y
    – II

12. X Y
    – III

13. X Y
   – –

14. X Y
   – –

15. X Y
   – –

16. X Y
   – –

Diatheses 5, 9 and 13 are obtainable from the basic diathesis by suppression
only; all the others (6–8, 10–12 and 14–17) are produced by combining permuta-
tion and suppression.

Note that seven of the derived diatheses 2–16 are formally invalid (they are
shadowed): the two asterisked ones contradict the restrictions on DSynt-actant
numbering, while five others coincide with diatheses already present in the dia-
gram. (If two derived diatheses formally coincide, we retain as valid one the dia-
thesis obtained with fewer operations. Thus, the diathesis 11, produced by permutation + suppression, is more complex than the identical diathesis 9, produced by suppression only.) Five valid derived diatheses—5, 6, 9, 10, and 13—must be added to the four ‘permuted’ diatheses, which gives us the total of nine.

To these nine diatheses, we have to add three further diatheses obtainable by reflexivization (again from the basic diathesis):

\[
\begin{align*}
17. & \quad X = Y \\
18. & \quad X = Y \\
*19. & \quad X = Y \\
20. & \quad X = Y
\end{align*}
\]

(One of the four reflexive diatheses that are logically possible—19—contradicts the restrictions on DSynt-actant numbering and is discarded.)

As a result, we have twelve logically possible voice grammemes. They are illustrated below: first with an English expression built on the sample sentence *John is shaving Alan* (in some cases this expression is ungrammatical in English); and second, with actual examples from languages that indeed have this voice. In the English literal glosses of the examples, I use the expression [“it”] as a conventional equivalent of an impersonal, or expletive, pronoun similar to Eng. *it* in *It is difficult to see*, etc.; [“they”] represents abstract people, something like Fr. *on* or Ger. *man*. The marker of the voice grammeme under consideration is boldfaced; for each DSyntA, its SSynt-role and its morphological implementation is indicated.

### 4.2. Voice grammemes

Voice grammemes are listed here in the following order: first, the grammemes obtainable by permutation only (Items 1–4); second, the grammemes obtainable by suppression only (Items 5–7); third, the grammemes obtainable by the combination of permutation with suppression (Items 8–9); and fourth, the grammemes obtainable by referential identification (Items 10–12).

1) ‘**Active**’:
   zero modification of the basic diathesis
   (‘John is-shaving Alan’)

\[
\begin{align*}
& X \quad Y \\
\Rightarrow & \quad X \quad Y
\end{align*}
\]

(6) Latin

\[
\begin{align*}
Xenophôn+Ø \quad & agricultur+am \quad laudâ+ba \quad +t \quad +Ø \\
\text{SG.NOM} & \quad \text{SG.ACC} \quad \text{IMPF} \quad \text{3SG} & \text{ACT}
\end{align*}
\]

‘Xenophon [I, Subj] praised [the] agriculture [II, DirO]’.
Chapter 3. Voice

(7) Nepali

Raj+le

Avā+lay

hirka+Ø

+ṃ

+o

ERG

DAT

hit

ACT

PAST

3SG.MASC

‘Raj [I, Subj] hit Ava [II, DirO]?.

The Main Verb [= MV] agrees with the Subject (which is underscored) in person, number2, and gender2.

Of course, it makes sense to speak of zero modification of the basic diathesis only if it is opposed to a non-zero modification. Therefore, an active is only possible with verbs that have at least one other voice such as a passive (this follows from the definition of an inflectional category, which cannot contain less than two grammemes). Thus, in the sentence *He died* the verb *to die* is not in the active: it does not have voice at all.

(8) Latin

A Xenophōnt+e

agricultur+a

lauda+ba

+ṃ

+ur

by

SG.ABL

agriculture

SG.NOM

praise

IMPF

3SG

PASS

‘By Xenophon [II, AgCo] [the] agriculture [I, Subj] was-praised3.

(9) Nepali

Raj+dwara

Avā+lay

hirka+i

+y

+in

from

DAT

hit

PASS

PAST

3SG.FEM

‘By-Raj [II, AgCo] Ava [I, Subj] was-hit’.

As in (7), the MV agrees with the Subject (here, *Avālay*).

The Full Promotional Passive promotes the DSyntA II to I, the former DSyntA I being automatically demoted to II. The DSyntAs thus exchange roles.

In most known cases, the AgCo is not obligatory with the promotional passive. Thus, in English, which readily admits the AgCo (i.e., the by phrase), about 80% of passives are agentless. However, the expression of the Agent may be obligatory—in some languages, in some particular contexts. I know of at least three types of cases where the full passive (= with an overt AgCo) is obligatory:

– The passive may be imposed by a person hierarchy. For instance, because of the person hierarchy 1 > 2, one can say ‘I push you’, but not ‘You push me’;
this latter meaning is necessarily expressed as ‘I am pushed by you’. In such a language the Subject cannot be lower on the person hierarchy than the Object, so that when this might occur, automatic passivization is required.12

– The full promotional passive can be (more or less) obligatory also for discourse reasons. Thus, in some Polynesian languages, the use of active imperatives is impolite, so that imperatives must be automatically turned into the passive. Even more generally, in Polynesian, the passive is preferred over the active as a main voice of narration.

– Still another type of automatic passive is found in Lushootseed (Beck 2000a). Here, with a transitive verb, the simultaneous expression of the Subject and the Direct Object is possible only if at least one of them is a pronoun: that is, in the sentences meaning ‘I chase a wolf’, ‘He will beat you’,13 The boys will see us, etc. In a transitive clause supposed to have two full noun phrases of the type ‘Mary sees John’ or ‘John kills the wolf’, only one noun phrase may actually appear, and only in the role of DirO (see (10b)). Therefore, to express the meaning ‘The boy found the dog’, Lushootseed passivizes the verb ‘[to] find’ and says ‘The dog was found by the boy’, cf. (10b) [PUNCT stands for ‘punctual aspect,’ and NON.CONTR, for ‘non-controlled’]:

\[(10)\]
\[
a. \quad ?u \quad +\text{?x}^j + dx^w \quad +\text{?} \quad \text{sq}^w \quad \text{baj}^j \quad \text{PUNCT} \quad \text{find} \quad \text{NON.CONTR} \quad \text{ACT} \quad \text{I} \quad \text{the-MASC} \quad \text{dog}
\]

‘I found the dog’.

\[
b. \quad ?u \quad +\text{?x}^j + dx^w \quad +\text{?} \quad \text{ti} \quad \text{sq}^w \quad \text{baj}^j \quad \text{PUNCT} \quad \text{find} \quad \text{NON.CONTR} \quad \text{ACT} \quad \text{I} \quad \text{the-MASC} \quad \text{dog}
\]

‘He/She found the dog’.

\[
c. \quad *?u \quad +\text{?x}^j + dx^w \quad +\text{?} \quad \text{ti} \quad \text{sq}^w \quad \text{baj}^j \quad \text{ti} \quad \text{caas} \quad \text{PUNCT} \quad \text{find} \quad \text{NON.CONTR} \quad \text{ACT} \quad \text{the-MASC} \quad \text{dog} \quad \text{the-MASC} \quad \text{child}
\]

‘The boy found the dog’.

\[
d. \quad ?u \quad +\text{?x}^j + du \quad +b \quad ?x^j \quad \text{caas} \quad \text{ti} \quad \text{sq}^w \quad \text{baj}^j \quad \text{PUNCT} \quad \text{find} \quad \text{NON.CONTR} \quad \text{PASS} \quad \text{by} \quad \text{the-MASC} \quad \text{child} \quad \text{the-MASC} \quad \text{dog}
\]

‘The dog was found by the child’.

3) ‘ Partial Demotional Passive ':'

Demotion of DSyntA I (to III), with DSyntA II retained in place (‘[‘It’] is-shaving Alan by John’)

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Chapter 3. Voice

A verb in the Partial (= unilateral) Demotional Passive does not have a DSyntA at all. In languages that require the obligatory presence of the SSynt-Subject, this verbal form automatically receives—at the SSynt-level—a dummy Subject. This is an empty lexeme, which can be an overt impersonal pronoun, as Ger. ES in (11), or a zero impersonal pronoun, as in (12)–(13):

(11) German

\[ Es \text{ wurde dem Patienten vom Arzt geholfen. } \]

lit. ‘It became to-the patient [II, IndirO, DAT] by-the doctor [III, AgCo] helped’. = ‘The patient was helped by the doctor’.

(12) Ukrainian

a. Mnoju bu+Il +o splačen+o cju sum+u

I-INSTR be PAST SG.NEU paid DEM-PASS this sum SG.ACC

lit. ‘By-me [III, AgCo] [“it”] was paid this sum [II, DirO]’. = ‘I paid this sum’.

b. Gurtk+ om junativ bud +e vygotovlen+o
circle SG.INSTR young.naturalists-GEN will.be 3SG prepared DEM-PASS
dobri kolekci +i
good collection PL.ACC

‘Good collections [II, DirO] [“it”] will be prepared by the circle [III, AgCo] of young naturalists’.

c. Cju operacij+u bud +e vidomym xyrurg+om

this operation SG.ACC will.be 3SG carry.out DEM-PASS well-known surgeon SG.INSTR

lit. ‘[“It”] will be carried-out this operation [= DirO] by-a-well-known surgeon’.

d. Tam, de zeml+ju Dnipr+om rozkolot+o ...

there where earth SG.ACC Dnieper SG.INSTR split DEM-PASS

lit. ‘There, where Earth [= DirO] [“it”] is split by-Dnieper’.

The Ukrainian verbal form under analysis contains a special marker of the partial demotional passive: the suffix -o, added to the stem of a passive participle, marked by -n or -t. The whole form is invariant; it is different from the passive participle of the neuter singular, which has the ending -e: splačen+e, etc.

(13) Northern Russian dialects

\[ U \text{ ne}j \text{ tělk } +u \text{ by+l } +o \text{ zareza+n } +o. \]

at her heifer SG.ACC be PAST SG.NEU slaughter PASS.PART SG.NEU

lit. ‘At her [III, AgCo] a heifer [II, DirO] “it”-was slaughtered’. = ‘She has slaughtered a heifer’.
4. Calculus of possible voices in bi-valent verbs

The form that interests us—zarezano—is a singular neuter past passive participle: it is not a special form, as in (12).

Sentences in (12) and (13) have a zero empty Surface-Syntactic Subject—a singular neuter pronoun Ø(3sg/neu) similar to the impersonal pronoun Eng. IT and Ger. ES, but having no physical expression (see above, 3, Comment 2, p. 191, for two other zero lexemes of Russian). The presence of the Subject Ø(3sg/neu) in the sentence is signaled by the fact that both the copula ‘to be’ in (12)–(13) and the past participle in (13) agree with it: the copula is in the neuter singular in (12a) and (13) and in the 3rd person singular in (12b), while the past participle in (13) is in the neuter singular.

The same type of partial demotional passive is found in Modern Irish (Noo-nan 1994)–in the varieties that admit the expression of the Agent; it seems that more often than not the AgCo is impossible, and then the corresponding form has to be described as a Subjectless Suppressive (see below, Item 5).

4) FULL DEMOTIONAL PASSIVE: demotion of both DSyntAs I and II

(‘It’ is-shaving by-John at-Alan)

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A verb in the Full Demotional Passive also lacks a DSyntA I; like verbs in the partial demotional passive, it automatically receives a dummy Subject at the SSynt-level.

I have not found actual examples of this voice with transitive verbs. Probably, due to its ‘anti-semiotic’ nature (it is not clear what the purpose of simultaneous demotion of both DSyntAs would be), it does not exist or is extremely rare.14

However, intransitive verbs can have the full demotional passive, see Sub-section 5.1, p. 219. It is widely known as the impersonal passive. But this term is, I think, not quite felicitous—because of its semantic connotations and for a few other reasons (see 4.3.4, p. 216).

5) SUBJECTLESS SUPPRESSIVE: suppression of DSyntA I—what should become, at the SSynt-level, the Subject (‘They’ are-shaving Alan)15

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Four examples of the subjectless suppressive follow: from Estonian, Polish, Spanish, and Hebrew.
Chapter 3. Voice

(14) Estonian

\[ \text{Ehita} + \text{a} + \text{kse} + \text{sild} + \text{a} \]

build SBJL.SUPPR PRES bridge SG.PART(itive)

\['["They"] are-building [a] bridge [II = DirO]'.

\[ \text{Ehita} + \text{i} + \text{sild} + \text{a} \]

build SBJL.SUPPR PAST bridge SG.PART(itive)

\['["They"] have-built [a] bridge [II = DirO]'.

\[ \text{Ehita} + \text{ta} + \text{ks} + \text{sild} + \text{a} \]

build SBJL.SUPPR SUBJ(unctive) bridge SG.PART(itive)

\['["They"] would-build/If ["they"] were building [a] bridge [II = DirO]'.

(15) Polish

\[ \text{Zbudowan} + \text{o} + \text{most} + \emptyset \]

have.built SBJL.SUPPR bridge SG.ACC

\['["They"] have-built [a] bridge [II = DirO]'.

In both (14) and (15), no SSynt-Subject is possible, nor is it possible to express the Agent. The Estonian form does not express the person or the number of the Agent, but distinguishes the tense and the mood. (A similar situation obtains in Modern Irish: there, the subjectless suppressive form has no person/number agreement, either, but also distinguishes all tenses and moods: Noonan 1994: 284.) The Polish form is invariant and has the meaning of perfective past in the indicative. 16

(16) Spanish

a. Se lee muchos libros de ese tipo
   lit. ["It"] reads itself many books [II, DirO] of this type'. =
   'Many books of this type are read'.

b. Se ha construido tres puentes sobre el río
   lit. ["It"] has constructed itself three bridges [II, DirO] over the river'. =
   'Three bridges have been constructed over the river'.

c. Se vende periódicos por aquí
   lit. ["It"] sells itself newspapers [II, DirO] here'. =
   'Newspapers are sold here'.

The Actor is not expressible with these forms—they do not admit an AgCo; however, they do have a zero dummy SSynt-Subject $\emptyset_{(3sg, masc)}$, with which the Main Verb agrees.

(17) Hebrew

\[ \text{Je} + \text{valeq} \text{et} \text{ha} + \text{arec}, \]

lit. ["It"] is-distributed [3SG.MASC] the-land [FEM; II = DirO, introduced by the DirO marker ?et]'.
As in Spanish, sentence (17) has a zero dummy SSynt-Subject \( \emptyset^{(3g)} \) , which controls the Main Verb’s agreement.

Russian uses the subjectless suppressive with a few communication verbs such as *V rabote govoritsja* [3sg] o mongol’skix jazykax, lit. ‘In the paper [“it”] is-spoken about Mongol languages’, or *Po radio soobščalos’* [sg,neu] o novyx spektakljax, lit. ‘Over the radio [“it”] was-being-communicated about new shows’, where the expression of the Agent is excluded and a zero dummy SSynt-Subject \( \emptyset^{(3g, neu)} \) controls the agreement of the Main Verb.

6) ‘OBJECTLESS SUPPRESSIVE’ : suppression of DSyntA II – what should become, at the SSynt-level, the DirO

"(John is-shaving [someone])"

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(18) Totonac \([V/\) stands for a laryngealized vowel; ‘ denotes stress]

a. Apapantilla Totonac

\( \text{tamáwá pancín} \) ‘He buys bread’.

\( \text{tamáwa+nín} \) ‘He is engaged in buying things’.

\( \text{čeqé lášy} \) ‘He washes cloths’ [the DirO is obligatory].

\( \text{čeqé+nín} \) ‘He is engaged in washing things’.

\( \text{aqšogó kin+tátín} \) ‘He deceives my brother’.

\( \text{aqšogö+nín} \) ‘He is engaged in deceiving people’ = ‘He lies to people’.

In the first member of these pairs, the DirO is obligatory; if it is not overtly expressed, the verbal form means ‘buys it’, ‘washes it’, ‘deceives him/her’, where the DirO is clear from the context. In the second member of these pairs, no expression of the Patient is possible; the verb refers to the usual activity rather than a specific action.

b. Upper Necaxa Totonac

\( \text{wamá mātax+nín} \) \( ?qš \) +kicís ‘He charges five pesos’.

\( \text{this charge OBJL.SUPPR CLASSIF five} \)

\( \text{[The DirO would be the person charged.]} \)

\( \text{ik +puca +māl čičj tū škā+nín} \)

\( 1SG.SUB \) look.for PROGR dog that.which bite OBJL.SUPPR

‘I’m looking for a dog that bites’.

[Thanks to D. Beck for the examples in (18) and especially for attracting my attention to the suppressives in Totonac.]
The objectless suppressive is apparently also found in Mayan languages such as Mam, Yucatec, and Tzutujil.

As a less exotic example, consider Russian reflexive-form verbs of the following type:

(19) Russian

Èta sobak+a kusaet+sja, lit. ‘This dog [I, Subject, NOM] bites himself’. = ‘This dog bites (everyone)’.

Pet+jia pljuët+sja, lit. ‘Pete [I, Subject, NOM] spits himself’. = ‘Pete spits on me’. or ‘Pete spits on everybody’.

No expression of the Patient is possible in this construction.

Example (19) is not quite correct, since the verbal form quoted belongs to derivation rather than to inflection: it is possible only for a few verbs denoting aggressive actions. Thus, it is not a voice form.

7) ‘Absolute suppressive’: suppression of both DSyntAs I and II

(There-is-shaving)

(20) a. German Hier wird [3sg] viel gelesen, lit. ‘Here becomes much read’.

Example (20a) is not quite correct, either, since the expression of the agent remains possible: Von der Jugend wird hier viel gelesen, lit. ‘By the young-people becomes here much read’; this form is, in point of fact, a full demotional passive of an intransitive (or intransitively used) verb.

b. Upper Necaxa Totonac

mâtax+t+nín +kán ?qš+kicís
charge OBJL.SUPPR SBJL.SUPPR CLASSIF five

“They” charge five pesos’. = ‘Five pesos are charged [for this]’.

The grammemes of the objectless and subjectless suppressives are combined to produce an absolute suppressive. (Note that the combinability of these grammemes requires treating them as belonging to two different inflectional categories.

I will allow myself to skip this additional difficulty.)

8) ‘Agentless promotional passive’: promotion of DSyntA II, with suppression of the former DSyntA II – the one which should correspond to X (‘Alan is-being-shaved’)
4. Calculus of possible voices in bi-valent verbs

(21) Arabic

\[ Al-\text{jisr}+u \text{\textit{jubn}i'u}, \text{lit. 'The bridge [I, Subject, NOM] is-being-built [PASS]}' = \]
\[ 'The-bridge [I, Subject, NOM] is under construction' \]
[the expression of the Agent is impossible in traditional style].

(22) Wappo

\[ Sawi \text{nuh} + \text{\textit{khe]?}} \]
\[ 'The-bread [I, Subject, SUBJ(ective case)] got-stolen [PASS]' \]
[no expression of the Agent].

The agentless promotional passive is found in a number of languages—for instance, in Latvian and Pashto.

This type also includes Romance ‘reflexive’ or pronominal passives such as Fr. \textit{Les journaux se vendent partout}, lit. 'The newspaper sell themselves everywhere', Sp. \textit{Los periódicos se venden en todas partes} [\textit{idem}].

9) \textit{PATIENTLESS DEMOTIONAL PASSIVE}:

demotion of DSyntA I, with suppression of the former DSyntA II—the one which should correspond to Y

(‘["It"] is-shaving by-John’)

(23) Rus. \textit{Mne mečaet}+\textit{sja}, lit. ‘["It"] to-me [II, IndirO, DAT] is-dreaming’.

In the intended sense, the expression of the DSyntA I is impossible; the corresponding active form is \textit{Ja mečaja} ‘I am-dreaming’.

Example (23) is not strictly correct and is used only for want of a better illustration: \textit{mečaetsja} is not a regular formation, nor does it belong to inflection.\textsuperscript{18}

10) \textit{OBJECTLESS REFLEXIVE}:

referential identification of SemAs, with suppression of DSyntA II

(‘John is-shaving-himself’)

(24) Rus. \textit{Otec +Ø pričęsyva}+\textit{Ø +et} +\textit{sja}

\[ \text{father SG.NOM} \quad \text{comb} \quad \text{PRES} \quad \text{3SG REFL} \]

lit. ‘Father [I, Subject] is-combing-himself’, = ‘Father is combing his hair’.
11) ‘subjectless reflexive’: referential identification of SemAs, with suppression of DSyntA I
(‘By-John is shaving himself’)

\[
\begin{array}{c|c}
X & Y \\
I & II \\
\end{array}
\Rightarrow
\begin{array}{c}
X = Y \\
II \\
\end{array}
\]

(25) Lit. Jon + si + t+a

\[\begin{array}{llll}
SG,GEN & PERF & REFL & combl SBJL.SUPPR \\
\end{array}\]

lit. ‘By-Jonas [II, AgCo] have been combed itself.’ =

‘Jonas has combed his hair.’

The reflexive form susičukuota is invariant; it does not agree with anything, so there is no question of the presence of a SSynt-Subject, even a dummy. The marker of the subjectless suppressive is a combination of the suffix of the past passive participle -t and the suffix of the feminine singular nominative -a.

12) ‘absolute reflexive’: referential identification of the SemAs, with suppression of both the DSyntA I and II
(‘There is shaving oneself’)

\[
\begin{array}{c|c}
X & Y \\
I & II \\
\end{array}
\Rightarrow
\begin{array}{c}
X = Y \\
– \\
\end{array}
\]

(26) Polish

Uczesan + no się

combed SBJL.SUPPR REFL

lit. ‘Have combed itself.’ = ‘Some people have Someone has combed their/his hair’.

The absolute reflexive form uczesan + no się is also invariant and does not agree with anything. The ‘sum’ of the grammemes ‘subject-less suppressive’ and ‘reflexive’ produces ‘abs. reflexive’—a kind of phraseologized grammemic combination.

(27) Turkish

Burada yka + t + maz

here wash REFL PASS not.PRES.IND.3SG

lit. ‘Here [“it”] not is washed itself.’ = ‘No washing here’.

Here, the absolute reflexive is implemented via the combination of grammemes ‘reflexive’ and ‘passive’; the resulting form is in the 3sg, which indicates the presence of a zero dummy Subject.
4. Calculus of possible voices in bi-valent verbs

For more on reflexives, see Geniušienė 1987, Kemmer 1993: Ch. 3 (p. 41ff), Lichtenberk 1994, Wierzbicka 1996: 402ff and Frązyngier and Curl (eds.) 2000b. These twelve grammemes constitute the maximal idealized system of particular voices for a binary transitive basic diathesis. For some of these grammemes, I do not have good examples; in others cases, one clearly sees the absence of a special marker or a combination of two independent markers. The latter fact leads me to discussing the possibility of several voice categories existing in the inflectional system of a particular language; this possibility has been mentioned above (p. 197; see also Section 6, p. 227).

4.3. Comments on specific topics: passive, middle, reciprocal, impersonal

Now I would like to provide some clarification with respect to the following four points: the passive voice, the middle ‘voice,’ the reciprocal, and the term impersonal as applied to voices.

4.3.1. The passive voice

Concerning the passive, I have to touch briefly on (at least) two questions:

1) Does a passive promote or demote the DSyntAs of the verb?
2) What are the conditions that license the passivization of a verb?

Promotion vs. demotion

This question is, in essence, the same as asking which aspect of the passive should be considered its defining property—the demotion of DSyntA I or the promotion of some other DSyntA into the position of DSyntA I? I would say the former as, logically, demotion is possible without promotion, while promotion is impossible without demotion. Cross-linguistically, as shown by Comrie (1977), passives can demote the DSyntA I of both transitive and intransitive verbs—and in either case, demotion is possible without promotion. Thus, in transitives, the DSyntA I \[\Rightarrow\] Subject can be demoted without changing the status of the DSynt II \[\Rightarrow\] DirO (cf. (11)–(13) above, p. 202). In intransitives, the DSyntA I can be demoted and there is nothing else to promote, as in the following Welsh sentence:

(28) Welsh

\[\text{Eir yno \ gan lawer yn yr haf}\]

\begin{tabular}{l}
was-gone there by many in the summer \\
‘Many people went there in the summer’.
\end{tabular}
Sentence (28), based on an intransitive verb, has only one SSyntA—an AgCo, but no SSynt-Subject; the verb is invariant, it does not agree with anything.

In this sense, demotion is a more general—and fundamental—operation than promotion (see the partial demotional passive—Item 3 in 4.2, and the formation of the passive in monovalent verbs, 5.1). Therefore, it is demotion that should be taken to be the defining property of the passive, although the promotion of the DSyntA II is also one of the important semantico-communicative functions of the passive in many languages.

**Conditions for passivization**

Languages differ greatly in regard to the types of bivalent verbs that allow/disallow passivization. Thus, in French the canonical passive can be applied only to transitive verbs—i.e., those governing a DirO—but not even to all of these. For instance, parametric verbs such as mesurer ‘[to] measure [3 meters]’, coûter ‘[to] cost’, peser ‘[to] weigh’, etc. do not passivize. On the other hand, English readily permits the full promotional passive of semantically bivalent INTRANSITIVE verbs:

(29) a. He was spoken to (by everybody in the room).

   The conclusion was arrived at (by several researchers).

   People were afraid of being retaliated against (by the government).

   English can even passivize verbal expressions composed of an intransitive verb and a prepositional—locative—circumstantial, which can be semantically quite fortuitous (‘Pseudo-Passives,’ or ‘Prepositional Passives’):

   b. These cars are designed to be slept under.

      The Black Lagoon has been camped beside so many times that now you don’t find any firewood there.

      Such a dress can’t be sat down in.

      My children haven’t been read stories to at night since they were five.

      This cup has already been drunk out of!

For the conditions that allow/disallow passivization, see Siewierska 1984: 186–216. The main semantic constraints on passivization in English seem to be affectedness of the object and volitionality of the action, although many cases are not covered by these constraints and need explicit lexical marking (i.e., indication in the corresponding lexical entries), as well as other, more subtle contextual conditions.

A similar, although by no means identical, phenomenon is found in Japanese. A verb can have the passive form if and only if

1) semantically, the verb is dynamic—i.e., it denotes an event (= an action or a process)
2) the SSynt-Subject of the passive denotes a person affected by the event. If both these conditions are met, the Japanese passive can be formed (by the suffix -(r)are):

- first, from a transitive verb (30a) and from some intransitive verbs having as their second actant a noun in the dative (30b);
- second, from an intransitive verb accompanied by a circumstantial, such that this circumstantial becomes the passive’s Subject (30c)—just like the English examples in (29b).

\[(30)\]

\(\text{a. } \text{Minoru+ga Yooko+o koros+i } +\mathcal{O} +\text{ta} \)

\[
\text{SUBJ} \quad \text{ACC} \quad \text{kill Them.El} \quad \text{ACT} \quad \text{PAST}
\]

‘Minoru killed Yoko’.

\[
\text{Minoru+ni koros+are } +\text{ta}
\]

\[
\text{SUBJ} \quad \text{DAT} \quad \text{kill PASS PAST}
\]

‘Yoko was killed by Minoru’.

\(\text{b. } \text{Minoru+ga Yooko+ni soodans+i } +\mathcal{O} +\text{ta} \)

\[
\text{SUBJ} \quad \text{DAT} \quad \text{consult Them.El} \quad \text{ACT} \quad \text{PAST}
\]

‘Minoru consulted Yoko’.

[The verb SOODANSURU (to consult) is intransitive and takes the Consultee in the dative.]

\[
\text{Minoru+ni soodans+are } +\text{ta}
\]

\[
\text{SUBJ} \quad \text{DAT} \quad \text{consult PASS PAST}
\]

‘Yoko was consulted by Minoru’.

\(\text{c. } \text{Eigakan+de kawaii ko+ga} \)

\[
\text{movie.theater LOC pretty girl SUBJ}
\]

\[
\text{Minoru+no tonari+ni suwat } +\mathcal{O} +\text{ta}
\]

\[
\text{GEN close DAT sit.down ACT PAST}
\]

‘In the movie theater, a pretty girl sat down at Minoru’s side’.

\[
\text{Eigakan+de Minoru+ga kawaii ko+ni tonari+ni suwar+are+ta,}
\]

\[
\text{lit. ‘In the movie theater, Minoru was-sat-down at-the-side by a pretty girl’}
\]

But Japanese is even more flexible with respect to passivization: it admits a further type of passive, in which the DSyntA I of the DSyntA II of a verb is promoted to be the verb’s DSyntA I—following the principle ‘The actant of my actant becomes my own actant.’ This happens when DSyntA II of the verb denotes a Body Part and constitutes a good example of what is known as Possessor Raising, shown in (30d):
These examples show where our definition of voice is too narrow: in English, as well as in Japanese, the passive can promote to the status of DSyntA even a circumstantial; moreover, Japanese allows this type of promotion for the elements at the second level of subordination (KODOMO ‘child’ in (30d)).22 In order for Definition 3.7 to accommodate all such cases, we need the following two amendments:

1) We must posit that a diathesis can in principle be ascribed not only to an L but to any expression formed, so to speak, ad hoc by a verb L and any of the sentence elements that directly depend on L – let us call such an expression an extended lexical unit.

2) We have to add to the formulation of Definition 3.7 – after the words “of a lexical unit” – the phrase “or an extended lexical unit” (see Definition 3.7’ in Section 6, p. 229).

With an extended LU L, the nominal element promoted by the passive is considered to be a SemA and, therefore, a DSyntA of L, so the definition of voice applies. For instance, in to sleep under cars the expression to sleep under is taken to be an extended LU with two SemAs: ‘X sleeps under Y’s’, and the passive Y’s are slept under by X can be readily formed. The construction of extended lexical units by syntactic rules in view of eventual passivization is formally similar to the construction of incorporative complexes.

For cases of the type of (30d), however, Definition 3.7 as such is adequate, provided that we first posit Possessor Raising:

(i) ‘Mother caressed the head of the child’. ⇒

(ii) ‘Mother caressed the child on the head’.

(it is irrelevant whether construction (ii) is actually possible for the verb in question). Then, from (ii), we obtain (iii) ‘The child was caressed on the head by Mother’ [= (30d)] by canonical passivization.
4.3.2. The middle voice

The term *middle voice*, or *medio-passive*, comes from Classical studies and the comparative grammar of Indo-European languages. As applied to Ancient Greek and Sanskrit, the term *middle voice* denotes an inflectional form of a transitive verb which can be used both intransitively and transitively (i.e., without or with a DirO) and which signals that the action is, in a sense, ‘concentrated’ on or within the referent of the Subject. This vague characterization can actually be applied to several different situations: either the action is itself in the focus of attention (rather than the Subject or the Object), or the Subject undergoes the action (passive interpretation), or the Subject acts upon itself (reflexive interpretation), or the Subject acts in his own interests or upon an entity which belongs to him (benefactive interpretation). For instance, in Ancient Greek, the middle voice is used in the following ways (Barber 1975):

(31) a.  
   \[\text{wash} \, \text{ACT.PRES.1SG} \quad \text{the-PL.ACC} \quad \text{cloth-PL.ACC} \]
   \('[I] \text{wash the clothes}'\)
   vs.
   \[\text{wash} \, \text{MIDDLE.PRES.1SG} \]
   \('[I] \text{wash myself}' or '[I] \text{am being washed}'
   vs.
   \[\text{wash} \, \text{MIDDLE.PRES.1SG} \quad \text{the-PL.ACC} \quad \text{cloth-PL.ACC} \]
   \('\text{I wash to-myself the clothes}' = \text{I wash my clothes}' or \text{I wash the clothes for my profit}'\).

b.  
   \[\text{crown} \, \text{ACT.PRES.1PL} \quad \text{youSG-ACC} \]
   \('[\text{We} \text{crown youSG}']\)
   vs.
   \[\text{crown} \, \text{MIDDLE.PRES.1PL} \]
   \('[\text{We} \text{crown ourselves}]', or '[\text{We} \text{crown each other}]', or '[\text{We} \text{are being crowned}]', or even '[\text{We} \text{crown somebody for our own benefit}]'.

c.  
   \[\text{crown} \, \text{MIDDLE.PRES.1PL} \]
   \('[\text{We] crown ourselves}', or '[\text{We] crown each other}', or '[\text{We] are being crowned}', or even '[\text{We] crown somebody for our own benefit}'.

It can be seen from these examples that what is called the middle voice in Ancient Greek is a mixture of (at least) three different things. The Greek middle implements two ‘ideal’ inflectional categories: *voice* (the passive and the reflexive) and *version* – an inflectional category familiar from many languages such as
Georgian, whose grammemes signal for whom or with respect to whom/to what
the event is taking place. In addition, it expresses the reciprocal. (For more on
the middle in Ancient Greek, see Bakker 1994; the middle in Modern Greek is
described in Manney 2000.)

In order to give more depth to this perspective on the middle voice, let me
examine the middle voice in Maasai, where the middle is opposed to the passive
and marked by special suffixes (-a in the present, -ayu in the future, etc.).

(32) Maasai

\[
\begin{array}{ll}
\text{active} & \text{middle} \\
\text{a. } e+\text{tsöj} \text{ (}nuc\text{é} \text{‘they, obl.’)} & e+\text{tsöj}+\text{a} \text{ (}nuc\text{é}) \\
\quad \text{‘They wash it’.} & \text{‘They wash themselves’, or ‘They wash}
\quad \text{each other’, or else ‘They are washed’ =}
\quad \text{‘They are clean’: reflexive, or reciprocal,}
\quad \text{or stative}
\text{b. } e+\text{tsöj} \text{ ‘He washes it’.} & e+\text{tsöj}+\text{ayu [FUT]}
\quad \text{‘It is washable’ = ‘It will wash itself;}
\quad \text{passive potential [like -able]; but also}
\quad \text{all the readings in (32a)}
\text{c. } e+\text{gl} \text{ ‘He breaks it’.} & e+\text{gl}+\text{a} \text{ ‘It breaks’: decausative}
\quad \text{[opposed to the passive } e+\text{gl}+\text{t} \text{‘It is}
\quad \text{broken by someone’]}
\text{d. } e+\text{ik} \text{ ‘He hangs it’.} & e+\text{ik}+\text{a} \text{ ‘It hangs = it is suspended’}
\quad \text{[opposed to the passive } e+\text{ik}+\text{t} \text{‘It is}
\quad \text{hung up by someone’]}
\end{array}
\]

As one can see, the middle voice is no less messy in Maasai than it is in Ancient
Greek: it expresses the reflexive and the reciprocal, as in Ancient Greek, plus
the stative, the decausative and the passive potential. At the same time, it does
not express the passive, which is a completely different voice in Maasai. In Ban-
tu languages, the middle voice expresses roughly the same inventory of gram-
matical signifieds, and an equally chaotic situation holds in Bella Coola (Beck
2000b). For more on middle voice in different languages and its various uses,
see Kemmer 1993.

The main point of the discussion here is that the middle is not an ‘ideal’ voice
and cannot be a part of the logical calculus of voices. It is a language-specific
hybrid of various voice- and voice-like signifieds.
4. Calculus of possible voices in bi-valent verbs

4.3.3. Is the reciprocal a voice?

Some linguists include among voices the *reciprocal*, which signals the reciprocal, or mutual, character of the action denoted by the verb. If a verb means \( P(X ; Y) \), its reciprocal changes the signified of the verbal stem, adding to it a rather complex propositional meaning: \( P(X ; Y) \) and simultaneously \( P(Y ; X) \), \( X \) and \( Y \) interacting in \( P \). For instance: Fr. *se battre* [to fight], lit. *[to] beat oneself; *s’engueuler* [to quarrel with each other], lit. *[to] watch oneself(s); *s’écrire* [to write to, oneself], lit. *[to] write to oneself(s); ...). In Russian and English, the sentence Žan i Koletta pocelovalis´ [Jean and Colette kissed] [reciprocal] is not synonymous to the sentence Žan i Koletta pocelovali drug druga [Jean and Colette kissed each other]: the first describes one kiss in which both have interacted, while the second, with a canonical active, speaks of two kisses successively exchanged. As Xolodovič (1978: 15–16) correctly points out, the reciprocal transforms an asymmetrical predicate into a symmetrical one; in the process, it can add a semantic actant to the verb (cf. immediately below): e.g., Jap. *naki* (+*u*) [to twitter] \( \sim \) *naki* +*a* (+*u*) [to twitter to each other]. Logically speaking, the reciprocal is a derivateme (or, depending on the language, a quasi-grammeme) functioning outside of the system of voices. Four properties distinguish reciprocals from ‘genuine’ voices:

- Changing the propositional meaning of the stem. As stated above, the reciprocal adds a rather ‘heavy’ semantic component to the meaning of the verbal stem. This is in itself sufficient to ban the reciprocal from the domain of voices.

- Additional semantic actant. The reciprocal can actually carry the meaning ‘together, cooperating with ...’ rather than ‘each other’ and, in this way, it adds a SemA. In Turkish, the suffix -iş can be added to an intransitive radical V and produce a verb meaning ‘V together with Z’: *ağla*- [to cry] \( \sim \) *ağla*+*iş*- [to cry together with Z], *kaç*- [to flee] \( \sim \) *kaç*+*iş*- [to flee together with Z], *uç*- [to fly] \( \sim \) *uç*+*iş*- [to fly together with Z], etc.

- Easy phraseologization. In many cases, the reciprocal changes the lexical meaning of the verb in an unpredictable way; in other words, reciprocal forms tend to undergo phraseologization. Thus, in Modern Hebrew, we have: katav [to write] \( \sim \) hitkatev [to write letters to each other]; ra‘ah [to see] \( \sim \) hitra‘eh [to see each other]; yet- [to suffice] \( \sim \) yet+*iş*- [to catch up with, grow up; *to suffice to one another]; kar- [to mix, something] \( \sim \) kar+*iş*- [to interfere,
[to] mix oneself in (but also ‘[to] mix with one another’), etc. The forms of the prototypical voice – the passive – rarely phraseologize.

Restricted formation. The reciprocal is subject to more arbitrary constraints than is considered normal for an inflectional category. For example, in Modern Hebrew, the reciprocal – the hitpa’el form – does not exist for many verbs which, from the purely semantic viewpoint, should have it (in such cases paraphrases with ‘each other’, ‘mutually’, etc., are used). In particular, the reciprocal, which coincides formally with the reflexive, is not possible with verbs that have a standard reflexive – such as ‘wash oneself’, ‘dress oneself’, ‘comb oneself’, etc. In these verbs, the hitpa’el form of these verbs does not get a reciprocal reading.

In some languages, the reciprocal is productive and regular – as, for instance, in Bantu languages. Thus, Zulu has a reciprocal form in -an(-a): thand‘ [to] love’ ~ thand+an- ‘[to] love each other’, siz- ‘[to] help’ ~ siz+an- ‘[to] help each other’, etc. However, I think that even here, the reciprocal is not a voice. Since a reciprocal form can be passivized (thand+an+w(-a) ‘[to] be loved by each other’, or siz+an+w(-a) ‘[to] be helped by each other’), the reciprocal and the passive belong to two different inflectional categories; and since the reciprocal changes the propositional meaning of the verbal stem, the corresponding inflectional category should not be included among voices.

However, in some other languages, the reciprocal cannot be separated from one of the well-established voices. In French, every two-actant transitive verb whose both actants denote humans can have a reflexive form, which always has two readings (if, of course, semantic context allows for this) – a genuine reflexive and a reciprocal one. Thus, Ils se lavent means ‘They wash themselves’ or ‘They wash each other’, Ils se détestent means ‘They hate themselves’ or ‘They hate each other’, Ils s’achètent du vin ‘They buy wine for themselves’ or ‘They buy wine for each other’, etc. As a result, in French the reciprocal must be described as one of possible meanings of the reflexive voice. In much the same way, in Ancient Greek and in Maasai, the reciprocal is one of possible meanings of the middle (cf. Frajzyngier and Curl (eds.) 2000a).

4.3.4. The term impersonal as applied to voices

Demotional passives, the subjectless suppressive, and the subjectless reflexive have no DSyntA I – that is, either no SSynt-Subject at all, or a dummy SSynt-Subject, the latter being what is known as an IMPERSONAL pronoun. For this reason, these voices are often described as impersonal. However, terms such as impersonal passive are infelicitous, because of their semantic connotations – in most cases, the voice in question can be used only if the SemA I of the verb
4. Calculus of possible voices in bi-valent verbs

is human, which means that the demotional passive, for instance, is very ‘personal’! We see the same problem with the subjectless suppressive, which is commonly referred to as ‘(Objective) Impersonal’ (this usage was proposed in Mel’čuk and Xolodovič 1970: 118, and now it is extremely widespread; cf. Brus 1992: 53). But all cases of subjectless suppressive known to me also presuppose a human Agent (cf. Frajzyngier 1982):

(33) Sp.  

\[ \text{Se grita en el bosque,} \]
\[ \text{lit. } [\text{“It”}] \text{ is-shouting itself in the forest}, = \text{‘There is shouting in the forest’}. \]

\[ \text{vs.} \]

\[ \text{Se aulla en el bosque,} \]
\[ \text{lit. } [\text{“It”}] \text{ is-howling itself in the forest}, = \text{‘There is howling in the forest’}. \]

(34) Mojave (Langacker and Munro 1975: 810–811)

a.  

\[ p \ +tapi\pitay+e +m \]
\[ \text{1SG.OBJ save SBJL.SUPPR DECLAR} \]
\[ \text{lit. } [\text{“They”}] \text{ saved me}, = \text{‘I [II, DirO] was saved’}. \]

b.  

\[ Tunay \ masahay+Ø \ +cuqam+e +pč \]
\[ \text{Yesterday girl NOM hit SBJL.SUPPR PAST} \]
\[ \text{lit. } [\text{“they”}] \text{ hit the girl [II, DirO]}, = \]
\[ \text{‘The girl got hit yesterday’}. \]

[The DirO in Mojave is in the nominative, while the transitive Subject (when overtly present) is in the ergative.]

The subjectless suppressive can be used in Mojave, as in Spanish, only if the verb’s SemA I refers to a person. For this reason, I will avoid calling the ‘subjectless’ voices impersonal.

An additional complication related to the term *impersonal* comes from French. French features the following type of construction:

(35) a.  

\[ \text{Il a été raconté par les survivants des histoires terribles} \]
\[ \text{lit. } [\text{“It has been told by the survivors some horrible stories”}, \] which is again currently called the ‘impersonal passive.’ This name might give the impression that we are dealing here with a special type of passive, but in fact this is not the case. (35a) is an example of the canonical full promotional passive of the type shown in (35b):

b.  

\[ \text{Des histoires terribles ont été racontées par les survivants} \]
\[ \text{‘Horrible stories have been told by the survivors’}. \]

The sentence in (35a) is the result of *Impersonalization*, which applies to several types of intransitives sentences, among them passive sentences as in (36):
(36) French

Des touristes viennent ‘Tourists come’. \( \Rightarrow \) Il vient des touristes, lit. ‘It comes tourists’.

Des camions passent ‘Trucks pass’. \( \Rightarrow \) Il passe des camions, lit. ‘It passes trucks’.

Des ponts ont été construits ‘Bridges have been built’. \( \Rightarrow \) Il a été construit des ponts, lit. ‘It has been built bridges’.

Impersonalization is used for communicative reasons: it turns the SSynt-Subject into a special clausal element, called a QUASI-SUBJECT (English does not have anything similar), which must be postposed with respect to the Main Verb and does not control its agreement. Therefore, the sentence Il a été construit des ponts does not constitute an additional type of passive: it represents a full promotional passive that has undergone Impersonalization—an operation logically independent of voices.

Impersonalization also applies to another type of the French passive—the agentless promotional passive (Item 8 in the inventory of voice grammemes, p. 206):

(37) French

Des ponts se construisent, lit. ‘Bridges build themselves’. \( \Rightarrow \) Il se construit des ponts, lit. ‘It builds itself bridges’.

Des journaux se vendent ici, lit. ‘Newspapers sell themselves here’. \( \Rightarrow \) Il se vend des journaux ici, lit. ‘It sells itself newspapers here’.

Such passives could be called impersonalized. Their existence makes the use of the adjective impersonal in connection with ‘subjectless’ voices even less recommendable.

For more on ‘impersonal’ passives and suppressives, see Comrie 1977.

5. Voice in mono- and multi-valent verbs

In order to avoid cluttering the exposition with too many details, I have drastically simplified the real state of affairs, so that some important properties of voice have remained untreated. My major sin consists in developing the calculus of voice grammemes exclusively on the basis of the BINARY diatheses of TRANSITIVE verbs, as if voice were applicable only to bivalent transitive verbs. This, however, is not true, and I have to consider two further possibilities: monovalent intransitive verbs and multivalent transitive/intransitive verbs that have more than two actants.
5. Voice in mono- and multi-valent verbs

5.1. Monovalent verbs

Logically, a monovalent (≈ intransitive) verb allows only two derived voices:

- Either its DSyntA I can be demoted: I ⇒ II (obviously, without any promotion). This is a full demotional passive, cf. the remark in Item 3 in the inventory of voice grammemes. However, the schema of this voice is slightly different for monovalent verbs, so that I will give it here:

  
  \[
  \begin{array}{c}
  X \\
  \text{I} \\
  \\
  \text{II}
  \end{array}
  \quad \Rightarrow \quad
  \begin{array}{c}
  X \\
  \text{II}
  \end{array}
  \]

- Or its DSyntA I can be suppressed: I ⇒ -. This is an absolute suppressive, cf. Item 7, p. 206. Again, its schema is slightly different:

  
  \[
  \begin{array}{c}
  X \\
  \text{I} \\
  \\
  \\
  \end{array}
  \quad \Rightarrow \quad
  \begin{array}{c}
  X \\
  \text{I} \\
  \end{array}
  \]

Both the monovalent demotional passive and the monovalent subjectless suppressive are found in various languages.

The Monovalent Demotional Passive

In many languages (including Latin), the passive can quite naturally be formed from a monovalent verb. In this passive, the only DSynt-actant (= I) of a monovalent verb is demoted: its surface expression loses the privileged status of SSynt-Subject and becomes an AgCo – a chômeur in the terminology of Relational Grammar. This AgCo can be readily omitted.

NB: In most cases, intransitive but semantically multivalent verbs behave – with respect to voice formation – in the same way as monovalent verbs: their SSynt-Subj is demoted or suppressed, while their IndirO/OblO remains unaffected. In (38), two such verbs are illustrated: see (38a-ii) and (38d), with the IndirO underscored.

(38) a. Latin

(i) *Adcurritur ab universis*, lit. ‘[“It”] is-coming-running by everybody’, = ‘Everybody is coming running’.

(ii) *A Cotta acriter mihi resistebatur*

  lit. ‘By Cotta severely to-me was-resisted’.

b. Russian

* Ox, skol’ko mnoj tut bylo xożeno (siženo)!*

  lit. ‘Oh, how-much by-me here was walked (sat)!’ = ‘Oh, how much did I walk (sit) here!’.

c. Dutch

*Er werd door de vrouw gegild!*

  lit. ‘It became by the woman screamed!’ = ‘There [lit. “It”] was screaming by the woman’.
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d. Arabic
\[ \text{\textit{gudiba ya\textit{lahihim}}, lit. \{\text{“It”}\} was-angered upon-them\}, = \]
\[ \text{‘There was anger towards them’}. \]

The possibility of expressing the only Sem-actant of the verb as a DSyntA II = AgCo, boldfaced in (38a–c), precludes the description of these forms as suppressives: these are clear-cut passives. The sentence in (39d) does not admit an AgCo, but this is typical of all Arabic passives, cf. Item 8 in 4.2, (21), p. 207.

The Monovalent Subjectless Suppressive

As an example of a monovalent suppressive, what is known in Spanish as passive-reflexive forms (of intransitive verbs) can be cited:

(39) a. \textit{Aquí se vive bien y se muere viejo}
\[ \text{here itself lives well and itself dies old} \]
\[ \text{‘Here people live a good life and die old’}. \]

As I said with respect to the suppressive of bivalent transitive verbs, this suppressive also has a zero dummy SSynt-Subject: Ø

b. \textit{Aquí se muere viejo + Ø (*viejo+a+s, *viejo+a+Ø, *viejo+a+s).}
\[ \text{here itself dies old MASC SG} \]
This is the same subjectless suppressive as with bivalent transitive verbs.

As stated above, what is valid for monovalent verbs is valid for all intransitive verbs, even those which are semantically polyvalent. Thus, the subjectless suppressive is possible in Spanish with the verb [to be]:

c. \textit{Se brilla en la escena cuando se es talentoso}
\[ \text{itself shines on the scene when itself is talented} \]
\[ \text{‘One shines on the scene when one is talented’}. \]

Another example of the same kind of subjectless suppressive comes from a Slavic language:

(40) Polish
\[ \textit{U nich zwykle siedzi się do rana} \]
\[ \text{at them usually sit-PRES.3SG itself till morning} \]
\[ \text{‘One usually stays at their place till morning’}. \]

At first glance, it seems that monovalent (or, more generally, intransitive) verbs do not change our perspective on the calculus of voice grammemes. However,
5. Voice in mono- and multi-valent verbs

this is not completely true: there are still some surprises in store. For one thing, the monovalent (demotional) passive can, in principle, be formed from reflexive verbs. Consider, for example, the Lithuanian sentence (41) [PPP stands for Past Passive Participle]:

(41) On +as ap +si +reng+t +a ir iš+ei+t +a
Ann SG.GEN PERF REFL dress PPP SG.FEM.NOM and out go PPP SG.FEM.NOM
lit. ‘By-Ann was-dressed-itself and was-gone-out’.

Here, a reflexive verb – AP+SI+RENG(-ti) (to dress oneself) – is passivized. The compatibility of the reflexive and the passive in one wordform shows that these two grammemes do not belong to the same inflectional category. Therefore, if in Lithuanian the passive is a voice, the reflexive can not be a voice in this language – in any event, not in the same sense as the passive. The passivization of the reflexive is not a very current phenomenon cross-linguistically; however, it is theoretically possible and, as we see, attested. We have to include it in the calculus. This would require splitting the voice category into two subcategories: VOICE (active ~ passives ~ suppressives) and REFLEXIVE (non-reflexive ~ reflexive), whose grammemes can combine within one wordform. At the end of the chapter, I will sketch a final picture of voice as it emerges after all the complications brought about by mono- and tri-valent verbs are taken into consideration.

5.2. Multivalent verbs

A semantically tri- or quadri-valent transitive verb can, of course, have all the same voices as a bivalent transitive verb, as well some additional voices which involve DSyntA III. Some of these extra voices are not interesting, and we do not find them in reality (like, for instance, the suppressive involving DSyntA III). However, three phenomena introduce new factors into the development of the calculus of voice grammemes – the possibility of more than one promotional (= full) passives, the existence of the 2/3-permutative, and the indirect reflexive.

5.2.1. Different promotional (= full) passives

A semantically trivalent transitive verb may have more than just one promotional passive, as defined above, since its diathesis allows more than one permutation of DSyntA I. Thus, as is well known, English has two passives for some trivalent verbs:

− A direct passive, involving the DSyntA II of the basic diathesis (identical to the binary full promotional passive). The DSyntA III stays in place:
Adam gave the apple to Eve.  
⇒  The apple was given to Eve by Adam.

An indirect passive, involving the DSyntA III of the basic diathesis. The DSyntA II stays in place—i.e., the DirO of the active is retained as such:

Adam gave the apple to Eve.  ⇒  Eve was given the apple by Adam.

In Tagalog, a transitive verb denoting an action with an addressee and an inherent instrument—a semantically quadri-valent verb, has, as a rule, an active and (at least) three full passives:

- a direct passive [marker: the infix -in-], involving the DSyntA II (= DirO);
- an indirect, or locative, passive [the circumfix -in-...(h)an], involving the DSyntA III (= IndirO which expresses the Beneficiary, Localization or Direction);
- and an instrumental passive [the prefix i-], involving the DSyntA IV (= OblO, which expresses the instrument or means of the action referred to).

(For details, see Lemaréchal 1996.)

In Tagalog passives, the DSyntA involved in the permutation becomes the DSyntA I (realized on the surface as a Subject) while the former DSyntA I (= the former Subject) is demoted and becomes the DSyntA II (= a DirO), III (= an IndirO) or IV (= an OblO). Thus, the verb SULAT ‘[to] write’ has the following four voice forms (quoted here in the past since in Tagalog, the past forms are morphologically simpler than the present forms; the Subject is boldfaced):

(42) Tagalog

a. Active
S+um+ulat ng liham sa pulang tinta sa istudyante ang titser
wrote letter red ink student professor
‘Wrote [a] letter with red ink to [the] student’  [the] professor.

b. Direct passive
S+in+ulat ng titser sa pulang tinta ang liham sa istudyante
‘Was written by [the] professor with red ink [the] letter to [the] student.

c. Indirect passive
S+in+ulat+an ng titser ng liham sa pulang tinta ang istudyante
‘Was written-to by [the] professor [the] letter with red ink [the] student’.
d. **Instrumental passive**

---

I+pinang+sulat ng titser ng liham sa istudyante ang pulang tinta

‘Was written-with by [the] professor [the] letter to [the] student [the] red ink’.

(Thanks to J.-M. Fortis for his help with this example.)

The same situation holds in several other Philippine languages of the Austronesian family – for instance, Cebuano, Bikol and Ilocano – as well as in Malagasy.

**5.2.2. The 2/3-permutative**

Certain languages have trivalent verbal forms in which DSyntAs II and III (rather than I and II) of L are permuted with the respect to basic diathesis:

\[
\begin{array}{ccc}
  X & Y & Z \\
  I & II & III \\
\end{array}
\]

\[
\Rightarrow
\]

\[
\begin{array}{ccc}
  X & Y & Z \\
  I & III & II \\
\end{array}
\]

The relation between the starting and the final form here reminds one of what is found in the following well-known English pairs:

- to load the bricks on the wagon  ~  to load the wagon with bricks
- to spray the paint on the wall  ~  to spray the wall with paint
- to supply books to students  ~  to supply students with books

There is a similar phenomenon in Russian:

- gruzitʹ kirpiči na telegu  ‘[to] load the bricks on the wagon’  ~
- gruzitʹ telegu kirpičami  ‘[to] load the wagon with bricks’
- mazatʹ maslo na xleb  ‘[to] spread butter on the bread’  ~
- mazatʹ xleb maslom  ‘[to] spread the bread with butter’
- zalitʹ gorjučee v baki, lit.  ‘[to] fill fuel into the tanks’  ~
- zalitʹ baki gorjučim  ‘[to] fill the tanks with fuel’

However, in English and Russian the modification of the diathesis in the two uses of the verbs LOAD, SPRAY, etc., is neither regular nor morphologically marked (therefore, it can not represent an inflectional category). Things are quite different in languages such as Chukchee. Chukchee has the verbal prefix **ine-** **ena-** which, when added to a transitive tri-valent verb, modifies its basic diathesis in the way indicated above: the DSyntA II is demoted to become the DSyntA III (instead of being realized on the surface as an DirO, it is now realized as an OblO), and the erstwhile DSyntA III is promoted (instead of being realized on the surface as an OblO, it is now realized as an DirO). Cf.:
(43) Chukchee (Polinsky and Nedjalkov 1987)

a. \(\text{эти} + \text{мёткв} + \emptyset \text{kawkav} + \text{kili} + \emptyset + \text{nin} \)
father SG.INSTR butter SG.NOM bread SG/PL.LOC spread AOR 3SG.SUB-3SG.OBJ

‘Father spread the butter on the bread’.

vs.

b. \(\text{эти} + \text{кawkaw} + \emptyset + \text{ена} + \text{рkele} + \emptyset + \text{nen} \)
father SG.INSTR bread SG.NOM butter SG.INSTR 2/3-PERM spread AOR 3SG.SUB-3SG.OBJ

‘Father spread the bread with butter’.

**NB:** In current descriptions of Chukchee our nominative is often called absolute, and our instrumental, ergative.

In (43a), the transitive trivalent verb (R)KILI\(+k\) \([\text{to} \text{ spread} \ [\text{N on N}]\) appears in its basic diathesis, with ‘butter’ as the DSyntA II (on the surface, it corresponds to a DirO in the nominative, the whole sentence representing an ergative construction). In (43b), the same verb, still transitive, features the prefix \(\text{ена-}\), which modifies its diathesis: here, it is KAWKAW ‘bread’ which is the DSyntA II, realized by a DirO. МТОМОТ ‘butter’ has been demoted and becomes the DSyntA III (on the surface, an optional OblO).

The modification of the basic diathesis triggered by the prefix \(\text{ена-}\) is a permutation of the DSyntAs, but it does not involve the DSyntA I, and therefore, according to Definition 3.9, we cannot call it a passive. I propose to call the corresponding grammeme, *faute de mieux*, 2/3-permutative, borrowing the term and notation—slightly changed—from Relational Grammar (where it is called 2-3 Retreat, see Perlmutter and Rosen (eds.) 1984, *passim*).

The 2/3-permutative is quite systematic and regular in Chukchee. Here is another example:

c. \(\text{эти} + \text{токе} + \text{утку} + \emptyset + \text{пela} + \emptyset + \text{nen} \)
father SG.INSTR bait SG.NOM trap SG/PL.LOC leave AOR 3SG.SUB-3SG.OBJ

‘Father left bait in [the] trap’.

vs.

d. \(\text{эти} + \text{токе} + \text{утку} + \text{ена} + \text{пela} + \emptyset + \text{nen} \)
father SG.INSTR bait SG.INSTR trap SG.NOM 2/3-PERM leave AOR 3SG. SUB-3SG.OBJ

lit. ‘Father left [= ‘supplied’] the-trap with bait’.

Note that the prefix \(\text{ине-ена-}\) of the Chukchee 2/3-permutative is homophous with the prefix \(\text{ине-ена-}\) of the *detransitivizer*, which will be discussed later, p. 233.
The 2/3-permutative is by no means restricted to Chukchee. It is also found, for example, in Indonesian (Chung 1976):

(44) a. (i) Saya mem+bawa surat itu kepada Ali
I ACT bring letter this to Ali

‘I brought this letter to Ali’.

vs.

(ii) Saya mem+bawa+kan Ali surat itu
I ACT bring 2/3-PERM Ali letter this

lit. ‘I brought Ali [II, DirO] this letter [III, OblO]’.

b. (i) Saya bikin roti untuk tetangga-ku
I make-ACT bread for neighbor 1SG

‘I made some bread [II, DirO] for my neighbor [III, OblO]’.

vs.

(ii) Saya bikin+kan tetangga-ku roti
I make 2/3-PERM neighbor 1SG bread

lit. ‘I’ve made my neighbor [II, DirO] [some] bread [III, OblO]’ =

‘I’ve supplied my neighbor with bread’.

The first postverbal NP in (44a-ii) and (44b-ii) is, as indicated, a DirO, and the second, an OblO. This can be shown by their different syntactic behavior: in particular, the first postverbal NP, but not the second, can be passivized. Cf.:

(45) a. Lakilaki itu mem+bawa+kan Ali surat itu
man this ACT bring 2/3-PERM Ali letter this

lit. ‘The man brought Ali [II, DirO] the letter [III, IndirO]’.

vs.

Ali di +bawa+ kan surat itu oleh lakilaki itu
Ali PASS bring 2/3-PERM letter this by man this

‘Ali was brought the letter by this man’.

vs.

*Surat itu di +bawa+ kan Ali oleh lakilaki itu
letter this PASS bring 2/3-PERM Ali by man this

lit. ‘The letter was brought Ali by this man’.

(As we see, in Indonesian, the 2/3-permutative can combine with a passive within a wordform. Therefore, here the passive and the 2/3-permutative belong to two different inflectional categories.)
Passives are, of course, a particular case of permutatives: a passive is a permutative involving the DSyntA I—thus, a passive can be called a 1/2- or 1/3-permutative. Logically, it would be more consistent to call them just this. However, I am against such a usage for two reasons: first, the term *passive* is too current and too well anchored to be replaced; second, the permutation involving the DSyntA I is a very special one and deserves to be set aside by a special name. Still, the terms *active* and *passive* are themselves far from ideal because of their semantic connotations. Thus, such verbs as Lat. *vapulō* ‘I am beaten’ and Eng. *undergo, suffer or receive* (a blow) have to be called active, in spite of their rather ‘passive’ meaning. Conversely, Dyirbal verbal forms with the suffix -qay should be called passive in spite of their ‘active’ meaning: Bayi yara ḏaban+du waga+qay+pu, lit. ‘The man to-an-eel is-spearing’ [in Dyirbal, the active and the passive forms are converse with respect to their Indo-European counterparts: see Mel’čuk 1988a: 186ff]. As unfortunate as this is, we are stuck with these terms, and all we can do is simply to remember that *active* is just a conventional name of the zero modification of the basic diathesis of L, and *passive* is again a conventional name for the I ⇒ II or I ⇒ III modification thereof.

**NB**: The 2/3-permutative can entail a slight change in the propositional meaning of the verb stem. This change is related to the holistic interpretation of the DirO: with the verb meaning ‘[to] load [the hay on the wagon]’, in the active the DirO is ‘hay’, and the expression implies ‘all the hay’; in the 2/3-permutative, the DirO is ‘wagon’, and the expression means ‘[to fill] the whole wagon’. However, I believe that this distinction can be considered as semantically non-essential and allowed to accompany a voice.

### 5.2.3. The indirect reflexive

Tri-valent transitive verbs having the meaning such as [to] *GIVE* in X gives Y to Z or [to] *DO* in X does Y to Z may allow for referential identification of X and Z: X gives Y to X [‘to himself’] and X does Y to X. This gives rise to a new schema of diathesis modification, where X = Z receive a joint expression via the DSyntA I:

<table>
<thead>
<tr>
<th>X</th>
<th>Y</th>
<th>Z</th>
<th>⇒</th>
<th>X = Z</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
<td>III</td>
<td>I</td>
<td>II</td>
<td></td>
</tr>
</tbody>
</table>

Such a modification underlies another voice, possible only for tri-valent verbs: *indirect reflexive*. The indirect reflexive is known, among other languages, in French:
6. Four distinct voice categories

(45) French

a. *Alain, a acheté une maison à Alain* ⇒

lit. ‘Alain has bought a house for Alain’.

*Alain s’est acheté une maison,*

lit. ‘Alain has bought himself a house’.

b. *Alain, a gratté la tête à Alain,* ⇒

lit. ‘Alain has scratched the head to Alain’.

*Alain s’est gratté la tête,*

lit. ‘Alain has scratched himself the head’.

Note the difference between English and French: to express the reflexivity of the action, English uses a reflexive pronoun, which refers back to the referent of the Subject, and leaves the verb unchanged (in the canonical active); but French conjugates the verb in the indirect reflexive – this is seen, among other things, in that the verb requires a different auxiliary: in compound tenses, instead of AVOIR ‘[to] have’, which is used with all transitive verbs in the active, a reflexive French verbs takes the auxiliary ÊTRE ‘[to] be’.

In point of fact, a bi-valent verb also can have an indirect reflexive – in a rather specific situation: to mark the fact that the referent of the DSyntA I is the Possessor (in a very large and vague sense of the term) of the referent of the DSyntA II. Cf. (46):

(46) Lithuanian

\[\text{Vaik +as } \text{ap } +kabino \quad \text{motin+q} \quad ~ \]

‘The child embraced [the] mother’.

\[\text{Vaik +as } \text{ap } +\text{si } +kabino \quad \text{motin+q} \]

‘The child embraced his mother’. = lit. ‘The child embraced-to-himself mother’.

6. Four distinct voice categories

So far, so good. But now we have to face the next challenge: some facts presented in 4 and 5.2.2 show that the inflectional category of voice, as we have defined it, should probably be split into several categories. Namely, we have seen that what have been treated as grammemes of one and the same category can actually be combined within one wordform (in some languages, but not in others) – and this is a clear sign that, in point of fact, we are dealing with distinct inflectional categories. For instance:
Chapter 3. Voice

– in 4, Items 11 and 12, examples (25) and (26), p. 208, one observes the combination of two distinct markers: that of the reflexive with that of the subjectless suppressive;
– in 5.4.2, example (44c), p. 225, the 2/3-permutative combines with the passive.

And we can add that the combination of the full promotional passive with the subjectless suppressive is also possible:

(47) Portuguese

a. active : O diabo tenta o homem
   ‘The devil tempts the man’.
full promotional passive : O homem é tentado pelo diabo
   ‘The man is tempted by the devil’.
subjectless suppressive from an active : Tenta-se o homem
   lit. ‘[“It”] tempts itself the man
   [= DirO].
subjectless suppressive from a passive : É-se tentado pelo diabo
   lit. ‘[“It”] is itself tempted by the Devil’.

b. Não há o que se fazer, quando se é explorado pelo patrão
   not there.is what itself do when itself is investigated by the boss
   ‘There is nothing to be done, when there is an investigation by the boss’.

Taking all such data into account pushes us to posit the existence of at least four distinct inflectional subcategories of voice:

\[
\text{VOICE} = \begin{cases} 
\text{voice}1 : \text{active} & \sim \text{(direct) passive} & \sim \text{indirect passive} \\
\text{voice}2 : \text{neutral} & \sim 2/3\text{-permutative} \\
\text{voice}3 : \text{non-suppressive} & \sim \text{subj-less suppressive} & \sim \text{obj-less suppressive} \\
\text{voice}4 : \text{non-reflexive} & \sim \text{(direct) reflexive} & \sim \text{indirect reflexive} 
\end{cases}
\]

As is easily seen, voice1 and voice2 are defined by the elementary operation of permutation, voice3—by suppression, and voice4—by referential identification of two SemAs.

We can then speak of the supercategory of voice, which embraces four specific voice categories; or we can keep the name voice for the ‘active ~ passive’ opposition only, and call the three other voice categories by the name of their marked grammeme: ‘permutative,’ ‘suppressive,’ ‘reflexive.’ This way of naming is probably more precise—but, on the other hand, it does not explicitly express the close relatedness of the four categories. This relatedness manifests it-
self in the fact that very often one morphological marker expresses different voices and voice-oriented meanings. For instance, Shibatani 1985: 826–830 and Haspelmath 1990: 33–34 list the following uses a passive marker can have: in many languages, the same marker that expresses the passive also expresses 1) the reflexive, 2) the reciprocal, 3) the resultative, 4) the reflexive-causative, 5) the decausative, 6) the passive potential, 7) the subjectless suppressive (called the desubjective by Haspelmath), 8) the objectless suppressive (= deobjective), and 9) the honorific. This means that practically any voice and voice-like meaning may be ‘fused’—that is, expressed by the same marker. And, cross-linguistically, they very often are. Because of the existence of many tightly interwoven voice-related meanings, I propose to use a ‘double standard’ in the description of voice as an inflectional category.

In theory, let us be extremists and maintain all the relevant differences—i.e., use a maximally fine-grained analysis. Namely, we will distinguish four voice categories, distributing among them our 12 ideal grammemes. This formal schema serves as a precise measuring device that allows us to better understand and characterize voices in particular languages. Then a generalized definition of voice can be formulated.

**Definition 3.7**: The inflectional category of voice

Voice is an inflectional category whose grammemes specify such modifications of a diathesis of a lexical unit L, including extended (i.e., ad hoc) lexical units, that do not affect or affect only in a non-essential way the propositional meaning of L.

This definition allows for as many different voice categories as there are possible combinations of voice grammemes within a wordform.

In practice, though—that is, when describing voices in a language L—we follow the most moderate approach and take into account only the differences and oppositions that actually appear in L. Thus, since in French the passive and the reflexive do not combine, we say that this language has only one category of voice with six grammemes:

1) ‘active’

: *Alain a écrit cette lettre*  
‘Alain has written this letter’

2) ‘full promotional passive’

: *La lettre a été écrite par Alain*  
‘The letter has been written by Alain’

3) ‘partial demotional passive’

: *Il a été procédé à l’interrogatoire par un comité de juges*  
‘It has been proceeded to the interrogation by a committee of judges’
4) ‘AGENTLESS PROMOTIONAL PASSIVE’: *De telles lettres s’écrivent souvent*
it. ‘Such letters write themselves often’

5) ‘DIRECT REFLEXIVE’:

6) ‘INDIRECT REFLEXIVE’:

We will say that both of the French reflexives have two distinct meanings: genuine reflexive (‘... oneself’/‘... to oneself’) and reciprocal (‘... each other’/‘... to each other’), while the French agentless (partial promotional) passive covers the passive potential, etc.

But Lithuanian and Polish, where the subjectless suppressive and the reflexive do combine (see (25)–(26)), these voices are treated separately: each of these languages has two subcategories of voice – voice\textsubscript{1}, which opposes ‘ACTIVE’ ~ ‘PASSIVE’ ~ ‘SUPPRESSIVE’; and voice\textsubscript{2}, with the opposition ‘NON-REFLEXIVE’ ~ ‘REFLEXIVE’. Similarly, because of (47), in Portuguese we find at least two subcategories of voice: voice\textsubscript{1} (‘ACTIVE’ ~ ‘PASSIVE’) and voice\textsubscript{3} (‘NON-SUPPRESSIVE’ ~ ‘SUPPRESSIVE’); there is of course also the reflexive to be considered.

7. Four inflectional categories related to voice

Along with voice, some languages feature other inflectional categories that superficially resemble voice and, although quite distinct from voice, are often confused with it. I will describe here four such categories: transitivization, focus, affectedness, and inversion.

7.1. Transitivization

7.1.1. Introductory remarks

Transitivization is used to reverse the transitivity characteristic of a verb stem: a V\textsubscript{tr} is turned into a V\textsubscript{ir}, and a V\textsubscript{ir} becomes a V\textsubscript{tr}. Transitivization resembles voice in that it also modifies the communicative structure of the meaning of the verb concerned (without affecting its propositional meaning); this is done in order to fit the verb better to the communicative structure of the SemR which this verb has to express. Just like voice, transitivization achieves its goal through manipulation of the communicative saliency of the verb’s actants. However, transitivization differs from voice in the following two respects:

First, the actant manipulated. Voice can in principle affect ANY DSyntA of the verb. Thus, the prototypical voice, the passive, affects the DSyntA \textsubscript{I} (= Subject) by demoting it, and then as a result, it affects the DSyntA \textsubscript{II} (= DirO) by promoting it. Another voice mentioned above – the 2/3-permutative – affects the DSyntA \textsubscript{II} and \textsubscript{III}, by demoting the DSyntA \textsubscript{II} and promoting the DSyntA \textsubscript{III}.
In contrast, transitivization deals exclusively with the DSyntA II, and this, only under the condition that one of its surface realizations is the DirO.

Second, the actantial property manipulated. Voice gives/removes communicative saliency to/from a DSyntA of the verb by modifying the verb’s diathesis. In contrast, transitivization achieves the same goal by modifying the surface-syntactic rank of the actant concerned, without actually affecting the verb’s diathesis. In other words, under transitivization, the DSynt-status of the actant manipulated is not modified.

Consequently, in order to define transitivization, I need to introduce another auxiliary concept: the syntactic rank of a SSynt-actant.

**Definition 3.12: Syntactic rank (of a SSynt-actant)**

The syntactic rank of a SSynt-actant is its position on the following hierarchy of nominal phrases that depend on a verb at Surface-Syntactic level:

```
Subject > DirO > IndirO > AgCo > OblO > Circ(umstantial)
```

This hierarchy is well known (see, for example, Keenan and Comrie 1977: 66; Iordanskaja and Mel’čuk 2000) and does not require additional justification here. The following fact is crucial for the present discussion:

All other things being equal, the higher the syntactic rank of a sentence element, the higher its communicative salience.

Thus, the DirO is communicatively more visible and more important than an IndirO or an OblO: the DirO is more difficult to omit, it occupies a more important linear position in the clause, it has more effect on the form of the verb (and maybe that of some other objects or complements) by imposing agreement, etc. It is this trait that is exploited by transitivization: it allows the speaker to modify, according to his communicative needs, the syntactic rank of the phrase whose communicative salience interests him.30

### 7.1.2. Concept of transitivization

**Definition 3.13: Transitivization**

Transitivization is an inflectional category whose grammemes specify, for a given verb, a modification of the syntactic rank of its second SSyntA [= its DSyntA II] such that it either changes this SSyntA = IndirO/OblO into the DirO, or, conversely, this SSyntA = DirO into an IndirO/OblO—without affecting the verb’s propositional meaning.

Transitivization is a verbal category; logically, it can include three grammemes:

- `'neutral'` : the rank of the Main Object does not change;
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\(\text{DETRANSITIVIZER}\) : the rank of the Main Object goes down (a DirO becomes an IndirO/OblO) [this grammeme is thus applicable to a transitive verb only];

\(\text{TRANSITIVIZER}\) : the rank of the Main Object rises (an IndirO/OblO becomes a DirO) [this grammeme is thus applicable to an intransitive verb only].

However, a language can have more than one detransitivizer or one transitivizer. Two detransitivizers can differ in the way they lower the rank of the DirO, or in other valence changes they trigger in the verb. Such is the case of Chukchee, see (48) below, p. 233.

The category of transitivization poses two problems, a theoretical and a practical one.

Theoretically, the problem with transitivization is as follows: the \(\text{DETRANSITIVIZER}\) and the \(\text{TRANSITIVIZER}\) grammemes are in a complementary distribution with respect to different verb classes. The \(\text{TRANSITIVIZER}\) can attach only to an intransitive verb, and the \(\text{DETRANSITIVIZER}\) only to a transitive verb. According to the very nature of this inflectional category, it is impossible for a verb to accept all the three transitivization grammemes: a V\text{intr} accepts only \(\text{NEUTRAL}\) and \(\text{TRANSITIVIZER}\), while a V\text{tr} accepts only \(\text{NEUTRAL}\) and \(\text{DETRANSITIVIZER}\). Fortunately, the present definition of inflectional category (Introduction, Definition 0.1, p. 22) does not explicitly require its ‘unity,’ or ‘completeness’—that is, the existence (in the language under analysis) of at least some lexical units that will accept all of the grammemes of this category. Thus, Definition 0.1 admits what may be called ‘loose,’ or ‘partial,’ categories. Partial inflectional categories do exist—for instance, such is nominal case I.1a in Russian (see Chapter 2, Section 7, Item 2, p. 139). If we consider partial cases such as the partitive \(\text{nemnogoo sup}+u\) ‘a little soup’), the locative \(\text{na most}+u\) ‘on the bridge’), and the adnumerative \(\text{dva sag}+á\) ‘two steps’), then no Russian noun possesses all cases I.1b: SUP ‘soup’ has no locative and no adnumerative, MOST ‘bridge’ has no partitive and no adnumerative, and SNEG ‘snow’, which has both the partitive and the locative, has no adnumerative; the nouns that have the adnumerative—\(\text{sag}\) ‘step’, \(\text{sar}\) ‘ball, sphere’, \(\text{rjad}\) ‘row’, \(\text{cas}\) ‘hour’—do not have the partitive and the locative. Therefore, the nominal case I.1a in Russian is a partial inflectional category. However, transitivization would be much ‘looser’ than is Russian case I.1a: its two main grammemes would always be in strict complementary distribution, because they can never attach to the same verb. I do not know whether we should admit such ‘unbalanced’ inflectional categories, one grammeme of which serves only one type of lexeme of a given class, and the other grammeme another type of lexeme of the same class. The evidence available to me is not sufficient to
make a well-founded decision. Even if we take the easy way out and consider the category of transitivization with only two grammemes, ‘NEUTRAL’ ~ ‘DETRANSITIVIZER’, we still face a problem: with a two-grammeme inflectional category of transitivization, we are forced to specify the expression of the grammeme ‘NEUTRAL’ (as a rule by a zero) in every transitive verb when it appears without the marker of the ‘DETRANSITIVIZER’. This is, of course, embarrassing. It would probably be better, from the theoretical standpoint, to consider the ‘DETRANSITIVIZER’ as a QUASI-grammeme, which does not entail the existence of an inflectional category containing obligatory elements. But I can only pose the problem here, being in no position to foresee a reasonable solution.

Cross-linguistically, we most commonly find detransitivizers; the transitivizers mentioned in the literature are either dubious or do not belong to inflection, being irregular or constrained. Therefore, in the next subsection I will illustrate exclusively detransitivizers.

7.1.3. Illustrations of transitivization

Detransitivizers apply to transitive verbs and transform them into intransitives. My examples will be drawn from two languages—Chukchee and Dargwa.

Chukchee has a category of transitivization with two detransitivizers:

‘NEUTRAL’ ~ ‘DETRANSITIVIZER-1’ ~ ‘DETRANSITIVIZER-2’.

Detransitivizer-1 [marked by the prefix ine- / ena-] lowers the SSynt-rank of the DirO (which becomes an IndirO); detransitivizer-2 [the suffix -t̩ku / -tko] does more: not only does it lower the rank of the DirO, but it also makes the DirO’s appearance in the clause undesirable and, at the same time, blocks the expression of all other objects and complements (which are allowed with the basic form of the verb and with the form including the detransitivizer-1).

(48) Chukchee

a. Tom+nan to +ret +ørkən+ø kimi+n+øn (tomy̞+reta)

I  INSTR 1SG.SUB transport PRES 3SG.OBJ load SG.NOM friend SG/PL.DAT

1 [I] transport a-load [II] (to-a-friend (to-friends) [III]).

In (48a), we see an ergative construction, obligatory in Chukchee for any transitive verb: the Subject ‘I’ is in the instrumental, and the DirO ‘load’, in the nominative.

NB: In current descriptions of Chukchee our nominative is often called absolutive, and our instrumental, ergative.
b. $\text{I NOM 1SG.SUB DETRANS-1 transport PRES load } \text{SG.INSTR}$

\[ \text{tomy + eto} \]

\[ \text{friend SG/PL.DAT} \]

\[ \text{I transport (a-load [II] ) (to-a-friend (to-friends) [III])}.\]

(48b) shows a nominative construction, possible only for an intransitive verb: the Subject, which remains $\text{I}$, is in the nominative; the DirO $\text{'a load'}$ has become an IndirO, thus losing its salience; the two IndirOs are in oblique cases and optional.

c. $\text{I NOM 1SG.SUB transport DETRANS-2 PRES load SG.INSTR friend SG/PL.DAT}$

\[ \text{I transport (a load / [something] [II] to-friend(s) [III])}.\]

This is again a nominative construction: the two IndirOs – ‘load’ and ‘friends’ – are incompatible and even less salient than in the preceding sentence; their omission is preferred.

Roughly, the first sentence answers the question ‘What are you transporting and to whom?’, the second, the question ‘What are you doing?’, and the third, the question ‘What is your occupation?’

Dargwa, like many other Daghshian languages, has the category of transitivization with two grammemes: ‘NEUTRAL’ $~^{\text{DETRANSITIVIZER}}$. Any transitive verb in Dargwa can be transformed into an intransitive one (by means of a morphological conversion – that is, by the modification of its syntax; on conversion as a morphological sign, see Chapter 5, 3.3.6, pp. 304–306). As a result, the DirO, obligatory with a transitive verb (whose agreement it controls, along with the Subject), becomes an optional IndirO and thus ceases to be salient. Yet the expression of the DSyntA II remains possible, so that the phenomenon under analysis cannot be an objectless suppressive – i.e., a voice. One of the communicative effects of this change is that the action itself comes to the foreground, so that one can say ‘He is reading’ (answering the question ‘What is he doing?’: he is reading, and not, say, playing or sleeping) by using the verb ‘to read’ de-transitivized. Otherwise, the sentence meaning ‘He is reading’ with the transitive ‘to read’ is impossible, as in (49c):

(49) Dargwa

\[ \text{a. $\text{Neš +li gazet +Ø +uč +uli sa+ri}$} \]

\[ \text{mother SG.ERG newspaper SG.NOM OBJ.SG.NON-HUM read GER be SUB.SG.FEM} \]

\[ \text{‘Mother [I] is-reading a newspaper [II]’}.\]
Here the verb is transitive, the SSynt-Subject ‘mother’ is in the ergative and the DirO ‘newspaper’ in the nominative. The verb agrees – in noun class2 – with both the Subject (the suffix -r(i) on the auxiliary sA- ‘[to] be’) and the DirO (the prefix b- on the lexical verb uĉ- ‘[to] read’ in the gerund form); the DirO cannot be omitted.

b. Neš +Ø gazet +li r +uĉ +uli sa+ri
‘Mother [I] is reading ([≈ lit. at] a newspaper [II])’.

In (49b) the verb is intransitive, the Subject (again, ‘mother’) is in the nominative, while ‘newspaper’, which became an IndirO (but still is a DSyntA [II]), is in the ergative. The verb agrees only with the Subject (via both its parts: the suffix -ri on the auxiliary and the prefix r- on the gerund); the IndirO is optional.

The sentence
c. *Neš+li r+uĉ+uli sa+ri.
means ‘Mother is reading it’, with the object pronoun (quasi-)obligatorily elided in an obvious context, but still reflected by the objectal prefix b- on the verb.32

The Dargwa case illustrates quite well the difference between ergative and nominative languages as far as the absence of a DirO with a semantically transitive verb is concerned. In a nominative language, if we do not express a DirO with a transitive verb and say, for instance, in English, He is reading, nothing changes in the expected behavior of the verb, that is, in its syntactics. In Swahili, where the transitive MV agrees with a definite DirO, the absence of the latter entails the absence of agreement, but still does not change anything else in the syntactics of the verb and consequently in the general structure of the sentence. In contrast, in an ergative language such as Dargwa, in the absence of a DirO, the global structure of the sentence has to change – the transitive MV that normally requires an ergative construction, becomes intransitive and now requires a nominative construction. The change “trans ⇒ intrans” in the syntactics of the verb is the signifier of a conversion whose signified is ‘DETRANSITIVIZER’.

Another example of detransitivizer is found in the Mayan languages Mam (England 1983).

7.1.4. ‘Antipassive’
Now the moment has come to say a few words about a term that is extremely popular nowadays – the antipassive. In the literature, this term (introduced in Silverstein 1972: 195) is currently used for what I propose here to call the de-
transitivizer. In a sense, the detransitivizer seems to be the inverse (= mirror image) of the passive: the passive RAISES the DirO to the status of SSynt-Subject, while the detransitivizer LOWERS the status of the DirO, demoting it to an IndirO or an ObI (cf., among others, Heath 1976, Davies 1984, Kozinsky et al. 1988, Givón 1990: 624ff, Cooreman 1994, and Dixon and Aikhenvald 1997: 73ff, where further relevant references are found). However, the term antipassive (in the meaning of ‘detransitivizer’) is logically and terminologically unacceptable. Here are at least three compelling reasons for which I think it should be banned and replaced with detransitivizer.

1) The passive of a verb changes its diathesis—that is, the correspondence between its SemAs and its DSyntAs. Therefore, passivization applies between the Semantic and the Deep-Syntactic level; the grammeme ‘PASSIVE’ appears in the DSyntS. However, the detransitivizer [= ‘antipassive’] does not change the diathesis of the verb. Detransitivization applies between the Deep-syntactic and the Surface-syntactic level: the grammeme ‘DETRANSITIVIZER’ appears only in the SSyntS. Following our definition of voice (Definition 3.7), the ‘antipassive’ is not a voice. Thus, the passive and the ‘antipassive’ have no common logical base.

2) The ‘antipassive’ is not the functional inverse of the passive, even for those who defend the term: the passive necessarily DEMOTES the DSyntA I (while, possibly, promoting the DSyntA II to I), and the detransitivizer also DEMOTES the DirO (without promoting anything). Thus, the passive and the ‘antipassive’ are by no means mirror images of each other.

3) The passive can also apply to INTRANSITIVE verbs, thus involving (albeit indirectly, via the DSyntAs) the IndirO/OblO. However, the detransitivizer applies, by definition, exclusively to TRANSITIVE verbs and can involve the DirO only. Thus the terms passive and antipassive do not have the same extension.

Since the detransitivizer is not even a voice, let alone a grammeme substantially similar to the passive, the term antipassive seems to me quite inappropriate. Even more so because of its literal meaning: it implies ‘something opposite with respect to the passive’, which, as we have just seen, is not at all the case.

### 7.2. Verbal focus

The inflectional category of verbal focus also resembles voice in that its grammemes express the Communicative Structure of the clause (without affecting the propositional meaning of the verb itself). More specifically, these grammemes indicate what immediate dependent of the Main Verb—its DSyntA I [⇔ SSynt-Subject], its DSyntA II [⇔ DirO], its DSyntA III [⇔ IndirO/OblO] or one of its Cir-
cumstantials – is the Rhematic Focus in the sentence (for the concept of Rhematic Focus, see Mel’čuk 2001: 113–115). The definition is straightforward:

**Definition 3.14: Verbal focus**

Verbal focus is an inflectional category whose grammemes specify, for a given verb \( L \) in the role of the Main Verb of the clause, which of \( L \)'s deep-syntactic actants or circumstantials is the Rhematic Focus of the clause.

Like transitivization, verbal focus is a strictly verbal category. From the logical viewpoint, it can have as many grammemes as the verb in question can have DSyntAs and/or circumstantials in \( L \). To my knowledge, however, verbal focus is attested with only the following six grammemes:

1. \( \text{NEUTRAL} \): nothing is in Rhematic Focus (neither \( L \) nor a dependent of \( L \));
2. \( \text{PRED-FOCUS} \): \( L \) itself (= the predicate) is in Rhematic Focus;
3. \( \text{SUBJ-FOCUS} \): the DSyntA \( I \) of \( L \) is in Rhematic Focus;
4. \( \text{DIR-OBJ-FOCUS} \): the DSyntA \( II \) of \( L \) is in Rhematic Focus;
5. \( \text{INDIR-OBJ-FOCUS} \): the DSyntA \( III \) of \( L \) is in Rhematic Focus;
6. \( \text{CIRCUM-FOCUS} \): a Circumstantial of \( L \) is in Rhematic Focus.

In many cases, IndirOs, OblOs and Circumstantials are not distinguished from the viewpoint of Focalization – for all of these, the language has just one grammem: ‘OBL-FOCUS’.


Yukagir has the category of verbal focus with four grammemes, which do not include ‘NEUTRAL’. As a result, a Yukagir sentence always contains an element in Rhematic Focus.

Verbs \( AI \) ‘[to] shoot’ [transitive] and \( O \) ‘[to] go’ [intransitive]

a. The Main Verb itself is in Rhematic Focus: the sentence answers a question of the form *WHAT DID X do to/with Y?* The grammeme is ‘PRED-FOCUS’; it is expressed by the prefix **mer-**:

\[
\begin{array}{cccc}
\text{Mer}++\text{I} & \text{ilen}++\text{I} & \text{mer} & +\text{ai}+\text{η} \\
\text{I NOM} & \text{deer NOM} & \text{PRED-FOC} & \text{shot 1SG}
\end{array}
\]

‘I shot a-deer’.

\[
\begin{array}{cccc}
\text{Tet}++\text{I} & \text{ilen}++\text{I} & \text{mer} & +\text{ai}+\text{mek} \\
\text{youSG NOM} & \text{deer NOM} & \text{PRED-FOC} & \text{shot 2SG}
\end{array}
\]

‘YOU\text{SG shot a-deer}’. 
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Tudel+Ø /Köde+Ø  ile +leŋ mer  +ai +m
he  NOM man  NOM deer  ACC  PRED-FOC  shot  3SG
1He/The-man shot a-deer.

[The word-final -ŋ appearing after vocalic stems and suffixes – ileŋ, ile+leŋ, etc. – is a meaningless phonological insertion, required, allowed or dis-
allowed by phonological context.]

b. The Synt-Subject is in Rhematic Focus: the sentence answers a ques-
tion of the form  \textit{Who did P to Y}\? The grammeme is `\textsc{subj-focus}`; it is
expressed by the form of the MV (for more detail, see below):

(i) With a transitive verb

\begin{align*}
\text{ileŋ+Ø met+ Ø ai +Ø} & \text{(I shot a-deer)} \\
\text{deer  NOM I  ERG shot SUBJ-FOC} \\
\text{ileŋ+Ø tet+ Ø ai +Ø} & \text{(YOUSG shot a-deer)} \\
\text{deer  NOM youSG  ERG shot SUBJ-FOC} \\
\text{ile+ leŋ tud(e) /kōd(e) ai +Ø} & \text{(HE/THE-MAN shot a-deer)} \\
\text{deer  ACC  he-ERG  man-ERG  shot SUBJ-FOC}
\end{align*}

(ii) With an intransitive verb

\begin{align*}
\text{met+Ø a +I} & \text{‘I went’} \\
\text{1 PRED  went SUBJ-FOC} \\
\text{tet+Ø a +I} & \text{‘YOUSG went’} \\
\text{youSG PRED  went SUBJ-FOC} \\
\text{Tudel+Ø /Köde+leŋ a +I} & \text{‘HE/THE-MAN went’} \\
\text{he PRED  man PRED  went SUBJ-FOC}
\end{align*}

The focal-rhematic character of the Synt-Subject is shown by two means:

– First, by the form of the Main Verb, marked by a zero suffix with transitive
verbs and by the suffix -l with intransitive ones. This form distinguishes tens-
eses and aspects: ai+nu [PROGRESSIVE], ai+Ø [AOR], ai+t [FUT]. It also agrees
with the Synt-Subject: the suffix -nu in the 3rd person plural (ai+yu ‘They shot’,
\(a+t+nu+l\) ‘They went’), and -Ø in all other forms.

– Second, by the case of the Synt-Subject – ergative for transitive, and predica-
tive for intransitive rhematic Subjects.

c. The DirO is in Rhematic Focus: the sentence answers a question of the
form \textit{What did X affect by doing P}\? The grammeme is \textsc{dir-obj-focus}’;
it is expressed by a cumulative person-number suffix:

\begin{align*}
\text{met+Ø ile +leŋ ai +meg} & \text{‘I shot a-deer’} \\
\text{I NOM deer PRED shot 1SG.DIR-OBJ-FOC} \\
\text{tet+Ø ile +leŋ ai +meg} & \text{‘YOUSG shot a-deer’} \\
\text{youSG NOM deer PRED shot 2SG.DIR-OBJ-FOC}
\end{align*}
7. Four inflectional categories related to voice 239

Tudel+∅ /Ködeŋ+∅ ile +leg ai +mele
he NOM man NOM deer PRED shot 3SG.DIR-OBJ-FOC
‘He/The-man shot a-deer’.

Tudel+∅ /Ködeŋ+∅ met+ek ai +mele
he NOM man NOM I PRED shot 3SG.DIR-OBJ-FOC
‘He/The-man shot ME’.

Tudel+∅ /Ködeŋ+∅ tet +ek ai +mele
he NOM man NOM youSG PRED shot 3SG.DIR-OBJ-FOC
‘He/The-man shot youSG’.

The focal-rhematic character of the DirO is shown by the special person-number agreement suffixes on the verb (which are different from those used in a rhythmic-predicate sentence) and by the predicative case of the DirO.

d. The Focal-Rhematic element is neither the MV, nor the Synt-Subject, nor the DirO, but a different sentence element (as indicated above, a Yukagir sentence cannot lack a Focalized element; in the absence of a designated candidate, the MV is automatically Focalized); the sentence answers, for instance, a question of the form How did P happen?, BECAUSE OF WHAT did P happen?, etc. The grammeme expressed is OBL-FOCUS; the verb has the same person-number suffixes as in the rhythmic-predicate construction, but no me(r)-prefix. The sentence must contain a circumstantial (place, time, reason, goal, etc.) which is focalized. Its position is shown by three dots in the translation.

Met+∅ ileq +∅ o +ai +ŋ
I NOM deer NOM OBL-FOC shot 1SG
‘I shot a-deer…’

Tet +∅ ileq +∅ o +ai +mek
youSG NOM deer NOM OBL-FOC shot 2SG
‘youSG shot a-deer’

Tudel+∅ /Ködeŋ+∅ ile +leg ∅ +ai +m
he NOM man NOM deer ACC OBL-FOC shot 3SG
‘He/The-man shot a-deer’

Focal-Rhematic constructions are obligatory in full-fledged Yukagir sentences in contexts that require automatic Focalization of a sentence element (Maslova 1997: 461 – 462; the examples that follow are from Kolyma Yukagir)33—that is, under contrast (50e), as well as in WH-questions and answers to them (50f):

e. Met t’äl+ek [= PRED] kes’i+me [= DirO-focus], el angil+ek [= PRED]
‘I MEAT brought, not FISH’.
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f. – Kin+tek  [= PRED] qontel+θ  [= Subj-focus]  ‘Who will-go?’

As noted by Comrie (1992: 59), the interrogative pronouns are obligatorily Focalized elements. Therefore, in a sentence in which an interrogative pronoun appears in a Synt-role different from that of Synt-Subject or Direct Object (e.g., ‘with whom?’, ‘for whom?’, ‘whose?’ or ‘why?’), the rhematic-oblique construction has to be used.34

(51) In Ixil (Ayres 1983), verbal focus—called ‘indexing’ in Ayres 1983—has, as far as one can judge from the description available, at least four grammemes:
   ‘NEUTRAL’ [nothing is in Rhematic Focus]
   vs.
   ‘SUBJ-FOCUS’ [the Subject is in Rhematic Focus]
   vs.
   ‘OBL-FOCUS’ [an Oblique Object of the Main Verb—including locatives—is in Rhematic Focus]
   vs.
   ‘MANNER-FOCUS’ [a Manner Circumstantial is in Rhematic Focus]

In Ixil, the DirO cannot be in Rhematic Focus.

The Focalized element has to precede the MV, which, in communicatively neutral clauses, is invariably clause-initial.

The ‘SUBJ-FOCUS’ grammeme is expressed by the suffix -on/-un. (There is another suffix -on/-un, which marks the detransitivizer; however, the two suffixes are distinguishable by morphological context.)

a.
(i) Kat in qos aš ‘I hit youSG’.
   PERF 1SG.SUB hit youSG
   vs.
   In kat qos+on aš ‘It was me who hit youSG’.
   I PERF hit SUBJ-FOC youSG

(ii) Kat y ečba nax Šun u lee ‘John ate the tortilla’.
   PERF 3SG.SUB eat CLASSIF John the tortilla
   vs.
7. Four inflectional categories related to voice

Nax  Šun+ eʔ
CLASSIF John EMPH
Nax  Šun  waʔ
CLASSIF John that
Xit  nax  Šun
not  CLASSIF John
Aḥil  who

kat ečh+un  u lee
PERF eat SUBJ-FOC the tortilla

‘JÖHN ate the tortilla’. ~ ‘It was John who ate the tortilla’. ~
‘It was not John who ate the tortilla’. ~ ‘Who ate the tortilla?’
The ‘OBL-FOCUS’ grammeme is expressed by the suffix -wat (in different dialects,
the suffix -ka or the enclitic kat are used):

b. (i)  La  e  +ela  kumool  ciciʔ
        FUT 2SG.SUB see our.companion there
‘YouSG will see there our companion’.

vs.  Ciciʔ  la  e  +ela+wat  kumool
        there FUT 2SG.SUB see OBL-FOC our.companion
‘It is there that youSG will see our companion’.

(ii)  I  +qos  tib  nax  Šun  tučʔ  Teʔk  tiiʔ  Šiw
        3SG.SUB hit self CLASSIF John with James for Jane
‘John fights [= Fr. se bat] with James for Jane’.

vs.  tiʔ  Šiw+eʔ  i  +qos+wat  tib  nax  Šun  tučʔ  Teʔk
        for Jane EMPH 3SG.SUB hit OBL-FOC self CLASSIF John with James
‘It is for Jane that John is fighting with James’.

The ‘MANNER-FOCUS’ grammeme is expressed by the suffixes -eʔ, -ata or -at:

c.  Wat  oʔ  xoxli
        sleep we face-down
‘We sleep face down’.

vs.  Xoxli  ku  +wat+eʔ
        face.down 1PL.SUB see MANNER-FOC
‘It is face down that we sleep’.
In the manner-focus form, the verb agrees with its Subject (which, if a personal pronoun, is dropped on the surface), while in the neutral form, the pronominal Subject is present, but no agreement occurs. (For more on the verb focus in Mayan languages, see Aissen 1999.)

As we see, the expression of the grammemes of verbal focus is functionally equivalent to the Clefting Transformation of English and French.

### 7.3. Affectedness

Let me switch now to the third inflectional category that resembles voice. This category, called here *affectedness*, has no generally accepted name. It resembles voice in that it also serves to change the communicative structure of the verb’s lexical meaning. However, the affectedness does this by selecting a SemA of the verb – 1 or 2 (roughly, the SSynt-Subject or the DirO) – and presenting it as undergoing the central effect of the action. This is achieved without changing the diathesis of the verb or the rank of the syntactic actant involved. (All my data on affectedness in Tamil, as well as the term itself, are borrowed from Klaiman 1988.)

**Definition 3.15: Affectedness**

*Affectedness* is an inflectional category whose grammemes specify, for a given verb L, the semantic actant of L which is principally affected by the action referred to by L.

Like transitivization and verbal focus, affectedness also is a verbal category. From the logical viewpoint, it can have as many grammemes as the verb in question has SemAs. But in the only case known to me (Tamil) affectedness has just two grammemes, for which I use the names proposed in Klaiman 1988:

- ′AFFECTIVE′ : the action affects principally SemA 1 (roughly, the Subject);
- ′EFFECTIVE′ : the action affects principally SemA 2 (roughly, the DirO).35

To put it differently, ‘affective’ means Actor-oriented, and ‘effective,’ Patient-oriented.

(52) Tamil

a. Racikarkal nāṭikaiyai valain +t +u konṭu at +in +ārkal
   admirers-NOM actress-ACC surround AF PARTIC(iple) take-PARTIC dance AFF PAST-3PL
   (The admirers, having surrounded the actress, danced [with joy]).

b. Racikarkal nāṭikaiyai valai +tt +u konṭu ati +tt +ārkal
   admirers-NOM actress-ACC surround EFF PARTIC take-PARTIC beat EFF PAST-3PL
   (The admirers, having surrounded the actress, beat [her]).
7. Four inflectional categories related to voice

[The auxiliary verb KON- ‘[to] take’ marks a particular construction, meaning roughly ‘having X-ed’.

In both forms of affectedness, the verb VALAIN- ‘[to] surround’ remains transitive, and the syntactic rank of its SSyntAs does not change. But in the affective, the result of the action concerns the (referent of the) Subject [= Actor], while in the effective, this result bears on the (referent of the) DirO [= Patient].

Being different from voice, affectedness can combine with voices within a wordform. More specifically, Tamil possesses the passive (expressed by a construction ‘auxiliary verb PAṬU ‘[to] fall’ + passive participle’) in the affective (53a) as well as in the effective (53b):

(53) a. Affective (= Subject-oriented) forms

active: Avāl avaṇai Rājiv ēru kāppi+ṭ +āṇ
she-NOM he-ACC Rajiv saying call AFF PAST-3SG
‘She has called him Rajiv’ [the action affects her: this was her choice].

vs.

passive: Avan Rājiv ēru kāppi+ṭ +ap paṭukiaṟṇā
he-NOM Rajiv saying call AFF PART.PASS fall-PRES.3SG
‘He is called Rajiv’ [the action affects him].

b. Effective (= Object-Oriented) forms

active: Avaṇ caṇgalai ṛṭa +ṭ +āṇ
he-NOM window-ACC break EFF PAST-3SG
‘He has broken the window’ [the action affects the windows].

vs.

passive: Caṇgal paṇiyāḷ ṛṭa +kk +ap paṭṭatu
window-NOM boy-INSTR break EFF PART.PASS fall-PAST.3SG
‘The window has been broken by [the] boy’ [the action affects the boy].

Three important remarks are here in order:

– First, the passive voice in Tamil necessarily retains the same form of affectedness as the starting active voice: this means that the grammeme of affectedness bears on the SemA, independently of its DSynt-role.

– Second, some Tamil verbs are always in the affective, while some others are always in the effective. Thus, the verb KŪPPI- ‘[to] call’ (cf. (53a)) is affectivum tantum. As Klaiman points out (1988: 76), the distribution of affectiva/effectiva tantum is, in many cases, rather arbitrary.

– Third, the opposition “affective ~ effective” is far from being always so transparent and compositional as shown in (52)–(53). More often than not the corresponding forms are lexicalized with idiomatic meanings. For example, the verb UTṉKĀRN- means in the affective ‘[to] be sitting’ and in the effec-
tive, ‘(to) seat [somebody]’; similarly, ĉern- means in the affective ‘(to) join something, adhere’ and in the effective, ‘(to) unite, put together’ (here the effective expresses the meaning of causation). The inflectional status of affectedness in Tamil can thus be questioned, if it weren’t for its strictly obligatory character: each verbal form must be marked either by the affective or by the effective.

Affectedness as a category is more semantic than voice and transitivization. It not only changes the communicative saliency of the actants, but also modifies the propositional meaning of the verb. And it does not modify the verb’s basic diathesis: therefore, it should not be considered a type of voice.

7.4. Inversion

Grammemes of the inflectional category known as inversion, or direction, are used to mark the transitive Main Verb of a clause in order to specify what type of Subject—roughly speaking, from the viewpoint of the Subject’s topicality—this verb takes. Inversion can be easily confused with voice because on the syntactic surface it looks sometimes as if the Subject and the Direct Object were exchanging their syntactic roles with respect to the Main Verb in conformity with its direct vs. inverse form. In point of fact, this does not happen, but the observable phenomena are complex and prone to misinterpretation.

In languages where the verbal category of inversion exists, the noun has, as a rule, a nominal inflectional category of obviation. Its grammemes—‘proximate’ and ‘obviative’—distinguish two types of nominal phrases: proximate (= more prominent in the discourse—roughly speaking, more topical) vs. obviative (= less prominent in the discourse, or less topical). Each 3rd person actant (a pronoun or a noun) of the Main Verb must be specified for obviation; only one proximate 3rd person phrase per clause is possible (but not obligatory: we can have a clause where all 3rd person actants are obviative). Therefore, when one of the 3rd person actants is selected by the Speaker to be proximate, all the other 3rd person actants automatically become obviative. Personal pronouns of 1st/2nd persons—i.e., lexical units referring to the participants of the speech act—are considered by definition ‘more’ proximate than a 3rd person proximate noun phrase; as a result, a 1st/2nd person pronoun is compatible within a clause with a proximate noun phrase and outranks it.36

Obviation is morphologically marked on nouns—as, for instance, by suffixes on animate nouns in Plains Cree and Ojibwa, as well as in Kutenai; Swampy Cree and East Cree mark obviation on singular inanimate nouns as well.
The grammemes of inversion specify, on the transitive Main Verb, whether its Syntactic Subject is more proximate than its DirO—or the other way around. In this way, inversion in the verb is intimately related to obviation in the noun. (Note that inversion is characteristic of the transitive verb only—intransitive verbs do not have it; obviation, however, characterizes all nouns, independently of the fact whether a noun is an actant of a transitive or an intransitive verb or even a verbal actant at all.)

**Definition 3.16: Inversion**

Inversion is an inflectional category of the transitive verb whose grammemes specify, for a given verb L in the role of the Main Verb of the clause, whether L’s Subject is more proximate than L’s Direct Object.

In the prototypical case, the inversion category includes two grammemes:

- ‘DIRECT’ : the verb takes a Subject that is more proximate than the DirO;
- ‘INVERSE’ : the verb takes a Subject that is less proximate than the DirO.

Here are a few examples from Plains Cree. [The person prefix and the first number suffix in the verb form refer to the actant—the Subject or the Direct Object—of higher rank with respect to proximateness. The person suffix and the second number suffix refer to the actant of lower rank.]

(54) Plains Cree

a. (i) Okimāw+Ø Ø+kitot +ē +Ø+w+Ø iskwēw+a
   chief PROX 3 talk.to DIR SG 3 SG woman OBV
   ‘The chief talks to the woman’.
   vs.
   (ii) Okimāw+a Ø+kitot +ik +Ø+w+Ø iskwēw+Ø
   chief OBV 3 talk.to INVERS SG 3 SG woman PROX
   ‘The chief talks to the woman’.

b. (i) Ø+wāpam+ē +Ø+w+Ø nāpēw+a atimw+a
   3 see DIR SG 3 SG man PROX dog OBV
   ‘The man sees the dog’.
   vs.
   (ii) Ø+wāpam+ik +Ø+w+Ø nāpēw+a atim+Ø
   3 see INVERS SG 3 SG man OBV dog PROX
   ‘The man sees the dog’.

Sentences in pairs (54a–b) are propositionally synonymous. The difference is purely communicative: in the (i) sentences, the Subject is proximate—more discourse-prominent than the Direct Object, while in the (ii) sentences, the Direct
Object is proximate and the Subject, obviative. As can be seen, inversion does not modify the diathesis of the verb: the SemA I [= Agent] corresponds to the DSyntA I [= Syntactic Subject] in both direct and inverse forms, and the SemA 2 [= Patient] corresponds, again in both forms, to DSyntA II [= Direct Object].

Personal pronouns of the 1st and 2nd person are more proximate by definition than any expression of the 3rd person and, in addition, there is in Algonquian a 2nd > 1st person hierarchy. As a result, all combinations of persons of the Subject and the DirO that involve speech act participants require one particular inversion form of the verb. Thus, for the combination ‘I — him’ only the direct form is possible, and for the combination ‘he/she/it — me,’ only the inverse form:

\[(i) \text{"ni+wāpam +ē +w+Ø atim+Ø / atimw+a} \]
\[1 \text{ see DIRECT } 3 \text{ SG dog PROX dog OBV} \]
\[\text{‘I see the dog’}. \]

\[\text{vs.} \]
\[(ii) \text{"ni+wāpam+ik } +w+Ø atim +Ø / atimw+a} \]
\[1 \text{ see INVERS DIRECT } 3 \text{ SG dog PROX dog OBV} \]
\[\text{‘The dog sees me’}. \]

d. (i) \[ \text{"Ni+pimah } +ā +nan+w+Ø} \]
\[1 \text{ look.after DIRECT } 3 \text{ PL man PROX dog OBV} \]
\[\text{‘We look after him/her’}. \]

\[\text{vs.} \]
\[(ii) \text{"Ni+pimah } +iko +nan+w+Ø} \]
\[1 \text{ look.after INVERS DIRECT } 3 \text{ PL man PROX dog OBV} \]
\[\text{‘He/She looks after us’}. \]

Finally, the pairs of contrasting sentences of the following type are possible:

\[(i) \text{"Ø+wāpam+ē } +w+Ø } nāpēw+a atim+Ø} \]
\[3 \text{ see DIRECT } 3 \text{ SG man PROX dog OBV} \]
\[\text{‘The dog sees the man’}. \]

\[\text{vs.} \]
\[(ii) \text{"Ø+wāpam+ik } +w+Ø } nāpēw+a atim+Ø} \]
\[3 \text{ see INVERS DIRECT } 3 \text{ SG man PROX dog OBV} \]
\[\text{‘The man sees the dog’}. \]

In (54e-i), ‘dog’ is the Subject of the direct form, but in (54e-ii), ‘dog’ is the DirO of the inverse form, as in the English translation. It is such pairs of sentences that may give the (incorrect) impression of a passive-like modification of DSynt-Actants with inverse forms: I ⇒ II, II ⇒ I. However, the inverse cannot be equated with a passive for at least the five following reasons:
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• In point of fact, the inverse does not entail the permutation of DSyntAs of the verb with respect to its SemAs – as seen from (54a–b), where the sentences of each pair have the same Subject (no change of the diathesis).

• In the inverse form the verb remains transitive (its DSyntA II is expressed as a DirO), which normally is not the case with the passive (or with any other voice, with the exception of the indirect reflexive).

• Particular combinations of person, number, and obviation of the Subject and the Direct Object of the Main Verb impose particular inversion grammemes. Thus, in Algonquian, ‘I see you’ can be expressed only with an inverse form of the Main Verb, and ‘You see me’, only with a direct form. For instance, in (54d-i), given its meaning, only the direct form is possible; in (54d-ii), only the inverse form. Such an automatic distribution of grammemes as a function of some characteristics of the actants is not typical of voice.

• Plains Cree (as other Algonquian languages) has genuine passive forms, different from inverse forms:

\[
\begin{align*}
\text{ACTIVE} & \\
\theta + w + p a m + e + \theta + w + \theta ' \text{He}_\text{PROX} & \text{ sees [DIRECT] him}_\text{OBV} \text{.} \\
\theta + w + p a m + i k + \theta + w + \theta ' \text{He}_\text{OBV} & \text{ sees [INVERS] him}_\text{PROX} \text{.}
\end{align*}
\]

\[\text{vs.}\]

\[
\begin{align*}
\text{PASSIVE} & \\
\theta + w + p a m + a + w ' \text{He}_\text{PROX/OBV} & \text{ is seen}.38
\end{align*}
\]

These four features clearly oppose the inverse to the passive.

• Voice is a semantic inflectional category: its grammemes are chosen by the Speaker as a function of his communicative intentions with regards to the events/relations he wants to verbalize and, consequently, the verb; the choice of a voice does not usually depend on the inflectional form of the verb’s actants. In sharp contrast, obviation is a syntactic inflectional category: its grammemes are imposed by the inflectional form of the verb’s actants. In other words, obviation marks in the verb morphological dependency on its actants and is thus an agreement category. (It would be reasonable to change the name of the category of inversion to verbal obviation, as, for example, proposed in Ford 1981: 74. That would make the category terminologically parallel to verbal number or adjectival gender.) This feature opposes the category of inversion to the category of voice as a whole.

For more on inversion, see Arnold 1994 and Rhodes 1994; a detailed discussion of the relationship between voice and inversion is found in Givón (ed.) 1994; passives in Ojibwa are described in Rhodes 1991, and obviation/inversion in East Cree, in Junker 2003.
8. Conclusions

Before the reader closes the book and eagerly rushes off to apply our idealized schema to the description of voices and voice-related phenomena of actual languages, a stern warning is in order: it will not be an easy job. As always happens with idealized schemata, ours cannot be applied in a straightforward, mechanical manner: in many cases, it will not directly correspond with actual linguistic data. There are at least three properties of natural languages that stand in the way of a nice, ‘clear-cut’ logical description of voice.

8.1. Complex voice-like categories

Instead of our ‘purified’ voice grammemes, natural languages show, as a rule, complex entanglements of voice-related phenomena. The situation illustrated for Ancient Greek in (31), p. 213, is rather typical of world languages. Similarly, in Huastec we find the following picture (Constable 1990):

(55) a. In  qaqu +n+Ø
   1SG hit PERF
   ‘I hit myself’.

b. Wawaq u  kaqi +tzi +n+al
   we  1PL carry.w.e for PERF
   ‘We carry water for ourselves’.

c. Ø buku+n+Ø  in  itziCAF an  wič  kal an ik
   3 spread PERF 3.POSS seed DEF flower by DEF wind
   ‘[The] seeds [from] the flower were-spread by the wind’.

d. An  čakam Ø  čem+tzi +n+ neek  kal  in  taataš+cik
   DEF child 3 die for PERF by 3.POSS parents PL.
   lit. ‘The child has-been-died by his parents’. = ‘The child has been orphaned’.

e. Exom ti  paxku +n+al  an  jač
   be  3[intr] boil PERF DEF water ‘The water is boiling’.

vs.

In  paxku  + al  an  jač
   3-3[tr] boil[trans] PERF DEF water ‘He is boiling the water’.

What does the suffix -n express? In (55a), it is clearly a reflexive; in (55b), it is a subjective version or perhaps an indirect reflexive; in (55c), a passive (note that
Huastec has another, ‘plain’ passive, expressed by the suffix -aab; in (55d), it is another passive, of a rather complex structure; and in (55e), -n expresses de-causativization (it is a suffix with a negative, or subtractive, signified, which ‘strikes out’ the semantic component ‘[to] cause’ in the meaning of the transitive verb PAXKU; on subtractive signifieds, see Chapter 5, 2.3, p. 292). This immediately reminds one of the notorious middle voice in classical languages. What then shall we do with the suffix -n? Try to preserve generality and say that this is a single (inflectional?) category marking the absence of the patient (‘cancellation,’ as Constable calls it)? Or try to preserve the neatness of a logical analysis and see here, as elsewhere in similar cases, the homophony of the markers of various grammemes and/or derivatemes? My philosophy forces me to adopt the second solution. I do not mind losing generalizations and cutting into the live flesh of linguistic facts, provided I can gain some logical advantages—clarity and sharpness of distinctions is my first and foremost concern. Of course, I am fully aware that everybody does not share this conviction, and this makes the acceptance of the scheme I propose for voice more problematic.

8.2. ‘Semantic impurity’ of actual voices

Even where the nature of a grammeme as a voice is more or less clear, this grammeme may appear in combination with other (grammatical) meanings. Two major classes of cases should be distinguished.

On the one hand, we can have a passive or a suppressive with an admixture of some additional semantic nuances. Thus, the partial demotional passive in some languages (e.g., in Lithuanian—Timberlake 1982) is possible only with an understood human Agent, and the same is true of the subjectless suppressive in Estonian and Polish. Is this part of the meaning of these voices or just a condition of its felicitousness? In addition, the Lithuanian partial demotional passive imparts to the sentence a vague nuance of uncertainty. Again, is this its meaning or a constraint on its use? The Norwegian passive is basically used to express generic, ‘permanent,’ or ‘habitual’ situations. Many passives, as is well known, acquire stative or resultative meaning. Mam has two passives: one is a ‘normal’ promotional passive—(56a), while the other one—(56b)—adds to the verb the meaning ‘accidentally’:

(56) Mam

Mam ᵃ  c ee qa + at  Čee p t + u n Kyel ‘José was hit by Miguel’.
PAST 3SG.SUB hit PASS José 3SG by Miguel
b. Ma Ø +ceeqa+pc Čeep t +uðn Kyel ‘José was accidentally hit by Miguel’.

The ‘adversative’ passives in a number of Far East languages introduce the additional meaning ‘... and this is bad for Y’.

Then there are so-called ‘periphrastic passives’ with a gamut of additional meanings: the get-passive in English (He got killed in the first battle), the se-faire and se-voir passives in French (Il s’est fait voler ‘He was robbed’, lit. ‘He made himself rob’: he was somehow responsible for what happened to him), etc.

On the other hand, we have many non-voice grammatical meanings that include voice-like modifications of the basic diathesis: the reciprocal, mentioned above, is an excellent example. A good example of a particular type of applicative, called the comitative, comes from Dyirbal (Dixon 1972: 193, Mel’čuk 1988a: 190). The Dyirbal comitative expresses the meaning ‘Z is involved in the action (as an instrument, a means or a participant)’ and adds a SemA to the verb, as in:

(57) Dyirbal

Bala+n+Ø dugumbil+Ø ba+ŋgu+l yara+ŋgu balga+n [ACTIVE]

‘The woman [I, NOM] by-the man [II, INSTR] is-beaten’.

Bala+Ø+Ø yugu+Ø ba+ŋgu+l yara+ŋgu balga+ma+n [COMITATIVE]

ba+gu+n dugumbil+gu,

lit. ‘The stick [I, NOM] by-the man [II, INSTR] is-involved-in-beating to-the woman [III, DAT]’.

The diathesis modification of the verb BALGA- ‘[to] beat’ here is I ⇒ III, i.e., a typical passive-like demotion, while the new SemA becomes the DSyntA I and the Agent [II] remains unaffected. Yet unlike a genuine passive, the Dyirbal comitative essentially changes the propositional meaning of the verb, introducing a new Sem-actant. In this case, one would prefer to say that this is not a passive, but a particular type of applicative, which uses a passive technique to accommodate the new SemA— that is, it changes the basic diathesis of the verb in the same way a passive does.

Such difficulties are typical of natural languages and frequently impede efforts to disentangle voices from the mess created by historical development.

8.3. Fickle differences between categories

If la donna è mobile, then natural languages are mobilissime: there are, as a rule, only shaky, moving borderlines between different phenomena. Thus, consider the transitive Russian verb RUGAT’ ‘[to] scold, abuse, call names’. Russian has
also the verb RUGAT’SJA, meaning exactly the same, but precluding the expression of the DSyntA II: Esli ja opozdaju, Ivan budet rugat’menja or ... Ivan budet rugat’sja [*menja] ‘If I am late, Ivan will scold me’. In our scheme, stretching the facts a little, the latter form can be considered as an objectless suppressive—just like KUSAT’SJA ‘[to] bite’ (but with the DSyntA II suppressed) from KUSAT ‘[to] bite’. Etso sobaka kusaetsja (*kusaet) ‘This dog bites’. However, in sub-standard speech, RUGAT’SJA can have a DSyntA II: Ivan budet na menja rugat’sja. According to our scheme, this form should be described as a detransitivizer. What seems to be very close in linguistic reality (‘almost the same!’) is treated by our scheme as two different inflectional categories. Another telling example: in Polish we have an objectless suppressive (Zbudowano most), while an extremely close Ukrainian construction is described as a partial deemotional passive (because of the possible presence of an AgCo and a conjugated copula). But once again, such things do not discourage me. I think that in theory we need sharp and logically justified divisions between concepts; they may be difficult to apply to reality, but in any event, they should be given priority.

Be it as it may, I think that voice will always interest linguists, if only because it has to do with one of the most intriguing questions asked by human beings of themselves and of each other: WHO did WHAT TO WHOM WITH WHAT and WHAT/WHO FOR?40

Notes

1 (p. 181, the motto) This beautiful exchange of barbed remarks, which took place years ago in the Spanish Parliament, nicely illustrates the opposition of voices. During a speech by a minister, a member of Parliament, the famous Spanish writer and wit, Camilo José Cela, who hated this minister, closed his eyes and pretended to be asleep. The angered minister stopped and said: – There is no point in my going ahead, since some people are not listening, such as, for instance, señor Cela, quien está dormido, lit. ‘who is slept = asleep’. To which Cela retorted: No estoy dormido, sino que estoy durmiendo, lit. ‘I am not slept, I am sleeping’. – What’s the difference? – asked the minister. – The same, – said Cela, – as between estar jodiendo ‘[to] be screwing’ y estar jodido ‘[to] be screwed’. I cannot think of an illustration of voice that would be clearer or would fit the occasion better.


3 (p. 186) Dummy syntactic elements do not interfere with this principle: as just stated, they do not appear on the DSynt-level and therefore are not counted. Thus, consider the Spanish idiom díñarse a N, lit. ‘[to] give-itself-to N’ = ‘[to] swindle N’, while DÍNAR = ‘[to] give’ [coll.]. In the SSyntS, LA (= 3sg feminine pronoun in the accusative) is the DirO of DÍNAR, but this is only a dummy DirO: it does not appear at all in the DSyntS, where the DSyntA II of DÍNARELA is the phrase ‘a N’: DÍNARELA–II ➔ a N.

4 (p. 186) This requirement is based on the following linguistic facts:
– Some verbs in some languages (for instance, ‘meteorological’ verbs in Indo-European languages) do not have DSyntA I: in It rains, It thunders, etc., we see a
dummy SSynt-Subject IT, which does not appear at the DSynt-level. As a result, in the DSyntS, these verbs do not have actants at all.

- Some monoactantial verbs in some languages have only the DSyntA II, as, for instance, Rus. TOŠNIT’ ‘[to] be nauseated’, lit. ‘[to] nauseate somebody’, or RVAT’ ‘[to] vomit’, lit. ‘[to] vomit somebody’ (Eë→II→šnit, lit. ‘Her [DirO, ACC] nauseates’), Lat. PUDERE ‘[to] be ashamed’ (Pudet<II<A me, lit. ‘Shames me [DirO, ACC]’), etc. Such verbs cannot have a non-empty SSynt-Subject; as a result, they do not have the DSyntA I.

NB: The opposition “Subject ~ Direct Object” is so fundamental in syntax that it has to be preserved at the DSynt-level. For me, this means that a DirO can be encoded in the DSyntS only as DSynt-actant II, while DSynt-actant I is reserved for Subjects.

- Idioms that include their SSynt-Subject, for instance, Fr. QUQUEL MOUCHE A PIQUE-II→N=X, lit. ‘What fly has bitten X [DirO]?’ = ‘Why is X so irritated?’ or QUE LE DIABLE EMPORTE-II→N=X ‘Let the devil take X [DirO]’, have only the DSyntA II. At the DSynt-level, such a idiom is represented by one node, and no branch numbered I leaves it.

- A verb in a grammatical voice that bars the expression of the DSyntA I—like as, for instance, the Subjectless Suppressive—has DSyntAs beginning with II: see 4.2, Item 5, p. 203ff.

These examples show that one can have diatheses in which the numbering of DSyntAs does not begin with I, but with II.

5 (2, p. 187) I have borrowed this term from Lazurskij 1988: 29.

6 (2, p. 187) For the sake of clarity, let me indicate all three possible types of correspondences between actants of different levels:

- A DSyntA of L corresponds to a SemA of L and to a SSyntA of L: US<→I→HELP, where ‘US<→I→help’, and US<→subject→helps
- A DSyntA of L corresponds to a SemA of L but not to a SSyntA of L: A<US<→I→HELP, where ‘US<→I→help’, and American<→modifying→help
- A DSyntA of L does not correspond to a SemA of L but corresponds to a SSyntA of L (a displaced DSyntA):
  BAKE<III→JOHN,
  where ‘bake<→I→for<→2<→JOHN’, and bake<→indir-obj→John [a pie]

7 (2, p. 189) Of course, not all LUs have a diathesis. An LU that has a diathesis must have a signified which is a predicate in the logico-semantic sense and therefore have Sem- and DSynt-actants. Later, we will also need the concept ‘diathesis of an extended lexical unit’ (see the end of Subsection 4.3.1, p. 212).

8 (3, p. 190) These reasons are: Topicalization, i.e., bringing the targeted element of the clause into the topic position; and Impersonalization, i.e., eliminating the necessity of mentioning the Agent.

9 (3, p. 192) It was S. Kahane (1998) who drew my attention to this fact.

10 (4.1, Def 3.9, p. 196) In other words, a passive entails 1) the removal of DSynt-role I from NP1, which has this role in the basic diathesis and (but not necessarily) 2) the assignment of DSynt-role I to NP2, which does not have this role in the basic diathesis. (NP2 receives a different DSynt-role.) A grammeme which marks a non-zero permutation of DSyntAs not involving DSyntA I is called a permutative (this grammeme is possible only with diatheses having three or more SemAs).
The Nepali examples (from Givón 1990: 596) are especially interesting in that they illustrate two different basic verbal constructions, distributed according to the voice of the verb involved:

- In the active, a Nepali transitive verb requires an ergative construction: the Subject which denotes a Causer is in a non-nominative case.\[I.1b\] (for a definition of ergative construction, see Chapter 4, 3, p. 270).
- In the passive, a transitive verb forms a pathetive construction—the Subject which denotes a Causee is in a non-nominative case.\[I.1b\] (for more on the pathetive construction, see Meůčuk 1988a: 259).

Another example of a pathetive construction with a passive verb is given in Shibata-ni 1985: 824–825 for Ainu:

(i) Chasi upshororke \[a +i +o +reshu\]
castle inside PASS 1SG. OBJ in raise

\[I\] was raised in a castle.

Ainu does not have grammatical case, but the (understood) Subject \[I\] controls the objective agreement of the MV as if it were in the accusative.

An interesting example of such an obligatory passive is found in Southern Tiwa (Allen and Frantz 1983: 304–306). In this language, an action by a 3rd person cannot target the 1st or the 2nd person (= a participant of a speech act), so that it is impossible to say *‘She loves me’ or *‘He hates you’. For person combinations ‘3—1’ and ‘3—2’ the passive must be used, and you actually say ‘I am loved by her’ and ‘You are hated by him’. Cf.:

(i) a. seuanide+ba \[te+mu+če+ban\] (no active counterpart is possible)
   man INSTR 1sg see PASS PAST
   ‘I was seen by the man’.

b. seuanide+ba \[a+mu+če+ban\] (no active counterpart is possible)
   man INSTR 2sg see PASS PAST
   ‘You SG were seen by the man’.

In the person combination ‘3—3,’ both the active and the passive are possible:

(ii) a. seuanide+Ø \[Ø +liora +mu+Ø +ban\]
   man NOM 3Subj-3Obj woman see ACT PAST
   ‘The man saw the woman’.

   [In a transitive classe the Direct Object noun is usually incorporated into the verb.]

b. liorade+Ø \[Ø +mu+če +ban seuanide+ba\]
   woman NOM 3sg see PASS PAST man INSTR
   ‘The woman was seen by the man’.

D. Beck (2001, 2004) describes even a more bizarre case of automatic voice alternation driven by person-number hierarchy in Upper Necaxa Totonac—the alternation between the subjectless suppressive (which is transitive) and the subjectless passive (intransitive) in the 2sg, both voices having the same marker, -kan. These formations are impossible if the denotation of the patient is in the plural and represents a speech act participant (i.e., it is of the 1st or 2nd person):
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(i) Upper Necaxa Totonac

**Singular Patient**

\[ \text{ki} + \text{musə+kán} + \emptyset \]  
\[ \text{SBJLSUPPR IMPF} \]  
\[ \text{("They") kissed me} \]

or

\[ \text{I kissed myself} \]

\[ \text{musə+kán} + \emptyset \]  
\[ \text{PASS 2SG.SUB.IMPF} \]  
\[ \text{"YouSG were kissed"} \]

or

\[ \text{YouSG kissed yourself} \]

\[ \emptyset + \emptyset + \text{musə+kán} + \emptyset \]  
\[ \text{3OBJ SG.SUPPR IMPF} \]  
\[ \text{"They" kissed him/her} \]

or

\[ \text{He/she kissed himself/herself} \]

**Plural Patient**

\[ \emptyset + \text{kă} + \text{musə+kán} + \emptyset \]  
\[ \text{3OBJ PL.OBJ kiss SBJLSUPPR IMPF} \]  
\[ \text{"They" kissed them} \]

or

\[ \text{They kissed themselves} \]

14 (4.2, Item 4, p. 203) As an approximate example, I can cite a pair of roughly synonymous Russian expressions that are not inflectionally related, but illustrate the diathesis modification in question:

(i) \[ \text{Ja styžus´ Ivan+a} \]  
\[ \text{I-NOM am.ashamed Ivan GEN} \]  
\[ \text{vs.} \]

\[ \text{Mne stydno za Ivan+a} \]  
\[ \text{I-DAT shameful for Ivan ACC} \]  
\[ \text{"To-me [II] is-shameful for-Ivan [III]"} \]

15 (4.2, Item 5, p. 203) The subjectless suppressive should be distinguished from a similar, although by no means identical, phenomenon: the use of so-called Indefinite Subject. A good example is given in Givón 1990: 581 (where the author describes the facts differently):

(i) Ute

\[ \text{Siváqu+cí paxá+O+ta + puga / paxá+qa + ta + puga} \]  
\[ \text{goat OBL kill SG "someone" PAST / kill PL "someone" PAST} \]  
\[ \text{lit. "Goat [II, DirO, OBL] killed someone/someones. = "Someone(s) killed the goat."} \]

No SSynt-Subject is possible nor is it possible to express the Agent. But the verbal form reflects the singularity [-O-]/plurality [-qa-] of the Actor; therefore, I think that the suffix -ta is a marker of an Indefinite Subject, something similar to Fr. ON or Ger. MAN, rather than that of a subjectless passive or a subjectless suppressive. If it were a marker of the subjectless suppressive, what could be singularized or pluralized? In languages with switch-reference (the marking of the ‘same Subject’ – ‘not the same Subject’), a verb with an Indefinite Subject must admit—in a corresponding context—the same Subject marker, while a verb in the subjectless suppressive never admits such a marker (see Note 23, p. 257).

16 (4.2, after (15), p. 204) The Polish construction in (15) and the Ukrainian construction in (12) differ in four important ways:

- In Ukrainian, but not in Polish, 1) expression of the Agent—as an AgCo—is possible, and 2) the verbal form, while invariant, takes the copula (bula ‘was’/bude ‘will be’) and in this way indicates tense and mood. For this reason, the Polish -(n) is said to be a marker of the subjectless suppressive, but the Ukrainian -(n) is a marker of the partial deontial passive.
Polish, but not Ukrainian, allows the construction in (15) with intransitive verbs as well:

(i) **Topion+o się w morzu**

  lit. ‘[“They”] drowned themselves in sea’. = ‘People drowned in the sea’.

And 4) the verbal form in -(n)o-(t)o can control an adverbial gerund:

(ii) **Tę książkę czytano+o siedząc+qc przy kominku**

  *this book-ACC read SBJL.SUPPR sit GER by fireplace-LOC

  ‘[“They”] were-reading this book [while] sitting by the fireplace’.

(For a detailed description and comparison of these two constructions, see Lavine 2001.)

Polish also has another type of subjectless suppressive:

(iii) **Sugeruje się rozwiązanie**, suggests itself following PL.ACC solution PL.ACC

  lit. ‘[“It”] suggests itself the following solutions [II, DirO]’.

This construction has a zero dummy SSynt-Subject Ø (3s) similar to that of the Spanish construction in (16); the verb in (iii) distinguishes all tenses and moods.

17 (4.2, (16), p. 204) The expression of the Agent with this SE-form does occur in colloquial speech (rather loose style). The sentences such as Sp. ‘Se construye aquí tres puentes por una compañía alemana’ are proscribed by the normative grammar and always attacked by purists. If, however, one admits such AgCos with the verbal expressions in (16), these expressions must be described as Partial Demotional Passives, rather than Suppressives.

The superficially similar French constructions **Il se lit beaucoup de livres de ce type**, lit. ‘It reads itself many books of this type’ = ‘Many books of this type are read’ et **Il s’est construit trois ponts sur le fleuve**, lit. ‘It is constructed itself three bridges on the river’ = ‘Three bridges have been constructed on the river’ are actually very different. In French, the phrases **beaucoup de livres** ‘many books’ and **trois ponts** ‘three bridges’ are not DirOs as in Spanish, but Quasi-Subjects. This is shown by the accusative cliticization of the corresponding DirOs in Spanish: **Se los lee**, lit. ‘[“It”] reads itself them’, and **Se los ha construido**, lit. ‘[“It”] has constructed itself them’, while in French such cliticization is impossible: *Il se les lit, *Il se les est construit. (See Lazard, 1994b.)

18 (4.2, (23), p. 207) Such cases as Ger. **Von Politikern wird hier oft gegessen**, lit. ‘By politicians becomes here often eaten’ = ‘Politicians eat here often’ cannot be considered a patientless demotional passive either, since this form cannot suppress an obligatory DSyntA II (Kahane 1998: 343, example (24)). It is possible exclusively with a transitive verb whose DSyntA II is omitted—that is, with a transitive verb in an ‘absolute’ use. Here are some relevant examples:

(i) **Die Polizisten verfolgten ihn** ‘The policemen pursued him’.

    *Die Polizisten verfolgten die Polizeien pursued them’.

    *Es wurde von Polizisten verfolgt, lit. ‘It was pursued by policemen’.

(ii) **Die Polizisten lasen Zeitungen** ‘The policemen read newspapers’.

    *Die Polizisten lasen die Polizeien read them’.

    *Es wurde von Polizisten gelesen, lit. ‘It was read by policemen’.
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19 (4.2, p. 209) The maximal number of voice grammemes indicated in some of my previous publications (Mel’čuk 1997a: 90) was eleven, because I did not include the full demotional passive (Item 4), for which I still do not have an example. The number of fourteen (Mel’čuk 1993b) comes from the inclusion, among the voices, of impersonalized constructions, which was, of course, a mistake.

20 (4.3.1, p. 210) French impersonalized constructions of the type *Il a été procédé à l’examen des malades*, lit. ‘It has been proceeded to the examination of the patients’; *Il lui a été tiré dessus*, lit. ‘It to-him has been fired upon’, etc., represent the partial demotional passive, Item 3 in our inventory, p. 201. This passive is possible in French only with some intransitive verbs and only together with impersonalization (*L’examen des malades a été procédé* (à), *Il a été tiré dessus*). There are several semantic constraints as well (the Agent must be human, etc.). For a fuller analysis of such passives, see Gaatone 1998: 117ff.

21 (4.3.1, p. 210) Passivizability is not, of course, a strictly lexical feature of verbs. A verb that cannot be passivized in a finite form in a factual statement sometimes does passivize in the infinitive in a generic expression:

(i) a. *This was had for twopence at a grocer’s.*
   vs. *This can be had for twopence at any grocer’s.*

(ii) a. *Football is played by me.*
   vs. *Football is always played with enthusiasm.*

A host of examples of passives—in English, German, and Russian—possible or impossible as a function of variegated contextual factors is found in Beedham 1982.

22 (4.3.1, 30d, p. 212) **Adversative passive**

Japanese also has what is known as the ‘adversative passive’, in which a monovalent intransitive verb V can be used in a form which has the same suffix as the passive and takes as its DSyntA I (= as its SSynt-Subject) the denotation of the person X who is ‘undergoing’ the situation expressed by the verb V. Here are some examples:

(i) Ziroo+ga ame+ni hur+are +ia
   SUBJ rain DAT fall PASS[?] PAST

lit. ‘Ziro [= I, Subject] by-rain [= II, AgCo] was-fallen-upon’:
   ‘Ziro was rained on’, = ‘Ziro was caught in the rain’.

(ii) Ziroo+wa, suzu+ii kaze+ ni huk+are +nagara,
   THEME fresh wind DAT blow PASS[?] while being
   syoo-undo+o nozoi+te aruk +u
   shop.window ACC watch GER take.a.walk PRES

lit. ‘Ziro [= I, Subject], while-being by-fresh wind[= II, AgCo] blown-upon,
   is taking a walk, watching shop-windows’.
In all these cases, a ‘non-passivized’ sentence cannot express the person that is affected by the situation:

(iv) *Ame +ga Ziro+ni hut+ta *(The rain fell on Ziro).
(v) *Kaze +ga Ziro+ni huk+u *(The wind blows on Ziro).
(vi *Haha+ga Ziro+ni sin+da *(The mother died on Ziro).

Using the active verb, you simply cannot say on whom the rain is falling, the wind is blowing, or mother is dying; to do so, you have to add to the verb the ‘passive’ suffix -are, which allows you to express the person involved. Therefore, the use of the ‘adversative passive’ implies the introduction of a new SemA, represented by Y in the scheme below:

```
X--Subj—VACT ⇔ [Y]--Subj—VPASS [?]—Agent→X
```

The conclusion is inescapable: the Japanese ‘adversative passive’ is not a passive and therefore not a voice—it is a voice-like APPLICATIVE. It lacks an active counterpart and adds to the meaning of the verbal stem the propositional meaning ‘(Z undergoes ...)’.

Interestingly, the expression of the Patient of this applicative has two syntactic properties that distinguish it from the AgCo of the true passive:
- it can be only in the dative (-ni), while with the passive, the AgCo can be in the dative or in the ablative (-kara), or it can be introduced by the postposition -ni yotte ≈ ‘by’;
- it cannot be omitted, while with the passive, the AgCo is omitted very often.

The form in question is, in fact, not even necessarily ‘adversative’ as shown in a number of studies, in particular semantico-syntactic contextual conditions, it can express positive or neutral affectedness. These conditions are carefully described in Werzbicka 1988: 257–292. For a detailed discussion of this Japanese formation, see Ono 1991.

23 (3.3.4, (34b), p. 217) We have an interesting confirmation of the fact that the Mojave form under consideration is a subjectless suppressive rather than an expression with an Indefinite Subject, cf. Note 15, p. 254. This form, when in a subordinate clause, does not admit the declarative marker of the same subject -k: since it has no Subject at all, it cannot be marked as having the same Subject with any higher verb (it admits, however, the marker of ‘not the same Subject’ -m).
The relevant difference between (35a) and (37) is that the first construction allows the AgCo (Il a été voté par ce parlement...), while the second does not (Il se vend des journaux "par des gamins de 10 ans").

Note the following complication in Italian. Here, in a similar construction with the subjectless suppressive of an intransitive verb, the verb is in the 3sg, but the predicative attributive must be in the masculine plural!

(i) Quando si è medic+̂i, bisogna ..., lit. 'When "it" is itself doctors, is-necessary ...'
(ii) Quando si è mort+̂i, ..., lit. 'When "it" is itself dead-ones ...'

Interestingly enough, the same strategy—that is, splitting a presumed inflectional category into several different categories—becomes inevitable with the category of aspect (which has to be split into five subcategories: aspectI, aspectII, ..., aspectV), and that of nominal case (with two subcategories: caseI.1 = governed nominal case vs. caseI.2 = "agreeing" nominal case, see Chapter 2, p. 110, 159ff). However, I am not in a position to develop this point any further or supply any explanations.

The analytical markers of grammatical cases I.1b in Tagalog are as follows (they also double as a kind of determiners):

Subjective [the case of the Subject] : ang, si
Oblique : ng / naŋ / ni
Dative : sa, kay

For more on analytical markers of cases I.1b, see Chapter 2, 7, 3, (22), p. 142.

That o homem is here a DirO is clearly shown by the possibility of having it in the plural without changing the form of the verb: Tenta-se os homens. This construction is current in Portuguese, although it is proscribed by normative grammar.

Even this is not the end of the matter. As D. Beck has informed me, in Upper Necaxa Totonac the subjectless and objectless suppressives can also be combined in one wordform:

(i) Puš + nun + kán nak marso 'Harvesting is done in March'.

Therefore, in this language, they constitute two different voice categories.
I will leave aside, without clarification, the notion of communicative salience, although it is very important in this context. It is related to the referential/non-referential character of the NP in question, its being definite or not, known or not, central/marginal to the event described, etc.

Thus, consider the verbal suffix -m of Bella Coola, which, added to a limited subset of V Intr,s, can transform them into V Ob}s. As a result, an (apparent) ObI, optional with the basic intransitive, becomes an obligatory DirI and therefore more salient in the sentence:

(i) Bella Coola (Davis and Saunders 1989, 1997: 59ff)

a. \( puX +Ø \quad ti + ?im\kappa+tx \quad ?ut \quad ti + mus\dot{a}\lambda+tx \)

   come 3SG.SUB DEF man DEF on DEF thief DEF

   ʻThe man jumped [lit. came] on the thief?.

vs.

b. \( puX +m+is \quad ti + ?im\kappa+tx \quad ti + mus\dot{a}\lambda+tx \)

   come 3SG.SUB-3SG.OBJ DEF man DEF DEF thief DEF

   ʻThe man attacked [lit. jumped] the thief?.

But, as D. Beck has pointed out to me, the basic V Intr in all such cases—here, \( puX \)—is not semantically bivalent: \( puX \) means simply ‘[to] come’, so that the prepositional phrase in (i-a) is a free circumstantial. The suffix -m is a kind of applicative marker; it increases the valency of V Intr and thus cannot be considered as the expression of a pure TRANSITIVIZER: -m transitivizes the verb, but by adding a SemA to its meaning (Beck 2000b: 241–242).

However, examples of transitivizers, although non quite regular and systematic, are found in some languages:

(ii) a. German

   \( \text{ins Zimmer} \quad \text{treten [intr]} \quad \text{[to] enter into the room} \sim \)

   \( \text{das Zimmer [ACC]} \quad \text{betreten [trans]} \quad \text{[to] enter the room} ; \)

   \( \text{über sein Benehmen} \quad \text{urteilen [intr]} \quad \text{[to] judge about his behavior} \sim \)

   \( \text{sein Benehmen [ACC]} \quad \text{beurteilen [trans]} \quad \text{[to] judge his behavior} ; \)

   \( \text{ihm [DAT]} \quad \text{drohen [intr], lit.} \quad \text{[to] threaten to-him} \sim \)

   \( \text{ihn [ACC]} \quad \text{bedrohen [trans]} \quad \text{[to] threaten him}. \)

   One finds subtle semantic differences between all these (and many similar) pairs, so that the German transitivizer belongs to derivation rather than to inflection.

b. Indonesian

   \( \text{Ali duduk [intr] di kursi itu} \quad \text{ʻAli is-sitting on this chair} \sim \)

   \( \text{Ali men+duduk+i [trans] kursi itu} \quad \text{[idem; ñʻAli occupies this chair]}. \)

   \( \text{Ali tinggal [intr] di rumah itu} \quad \text{ʻAli lives in this house} \sim \)

   \( \text{Ali men+inggal+i [trans] rumah itu, lit.} \quad \text{ʻAli inhabits this house}. \)

   \( \text{Ali suka [intr] kepada ku, lit.} \quad \text{ʻAli loves towards me}. \sim \)

   \( \text{Ali meny+uka+i [trans] ku} \quad \text{ʻAli loves me}. \)

c. Arabic

   \( \text{ha\d{z}ama \text{\textit{Sala} N, lit.} [to] attack on N} \sim \text{ha\d{z}ama N [to] attack N} \)

   \( \text{q\d{a}ma \text{\textit{Sala} N, lit.} [to] resist to N} \sim \text{q\d{a}wama N [to] resist N} \)

   \( \text{\d{a}d\d{a} \text{\textit{Sala} N, lit.} [to] assault on N} \sim \text{\d{a}d\d{a} N [to] assault N} \)
In (iib–c), the propositional meaning of the basic verb form does not change, or changes only slightly.

32 (6.1.3, (49d), p. 235) I would like to correct here a misstatement in Mel’čuk 1988a: 205, Note 25, and 224, where these Dargwa forms were wrongly described as a subjectless suppressive (an objective impersonal, in the old terminology). The concept of detransitivizer did not exist at that time.

33 (7.2, (50d), p. 239) Focal-Rhematic constructions, however, do not appear in imperative and negative sentences. In a negative Yukagir sentence, the negative prefix on the verb is, in all probability, the Rhematic Focus, and it “preempts any other overt marking of focus” (Comrie 1992: 64).

34 (7.2, after (50), p. 240) Case marking of the Synt-Subject and the Direct Object in Yukagir

Note the complex distribution of the case forms of the Subject and the DirO (nouns KÖDE- ‘man’ and ILE- ‘deer’, the pronouns MET ‘I’, TET ‘youSG’ and TUDEL ‘he’) in (50):

If a noun/pronoun used as Synt-Subject does not express a Focalized element, it is marked with the nominative – the suffix -º (cf. (50a, c, d)). But if the Synt-Subject is Focalized, its case depends on the transitivity of the verb:

(i) The rhematic Synt-Subject of a transitive verb (whether a noun or a pronoun) is marked with the ergative case – the suffix -º or the truncation of the final -l in 3rd person pronouns; the final -º after a vocalic stem is impossible (cf. (50b-i)).

(ii) The rhematic Synt-Subject of an intransitive verb is marked depending on its type:

– if it is a common noun without a possessor dependent or it is a 1st/2nd person pronoun, it receives a special case, called predicative (Maslova 1997), with the suffixes -le(º) and -ek (cf. (50b-ii));
– if it is a proper name, a common noun with a possessor dependent, or a 3rd person pronoun, it is in the nominative (this situation is not illustrated in (50)).
– If a noun/pronoun used as a DirO does not express a Focalized element, it is also marked with the nominative (cf. the first two lines in (50a) and (50b-i)), with the following two important exceptions:

(iii) A non-rhematic DirO is marked with the accusative (the suffixes -le(º), -ul and -º) if:

– it is a common noun without a possessor dependent and the Synt-Subject is a noun or a 3rd person pronoun (cf. the third line in (50a) and (50b-i));
– it is a pronoun and the Synt-Subject is a pronoun of the 1st/2nd person:

Met tet+ul /tudel+º[ACC] me+paj+º[ACC] hit youSG /him;

(iv) A non-rhematic DirO is marked with the locative (the suffixes -qane/-γane) if it is a proper name, a common noun with a possessor dependent, or a pronoun and the Synt-Subject is of the 3rd person:

Tudel/Ködeq tet+γane /tude+γane [LOC] me+paj+m ‘He/The man hit youSG/him’,
Titel Gavrila+γane [LOC] me+paj+pa ‘They hit Gavrila’, etc.

These last examples of case marking are not presented in (50). If a DirO is Focalized, it is marked, of course, with the predicative case.
This intimate link between the verbal focus and nominal cases is an important feature of Yukagir.

35 (7.3, before (52), p. 242) The terms adopted for these grammemes in traditional Tamil grammar are ‘weak verbs’ (for affective forms) and ‘strong verbs’ (for effective forms).

36 (7.4, p. 244) The category of obviation is not restricted to marking the actants of the Main Verb; its grammemes are used to mark other elements of the clause other as well. But in the present context, these functions of obviation can be ignored.

37 (7.4, after (54), p. 247) It is Dahlstrom (1991: 67–88) who shows that the inverse form remains transitive and thus cannot be passive. She does so by proposing tests for the Subject and the DirO in Cree. In particular, a preverbal floating quantifier cannot have scope over a transitive Subject and so singles out the DirO:

(i) Nisto Ø+nipah+ē  +w+ak mōsw+a nāpēw+ak+Ø

three 3 kill DIR 3 PL moose OBV man PL PROX

‘The men killed three moose’ [not *‘Three men killed (some) moose’]. vs.

Nisto Ø+nipah+ik  +w+ak mōsw+a nāpēw+ak+Ø

three 3 kill INVERS 3 PL moose OBV man PL PROX

‘The moose killed three men’ [not *‘Three moose killed men’].

To quantify a transitive Subject, the numeral must be contained within the Subject NP:

(ii) Ø+nipah+ē  +w+ak mōsw+a nisto nāpēw+ak+Ø

three 3 kill DIR 3 PL moose OBV three man PL PROX

‘Three men killed (some) moose’.

or

Ø+nipah+ik  +w+ak nisto mōsw+a nāpēw+ak+Ø

three 3 kill INVERS 3 PL three moose OBV man PL PROX

‘Three moose killed (some) men’.

Cree nouns in the obviative do not distinguish numbers, so that the form mōsw+a can be understood as singular or plural.

38 (7.4, after (54), p. 247) Dahlstrom (1991: 74) proposes an elegant demonstration of the fact that in Plains Cree the only actant of the verbal form suspected to be a passive is the Subject. Therefore, this form is a genuine passive (rather than a transitive ‘indefinite-object’ construction, or a subjectal suppressive, as is sometimes claimed).

Consider a verb V that governs a sentential object – a completive clause; this verb agrees with the Subject of the transitive verb of the subordinate clause (in person and number) but can not agree with its DirO [CONJ stands for ‘conjunct order,’ that is, a special inflectional form a verb takes, for example, when appearing in a subordinate clause; person/number objectal agreement markers in the matrix MV are boldfaced]:

(i) ni+kiskéjí̱m+ē +O+w+Ø anima atayókkan-ácimó̱n+Ø

1 know DIR SG 3 SG that story-SG.OBV

awášis+ak+Ø  ékt +O+sékí̱h+ik  +ac  +O +ik

kid  PL PROX PERF 3 scare INVERS CONJ SG 3PL
Chapter 3. Voice

lit. ‘I-know-it that [the] story scared [the] kids’ [the MV of the matrix clause agrees with the Subject of ‘scare’, i.e., with ‘story’].

vs.

(ii) *ni+ kiskéyim+a +Ø+w+ ak anima ātayóhhkan-áccimovin+Ø

1 know DIR SG 3 PL that story-SG.OBV
awásis+ak+Ø ēkt +Ø+sékhih+ik +oc +Ø+ik
kid PL PROX PERF 3 scare INVERS CONJ SG 3PL

lit. ‘I-know-them that [the] story scared [the] kids’ [the MV of the matrix clause agrees with the DirO of ‘scare’, i.e., with ‘kids’].

In those cases where the completive clause contains a verbal form supposed to be a passive, the matrix MV agrees with the subordinate clause’s only actant:

(iii) ni+ kiskéyim+a+ +Ø+w+ ak anima

1 know DIR SG 3 PL that
awásis+ak+Ø ēkt +Ø+sékhih+ihc +Ø +ik
kid PL PROX PERF 3 scare PASS.CONJ SG 3PL

lit. ‘I-know-them that [the] kids were scared’ [the MV agrees with the Subject of ‘be.scared’].

This proves that the single actant of the form in question, that is, of ēkt+Ø+sékhih+ihc+Ø+ik, is its Subject.

39 (8.2, (57), p. 250) The main (= active) verbal construction of Dyirbal is converse with respect to what we have in other languages: the Patient is the SSynt-Subject, while the Agent is an OblO; hence, the passive in the English gloss.

40 (8.3, p. 251) This highly philosophical question is put into a nutshell in the following limerick:

A young pansy, who lived in Khartoum,
Brought a lesbian once to his room.
And throughout the whole night
They would argue who’s the right
To do WHAT, WITH WHAT, and TO WHOM!
Chapter 4. Case, the basic verbal construction, and voice in Maasai

1. Introductory remarks

This chapter attempts a logical analysis of the concepts of grammatical case (= case I.1a, in the sense of Chapter 2) and grammatical voice (in the sense of Chapter 3) as applied to data from Maasai, an Eastern Nilotic language of East Africa.1 Case and voice are intimately connected. Case is used to mark different Surface-Syntactic [= SSynt]-roles of Nominal Phrases [= NP], while voice determines which NP depending on a verb plays which Deep-Syntactic (and, as a consequence, Surface-Syntactic) role in the clause. This justifies considering these two inflectional categories together. Moreover, any study of voice in a language entails the study of the most basic verbal construction in this language—the Subject–Predicate Construction. In all languages, this construction can be represented by the following formula:

$$\text{SSynt-Subject} + \text{Main Verb (+ Direct Object)}.$$ 

Consequently I will have to discuss both the relationship between the SSynt-Subject, the DirO, and the Main Verb, and the system of case-marking in Maasai.

All my data on Maasai come from published sources, mainly from Tucker and Mpaayei 1955. In those cases where I use data from other sources, this is explicitly indicated.2

2. Case in Maasai

2.1. The primary data

Standard descriptions of a number of Nilotic languages, most notably of Maasai (Tucker and Mpaayei 1955), but also, for instance, of Kalenjin and Teso (Bennett 1974), state that in these languages the noun has two grammatical cases, traditionally called the nominative and the accusative. They are formally distinguished by different tonal schemes (cf. Tucker and Bryan 1966: 467–649).

Let me first sketch a traditional picture of the Maasai case system—as it emerges in the classic work Tucker and Mpaayei 1955. This picture is more or less applicable to other related languages such as Turkana (Dimmendaal 1983a: 259–268).

With respect to their use, Maasai cases are characterized in Tucker and Mpaayei 1955: 176 and Payne et al. 1994: 286–287 as follows.
Chapter 4. Case, basic verbal construction, and voice in Maasai

The traditional description of case marking in Maasai

The traditional **ACCUSATIVE** marks the noun in one of the following nine **SSynt-roles**:

1. noun spoken in isolation (e.g., used to name something);
2. Direct Object \([\text{DirO}]\) of a transitive verb;
3. SSynt-Subject \([\text{Subject}]\) of a passive verb, denoting, as to be expected with passives, the patient;
4. predicative nominal with the verb ÁRÁ \([\text{to be}]\) (as in \([\text{to be the chief}]\));
5. direct address without a vocative particle \((= \text{‘bare’ address});
6. Possessor in a possessive NP (if introduced by the possessive particle);
7. complement of the associative-conjunctive particle O \([\text{and}]\) (syntactically similar to the Eng. *plus [he]*);
8. prepositionless Indirect and Oblique Objects \([= \text{IndirO and OblO}]\); and
9. “subjects that occur before the verb” \([I \text{ think that these are really Fronted Topics}].

The accusative also marks

10. adjectives and numerals used predicatively \((as \text{in ‘He \([\text{is}]\) sick’ or ‘They \([\text{are}]\) five’}, \text{where ‘sick’ and ‘five’ are in the accusative}).

The traditional **NOMINATIVE** marks the noun in one of the following four **SSynt-roles**:

1. Subject of any verb not in the passive \([i.e., \text{the Subjects of both transitive and intransitive verbs}]\) and of an adjective or a numeral used predicatively;
2. Agentive Complement \([= \text{AgCo}]\) of a passive verb;
3. complement of a preposition \((for \text{instance, TE [at/in/to/with]})\);
4. complement of a vocative particle.

An illustration of some syntactic uses of both traditional cases is given in (1).

(1) Maasai **siluuní** ‘person’ \([\text{ACC: noun form spoken in isolation}]

- The symbol ‘ represents the high tone, ‘ the low tone, and ‘ the falling \((\text{high-low})\) tone; the mid, or flat, tone is not indicated; e, i, œ, o stand for open \(/e/, /i/, /œ/, /o/\).
- A Maasai noun has a gender prefix, which shows number as well; in our case, this is **Ol-**. \(I\text{n some contexts, the gender prefix is dropped, but I will not specify the corresponding rules (see Hollis 1970 [1905]: }\text{12–14, Tucker and Mpaayei 1955: }\text{46–47, Heine and Claudi 1986: }\text{28–39}).

In the dictionary appended to Tucker and Mpaayei 1955, all nouns are quoted in the accusative, the citation form.
2. Case in Maasai

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a. **Accusative forms**

\[1SG \text{ see } \rightarrow \text{act}] \text{oltunjáni} \rightarrow \text{'I-see [a/the] person'}.\]

\[3SG \text{ call } \rightarrow \text{pass}] \text{oltunjáni} \rightarrow \text{'Is-called [a/the] person'}.\]

\[1SG \text{ be }] \text{oltunjáni} \rightarrow \text{'I-am [a] person'}.\]

**b. Nominative forms**

\[3SG \text{ call } \rightarrow \text{act}] \text{oltunjáni} \rightarrow \text{'The person calls the boys'}.\]

\[3PL \text{ call } \rightarrow \text{pass}] \text{oltunjáni} \rightarrow \text{'The boys are called by the person'}.\]

\[\text{at/with [the] person}] \text{oltunjáni} \rightarrow \text{'O person'}.\]

\[\text{with the vocative particle}] \text{oltunjáni} \rightarrow \text{'O person'}.\]

I will not discuss the rules of tonal assimilation, which, among other things, turn the high tones of a wordform to mid tones after a preceding high tone, as in \text{oltunjáni}! Moreover, in all the Maasai examples in this chapter nominal wordforms are represented as they are BEFORE tonal assimilation has taken place, so that the surface form shown is often incorrect as far as tones are concerned.

As noted above, with respect to their form, Maasai distinguishes its cases with tones:

(2) Tucker and Mpaayei 1955: 175–176 (nouns are shown without the gender prefix)

<table>
<thead>
<tr>
<th>Case</th>
<th>Accusative</th>
<th>Nominative</th>
</tr>
</thead>
<tbody>
<tr>
<td>'person'</td>
<td>tunjáni</td>
<td>tunjáni</td>
</tr>
<tr>
<td>'child'</td>
<td>kéráí</td>
<td>kéráí</td>
</tr>
<tr>
<td>'horse'</td>
<td>bártá</td>
<td>bártá</td>
</tr>
<tr>
<td>'fire'</td>
<td>kimá</td>
<td>kimá</td>
</tr>
<tr>
<td>'[a] Maasai'</td>
<td>Máásaní</td>
<td>Máásaní</td>
</tr>
<tr>
<td>'chest'</td>
<td>góò</td>
<td>góò</td>
</tr>
<tr>
<td>'home'</td>
<td>án̄</td>
<td>án̄</td>
</tr>
</tbody>
</table>

A general tendency observed in the production of the nominative is the lowering of the tones of the accusative form. According to Tucker and Mpaayei 1955:
177ff, in nouns of tonal classes I and II the nominative is obtained from the accusative by lowering the tone of all or some syllables of the stem. In nouns of tonal class III, however, some or all syllables of the stem are raised – what we see, for instance, in ‘person’ in (2); but again, the nominative is formally still based on the accusative, and not vice versa. This firmly establishes the fact that the accusative form is basic (= underlying, primary).

The same pattern of the nominative being formally based on the accusative (generally, it is derived by lowering of tones) is also reported in related languages – for example, in Teso (Bennett 1974: 20):

(3) Teso

<table>
<thead>
<tr>
<th>Noun</th>
<th>Accusative</th>
<th>Nominative</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘river’</td>
<td>écilêt</td>
<td>écilet</td>
</tr>
<tr>
<td>‘rivers’</td>
<td>icilétrá</td>
<td>iciléta</td>
</tr>
<tr>
<td>‘man’</td>
<td>étuğanân</td>
<td>étuğanan</td>
</tr>
<tr>
<td>‘these houses’</td>
<td>itogólú</td>
<td>itogoilú</td>
</tr>
</tbody>
</table>

A similar situation exists in Turkana; Dimmendaal (1983a: 261 – 264) provides a detailed description of the tonal apophony (also lowering) by which the nominative is formed from the accusative in that language.

2.2. The problem stated

The use of case terminology found up to now in the description of Nilotic languages raises serious objections. Specifically, the following practices seem highly problematic to me:

1. Applying the label ‘accusative’ to the form of the noun in isolation, used to name an object or a fact – in other words, to the lexicographic (or citation) form, which is obviously the basic form of the noun. Tucker and Mpaayei (1955: 175), for example, begin the discussion of cases in Maasai with the accusative; the accusative form is also the one quoted as basic in their dictionary.

2. Applying the label ‘accusative’ to the form used for bare address or to the form of the noun considered to be the Subject of a passive verb. Thus, Keenan (1976: 326 – 328) exploits the idea of a Subject in the accusative to support his theory of ‘partial subjecthood,’ saying that the DirO of a transitive verb in Maasai becomes, with the passive form of the verb, a derived Subject that takes on the characteristic syntactic position of a basic subject, but not its case-marking. This point is convincingly attacked by Perlmutter and Postal (1984: 159) – but, again, their reasoning is anchored in calling the basic form of the noun the ‘accusative,’ so that the confusion remains.
2. Case in Maasai

3. Applying the label ‘nominative’ to the form of the noun governed by a preposition or a particle.

4. Applying the label ‘accusative’ to the morphologically basic, i.e. unmarked, form of the noun, while its morphologically complex, or marked, form is labeled as ‘nominative.’

Using the terms *accusative* and *nominative* in the indicated way disrupts the generally accepted doctrine on grammatical case and runs counter to many universalist theories of syntax. It is detrimental to linguistic typology and even more so to all attempts to develop a universal linguistic theory and a corresponding linguistic metalanguage – that is, a formalized coherent system of concepts for the whole of linguistics.

2.3. The proposal: Changing the names of the cases

As far as I can judge, the difficulty here arose, in the first place, because the founders of Nilotic linguistics chose to apply case names according to each case’s main syntactic function. Therefore, following the syntactic pattern of Latin, the case which marks the Subject was called the nominative, while that which marks the DirO automatically got the name of the accusative. However, such a practice cannot be condoned for a number of reasons: first, the syntactic patterns of one language should not be mechanically transposed to another; second, and even more importantly, by linking the case of a noun N and the SSynt-role of N too rigidly we blur the extremely important distinction between cases and syntactic roles, thus blocking, among other things, the possibility of saying readily that, in a language \( L \), a given SSynt-role can be marked by several different cases, while a given case can mark several different SSynt-roles.

My solution is simple and drastic. It derives from the following definition of nominative case.

**Definition 4.1: Nominative Case**

In a language \( L \) with the inflectional category of case, the particular case (= case\( I.1b \)) that marks the noun used to NAME an object or a situation – i.e., that marks a noun in isolation – must be called the *nominative*, whatever role it plays in the syntax of \( L \) and whatever its formal exponent (Chapter 2, 9, p. 152; Mel’čuk 1986: 71).

In other words, I propose to restore to the nominative its etymological meaning: ‘the case of naming’.

If this proposal is accepted, then Maasai (like all related languages) has two cases: the *nominative*, the former ‘accusative’) and the *oblique* (or else *ergative* or *subjective*), the former ‘nominative’). The resulting two-case system is
typologically highly plausible: it is similar, for instance, to that of Kabardian/Circassian, Kurdish or Old French. With this new terminology, the description of the use of cases in Maasai ceases to be exotic and becomes quite ordinary.

The proposed description of case marking in Maasai

The nomina tive marks nouns in one of the following eight SSynt-roles:

1) the basic (lexicographic) form of the noun—that is, the form spoken in isolation;
2) DirO of a transitive verb (as it typically happens in numerous languages in the ergative construction);
3) predicative nominal with the verb ĀRA ‘[to] be’;
4) bare form of address (without a vocative particle);
5) Possessor (the complement of the possessive particle in a possessive NP);
6) complement of the associative-conjunctive particle O ‘and’ (= ‘plus’);
7) prepositionless IndirO and Oblo;
8) Fronted Topic.

The nominative also marks

9) adjectives and numerals used predicatively.8

The set of SSynt-roles of the nominative in Maasai does not include the noun denoting the patient of a passive form (which it should, so to speak, inherit from the ‘former’ accusative, see Item 3 in “The traditional description of case marking,” p. 264). The reason is that I believe that this sentence element is the DirO, not the Subject, of what is considered a passive form and thus corresponds to Item 2 in the revised list above. This will be explained more fully in Section 3.

The oblique marks nouns in one of the following four SSynt-roles:

1) Subject of any verb (including ‘[to] be’) and of any predicative adjective or numeral;
2) AgCo of a passive verb;
3) complement of a preposition;
4) complement of a vocative particle.

My nominative is also the formally basic, unmarked form, which has to be stored in the lexicon; the oblique is obtained from it by a tonal apophony—i.e., by replacing the tonal scheme of the nominative by another tonal scheme, as indicated in the end of Subsection 2.1. It is well known that the nominative tends to be formally unmarked—in other words, to have a zero exponent (a zero suffix or a zero apophony). This means that if language L has one unmarked case
3. The basic verbal construction in Maasai

If the case names are changed as suggested above, the only exoticism (if this is really an exoticism) that remains in the description of Maasai is the following:

The basic verbal construction of Maasai is an ergative construction, since the Subject of any verb, including the verb ‘[to] be’, and of any predicative adjective/noun, is never in the nominative: it is in the oblique.

NB: From now on, the Maasai case names will be used in this chapter (and in the rest of the book) only as proposed—that is, henceforth, NOM = my nominative, and OBL = my oblique.
Of course, the truth of this statement hinges upon the definition of ergative construction we adopt. I uphold the definition of Ergative Construction as proposed in Mel’čuk 1978 and then developed in Mel’čuk 1988a: 182, 251, 258–259ff and Mel’čuk 1992: 105ff.

Definition 4.2: Ergative Construction

An Ergative Construction of language $\mathcal{L}$ is a construction in which the Subject:

1) can potentially express the Causer (that is, with appropriate verbs in the appropriate diathesis);
2) is marked by a case other than the nominative, such that the choice of this case does not depend on the meaning of the Subject itself (i.e., on its determinacy, partitivity, etc.).

In other words, in a prototypical Ergative Construction of $\mathcal{L}$—with a semantically transitive verb like ‘[to] kill’, ‘[to] build’, ‘[to] write’, etc.—the Subject expresses the Causer; this is sufficient to call by analogy any construction “Subject + MV” in $\mathcal{L}$ ergative, provided its Subject is not in the nominative.

Consider the following Maasai sentences (the Subject and the name of its case are bold faced; tonal assimilations are not shown):

(4) a. 
| $\hat{A}$ | +rik | +Ø | nanó | Sirónkà | ‘I nauseate Sironka’.
| 1SG.SUB-3.OBJ | cause.nausea | ACT | I-OBL | S.-NOM |

vs.

| $\hat{\hat{A}}$ | +rik | +Ø | nanó | Sirónkà | ‘Sironka nauseates me’.
| 3SG.SUB-1.SG.OBJ | cause.nausea | ACT | S.-OBL | I-NOM |

b. 
| $\hat{\hat{A}}$ | +d5l | +Ø | nanó | Sirónkà | ‘I see Sironka’.
| 1SG.SUB-3.OBJ | see | ACT | I-OBL | S.-NOM |
3. The basic verbal construction in Maasai

Áa
3SG.SUB-1SG.OBJ see ACT
+Sírònkà
S.-OBL nánò

Áá
1SG.SUB-2SG.OBJ see ACT
+dsl +Ø
+nànó
I-OBL iyìè

Kí
2SG.SUB-1SG.OBJ see ACT
yiye
youSG-OBL nánò

É
3SG.SUB-3SG.OBJ see ACT
+Sírònkà
ox-SG.OBL 3lkitèŋ

Éé
3SG.SUB-3SG.OBJ see ACT
+Sírònkà
ox-SG.NOM 3lkitèŋ

I consider the Synt-Subject of a Maasai clause to be the same NP that is traditionally said to be the Subject. I cannot discuss here in detail the factors taken into account when deciding the subjecthood of Maasai NPs – basically, these are word order and agreement: the Subject immediately follows the Main Verb and, in case of an intransitive verb, determines its person and number. In a transitive verb, the DirO also participates in agreement, as seen in (4a – b): the MV in ‘I see Sironka’ vs. ‘I see youSG’ has different forms, as it does in ‘Sironka sees me’ vs. ‘Sironka sees the ox’.10 (Person-number agreement is manifested in mega-morph, or portmanteau, verb prefixes.) Although in the sentences in (4b) the Subject does not express the Causer, in (4a) it does; therefore, the Subject + MV construction which is used in Maasai for all verbs can be called ergative according to Definition 4.2 above.

Thus, the price of changing the case names as suggested in 2.3 is the acceptance of an Ergative Construction for all verbs in Maasai. To show that this price is not too high, I will make the following two points: this type of (ergative) construction 1) is typologically plausible (it is widely found outside of the Nilotic family) and 2) is widespread in the same geographical area where Maasai is spoken.

1) An ‘all-purpose’ ergative construction

Sentences (4a – b) remind one of the prototypical ergative construction as found in Chukchee, Koryak, Hindi, Nepali, Kurdish, Georgian, etc. An objection, however, might be raised in connection with the following fact: the construction that we want to call ‘ergative’ is in fact more general than in all those languages – in Maasai the oblique case marks the Subject not only with transitive verbs, but also with intransitive verbs and even with adjectives and numerals used predicatively; here are a few examples:
Chapter 4. Case, basic verbal construction, and voice in Maasai

(5) a. N é dón kíshu óó Keêkonyokie te Kinopóp
    CONT1 3PL.SUB descend FEM cow-PL.OBL POSS to
    'And then the cows of Kekonyokie came down to Kinopop'.

b. É 'puó iltuqaná 'The people go'.
    3PL.SUB go-PL.PRES person-PL.OBL

c. Biyót iltuqaná 'The people are healthy'.
    healthy-PL.NOM person-PL.OBL

d. Á rà nanó sápok 'I am big'.
    1SG be 1-OBL big-SG.NOM

e. Ná bo nanó, lit. 'Am-one[FEM] 1 = [I [a woman] am alone'.
    FEM one 1-OBL

Some linguists would probably be reluctant to call the non-nominative subject construction presented in (5) ergative; they might prefer to call it active or something else. My definition of ergative construction does, however, take the construction in these examples to be ergative. Still, at this juncture, I by no means insist that the name of ergative construction be applied to Maasai finite verbal clauses: the acceptance/rejection of this name depends on whether or not my definition of the ergative construction is accepted, which is not important in this chapter. However, it is clear that the basic verbal construction of Maasai is essentially different from the nominative construction of Romance, Slavic, Germanic, Finno-Ugric, Turkic, or Semitic languages, in which the SSynt-Subject is always – putting aside a few exceptional and questionable cases – in the basic lexicographic (= citation) form, legitimately called the nominative. The Maasai construction is not nominative, and, faute de mieux, I will call it ergative.

Languages in which the SSynt-Subject is always in a case other than the nominative (i.e., from the case of naming) are quite well known and are not terribly rare. Let me cite three:

– First, Megrelian, where the ergative case in -k (different from the nominative in -i) marks the Subjects of all verbs: e.g., Koč+k kumortu 'The-man came' and Koč+k gaagibu čqar+i 'The-man heated the-water'.

– Second, Wappo, where the subjective case in -i (opposed to the zero nominative suffix) marks all Subjects, even those with passive forms and adjectival verbs: Chic+i lołkhe 'The-bear got-caught'; Chic+i tucākhi 'The-bear is-big'.

– And third, Japanese, with its subjective case in -ga (the nominative having a zero suffix) used for all Subjects. (The thematic marker -wa replaces case markers of Japanese nouns, so that a Subject as a communicative Theme does not have -ga on the surface.)
2) An ‘all-purpose’ ergative construction in Eastern Africa

Now, by far the most interesting observation I can make here is that many such languages are found in Eastern Africa, not only among Paranilotic languages, but also among Berber-Libye, Cushitic, and Nilo-Saharan languages. Here is a telling example from Berber (Bader and Kenstowicz 1987). In this language the Subject, when in a neutral position (immediately following the MV), is marked by the oblique case with all verbs, and the DirO (if there is one), by the nominative (= citation form):

(6) a. Ičča *weqžun* amšiš (The *dog* ate the *cat*).
    
    eat-AOR dog-SG.OBL cat-SG.NOM
    
    vs.
    
    Ičča *wemšiš* aqžun (The *cat* ate the *dog*).
    
    eat-AOR cat-SG.OBL dog-SG.NOM

A more traditional name for the Berber cases is *free state* [= NOM] and *construct state* [= OBL], but actually these forms are quite normal cases. (Sasse 1984: 120-122 draws a very convincing parallel between Berber and Cushitic case distribution and marking. See also Aikhenvald 1986 for some data and further references concerning the non-nominaive character of the syntactic system in Afro-Asiatic languages, with special attention to Berber.)

Moving to Cushitic, let us consider, for instance, Oromo (= Galla):

(7) *Muk* +ni gog +e (The *wood* dried up).

    wood OBL dry PAST.3SG.MASC

    vs.

    *Terfaa*+n muka+Ø gog+s +e (Terfaa dried up the wood).

    OBL wood NOM dry CAUS PAST.3SG.MASC

The Subject is always marked with the oblique case, while the DirO is in the nominative: it is the same situation as in Maasai, Teso, Turkana, etc., on the one hand, and in Kabyle Berber, on the other.

A similar phenomenon is found in Somali: the Subject phrase has a special marker, attached to the rightmost element of the phrase, while the DirO and other complements are in the citation (= basic) form. It is enough to leaf through the descriptions of a few Cushitic (e.g., Beja: p. 108, Dasenech: p. 205), Burji and Darasa: p. 253) and Nilo-Saharan (e.g., Mursi: p. 546) languages in Tucker and Bryan 1966 or to look through Bender (ed.) 1976 to recognize the familiar pattern: the basic (absolute, i.e. unmarked) form of the noun – called, as a rule, the accusative – is used in isolation and for all objects and complements, while the Subject (either uniformly or only in the postverbal position in the presence of a preverbal DirO, as in Mursi) has special marking (and this form is traditionally called the nominative):
Chapter 4. Case, basic verbal construction, and voice in Maasai

(8) a. Darasa
   
   Dulla ['stick': citation form] iyyedage ['He] brought [the] stick'.
   vs.
   Dull+ i enkeme ['The] stick is-broken'.

b. Mursi
   
   Itim hiri ['man': citation form], lit. 'Kindles the-man'.
   vs.
   Mor ['calf': citation form] lam hiri+ o, lit. '[For the] calf looks [the] man'.
   vs.
   Hiri lam mor, lit. 'The-man looks [for the] calf'.

It stands to reason that the names of both cases should be changed as proposed above. It is also clear that the ergative construction of the type described—all the Subjects in the oblique, and all the DirOs in the nominative—is really typical of many languages of North-East Africa. In this respect, one could probably talk of a Sprachbund (this idea has been advanced before: see, for example, Bennett 1974 and Bender (ed.) 1976: 195, ftn. 4). I would like to emphasize that no less an authority than B. Andrzejewski (1984) insists on the similarity of the way that cases are used and marked in Cushitic (Somali, Oromo) and Paranilotic (Maasai, Kalenjin). Sasse (1984) goes even further and hypothesizes the same type of syntactic case use not only in Proto-Cushitic, but in Proto-Semitic as well.

Therefore, the idea that the basic verbal construction of Maasai is ergative should not be perceived as something exotic. Indeed, a well-known Chadic specialist—Z. Frajzyngier (1984a)—has already proposed that in Proto-Chadic, “the unmarked noun phrase which occurred with a transitive verb was the semantic Patient, and not the semantic Agent as in present Indo-European languages and many present Chadic languages” (p. 141), so that, consequently, the basic transitive subject construction of Proto-Chadic was essentially different from the ‘normal’ nominative construction: it is an example of what I call the ergative construction. Moreover, in Frajzyngier 1984b one finds further facts that argue for the ergative construction in Proto-Chadic. True, the language investigated—Mandara—shows ergative features quite different from what we see in Paranilotic, etc. More specifically, the transitive verb in Mandara has a special type of agreement with its DirO (reduplication of the stem for the plurality of the DirO). Yet Frajzyngier’s analysis in both papers clearly shows that the presence of the ergative construction in Chadic languages is not at all amazing. Finally, let me point out that the ergative construction is also found in Western Nilotic (Andersen 1988), which is already very close to Maasai.
An interesting comparison (or maybe a parallel?) can be drawn between Maasai and Nias, a Malayo-Polynesian language spoken in Indonesia (Brown 1994). Any Nias noun has two forms, distinguished by the mutation of the initial consonant or vowel, according to the three following rules:

\[ /C_{[-\text{voiced}]}/ \Rightarrow /C_{[+\text{voiced}]}/, \quad /C_{[+\text{voiced}]}/ \Rightarrow /C_{[+\text{prenasalized trill}]/}, \quad /V/ \Rightarrow /\text{nV}/ \]

The unmutated form is used as the citation form of the noun and is, in my terminology, the nominative; I take the mutated form to be an oblique. Here are a few examples:

<table>
<thead>
<tr>
<th>NOM</th>
<th>OBL</th>
</tr>
</thead>
<tbody>
<tr>
<td>tödö</td>
<td>dödö</td>
</tr>
<tr>
<td>kavali</td>
<td>gavali</td>
</tr>
<tr>
<td>bavi</td>
<td>mbavi</td>
</tr>
<tr>
<td>ñomo</td>
<td>nomo</td>
</tr>
<tr>
<td>ñulö</td>
<td>gulö</td>
</tr>
</tbody>
</table>

In Nias, the nominative marks the following syntactic roles (cf. the indications found in Pätsch 1964: 597 – 599):

1) the Subject of a transitive verb;
2) ‘bare’ form of address;
3) a fronted topic;
4) a free form in answers;
5) predicative nominals (as in He is a friend of mine);
6) the complements of some prepositions/conjunctions (meaning ‘like ...’, ‘plus ...
7) the object complement of a nominalized verbal form (as in house sweeping or house sweeper);
8) non-governed adverbials (= circumstantial, as in I am looking for someone as my father [= ‘to be for me as my father’] or He hit a pig with a spear);
9) apposition (as in Take your food, crocodile liver);
10) the non-initial members of a coordinate structure, even if the first member is in the oblique (as in He killed a pig [OBL] and a dog [NOM])

The oblique marks:

1) the Subject of an intransitive verb (including the Subject of an adjective and of a predicative nominal);
2) the DirO of a transitive verb;
3) the Possessor (as in the house of-Father or inhabitants of-the-village);
4) the complement of most prepositions (with directional-locative senses).
I accept without question Brown’s (and Pätsch’s) syntactic role assignment; in point of fact, it is necessary to supply special substantiation for such roles as Subject vs. DirO, but I have neither sufficient information nor sufficient space to do so.

Taking major syntactic roles for granted, it appears that the distribution of case markings for syntactic roles in Nias is, as one can see, typologically quite plausible. However, with respect to Maasai, Nias offers, in a sense, a ‘mirror’ image of case marking: Nias does not have an ergative construction (in all its transitive sentences the Subject is in the nominative), but it has a pathe tive construction (see Mel’čuk 1988a: 259; Chapter 3 of this book, Note 11, p. 253), although in intransitive sentences only. With respect to prototypical ergative languages, such as Georgian or Chukchee, Nias behaves similarly in that it treats the Subjects of intransitives and the DirOs of transitives in the same way, yet it uses the opposite case marking pattern: the nominative marks the transitive Subject, where Georgian uses the ergative and Chukchee the instrumental, and the oblique marks the intransitive Subject and the transitive DirO, where both Georgian and Chukchee use the nominative.

4. Voice in Maasai

The last problem that requires clarification is that of voice in Maasai. This language has a special verbal form marked with the suffix -ki (with the allomorphs -kI, -i, and -I, whose distribution is more or less phonemically conditioned). This form is traditionally called the ‘passive’ (for a concise overview, see Heine and Claudi 1986: 74–84). However, as Tucker and Mpaayei themselves observe (1955: 79), in Maasai, “from the point of view of verb conjugation, the Passive could be regarded as a specialized form of the 3rd person active, in that it takes a contained object. (Compare French On vous appelle for: ‘You are called.’)” As it turns out, this observation is both astute and relevant to the question of voice in Maasai, although one might reproach the authors for some terminological inconsistency since they continue to present it as a passive. As we will see below, the actual state of affairs in Maasai corresponds to neither of Tucker and Mpaayei’s terminological choices.

The key to the understanding of the nature of the ki-form in Maasai lies in establishing its SSynt-Subject. J. Greenberg, in his elegant analysis (1959), has shown, beyond the shadow of a doubt, that the Subject of a passive form in Maasai is in fact not the NP in the nominative (= traditional ‘accusative’), but a zero 3rd person plural dummy lexeme (historically meaning ‘people’). His cogent arguments can be summarized in the following two points:
Agreement of the Main Verb

In Maasai, the MV always agrees in number and person with the Subject, and a transitive MV also agrees with its DirO. Now, the passive Subject person-number prefixes for a given person (of the patient) are the same as the active-transitive Object person-number prefixes of that person combined with a 3rd person Subject:

(9) Maasai

\[
\begin{array}{llll}
\text{passive} & \text{active} & \text{– with the 3rd person Subject} \\
\text{‘I am nauseated’} & \acute{a}a + rik + i & \text{‘He/They nauseate(s) me’} & \acute{a}a + rik \\
\text{‘You}_{SG} \text{are nauseated’} & k\acute{i} + rik + i & \text{‘He/They nauseate(s) you}_{SG}’ & k\acute{i} + rik \\
\text{‘He is nauseated’} & \acute{e} + rik + i & \text{‘He/They nauseate(s) him’} & \acute{e} + rik \\
\text{‘We are nauseated’} & \acute{e} + rik + i & \text{‘He/They nauseate(s) us’} & \acute{e} + rik \\
\text{‘You}_{PL} \text{are nauseated’} & \acute{e} + rik + i & \text{‘He/They nauseate(s) you}_{PL}’ & \acute{e} + rik \\
\text{‘They are nauseated’} & \acute{e} + rik + i & \text{‘He/They nauseate(s) them’} & \acute{e} + rik \\
\end{array}
\]

The choice of agreeing prefix indicates that the ‘invisible’ Subject of the passive form is 3rd person.

Plural stem verbs

In Maasai, an infinitive governed by a MV agrees in number with the Subject of the MV, not with its own – explicit or presumed – Subject (the corresponding grammemes on the infinitive and on the MV are boxed):

(10) Maasai (Tucker and Mpaayei 1955: 65)

\[
\begin{array}{lll}
\acute{a} & +\text{tārētō} & \acute{\text{altōnā}}_{SG} \text{ person-SG.NOM} \\
\text{SUB-3.OBJ} & \text{helped} & \text{ā} + \acute{\text{mūk}} \text{ INF.} \text{SG brew} \\
\text{INF.}\text{SG} & \text{beer-SG.NOM} \\
\theta\text{ltōnānā} & \text{person-PL.NOM} \\
\end{array}
\]

‘I helped the person/the people brew beer’.

vs.

\[
\begin{array}{lll}
\acute{k} & +\text{taretō} & \acute{\text{altōnā}}_{PL} \text{ person-PL.NOM} \\
\text{SUB-3.OBJ} & \text{helped} & \text{āa} + \acute{\text{mūk}} \text{ INF.}\text{PL brew} \\
\text{INF.}\text{PL} & \text{beer-SG.NOM} \\
\theta\text{ltōnānā} & \text{person-PL.NOM} \\
\end{array}
\]

‘We helped the person/the people brew beer’.

As one can see, the infinitive ‘[to] brew’ agrees in number with the Subject of ‘help’ (‘I’ vs. ‘we’) rather than with its own understood agent (‘person’ vs. ‘people’).

A few Maasai verbs have two different stems, one used with the Subject in the singular, and the other with the Subject in the plural—for instance, lō [sin-
gular Subject] ~ púò [plural Subject] ‘[to] go’, lotú [sg] ~ puonú [pl] ‘[to] come’, tön [sg] ~ tóni [pl] ‘[to] sit’, nyokië [sg] ~ nyokíoo [pl] ‘[to] be red’, etc. In this connection, Greenberg cites three idiomatic constructions in which the passive of the two-stem verbs ‘[to] go’, ‘[to] come’ and ‘[to] sit’ is used as an auxiliary and governs the infinitive (Tucker and Mpaayei 1955: 88). The first two constructions are periphrastic future passives (something like “They”-are-gone/come me to-beat ≈ ‘I will be beaten’), and the third is another periphrastic passive with the meaning ‘by someone who stayed for the purpose’ (“They”-are-sat me to beat ≈ ‘They stayed to beat me’). In these constructions, a twofold choice between singular and plural must be made, first in employing the singular or plural stem of the auxiliary verb..., and secondly, in regard to the form of the infinitive. In all instances the choice is unequivocally plural” (Greenberg 1959: 173). Thus, to say ‘I will be followed’ Maasai uses (11):

(11) Áa + púó +í áà +sój
3PL.SUB-1SG.OBJ go[PL] PASS INF[PL] follow,
lit. “They”-are-gone-me to-follow.

Here are two more examples (from Heine and Claudi 1986: 80) to illustrate this phenomenon – namely, to show that, if an infinitive syntactically depends on a passive form, it has plural agreement (12a), and if this passive form belongs to a two-stem verb, the plural stem is used, although the understood agent of the infinitive is singular (12b).

(12) a. Ê +síg +í nkaji áà +rany
3PL.SUB-3SG.OBJ enter PASS house-SG.NOM INF[PL] dance
lit. [“They”] are-entered house to-dance, = ‘People enter the house to dance’.

b. Áa + puonunú+i áà +nuraa
3PL.SUB-1SG.OBJ come[PL] PASS INF[PL] look
lit. [“They”] are-come-me to-see’, = ‘I will come to be looked at’.

The choice of the plural agreeing prefix on the infinitive indicates that the ‘invisible’ Subject of the passive form is in the plural.

Based on this evidence, we are forced to analyze the sentences in (11) and (12) as having a zero dummy Subject O_{(pl)}^{EMPTY} – an indefinite-personal pronoun, roughly equivalent to Eng. it, Fr. il, Ger. es, but in the plural (i.e., “they”). Turkana (Dimmendaal 1983b: 27) has – in a quite similar, although not identical construction – “a phonetically empty (= zero) pronominal subject PRO1 which is semantically animate and plural.” The Maasai dummy Subject most probably was etymologically also semantically animate, but today it is semantically empty: the ‘humaneness’ present in the meaning of the passive form is included in the meaning of the passive.
As a result, what is often considered the Subject of the Maasai passive (= the NP that denotes the patient), is by no means its Subject: this NP is the DirO of the verb (this treatment is explicitly proposed in Payne et al. 1994). This NP is invariably in the nominative, as are all DirOs in Maasai, both pronouns and nouns:

(13) Maasai

PASSIVE

'I am seen' áa + d3l + i nánó
'YouSG are seen' kí + d3l + i iyié
'He is seen' ê + d3l + i nnyé
'We are seen' ê + d3l + i iyióók
'YouPL are seen' ê + d3l + i intúí
'They are seen' ê + d3l + i nince

ACTIVE (with the 3rd person Subject)

'He/They see(s) me' áa + d3l nánó
'He/They see(s) youSG' kí + d3l iyié
'He/They see(s) him' ê + d3l nnyé
'He/They see(s) us' ê + d3l iyióók
'He/They see(s) youPL' ê + d3l intúí
'He/They see(s) them' ê + d3l nince

Still, the form under discussion cannot be simply called ‘impersonal active,’ as Dimmendaal (1983a: 72 and passim) appropriately calls the corresponding form in Turkana. The crucial difference is that while in Turkana an Ag(entive) Co(mplement) (= ‘by N’) is impossible with this form, it is possible with what Tucker and Mpaayei call ‘passive’ in Maasai:

(14) É +rík +i nkishú aainei lmoórran
3PL.SUB-3PL.OBJ lead PASS cow-PL.NOM my (young)warriors-OBL

'My cows are/ will be lead by (young) warriors' (Tucker and Mpaayei 1955: 81, §94).

É +ípót+i énkeráí
3PL.SUB-3SG.OBJ call PASS child-SG.OBL

'He is called by the child' (Tucker and Mpaayei 1955: 176, (ii)).

É +tróór +aôk +kí yióók iltogáná
3PL.SUB-1PL.OBJ speak APPL.PAST PASS us-NOM person-PL.OBL

'We were greeted by the people' (Tucker and Mpaayei 1955: 132, §172).

[The APPL(icative) form of IR Ô [to] speak’ means Ô[to] greet’.]

É +ísis +i iltogáná
3PL.SUB-3SG.OBJ praise PASS person-PL.OBL

'He is praised by the people' (Tucker and Mpaayei 1955: 176, (ii)).
It is true that in most examples of passives given by Tucker and Mpaayei (1955) the AgCo is missing (it is contextually understood or simply irrelevant); so it is possible that the passive without AgCo is preferred in Maasai. Yet some unambiguous examples with the AgCo in the oblique are present and the possibility of expressing an AgCo is explicitly mentioned by the authors (p. 176: “when acting as ... agent of a passive verb, ... the noun ...”). Therefore, the verbal form which I am discussing represents the demotion of the SSynt-Subject to an AgCo, the real Subject being replaced by a dummy—a zero lexeme of the 3rd person plural, meaning “people”.

The construction is superficially very similar to what is observed in the following French sentences:

(15) Il a été raconté beaucoup d’histoires horribles par les survivants
lit. ‘It has been told many awful stories by the survivors’.

Il a été voté par ce parlement des lois qui nous semblent iniques
lit. ‘It has been voted by this parliament laws which seem iniquitous to us’.

But in actual fact, the Maasai and the French constructions are essentially different. In French, the postverbal NP is by no means a DirO, while in Maasai it is (see Chapter 3, 4.3.4, p. 217ff for a detailed discussion of the French construction, which implements an impersonalized full promotional passive). In addition, the dummy Subject Il in French is in the singular, while in Maasai, the dummy Subject Ø EMPTY is in the plural. Also, the French Il is not phonologically zero while the Maasai dummy is.

From the viewpoint of the general calculus of voices proposed in Chapter 3, 4.2, the Maasai situation exemplifies the following modification of the basic diathesis of the verb (Item 3, p. 201):

\[
\begin{array}{ccc}
X & Y & I \\
 & I & II \\
\end{array} \quad \Rightarrow \quad \begin{array}{ccc}
X & Y & III \\
III & & II \\
\end{array}
\]

The phrase which in the basic diathesis of the lexical unit L is L’s DSyntA I (= the SSynt-Subject) and corresponds to its Sem(antic) A(ctant) X becomes its DSyntA III (= its AgCo) in the derived diathesis of L, while L’s DSyntA II (= its DirO) remains in place. Moreover, on the Surface-Syntactic level, a dummy element (in Maasai, the zero pronoun Ø EMPTY) is introduced at the Surface-Syntactic level and becomes the Subject of the verb form under consideration.

This voice is called Partial Demotional Passive. Often it is referred to as Impersonal Passive (impersonal means here having an impersonal pronoun as a dummy SSynt-Subject; on the term impersonal passive, see Chapter 3, 4.3.4, p. 216). Thus we come to roughly the same conclusion as Perlmutter and Postal (1984: 159 – 165), who argued—against Keenan (1976)—that the Maasai passive
is, in point of fact, an impersonal passive—that is, a passive without a ‘real’ Subject. A very similar type of partial demotional passive is found in Ukrainian, see Chapter 3, 4.2, Item 3, (12), p. 202.

But this is still not all. Heine and Claudi (1986: 80) report that many Maasai speakers do not allow the AgCo to appear with a passive form: “For the majority of Maa [= a dialect of Maasai—IM.] speakers, the use of the passive suffix and agent coding are mutually exclusive.” Some allow the AgCo, but only after an intonation break as a ‘cleft’ element; some allow it only under certain conditions. The same statement is found in Payne et al. 1994: 301–302. I am in no position to know the truth about the use of the AgCo in Maasai and, moreover, it is quite possible that there is no single truth: the Maasai passive construction is in a transitional stage (Heine and Claudi 1986: 82), so that numerous hesitations and disagreements among speakers are the norm. To account for this, we need TWO different descriptions of the construction: one with and one without an AgCo. For the passive form that potentially takes an AgCo, such a description has already been given—Partial Demotional Passive. However, the form that precludes an AgCo shows a different type of diathesis modification: there is no permutation of Deep-Syntactic actants, since the NP that is inherently DSyntA I, corresponding to X, is suppressed rather than demoted, and the inherent DSyntA II retains its role. The addition of a dummy SSynt-Subject (= the zero pronoun Ø EMPTY (3pl)) does not change the nature of this operation. The corresponding modification of the basic diathesis can be represented as follows:

\[
\begin{array}{ccc}
X & Y & \implies \\
\text{I} & \text{II} & \\
\end{array}
\]

This is a Subjectless Suppressive (Chapter 3, 4.2, Item 5, p. 203ff). Such a description treats the Maasai -ki/-i form that may not take the agentive NP as being structurally similar to the Spanish se-form in (16):

(16) Sp. Se construye tres puentes

lit. ["It"] builds itself three bridges\(^1\). = ‘Three bridges are being built’

[no real Subject is possible nor is an AgCo; the dummy (= empty zero) Subject is a 3rd person singular pronoun].

According to Dimmendaal’s description (1983a: 132–133, 1983b), this is what Turkana has (as ‘Impersonal Active,’ in Dimmendaal’s terminology).

As is to be expected, the Subjectless Suppressive can also be formed in Maasai from intransitive verbs. This fact, first established in Perlmutter and Postal 1984: 164, is illustrated in Payne et al. 1994: 289: e+kwett+i meiabâyki ‘There-will-be-running tomorrow’ (where no NP denoting the agent can be added), e+ran+yi ‘There-is-singing’, etc.
Chapter 4. Case, basic verbal construction, and voice in Maasai

To sum up: the Maasai verbal form in -ki/-i can be described in two mutually exclusive ways. In the speech variety which allows an AgCo (in the oblique case), the -ki/-i form is a partial demotional passive, while in those varieties where an AgCo is excluded, it is a subjectless suppressive. This difference parallels very closely that between the Impersonalized full passive and the Impersonalized partial (= agentless) passive in French:

(17) a. 157 ordinateurs [= I] ont été vendus par nos représentants [= II] ⇒
157 computers have been sold by our representatives.

Il a été vendu par nos représentants [= II] 157 ordinateurs [= I]
It has been sold by our representatives 157 computers.

b. Des ordinateurs personnels [= I] se vendent partout
(*par nos représentants [= II]) ⇒
lit. 'Personal computers sell themselves everywhere (*by our representatives).

Il se vend partout des ordinateurs personnels [= I] (*par nos représen-
tants [= II])
lit. 'It sells itself everywhere personal computers (*by our representatives)'

(see Items 3 and 5 in Subsection 4.2, Chapter 3, p. 201 and 203ff).

Another example of the historical development of a passive form with a dummy 3PL subject (= impersonal “they”) from an active form parallel to the Maasai case is reported in Kimbundu (Givón 1990: 606–607). Here, the typical Bantu 3PL-subject prefix a- of the active form has been reinterpreted as the passive marker; the object marker, which appears in the active form only when the DirO is fronted (for topicalization purposes), has become—a in the passive—a subject marker:

(18) a. Aana a +mono Nzua
children 3PL.SUB see John
'The children saw John'.

Aana a +mono meme
children 3PL.SUB see I
'The children saw me'.

b. Nzua, aana a +mu +mono
John children 3PL.SUB 3SG.OBJ see
'John, the children saw him'.
Meme, aana a +ngi +mono
I children 3PL.SUB 1SG.OBJ see
‘Me, the children saw me’.

c. Nzua a +mu +mono (kwa meme / aana)
John PASS 3SG.SUB see by I / children
‘John was-seen by me/by the children’.

Meme a +ngi +mono (kwa Nzua / aana)
I PASS 1SG.SUB see by John / children
‘I was-seen by John/by the children’.

As we see in these examples, in Kimbundu the end of this diachronic path is different from that in Maasai: here, a full passive has emerged, with the DSyntA II [= DirO] being promoted to the DSyntA I [= Subject], and the Subject being demoted to an AgCo.

Notes

1 (1, p. 263) Nilotic languages are also known as Nilo-Hamitic or Paranilotic (see Tucker and Bryan 1966: 443).
2 (1, p. 263) I became first interested in case and voice in Maasai more than thirty years ago, as a consequence of the following episode. At a linguistic seminar in Moscow, where I was presenting a paper, I said that I wanted to define the nominative case as the case of naming – as traditional grammar has always done. One of the listeners, a young linguist named Icxak Kozinskij, stood up to formulate an objection: ‘Generally speaking, your definition will not work. There are languages – for instance, Maasai – where the nominative is not the case of naming. In such languages, objects and events are named in the accusative!’ I did not know what to answer: I was completely unaware of the existence of languages of this type. Therefore, I limited myself to the remark that then my theory would apply only to languages whose speakers behave like everyone else and name the external world’s objects using the nominative form. However, the thorn that Kozinskij had planted remained under my skin. Only 20 years later was I able to formulate the first sketch of an answer: we simply have to reverse the names of grammatical cases in Maasai and several related languages. Maasai speakers behave in an absolutely normal way – it is linguists who use their terminology upside down. But to prove and substantiate this claim, a few more years of work were needed. Unfortunately, Dr. Kozinskij died before my results were ready, so that I was unable to profit from his renewed criticisms. I would like to dedicate this study, which was prompted by his remarks, to his memory. Habent sua fata sententiae hominesque...
Quite probably, only the high and the low tones are phonologically relevant, while the mid and the falling ones are simply phonetic results of tonal interaction. However, I am using the data from Tucker and Mpaayei 1955 as they appear there, and I am not in a position to undertake tonological research into Maasai. Note that a more recent paper Payne et al. 1994 accepts Tucker and Mpaayei’s tonal notation.

Strange as it may seem, this fact completely escaped the attention of Hollis, one of the first linguists who produced a relatively full description of Maasai. He says explicitly that “nouns in Masai are not susceptible of any inflexions to mark the cases... The accusative case is the same as the nominative” (Hollis 1970: 14).

However, non-nominative Syntactic Subjects of passive forms are attested—see, for example, Chapter 3, the Nepali sentence in (9), p. 200, where the Synt-Subject of the passive form is in the dative, or the Wappo example in (22), p. 207, with the Synt-Subject of a passive form in the subjective case.

I by no means imply that the form of the accusative must necessarily be more complex than (that is, derived from) that of the nominative. In Classical and Slavic languages or in Arabic, nouns (of many declension types) have equally complex forms in the nominative and the accusative: Lat. lup+us ‘wolf, NOM’ ~ lup+um ‘wolf, ACC’ or Ar. bājit+a ‘house, NOM’ ~ bājit+a ‘house, ACC’. To put it differently, in these languages both the nominative and the accusative have non-zero suffixes. This can be true not only for the nominative and the accusative, but for the nominative and any other grammatical case. What I am saying here is this: the nominative is the case of naming objects outside of any syntactic context (see immediately below); therefore, everything else being equal, the nominative strongly tends to be formally simpler (= less derived) or, at least, not more complex than any other case in the system. This property seems to be statistically quite predominant—in fact, I, for one, do not know of exceptions. Except for Yukagir (see Chapter 2, Note 22, p. 177), I have not heard of a naming case (= the nominative in the sense defined below) that, in a given language, would ALWAYS have a positive, non-zero mark, while there is, at the same time, another case which ALWAYS has a zero mark. Prototypically, the nominative tends to be zero marked, while all non-nominative cases have overt marking. Interestingly, Sasse 1984, while discussing grammatical cases in East Cushitic, speaks of deriving the oblique from the nominative (in his terms, the Subject case from the Absolute) by replacing the last vowel of the stem with a higher one (a ⇒ i, a ⇒ u), deleting the high tone of the stem (Somali sán ‘nose, NOM’ ~ san ‘nose, OBL’) or adding a suffix (-ní in Oromo, -s in Burji, -i in Somali, etc.).

I do not insist on a specific name for this case. Here I will call it oblique, because in a system with just two cases this terminology seems the most appropriate. In a system with more cases, such as Turkana as presented by Dimmendaal, or in Wappo (see Note 9 below), I would prefer the term subjective (cf. the term Subject Case, proposed in Sasse 1984: 111–112). Yet for Maasai, the term oblique is better, since the case in question also marks SSynt-roles other than the Subject—namely, the Agent of the passive and the complement of a preposition.
In Maasai, adjectives used as modifiers agree in case (and in number, but not in gender) with the noun modified.

The same infelicitous use of case terminology is found in the description of the Amerindian language Wappo (California) by Li et al. (1977). Wappo is typologically very similar to Maasai: the citation form of the noun is used as the DirO, while all SSynt-Subjects are marked by the suffix -i. Li et al. call the citation form the accusative, and the case which marks the Subject the nominative. It goes without saying that I propose the same change of case names for Wappo: the citation form is in fact the nominative, and the case of the Subject the subjective (Wappo has other cases as well – genitive, dative, instrumental, etc.). As reported in Dixon 1979: 77 and 1994: 65, this type of case-marking for all Subjects is also found in most Yuman languages of California, including Mojave and Maricopa.

A detailed discussion of the Maasai verb agreement with both the Subject and the DirO, introducing the idea of ‘direct-inverse opposition,’ is presented in Payne et al. 1994, where subject-object agreement is explained in terms of a person-number hierarchy.

 CONT =<instance name="continuative">continuative</instance>, a grammeme meaning 'and then ...' (see Allan 1990: 181). In Payne et al. 1994 this grammeme is called <instance name="sequential">sequential</instance>. For a discussion of a similar grammeme in Turkana, called <instance name="subsecutive">subsecutive</instance>, see Dimmendaal 1983a: 174.

The verb LÓ ['to'] go’ is one of a few verbs in Maasai which have special ‘plural’ stems (in this case, suppletive: púó) used when the Subject is in the plural: see: 4, pp. 277–278).

It is worthwhile to reproduce here Andrzejewski’s example from Somali:

(i) Nín báa shabeel qabtay ‘A leopard caught a man’.

Nín báa shabèel qabtáy ‘A man caught a leopard’.

[Case names in this example are mine – IM.]

As Andrzejewski points out, (i) is structurally identical with the Maasai sentences in (4).

All my data on Nias come from this unpublished study by L. Brown, and I use them with her kind permission; Brown also provided me with additional information, which allowed me to formulate these remarks.

In order to help the reader to analyze my examples, I will give the personal prefixes of the Maasai active verb (according to Tucker and Mpaayei 1955 and Payne et al. 1994) in Table 1 below.

As can be seen from this table, 3rd person singular objects and all plural objects are not specifically marked on the verb: with these objects, a transitive verb has the same agreement prefixes as an intransitive verb. In spite of the homonymy of prefixes for the sg/pl in the 2nd and 3rd persons of the Subject, the corresponding forms are distinguished: 1) by the reduplication of the stem (with the 2nd person plural sub-
Table 1

<table>
<thead>
<tr>
<th>Object</th>
<th>INTRANSITIVE VERB</th>
<th>TRANSITIVE VERB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>á-</td>
<td>á-</td>
</tr>
<tr>
<td>2</td>
<td>i-</td>
<td>á-</td>
</tr>
<tr>
<td>3</td>
<td>é-</td>
<td>á-</td>
</tr>
<tr>
<td>1</td>
<td>kí-</td>
<td>kí-</td>
</tr>
<tr>
<td>2</td>
<td>– –</td>
<td>– –</td>
</tr>
<tr>
<td>3</td>
<td>kí-</td>
<td>kí-</td>
</tr>
</tbody>
</table>

Here are two examples (from Payne et al. 1994: 290, 293) [2>3 stands for ‘2nd person acting upon 3rd’ and 3>1, for ‘3rd person acting upon 1st’]:

(i) *í+uṣj* vs. *í+sójúsójus*

2>3

‘YouSG wash him/her’

‘YouPL wash him/her’

[the plurality of the subject is indicated by a reduplication of the stem]

(ii) *áa+y+nyal+á* vs. *áa+y+nyal+á*

3>1 PERF

‘He/She insulted me’

‘They insulted me’

[the plurality of the subject is indicated by the falling tone on the last syllable of the wordform]
II.2. Morphological signifiers

A systematic presentation of the theory of morphological signifiers in natural languages, be it only a sketchy outline, is out of the question here. Even a hasty discussion of alternations or reduplications, without mentioning morphological conversions, would require another volume. The only possibility open to me seems to limit myself to a very concentrated characterization of the method applied to define all possible types of morphological signifiers and their uses, which is what I will do in the following chapter.

However, studying morphological signifiers requires sharpening my analytical tools—therefore, I will have to formulate a few of the methodological principles which underly my descriptive decisions. These are introduced in Section 6 of Chapter 5, p. 313ff.
Chapter 5. Morphological processes

1. Introductory remarks

A morphological process is an action taken by the speaker of a language \( \mathcal{L} \) whereby a particular type of linguistic sign of \( \mathcal{L} \) is applied, within the boundaries of a wordform, in order to express some lexical or grammatical meaning, which is added to the lexical meaning of this wordform.\(^1\) Morphological processes are defined by the following three oppositions:

1) A morphological process (e.g., prefixation) uses a linguistic sign—i.e., a meaningful entity—to express something; therefore, morphological processes are meaningful. As such, morphological processes are opposed to the use of morphological means, those one-sided entities that are building blocks for morphological signifiers; taken by themselves, morphological means are meaningless, although they can form signifiers or parts of signifiers.\(^2\)

2) A morphological process is a morphological—i.e., wordform-internal—phenomenon involving a sign which, together with other signs, is part of a wordform. As such, morphological processes are opposed to non-morphological, or syntactic, processes (for non-morphological processes, see below, 2.1, 2), p. 290).

3) A morphological process is an action taken by the speaker—namely, the action of using a linguistic sign. As such, morphological processes are opposed to morphological signs (e.g., prefixes).

Thus, morphological processes should be distinguished from three types of linguistic phenomena:

1) from morphological non-meaningful events (i.e., from using morphological means as such),
2) from non-morphological meaningful events (i.e., from non-morphological, or syntactic, processes), and
3) from morphological entities (i.e., from morphological signs and those morphological means that are entities—segments and suprasegmentals).

It should be noted that, from the strictly logical point of view, the concept of morphological process is redundant: a morphological process is fully determined by the type of linguistic signs it uses (N. Pertsov drew my attention to this fact). However, traditionally, this concept and the corresponding term are in wide use and they seem to come in handy in a number of contexts.
Two terms compete in the literature with *morphological process* as it is intended here: *formal process* and *grammatical process*. The term *formal process* is in felicitous: first, there is no such term as *informal/meaningful process*, so that it is not clear what this term is opposed to; second, what are called ‘formal processes’ are in fact meaningful (rather than formal) by their very nature. The term *grammatical process* is technically fine, *grammatical processes* being opposed to *non-grammatical* ones (see 2.2). However, according to its literal meaning, this term denotes processes used to express grammatical meanings—which are not necessarily morphological (i.e., expressed wordform-internally). It seems more appropriate to use *grammatical process* just for the class of processes that express any grammatical meanings, including those that function outside the wordform. Thus, the term *morphological process* should be preferred in my perspective here.

2. The characterization of morphological processes

I will discuss the concept of morphological process in three steps:

- First, several auxiliary concepts (2.1)
- Second, a definition of morphological process (2.2)
- Third, a discussion of the inherently additive character of morphological processes (2.3)

2.1. Auxiliary concepts

The definition of morphological process is based on the following four concepts defined previously—linguistic sign, elementary linguistic sign, wordform, and stem—plus a special concept of expressive linguistic process:

An operation used by speakers of a language to express a meaning which consists in selecting and combining linguistic signs is called an expressive (linguistic) process. Expressive processes are subdivided along two axes:

- Depending on the nature of the meaning expressed, an expressive process can be grammatical (= it expresses a grammatical meaning) or non-grammatical. All but two expressive processes are grammatical: the only non-grammatical processes are lexicalization (= selecting the lexical unit for a given meaning) and compounding, this latter being, in point of fact, a special case of lexicalization—lexicalization within the boundaries of a wordform.³ (Lexicalization and composition can, of course, both involve other grammatical processes.)
- Depending on the textual limits within which the meaning is expressed, an expressive process can be morphological (= the expression takes place
within the boundaries of a wordform) or non-morphological (= syntactic; the expression takes place within the boundaries of a sentence, but outside the boundaries of the wordform affected).

These axes intersect, giving four classes of linguistic expressive processes:

1) Grammatical morphological processes: affixation, modification, etc., see 3.3.2 – 3.3.6. Linguistic signs used by these processes are called grammatical signs (cf. dependent morphemes in Langacker 1987: 336).

2) Grammatical non-morphological processes: use of ‘structural’ words, which express grammatical meanings in what is known as analytical forms (auxiliaries of all kinds) or mark syntactic constructions (governed prepositions or conjunctions), agreement and government (= determining grammemes of one wordform as a function of grammemes or syntactic features of another wordform), meaningful word order permutations, sentence prosodization, etc.

3) Non-grammatical morphological processes: compounding, see 3.3.1.

4) Non-grammatical non-morphological processes: lexicalization.

Since expressive processes are actions (they select and use linguistic signs), their names should be deverbal nouns, e.g., nouns in -(a)tion/-sion, derived from the names of the types of the signs involved: X-ation from X, such as affixation (from affix), replication, prosodization, etc.

All expressive processes are strictly synchronic linguistic phenomena.

2.2. The concept of morphological process

Definition 5.1: Morphological process

Consider a stem \( R \) and a sign \( X \), whose signified ‘\( X \)’ applies to the signified ‘\( R \)’ of \( R \).

An expressive process \( P \) of language \( L \) is said to be a morphological process if and only if the sign \( X \) that \( P \) uses in order to express ‘\( X \)’ for ‘\( R \)’ is a component of the same wordform as \( R \).

A morphological process \( P \) is a particular case of the operation of linguistic union \( \odot \); \( P \) joins a sign \( X \) to its ‘target’ – the stem \( R \), for which \( X \) expresses the meaning ‘\( X \)’ – and \( P \) does this within a wordform that includes \( R \). To put it differently, a morphological process \( P \) applies to a stem \( R \) and produces a higher-order stem \( R' \) or a full-fledged wordform.
In our presentation, the term *operation* is used with two slightly different interpretations: *operation* refers to a linguistic means such as alternation, reduplication or conversion, while *operation* (= linguistic union ⊗) actually stands for meta-operation, since it can consist in an application of operations. Context will make the intended meaning clear.

**Examples**

Two typical examples of morphological processes and two typical examples of phenomena which are not morphological processes (but could be mistaken for one) are given below and checked against the definition.

**Positive examples**

Different types of morphological processes express the same grammeme

(1) Nisga’a (= Nass), where the nominal plural is expressed by one of the following four morphological processes (Sapir 1921: 60; the names of the processes are introduced in 3.2, p. 297):

- **Suffixation**: 
  - *waky* ‘brother’ \sim waky+kw ‘brothers’
- **Prefixation**: 
  - *an/on* ‘hand’ \sim ka+an/on ‘hands’
- **Modification**: 
  - *gwula* ‘cloak’ \sim gwila ‘cloaks’
- **Reduplication**: 
  - *gyat* ‘person’ \sim gyigyat ‘people’

Here, as elsewhere in this book, I use numerical subscripts to distinguish different senses of a polysemous term. More specifically, with the term *reduplication*, the subscript ‘1’ denotes the (meaningless) operation called ‘reduplication;’ the subscript ‘2’ denotes a sign whose signifier is a reduplication1, so that a reduplication2 is a sign having a reduplication1 as its signifier; and the subscript ‘3’ denotes a morphological process which uses reduplications2. With other terms the subscripts are used in a similar—although by no means always identical—way.

The same type of morphological processes expresses different grammemes

(2) English

a. Suffixation expresses a large variety of grammemes and derivatemes:

- **Plural**: 
  - *book* \sim *book*+s
- **Past**: 
  - *want* \sim *want*+ed
- **Comparative**: 
  - *smart* \sim *smart*+er
- **Adverb**: 
  - *smart* \sim *smart*+ly
- **One who ...**: 
  - *sing* \sim *sing*+er
- **[to] cause to be ...**: 
  - *sharp* \sim *sharp*+en

b. Modification expresses three different grammemes:

- **Plural**: 
  - *tooth* \sim *teeth*
- **Past**: 
  - *sing* \sim *sang*
- **Past participle**: 
  - *sing* \sim *sung*
c. Conversion expresses a large variety of derivatemes:

- ‘one who ...’ : \([to] \text{gossip} \sim [a] \text{gossip}\)
- ‘to cause to ...’ : \([to] \text{burn [intrans]} \sim [to] \text{burn [trans]}\)
- ‘to submit to the action of ...’ : \([a] \text{hammer} \sim [to] \text{hammer}\)
- ‘a unit of ...’ : \([to] \text{kiss} \sim [a] \text{kiss}\)
- ‘to address someone as ...’ : \([a] \text{sir} \sim [to] \text{sir}\)

### Negative examples

(3) Russian

The subjunctive mood is expressed by the clitic particle **by** with the past form of the verb:

\[
\begin{align*}
\text{plyl} & \quad \text{‘swam’} & \sim & \text{plyl} \text{ by} & \quad \text{‘would swim’} \\
\text{žil} & \quad \text{‘lived’} & \sim & \text{žil} \text{ by} & \quad \text{‘would live’}
\end{align*}
\]

By is a separate wordform, not a component of the wordform that includes the root \text{ply(v)-} or \text{ži(v)-}; therefore, the conditions of Definition 5.1 are not satisfied: using the particle **by** is not a morphological process (it is, however, a grammatical process of Russian, since the auxiliary wordform **by** expresses a grammeme, \(\text{SUBJUNCTIVE}\)).

(4) Chinese (Mandarin)

Consider the following quadruplets of wordforms:

\[
\begin{align*}
\text{mā} & \quad \text{‘mother’} & \sim & \text{má} \quad \text{‘flax’} & \sim & \text{mà} \quad \text{‘curse’} & \sim & \text{mā} \quad \text{‘horse’} \\
\text{yī} & \quad \text{‘one’} & \sim & \text{yí} \quad \text{‘stranger’} & \sim & \text{yì} \quad \text{‘town’} & \sim & \text{yǐ} \quad \text{‘chair’} \\
\text{fū} & \quad \text{‘husband’} & \sim & \text{fú} \quad \text{‘support’} & \sim & \text{fù} \quad \text{‘rich’} & \sim & \text{fu} \quad \text{‘ax’}
\end{align*}
\]

In (4), as in all similar cases (which are extremely numerous in Chinese), tones play an important semantic role: they oppose sets of near-homophonous signifiers. Therefore, Chinese tones are a linguistic expressive means, and they are used within wordforms. However, they do not mean anything by themselves, each tone being an integral part of a signifier rather than an independent signifier (just like phonemes). It is impossible to associate a specific tone with a specific meaning, and so tones are not (signifiers of) linguistic signs. Therefore, using tones is by no means a morphological process in Chinese.

### 2.3. The inherently additive character of morphological processes

The proposed definition of morphological process essentially presupposes the following conception of wordform production. The construction of a complex
wordform \( w \) by the speaker happens in two major steps. First, the speaker selects a stem \( R \), which expresses the lexical meaning \( R' \) he needs; then, he adds to it other wordform components—that is, he applies to \( R \) various morphological processes in order to express meanings, grammatical and non-grammatical, which modify \( R' \) within the boundaries of \( w \). Therefore, a morphological process, as well as the signs it uses, is strictly additive—although the signifier or the signified of the sign added can be subtractive or replacive (Mel’čuk 1991a).

A **subtractive signifier** is the operation of **truncation**, applied to another segmental signifier. It is found, for example, in the following cases:

\[
\begin{array}{ll}
\text{5) Plural formation in nouns} \\
& \text{singular} \quad \text{plural} \\
\text{a. French} \\
\text{œuf} /œ/ 'egg' \sim & \text{œufs} /œ/ 'eggs' \\
\text{boeuf} /bœ/ 'ox' \sim & \text{boeufs} /bœ/ 'oxen' \\
\text{os} /œs/ 'bone' \sim & \text{os} /œ/ 'bones' \\
\text{b. Upper Hessian dialect of German} \\
\text{hon} 'dog' \sim & \text{hon} 'dogs' \\
\text{bärk} 'mountain' \sim & \text{bär} 'mountains' \\
\text{riňk} 'ring' \sim & \text{riŋ} 'rings' \\
\end{array}
\]

\[
\begin{array}{ll}
\text{6) Completive aspect formation in verbs} \\
& \text{incomplete} \quad \text{complete} \\
\text{a. Huichol} \\
\text{nepiizei} 'I saw him (and may see him again) \sim & \text{nepiizei} 'I saw him (for the last time)' \\
\text{pišiunei} 'He danced (and may dance again) \sim & \text{pišiunei} 'He danced (for the last time)' \\
\text{b. Papago} \\
\text{huduńi} '[to] descend' \sim & \text{hudu} '[to] have descended' \\
\text{täpa} '[to] split' \sim & \text{tāp} '[to] have split' \\
\text{mäka} '[to] give' \sim & \text{mā} '[to] have given' \\
\end{array}
\]

A **subtractive signified** is a ‘command’ to delete a component in the signified of the target sign (target sign syntactics can be affected as well). A good example: common decausativizing suffixes of the type of Rus. **-sja** in pairs of the type \( lomat ' [to] break_{trans} = [to] cause to break_{intrans} \sim lomat 'sja ' [to] break_{intrans} \). Here, **-sja**, added to a verbal stem, deletes the component \( ' [to] cause' \) in its signified (it also changes its syntactics in that the verb becomes intransitive and its government pattern is modified through the loss of an actant).
Yet, in spite of the subtractive character of its signifier or its signified, the corresponding sign is additive: it is always joined (added) as a whole to its target. This leads us to conclude that languages have no subtractive signs and, consequently, no subtractive morphological processes.

From this it follows that there are no replacive signs and, therefore, no replacive morphological processes, either (replacement being reducible to subtraction plus addition), although replacive signifiers and replacive signifieds do exist. Thus, a replacive signifier is found, for example, in the apophony seen in the pairs of the type foot ~ feet. A replacive signified can be illustrated by so-called parasitic formations (Matthews 1972: 86): a meaningful affix $a_1$ is added after another meaningful affix $a_2$ such that ‘$a_1$’ replaces ‘$a_2$’ rather than being added to the meaning of the stem along with ‘$a_2$’. This situation holds for the secondary cases of some Daghestanian languages, as in Dargwa ‘book’ ʿžuz ~ erg ʿžuz+li ~ dat ʿžuz+li+s, where the signified ‘dative’ (of the suffix -s = $a_1$) replaces the signified ‘ergative’ (of the suffix -li = $a_2$).4 (For secondary cases I.1b, see Chapter 2, 7, Item 4, p. 143; for replacive signifieds, see Mel’čuk 1990: 301–302.) Once again, all the corresponding signs and morphological processes are strictly additive.

A morphological process is by definition an application, or addition, of a linguistic sign to another sign. This addition should not be construed simplistically as strict concatenation or set-theoretical union: it could be a much more complex operation. Yet it is still addition: signs as such are never subtracted or replaced, only their signifiers or signifieds can be.

3. Typology of morphological processes

Inventories of morphological processes are found in all major morphology manuals and reference books. All these inventories are more or less identical—basic facts about morphological processes are well known. Still, most of these works are descriptive exercises while what seems more attractive is a theoretical calculus of possible morphological processes, which supplies a logical justification for a given inventory and allows in turn for a better understanding of the relationships among the various processes. Such a calculus was first proposed, as far as I know, in Mugdan 1977: 47–50; in this chapter another attempt is made. I will do this in five steps by examining:

– major types of linguistic signs: these types actually underlie the typology of morphological processes
– major types of morphological processes
3. Typology of morphological processes

3.1. Major types of linguistic signs

As noted above, morphological processes are distinguished according to the types of linguistic signs they use. Careful reasoning shows us that there are exactly six major types of linguistic signs. Thus, let there be a stem \( R = \langle R' ; /R/ ; \Sigma_R \rangle \) and a meaning ‘\( s \)’ that is to be added to ‘\( R' \)’ (i.e., ‘\( s \)’ has ‘\( R \)’ as its target); ‘\( s \)’ itself is the signified of the sign \( s = \langle s' ; /s/ ; \Sigma_s \rangle \). The sign \( w \) resulting from this ‘addition’ (\( w = R \odot s \)) should be a single wordform or a part thereof, since only morphological processes are considered here. The signified of \( w \) must be ‘\( R \odot s \)’, but what about \( w \)’s signifier? In other words, how can one express ‘\( s \)’ with \( R \)’? To do this, one can either add something to \( R \), without changing anything in \( R \), or, on the other hand, change something in \( R \), without adding anything to \( R \) – that is, change its signifier /\( R/ \) or its syntactics \( \Sigma_R \). This addition or change will constitute the signifier /\( s/ \) of the sign \( s \) of which ‘\( s \)’ is the signified. (One cannot limit oneself to changing the signified ‘\( R' \) only: the result will present no observable difference, and so this case is irrelevant to my purpose here.6)

Natural languages have exactly two types of signifiers:

- either entities, which can be segments or suprasegmentals;
- or operations, which are substitutions applicable to signifiers or to syntactics.

As a result, we have the following six major types of linguistic signs and, accordingly, of morphological processes:

A. The meaning ‘\( s \)’ is expressed by affecting the signifier /\( R/ \) of the stem \( R \).

This can be done in two ways only: ‘\( s \)’ is expressed either by an entity added to /\( R/ \) or by an operation which is applied to /\( R/ \) and modifies it.

(a) If ‘\( s \)’ is expressed by an added entity, this entity can be:

(a1) A segmental signifier – a phonemic string /\( s/ \) – that is joined to /\( R/ \).

The sign

\[
 s = \langle \alpha' ; /s/ ; \Sigma_s \rangle,
\]

which has /\( s/ \) as its signifier, is

1. a root (or a stem)

or

2. an affix.
The corresponding morphological process is called **compounding** or **affixation**. A particular case of compounding is known as **incorporation**: compounding of roots/stems of different parts of speech, basically of the type N+V or Λ+N; see example (8) below. Note that the existence of what are known as ‘combining forms’ (pseudo-, astro-, etc. or -crazy, -burger, etc.) – i.e., signs that appear exclusively in compounding – does not change the picture: for the purposes of our discussion here, some of them can be identified with (bound) roots and the others with affixes.

(a2) A suprasegmental signifier – a prosodic configuration / x / – that is superposed onto /R/. More precisely, such a signifier is associated with a particular syllable or syllables of /R/. The sign

\[ s = \langle s' ; / x / ; \Sigma s \rangle, \]

whose signifier is a suprasegmental, is

3. a **suprafix**.

The corresponding morphological process is **suprafixation**.

(b) If \{s\} is expressed by an operation which modifies /R/, this operation can be:

(b1) A substitution /R/ \[\Rightarrow f/(R/)\] where \(f\) is an operation of iteration (= copying) /R/ or a part of /R/ is called **replication**. The sign

\[ s = \langle s' ; /R/ \Rightarrow f/(R/) ; \Sigma s \rangle, \]

whose signifier is a replication, is

4. a **replication**.

The corresponding morphological process is **replication**. A replication creates a segmental copy of (a part of) /R/ and adjoins it to /R/.

Replications are further subdivided as a function of the number of iterations: one iteration gives reduplication, two iterations – triplication, etc. (I am not aware of replications involving more than three iterations.)

(b2) A substitution which is not an operation of iteration – i.e. /X/ \[\Rightarrow /Y/\] – substitutes a string of phonemes or a configuration of prosodemes for another such string or configuration. This substitution is called **alternation**. The sign

\[ s = \langle s' ; /X/ \Rightarrow /Y/ ; \Sigma s \rangle, \]

whose signifier is an alternation, is

5. an **apophony**.
The corresponding morphological process is \textit{modification}. (In the next step in this typology, we have to distinguish between segmental and suprasegmental modifications: see 3.3.5.)

B. The meaning `{s}` is expressed by changing the syntactics $\Sigma_R$ of the stem. This can be done in one way only: through a substitution $\gamma_i \Rightarrow \gamma_j$, which replaces some syntactic feature(s) $\gamma_i$ of $\Sigma_R$ by some other features $\gamma_j$; such a substitution is called a \textit{conversion}. The sign

$$s = \langle s^2; \gamma_i \Rightarrow \gamma_j; \Sigma_s \rangle,$$

whose signifier is a conversion, is

6. a \textit{conversion}.

The corresponding morphological process is \textit{conversion}.

3.2. \textbf{Major types of morphological processes}

To sum up, the six major types of morphological processes are as follows:

Processes using signs whose signifier is an entity

- Processes using signs whose signifier is a segmental entity
  - Processes using roots/stems:
    1) \textit{compounding}, including \textit{incorporation}
    - Processes using affixes:
      2) \textit{affixation}
  - Processes using signs whose signifier is a suprasegmental entity:
    3) \textit{suprafixation}

Processes using signs whose signifier is an operation

- Processes using signs whose signifier is an operation on signifiers
  - Processes using signs whose signifier is a substitution that deals with copies of the operand:
    4) \textit{replication}
    - Processes using signs whose signifier is a substitution that does not deal with copies of the operand:
      5) \textit{modification}
  - Processes using signs whose signifier is an operation on syntactics:
    6) \textit{conversion}

What has just been said can be summed up in the following table:

\begin{tabular}{|c|c|c|}
\hline
\textbf{Signifier} & \textbf{Sign} & \textbf{Morphological Process} \\
\hline
segmental unit & root & compounding/incorporation \\
affix & & affixation \\
\hline
\end{tabular}
These major types of morphological processes can, of course, be further subdivided in accordance with the subdivision of major sign types.

3.3. Brief survey of morphological processes

The definitions of morphological processes considered here are not explicitly stated, since most of them are of the trivial form: "X-ation is a morphological process which uses signs of the corresponding type X."

3.3.1. Compounding

(7) a. Regular compounding of the N+N type is typical of German:

<table>
<thead>
<tr>
<th>Sign</th>
<th>Sign</th>
<th>Morphological Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>suprasegmental</td>
<td>supravidx</td>
<td>supravidfixation</td>
</tr>
<tr>
<td>replication 1</td>
<td>replication 2</td>
<td>replication 3</td>
</tr>
<tr>
<td>alternation</td>
<td>apophony</td>
<td>modification</td>
</tr>
<tr>
<td>conversion 1</td>
<td>conversion 2</td>
<td>conversion 3</td>
</tr>
</tbody>
</table>

In the three last examples we find interfixation as well, see 3.3.2, (9c).

b. Regular compounding of the A+A type (with the interfixation of -o-) is typical of Russian:

<table>
<thead>
<tr>
<th>Sign</th>
<th>Sign</th>
<th>Morphological Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>krasn</td>
<td>bel (+yj)</td>
<td>ser (+golub (+of))</td>
</tr>
<tr>
<td>red</td>
<td>white</td>
<td>grey     light.blue</td>
</tr>
<tr>
<td>nemeck</td>
<td>russk (+ij)</td>
<td>kitajsk (+grečesk (+ij))</td>
</tr>
</tbody>
</table>

(8) a. Regular incorporation of the N+V type is typical of Chukchee:

Incorporation of the DirO into a transitive verb makes the verb intransitive. This entails switching from an ergative construction in the first sentence of (8a) to a
nomnominative construction, which we see in the second sentence of (8a), as well as triggering changes in the choice of personal suffixes on the verb.

b. A case of incorporation of the A+N type is found in Russian:

\[
\text{partijnoe sobranie} \quad \text{stroitel’nye raboty} \quad \text{literaturnoe ob”edinenie}
\]

party meeting construction works literary association

vs.

\[
\text{part} + \text{sobranie} \quad \text{strof} + \text{raboty} \quad \text{lit} + \text{ob”edinenie}
\]

The adjective undergoes first a (meaningless) truncation which retains, roughly speaking, the first syllable and the consonant onset of the second one; the result is an incorporating allomorph of the adjectival stem.

As indicated above, composition, including incorporation, is the only non-grammatical morphological process.

3.3.2. Affixation

Affixes are classified according to the following two features:

– Do they interrupt roots (or other morphological elements)?
– Are they interrupted themselves?

As a result, four classes of affixes are distinguished (Mel’čuk 1963, Mel’čuk 1982: 82), which gives us four major types of affixation.

(9) Confixation, where affixes do not interrupt roots and are not interrupted themselves:

a. Suffixation, with affixes following the root, as in Turkish:

\[
g¨r + m¨ + y¨r + du + k
\]

see NEG PROGR PAST 1PL

\[
ev + ler + i + n + den
\]

house PL 3SG link.element ABLATIVE

‘We were not seeing’.

‘from his/her houses’

b. Prefixation, with affixes preceding the root, as in Koryak:

\[
to + ku + lle + yi
\]

1SG.SUB PRES lead 2SG.OBJ

\[
\emptyset + ku + lle + y + one + t
\]

2SG.SUB PRES lead PRES 3SG.OBJ DUAL

‘I lead youSG’.

‘YouSG lead them two’.

c. Interfixation, with affixes that are positioned between two roots, as in Russian, where the interfix -o- marks compounding of adjectives:
(10) **Infexion**, where affixes interrupt roots or other morphological elements but are not interrupted themselves, as in Tagalog, where the infixed -um- and -in- express, respectively, the active and the passive:

<table>
<thead>
<tr>
<th></th>
<th>past</th>
<th>present</th>
</tr>
</thead>
<tbody>
<tr>
<td>active</td>
<td>[to] kill¹</td>
<td>p+um+atáy</td>
</tr>
<tr>
<td></td>
<td>[to] write²</td>
<td>s+um+ulat</td>
</tr>
<tr>
<td>passive</td>
<td>[to] be killed²</td>
<td>p+in+atáy</td>
</tr>
<tr>
<td></td>
<td>[to] be written³</td>
<td>s+in+ulat</td>
</tr>
</tbody>
</table>

The present is expressed by the reduplication₁ of the first syllable of the root:

\[ \text{patáy}, \text{ulat} \Rightarrow \text{pápatáy}, \text{susulat}. \]

In the present, the infix interrupt the *reduplicate*—that is, the copy of the part of the root created by this reduplication₁.

(11) **Circumfixation**, where affixes do not interrupt roots but are interrupted themselves, as in Malay, where the circumfix ke-...-an means ‘[to] be like...’:

- ke+cina+an: Chinese doll
- ke+anak-anak+an: adopted child

‘[to] be like a Chinese³ ’[to] be like a doll³  ‘[to] be like an adopted child³’

(12) **Transfixation**, where affixes interrupt roots and are interrupted by elements of roots themselves, as in Arabic, where the transfix -a-a- means ‘active perfective’, the transfix -u-i-—‘passive perfective’, etc.:

<table>
<thead>
<tr>
<th></th>
<th>active</th>
<th>passive</th>
</tr>
</thead>
<tbody>
<tr>
<td>[to] draw³ : r-s-m</td>
<td>r-a-s-a-m(+a) ‘he has drawn [a drawing]³’</td>
<td>r-u-s-t-m(+a) ‘he/it has been drawn³’</td>
</tr>
<tr>
<td>[to] hit¹ : d-r-b</td>
<td>d-a-r-a-b(+a) ‘he has hit¹’</td>
<td>d-u-r-i-b(+a) ‘he/it has been hit¹’</td>
</tr>
<tr>
<td>[to] kill¹ : q-t-l</td>
<td>q-a-i-a-t(+a) ‘he has killed¹’</td>
<td>q-u-t-i-l(+a) ‘he/it has been killed¹’</td>
</tr>
</tbody>
</table>
3.3.3. Suprafixation

There are two major subtypes of suprafixation:

- **Accentual suprafixation**, for which I have no example (cf. Note 10, p. 319).
- **Tonal suprafixation**, as in a number of African languages, where specific tones express verbal tenses:

  (13) Ngbaka


3.3.4. Replication

*Replication* creates a *replicate*—a string of phonemes that is a copy of the *replicand*, this latter being a part of the *replication base* (= root plus perhaps other signs)—and places the replicate to the right, to the left or inside of the base. In other words, replication iterates a designated part of the wordform in question and includes the copy in the resulting wordform. Replications are classified according to the signs they use—that is, replication. The latter can be characterized by the following seven features:

- Number of iterations: reduplication (one copy is created), triplication (two copies are created), quadruplication, ...
- Simple vs. complex (the replication base consists of one/of more than one sign)
- Total vs. partial (the whole replicand/a part of the replicand is iterated)
- Exact vs. non-exact (the replicand is iterated without/with changes)
- Contiguous vs. distant (in the resulting wordform the replicate is/is not in contact with the base)
- Left vs. right (the replicate is placed before/behind the base)
- Continuous vs. discontinuous (the copy does not interrupt/interrupts the base)

As a result, there are 64 possible types of reduplications and as many types of triplications. Reduplications are by far the most common subclass of replication. Three types of replication are illustrated below, with replicates boldfaced (Red stands for reduplication, and Tripl, for triplication).

(14) In Kazakh, a simple total non-exact contiguous right continuous reduplication expresses the meaning ‘[a] bad X and things related to it’ ('/q/ stands for ‘any string of phonemes’):
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3.3.5. Modification

The sign type used by modification is apophony \([=\text{A}]\). Apophonies are first classified according to the nature of the signifiers transformed: they are segmental or suprasegmental.
Segmental apophonies are further subdivided, depending on the nature of the alternation which is their signifier, into replacements (of phonemic strings or phonemic features), truncations and permutations (of phonemic strings).

(17) Segmental apophony – replacement: nominal plural formation in Romanian

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>'thief'</td>
<td>hot</td>
</tr>
<tr>
<td>'man'</td>
<td>bárbat</td>
</tr>
<tr>
<td>'wolf'</td>
<td>lup</td>
</tr>
<tr>
<td>'bear'</td>
<td>urs</td>
</tr>
</tbody>
</table>

The corresponding sign is \( A_{\text{PLUR}} = \{ \text{PLURAL} ; -/C/ \Rightarrow -/C [+\text{palatalized}] ; \Sigma = \text{applies to a masc. noun, ...} \}\)

(18) Segmental apophony – truncation: pejorative augmentative formation in Polish (Szymanek 1989: 95)

<table>
<thead>
<tr>
<th>Augmentative</th>
<th>('big/much and bad')</th>
</tr>
</thead>
<tbody>
<tr>
<td>'bread roll'</td>
<td>bulk(+a)</td>
</tr>
<tr>
<td>'vodka'</td>
<td>wód(k(+a))</td>
</tr>
<tr>
<td>'barrel'</td>
<td>becz(k(+a))</td>
</tr>
</tbody>
</table>

We observe in the last example a 'reverse' alternation cz /č/ \( \Rightarrow k \). Since in regular derivation the final /k/ of a stem alternates with /č/ before a suffixal /k/, as in rzek(+a) ‘river’ – rzecz+k(+a) ‘small river’, etc., the phoneme /č/ in beczk(+a), which is not a result of /k/ \( \Rightarrow -/C/ \) alternation, is replaced by /k/ when the following /k/ is removed by (false) analogy.

The corresponding sign is \( A_{\text{AUGM}} = \{ \text{much/big and bad} ; -/C/ \Rightarrow -/C/ ; \Sigma = \text{applies to a noun, ...} \}\)

(19) Segmental apophony – permutation (traditionally known as metathesis): incompletive aspect in verbs and indefinite form in nouns in Rotuman

<table>
<thead>
<tr>
<th></th>
<th>Completive</th>
<th>Incompletive</th>
</tr>
</thead>
<tbody>
<tr>
<td>'[to] decide'</td>
<td>pure</td>
<td>~ puier</td>
</tr>
<tr>
<td>'[to] cut out'</td>
<td>suki</td>
<td>~ suik ( \Rightarrow ) sük</td>
</tr>
<tr>
<td>'[to] sweep'</td>
<td>tofi</td>
<td>~ toif ( \Rightarrow ) tef</td>
</tr>
<tr>
<td>'canoe'</td>
<td>vak</td>
<td>~ vak</td>
</tr>
<tr>
<td>'banana'</td>
<td>futi</td>
<td>~ füt ( \Rightarrow ) füt</td>
</tr>
<tr>
<td>'young shoot'</td>
<td>rito</td>
<td>~ riot ( \Rightarrow ) rytot</td>
</tr>
</tbody>
</table>

Under the standard form of signs these permutations appear as follows: \( A_{\text{INCOMPL}} = \{ \text{INCOMPLETIVE} ; -/C(V)/ \Rightarrow -/(V)/C ; \Sigma = \text{applies to a verb, ...} \}\)
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\( A_{\text{INDEF}} \) = \{‘indefinite’\} ; -/C(V)# \( \Rightarrow \) -/(V)C/# ; \( \Sigma \) = applies to a noun, ...

To obtain actual surface forms, three surface-morphonological rules (= meaningless alternations) have to apply: /ai/ \( \Rightarrow \) /ä/, /ai/ \( \Rightarrow \) /œ/ and /i\(\text{I}V/ \( \Rightarrow \) /jV/.

Suprasegmental apophonies are subdivided depending on the nature of the suprasegmentals involved: accentual vs. tonal apophonies.

(20) **Accentual apophony**: 'passive' adjective formation in Tagalog

<table>
<thead>
<tr>
<th>noun</th>
<th>passive adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>knowledge</code></td>
<td>alam ( \sim ) alám `known'</td>
</tr>
<tr>
<td><code>heat</code></td>
<td>ínít ( \sim ) ínít `heated'</td>
</tr>
<tr>
<td><code>dispersion</code></td>
<td>kálat ( \sim ) kalá ( \sim ) dispersed'</td>
</tr>
</tbody>
</table>

\( A_{\text{PASS.ADJ}} \) = \{‘which underwent ...’; /_/\# \( \Rightarrow \) /_/\# ; \( \Sigma \) = applies to a noun, ...

(21) **Tonal apophony**: oblique case formation in Maasai [the symbols ` and ^ denote high, low and falling tones, respectively; the mid tone is not marked]

<table>
<thead>
<tr>
<th>nominative</th>
<th>oblique</th>
<th>nominative</th>
<th>oblique</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>horse</code></td>
<td>embártá ( \sim ) embártá `weapon'</td>
<td>enáré ( \sim ) enáré</td>
<td></td>
</tr>
<tr>
<td><code>dog</code></td>
<td>ildíé ( \sim ) ildíé ( \sim ) fork`</td>
<td>ildíé ( \sim ) ildíé</td>
<td></td>
</tr>
</tbody>
</table>

\( A_{\text{OBL}} \) = \{‘oblique [case]' ; /_/\# \( \Rightarrow \) /_/\# ; \( \Sigma \) = applies to a noun, ...

\( A_{\text{OBL}} \) = \{‘oblique [case]' ; /_/\# \( \Rightarrow \) /_/\# ; \( \Sigma \) = applies to a noun, ...

See Chapter 4, 2.1, (2), p. 265ff.

3.3.6. **Conversion**

Conversions\(2 \) [= Conv] are classified according to the type of the feature of the syntactics that is replaced—part of speech (= categorial conversion\(2 \)), inflection/derivation type (= paradigmatic conversion\(2 \)), or government/agreement (= rectional conversion\(2 \)). Pure types are rare; in most cases, several different features of the word’s syntactics are changed simultaneously.

(21) **Categorial [= Part-of-Speech] conversion**

By changing a noun denoting an artifact or substance `X’ into a verb, English expresses the meaning `[to] submit Y to the action of X for which X is designed or intended’:

\begin{align*}
\text{N} & \quad \Rightarrow \quad \text{V} \\
[a] \text{ bomb} & \quad \sim \quad [\text{to}] \text{ bomb} \\
[a] \text{ hammer} & \quad \sim \quad [\text{to}] \text{ hammer} \\
[a] \text{ salt} & \quad \sim \quad [\text{to}] \text{ salt} \\
[a] \text{ oil} & \quad \sim \quad [\text{to}] \text{ oil} \\
[a] \text{ saw} & \quad \sim \quad [\text{to}] \text{ saw} \\
[a] \text{ nail} & \quad \sim \quad [\text{to}] \text{ nail} \\
\end{align*}
3. Typology of morphological processes

**ConvSubmit** = \{ submit Y to action of X... \} ; N \rightarrow V ; \Sigma = applies to a noun, ...)

(22) **Paradigmatic conversion**

By changing the noun class of a noun, Kirundi—like most Bantu languages—expresses its plural (nominal class prefixes are boldfaced):

<table>
<thead>
<tr>
<th>a.</th>
<th>class XI, SG \Rightarrow class XII, PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>'river'</td>
<td>( u + r + uz ) \sim ( i + nz + uzi )</td>
</tr>
<tr>
<td>'needle'</td>
<td>( u + ru + shinge ) \sim ( i + n + shinge )</td>
</tr>
<tr>
<td>'piece of wood'</td>
<td>( u + ru + sate ) \sim ( i + n + sate )</td>
</tr>
</tbody>
</table>

**ConvPL** = \{ PLURAL \}; XI \Rightarrow XII ; \Sigma = applies to a noun of class XI, ...)

Class conversions are also widely used in Kirundi to express the diminutive, the augmentative, the pejorative augmentative, the singulative, etc. For instance:

<table>
<thead>
<tr>
<th>b.</th>
<th>class XVI \Rightarrow class XI, SINGULATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>'beard'</td>
<td>( u + bw + anwa ) \sim ( u + rw + anwa ) \text{‘a hair of beard’}</td>
</tr>
<tr>
<td>'necklace'</td>
<td>( u + bu + dende ) \sim ( u + ru + dende ) \text{‘a bead of necklace’}</td>
</tr>
<tr>
<td>'ants'</td>
<td>( u + bu + nyegeri ) \sim ( u + ru + nyegeri ) \text{‘an ant’}</td>
</tr>
</tbody>
</table>

**ConvSINGULAT** = \{ an element of ... \}; XVI \Rightarrow XI ; \Sigma = applies to a noun of class XVI, ...)

(23) **Rectional conversion**

By changing the gender (and therefore the agreement pattern) of a feminine noun with the meaning ‘X’ to masculine, Spanish expresses the meaning ‘agent essentially related to X’:

<table>
<thead>
<tr>
<th>feminine gender</th>
<th>\Rightarrow</th>
<th>masculine gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>'police'</td>
<td>[la] policia \sim [el] policia \text{‘policeman’}</td>
<td></td>
</tr>
<tr>
<td>'defense'</td>
<td>[la] defensa \sim [el] defensa \text{‘full-back [soccer]’}</td>
<td></td>
</tr>
<tr>
<td>'sword'</td>
<td>[la] espada \sim [el] espada \text{‘matador [bull-fighting]’}</td>
<td></td>
</tr>
</tbody>
</table>

Categorial and rectional conversions are used exclusively for derivation: their application produces a new lexeme. Paradigmatic conversions can be used both for derivation (22b) and inflection (22a)—in other words, the application of a conversion can produce a different form of the same lexeme. Let me give another example of paradigmatic conversion used in inflection:

(24) In Spanish, ‘inverting’ the conjugation group of a verb (that is, changing the Thematic Vowel) expresses the subjunctive in the present:

<table>
<thead>
<tr>
<th>1st conjugation</th>
<th>\Rightarrow 2nd conjugation</th>
</tr>
</thead>
<tbody>
<tr>
<td>cant+a+mos \text{‘we sing, PRES.IND’} \sim cant+e+mos \text{‘[that] we sing, PRES.SUBJ’}</td>
<td></td>
</tr>
<tr>
<td>pens+d+is \text{‘youPL think, PRES.IND’} \sim pens+é+is \text{‘[that] youPL think, PRES.SUBJ’}</td>
<td></td>
</tr>
</tbody>
</table>
2nd/3rd conjugation \(\Rightarrow\) 1st conjugation

\[\text{com } +e+\text{mos} \text{ 'we eat, PRES.IND'} \sim \text{com } +a+\text{mos} \text{ '[that] we eat, PRES.SUBJ'}\]

\[\text{duerm}+e+n \text{ 'they sleep, PRES.IND'} \sim \text{duerm}+a+n \text{ '[that] they sleep, PRES.SUBJ'}\]

3.4. Hierarchies of morphological processes

Grammatical morphological processes form the following hierarchy, based on degrees of \textit{semiotic naturalness} from the viewpoint of linguistic communication (Dressler 1987)—that is, on the degree of the ease with which the speakers use them and perceive them:

- affixation > suprafixation > replication > modification > conversion

Compounding, being of a completely different semantic nature, does not belong here.

This hierarchy is, of course, built on the hierarchy of the corresponding signs, in which entities precede operations, segmental elements precede nonsegmentals, and more concrete phenomena precede more abstract ones. Within each major class of morphological processes, the subclasses form a hierarchy of their own. Thus, for affixation we have:

- suffixation > prefixation > infixation > transfixation

Or for modification:

- replacement > truncation > permutation

All of these hierarchies reflect some observable features of the morphological processes involved and therefore have certain predictive power. The higher a process is in such a hierarchy, the higher are its chances of having the following six properties (Dressler 1982: 74–75):

- to be more frequent both cross-linguistically and within a particular language
- to be diachronically more stable
- to be learnt earlier by speakers
- to be lost later in aphasias
- to be more favored by pidgins
- to be more productive in a given language.

Thus, for example, suffixation is by far more common than other types of affixation and all other morphological processes. Suffixes are better retained in the history of a language, they are used by children at earlier stages of speech development, stay longer under aphasic disturbances, prevail in pidgins and are
3. Typology of morphological processes

more productive. Being segmental units, affixes—and especially suffixes—are considered as grammatical signs \textit{par excellence}, all the others being somehow ‘secondary.’ This is so because, as noted above, they are semiotically better: they are easier to produce (more economical) and easier to perceive (more distinctive). Thus, they appear in the highest place in the hierarchy.

However, semiotic hierarchies of morphological processes are not very strict, especially on the boundaries of their major classes. Thus, affixation as a whole is semiotically better than suprafixation, but it is far from clear whether transfixation is superior to suprafixation (in fact, the opposite seems to be true). Similarly, it is difficult to say whether truncation3 is semiotically better than permutation3, whether truncation3 should really precede conversion3, etc. It seems that overlapping in border areas is widespread.

The main problem is that some of the semiotic properties of the signs involved in morphological processes can be in conflict. Thus, conversion2 is highly abstract and not transparent, and therefore semiotically wanting. At the same time, it is an extremely economical type of sign, and therefore it is semiotically valued. Such contradictions explain the existence of what Dressler (1985b: 327) calls “Devil’s cases:” linguistic phenomena that, at first glance, seem semiotically non-viable, such as \textit{suppletion} (see 5.1). Another consequence of these contradictions is the impossibility of stating implications of the type “If language \( L \) has a morphological process \( P \), then it will have all the morphological processes \( P_i \) that are higher in the hierarchy.” Thus, for instance, Vietnamese has conversion3 and replication3, but it has neither affixation nor modification. In any event, much more study is needed in this area.

The above hierarchies of morphological processes are established empirically, based on a few hundred languages of various types, studied by many researchers. However, a number of theoretical explanations have been proposed for these hierarchies (see, for example, Hawkins and Cutler 1988 and Hall 1988, where relevant references are given). These explanations are of three types—psycholinguistic, semiotic, and diachronic.

\begin{itemize}
  \item Psycholinguistic explanations include such factors as lexical access in speech comprehension, the importance of word onsets as retrieval and recall cues, the perceptibility/production of different linguistic elements, etc.
  \item Semiotic explanations invoke the number of signs which can be produced by using a particular technique, the preservation of signifiers under different processes, etc.\textsuperscript{10}
  \item Diachronic explanations derive from observations such as, for instance, the fact that many grammatical signs arise historically from erstwhile lexical items which were modifiers, that in languages where modifiers predominantly follow their heads, they often develop into suffixes, etc.
\end{itemize}
All the three types of factors are, of course, intimately interwoven and may influence each other.

3.5. **Morphological processes and language types**

The distribution of morphological processes in languages is related to language type (Dressler 1985b: 324): roughly speaking, the more pronounced the agglutinating character of $L$, the higher is the probability that $L$ will use, predominantly or exclusively, the morphological processes closer to the left-hand edge of the relevant hierarchy. For fusional languages the opposite is true. Thus, rather agglutinative Turkic languages capitalize on suffixation, admitting a little reduction and a little conversion, but no modification at all. (Turkic languages have, of course, a lot of alternations, but all of them are non-meaningful: no apophonies are used.) On the other hand, Modern Germanic languages, being rather fusional, make extensive use of modification—i.e., of apophonies. But as almost always in natural language, these links are statistical correlations and by no means strict logical implications.

4. **A special variety of morphological processes: zero processes**

An inflectional meaning (= a grammeme), which is obligatory, can be expressed by the non-application of an expected morphological process: in a position where a grammeme is obligatorily present this is contrasted with the application of the process. Given the tendency of languages to economize speakers’ efforts, this will often be the case. A meaningful absence is called zero. All morphological processes can use zero signs, and those that do are referred to as zero morphological processes. The type of a zero sign is determined by the type of its non-zero counterpart. Thus, the meaningful absence of a suffix is a zero suffix, a meaningful absence of an apophony is a zero apophony, etc. Here are three examples of zero morphological processes.

(25) a. **Zero suffixation**

In Russian, the genitive plural of feminine nouns of the 1st declension is expressed by a zero suffix, as in the corresponding form of the noun STENA ‘wall’:

\[
\begin{align*}
\text{stén+á} & \text{ SG.NOM, stén+y} \text{ SG.GEN, stén+é} \text{ SG.DAT, stén+u} \text{ SG.ACC, ...}, \\
\text{stén+y} & \text{ PL.NOM, ...}, \text{etc.}, \\
\text{but} & \\
\text{stén+Ø} & \text{ PL.GEN}.
\end{align*}
\]
5. Three current fallacies concerning morphological processes

5.1. Suppletion is not a morphological process

One often sees an extra item on a list of morphological processes – suppletion. The treatment of suppletion as a morphological process is, however, a result of logical confusion. Suppletion is not a (type of) linguistic sign but a relation between two signs; therefore, it cannot be used by a morphological process. When, in order to express the meaning ‘s’ applied to a sign X, language L uses a sign Y which is suppletive with respect to X, this is done precisely because in the context of X the meaning ‘s’ cannot be expressed by any morphological process: in other words, L does not have a separate sign with the signified ‘s’ which could be combined with X. Of course, L does have separate signs with the signified ‘s’—but no one of them can be used with X (thus, instead of *[I] *be+ed we have to say *[I] was). Being highly irregular by nature, suppletion cannot be a morphological process, given that the latter are regular by definition (see Chapter 8, p. 405ff).
5.2. **Word-creating devices are not morphological processes**

Languages have a number of techniques used to construct new lexical units; we can refer to the set of such techniques as **word-creation**. Word-creation includes: **clipping** (advertisement ⇒ ad, telephone ⇒ phone), **blending** (br(reakfast)+lunch ⇒ brunch), **acronymization** (Acquired Immune Deficiency Syndrome ⇒ AIDS), and **analogical formation** (as in Rus. sovok ‘Homo Soveticus’ = ‘typical representative of Soviet population’, using the element sov- from sovet-skij and homophonous with sovok ‘dust pan’), etc. Dubbed “word-manufacturing methods” (Szymanek 1989: 33), these phenomena, in sharp contrast to genuine morphological processes, are diachronic: they expand the lexical stock by creating new lexemes, yet they do not in themselves express meanings.

The case of **back-formation** (of the type proofreading ⇒ to proofread) is less obvious, but it is also a diachronic phenomenon, even if it can be highly productive and produce semantically predictable results. No sooner is a verb diachronically derived by back-formation from an action noun than it becomes semantically primary with respect to this noun. In other terms, once word-creation (in this case, by back-formation) has taken place, the resulting pair of words becomes like any other pair of words in the lexicon that are related by regular morphological processes—in this case, by conversion3. The direction of derivation is determined according a greater semantic complexity. Thus, the signified of proofreading is ‘action of proofread’—that is, synchronically proofreading is derived from [to] proofread. The same holds for [a] butcher (historically, from Fr. boucher): the ‘backformed’ verb [to] butcher became semantically underlying for the noun, so that now [a] butcher means ‘person who butchers animals ...’; therefore, viewed synchronically, [a] butcher is derived from [to] butcher (by the same conversion, as [a] gossip is derived from [to] gossip, [a] cook from [to] cook, [a] tease from [to] tease, etc.). Cf. as well [to] edit, ‘backformed’ from editor.

Being diachronic by their very nature, word-creating techniques cannot be morphological processes, the latter being strictly synchronic.

5.3. **Combinations of morphological processes, or multiple exponence**

On several occasions proposals have been made in the literature for combinations of grammatical morphological processes, in the sense that two or more morphological processes are said to be used simultaneously to express one grammatical signified within a wordform. Such a phenomenon is known as **multiple exponence**. However, in most cases presented so far, especially in reference books and manuals, we do not have two or more morphological processes simultaneously used, but rather either a single (complex) morphological process or a morphological process plus some meaningless accompanying phenomena.
To illustrate my point, I will consider two major classes of proposed combinations of morphological processes:

1) different types of confixes used simultaneously;
2) a confix used simultaneously with a modification.

Further combinations could be, of course, considered as well: confix + suprfix, confix + conversion, etc. I will limit myself just to the two classes indicated since the other combinations do not add anything logically different.

A typical example of the first class is as follows:

(26) In Tzutujil, a transitive verb is said to be detransitivized by applying simultaneously infixation and suffixation (Bauer 1988b: 21):

\[ \text{\text{to buy [something]} } \text{loq} \sim \text{\text{to be involved in buying} } \text{lo+}\text{j+q+o\text{'m}}, \]

with the infix -j- and the suffix -o\text{'m}.

But -o\text{'m} does not occur without -j-, and -j-, when it occurs without -o\text{'m}, marks the passive rather than the detransitivizer, so that this is a different morph. Therefore, in my opinion, Tzutujil uses here a single morph – the transfix -j-o\text{'m} (whose component -j- is, in all probability, diachronically related to the passive infix -j-).

What we observe in this case, as in many similar ones, is a single elementary linguistic sign. Its structure is perhaps etymologically complex; however, synchronically, its parts are not used separately, so that it is now a simplex and should be treated as such. To ensure such a treatment, I posit the Principle of a single morphological process, see in 6.1 below, Principle 1, p. 314.

A typical example of the second class is as follows:

(27) In Welsh, “one of the ways of forming the plural is vowel change plus a suffix” (Bauer 1988b: 21):

<table>
<thead>
<tr>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>garden'</td>
<td>gardd /gar\d/</td>
</tr>
<tr>
<td>giant'</td>
<td>cawr</td>
</tr>
<tr>
<td>hour'</td>
<td>awr</td>
</tr>
</tbody>
</table>

Yet the vowel change in (27) is, in my view, not a sign and therefore it does not represent a morphological process: the suffix is sufficient in itself to express the plural, so that the vowel change observed in the three pairs above it is a meaningless alternation accompanying the plural-marking suffix. This description also follows from the Principle of a single morphological process (see p. 314).

In this, as well as in all similar cases, we see the application of two morphological means: a segmental unit (= a phonemic string) and a phonemic substitution. Of these, only one – the phonemic string – is admitted to the status of a
signifier, so that only one sign is present here, the suffix (cf. the Principle of the higher morphological process in 6.1). Therefore, (27) presents just one morphological process using this linguistic sign. The alternation observed is simply a contextually-induced morphological means, expressing no meaning.

Yet in Welsh nouns which have no plural suffix in the plural such alternations ARE signifiers and represent morphological processes: ‘swan’ alarch ~ elych, ‘ray’ paladr ~ pelydr, etc. These alternations are admitted to the status of signifiers and, consequently, of morphological processes because the forms in question show no ‘better’ morphological process. (We cannot postulate a zero plural marker here: this follows from the Principle of zero as the last resort, see 6.2, p. 317)

Nevertheless, although situations in which a grammeme can be simultaneously expressed within the same wordform by more than one morphological process are probably rather infrequent, such situations – multiple exponence – do exist. Here are two examples.

(28) Breton

| ‘girl’   | merc’h /merx/ | PL merc’h+ed |
| ‘meadow’ | prad          | PL prad+ou /w/ |
| ‘house’  | ti            | PL ti+er      |
| ‘little girl’ | merc’h+ig   | PL merc’h+ed+ig+ou |
| ‘little meadow’ | prad+ig   | PL prad+ou+ig+ou |
| ‘little house’ | ti+ig    | PL ti+er+ig+ou |

As we see, the grammeme ‘PLURAL’ is expressed twice in a noun when it bears the diminutive suffix -ig: the radical and the suffix -ig are pluralized ‘in parallel.’

(29) Alutor (Mel’čuk 1973b: 58–65)

the verb JUNAT(-ok) ‘[to] live’, in the present

| indicative | imperative | conditional
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td>to+junato+tkon</td>
<td>ma+junato+tkon to +?junato+tkon ⇒ tajunatokon</td>
</tr>
<tr>
<td>2sg</td>
<td>Θ+junato+tkon</td>
<td>qa+junato+tkon ma+?junato+tkon ⇒ majunatokon</td>
</tr>
<tr>
<td>3sg</td>
<td>Θ+junato+tkon</td>
<td>na+junato+tkon na+?junato+tkon ⇒ najunatokon</td>
</tr>
</tbody>
</table>

[the suffix -tkon marks the present]

The grammeme ‘CONDITIONAL [mood]’ is expressed in a verbal wordform twice: by the prefix Θ- and by a special set of personal prefixes, which are different from the personal prefixes of the two other moods – the indicative and the imperative. The indicative and the imperative, unlike the conditional, have no separate marker, so that their personal prefixes must be taken to express the mood cumulatively, together with the person and the number:
6. Non-uniqueness of morphological solutions: methodological principles

Considerations of symmetry require the inclusion of the grammeme of mood in the signified of the conditional personal prefixes as well:

\[
\begin{array}{ll}
\text{t-} & (1\text{SG.SUBJECT, IND}) \\
\text{Ø-} & (2\text{SG.SUBJECT, IND}) \\
\text{n-} & (3\text{SG.SUBJECT, IND}) \\
\text{m-} & (1\text{SG.SUBJECT, IMPER}) \\
\text{q-} & (2\text{SG.SUBJECT, IMPER}) \\
\text{Ø-} & (3\text{SG.SUBJECT, IMPER})
\end{array}
\]

As a result, the grammeme \textit{CONDITIONAL} is expressed in an Alutor verb form twice: once by the conditional mood prefix \textit{t-} and once by the conditional person-number prefix.

Two major types of multiple exponence can be distinguished:
- A grammeme taken alone is expressed simultaneously by several synonymous monosemic signs (for instance, by the same morph repeated twice as in (28) \textit{prad+ou+ig+ou}).
- A grammeme is expressed in cumulation with other grammemes by several non-synonymous signs.

A mixed type is illustrated in (29): a grammeme is expressed once autonomously – by a monosemic morph – and a second time by a cumulative morph.

Duplication (= repeated expression) of information is typical of natural languages. No doubt such duplication should also be found among morphological processes applied within one wordform. But subler analyses and more accurate descriptions are needed in order to find reliable facts.

6. Non-uniqueness of morphological solutions: methodological principles

Identifying specific morphological processes that have been applied in an actual utterance can be a tricky business: one often has to distinguish between a morphological process and the use of a (meaningless) morphological means (6.1) or between two or more different morphological processes (6.2). In order to be consistent in the decisions he makes, the linguist has to follow some methodological principles. In this section, I will propose seven such principles.

6.1. A morphological process or a (meaningless) morphological means?

In Ger. \textit{Vater} \textit{father} \textit{\textasciitilde} \textit{Väter} \textit{fathers} the alternation \textit{a \textasciitilde ä} marks the plural, which has no other explicit mark; therefore, this is a morphological process – namely,
a modification (which uses an Umlaut apophony). But what about Nacht ‘night’ ~ Nächte ‘nights’? Here the plural is marked by the suffix -e, which sometimes is accompanied by the alternation of the type a ⇒ ä in the stem and sometimes is not (cf. Tag ‘day’ ~ Tag+e ‘days’ or Hund ‘dog’ ~ Hund+e ‘dogs’, etc.). On the other hand, the Umlaut in Nacht is not necessarily connected with plurality, either (cf. the adjective nächtlich ‘nightly’ and the diminutive Näch+chen). Can we say, then, that the alternation a ⇒ ā in Näch+e is also a plural marker? More precisely, is it an apophony which expresses the plural together and simultaneously with the suffix?

The answer depends on the methodological principle posited for morphological description. Either any observable phenomenon related to the expression of a meaning is taken to be its marker (the ‘maximalist’, or -etic, approach), or only one of observable phenomena related to the expression of a meaning is taken to be its marker, all the others being considered as meaningless accompaniers (the ‘minimalist’, or -emic, approach; the terms -etic and -emic are used here in the sense of Pike 1967). In my view, the second approach contributes to the simplicity of morphological (and more generally, linguistic) descriptions; and I will formulate the corresponding principle as part of Meaning-Text Theory:

**Principle 1: Only one morphological process as expressive means**

Among several morphological phenomena related to the expression of a meaning ‘o’, try to choose only one as a marker for ‘o’, relegating all the others to the status of conditioned accompaniers.

If Principle 1 is accepted, then, for instance, in the wordform children the only marker of the plural is the suffix -en, while the replacement /a/ ⇒ /i/ and the incrementation /N/ ⇒ /t/ (/čaild/ ~ /čldr/) are considered (contra Bauer 1988b: 21) to be meaningless accompanying alternations. (Or else one can consider -ren as suffix, finding in the stem only a replacement.) Analogously, in Rus. syn ‘son’ ~ synov’j+á [pl.nom] the only marker of the plural nominative is the suffix -a, as in hundreds of Russian nouns. The element -ov’j-, found in this plural form, is considered to be the result of a meaningless incrementation alternation accompanying the suffixation.

The price to pay for such a treatment is that one and the same linguistic phenomenon can be described in similar circumstances in two different ways. Thus, the substitution a ⇒ ā is taken to be an apophony (i.e., a sign and hence an operand of a morphological process) in Vater ~ Väter but a meaningless accompanying alternation in Nacht ~ Nächte (and thus not a morphological process). But then the fact that the same or very similar phenomena may play very different roles in different contexts is well known in natural languages.
NB: What are called here ‘meaningless accompanying phenomena’ are the results of application of morphonological rules. Accompanying phenomena are by no means useless in language, but play a rather important semiotic role: they ‘co-signal’ (Dressler 1985a, esp. Ch. 10) the meanings in question.

6.2. Which morphological process?

Very often a morphological phenomenon can be described, from a logical viewpoint, in terms of more than one alternative morphological process. Here are three typical examples.

(30) a. Transfixation or modification?
Ar. *katab(+a) ‘[he] wrote’ ~ *kutib(+a) ‘[it] was written’ can be presented as either transfixation of -a-a- vs. -u-i- applied to the root k-t-b or as multiple modification (apophonies a ⇒ u and a ⇒ i) applied to the unanalyzable stem *katab- (Kilani-Schoch and Dressler 1984).

b. Modification or affixation?
Rom. *copac /kopāk/ ‘tree’ ~ *copaci /kopāč´/ ‘trees’ can be presented as either modification (a plural apophony /k/ ⇒ /č´/) or affixation, where the plural is expressed by the suffix -i /j/, the substitution /k/ ⇒ /č´/ being an empty accompanying alternation triggered by this /j/; the /j/ itself disappears, so to speak, fused with the stem.

NB: the word-final orthographic i in Romanian is not pronounced after a consonant; it is used only to show the palatalization of the preceding consonant.

c. Conversion3 or zero affixation?
Eng. [a] bomb ~ [to] bomb or sugar ~ [to] sugar can be presented as either conversion3 or zero affixation, where the meaning ‘[to] submit to the action of X for which X is designed’ is expressed by a zero suffix -ØSUBMIT.

These are situations of non-uniqueness of morphological solutions, typical of natural languages. To choose between competing solutions, the researcher needs to proceed from a series of methodological principles, similar to that stated above. It is impossible to go deeper into this topic here; therefore, only six such principles will be discussed (in addition to Principle 1, formulated above) in order to serve as an illustration: one very general principle, and five others, more specific ones.
Chapter 5. Morphological processes

**Principle 2: Internal linguistic consistency**

Everything else being equal, prefer the description couched in terms of the morphological process that is more consistent with other phenomena observed in the language.

Clearly, this trivial principle requires a special study in depth for every difficult case.

**Principle 3: A single morphological process**

Everything else being equal, prefer the description couched in terms of a morphological process using one segmental sign $X$ with a specific meaning rather than in terms of a compositional combination of several segmental signs $X_1, X_2, ..., X_n$ (such that $\oplus\{X_i\} = X$), provided they do not appear separately with the corresponding parts of the meaning.

In German, the past participle is formed by a single circumfix $\text{ge-...-t}$ or $\text{ge-...-en}$ ($\text{frag(+en)}$ $\text{[to]}$ ask$^\prime$ $\sim$ $\text{ge+frag+t}$ or $\text{find(+en)}$ $\text{[to]}$ find$^\prime$ $\sim$ $\text{ge+fund+en}$) rather than by combinations of a prefix with a suffix: although the prefix $\text{ge-}$ and the suffixes $\text{-en}$ and $\text{-t}$ exist in German, they do not express by themselves the meaning of the participle ($\text{ge-}$ expresses collectivity; $\text{-en}$, the infinitive or 1pl/3pl; $\text{-t}$, 3sg). A circumfix of this type is a sign complex (= a morphological idiom), essentially similar to such idiomatic expressions as $\text{[to]}$ KICK THE BUCKET or $\text{[to]}$ SHOOT THE BREEZE.

Note that Principle 3 is different from Principle 1, although they are superficially similar. Principle 1 stipulates that if the expression of a grammeme $g$ is related to several morphological phenomena of different nature, the researcher should try to choose one as a marker of $g$, while the others are to be considered meaningless accompaniers. Principle 3 deals with cases where the expression of a grammeme $g$ is related to several phonemic strings, and it recommends taking these strings to be discontinuous parts of one segmental signifier rather than separate signifiers.

**Principle 4: The higher morphological process**

Everything else being equal, prefer the description couched in terms of the morphological process that is higher in the relevant hierarchy (see 3.4, p. 306).

Thus, transfixation should be preferred over modification in (30a). Note the importance of the restriction "everything else being equal." Thus, in the case of Eng. $\text{foot} \sim \text{feet}$ I prefer an analysis in terms of modification (apophony $\text{oo} \Rightarrow \text{ee}$) rather than of infixation of $\text{-oo-}$ and $\text{-ee-}$ into the root $\text{f-t}$, because other infixes do not massively occur in English and $\text{f-t}$ is not related to the meaning of 'foot' (cf. $\text{fat}$, $\text{feat}$, $\text{fit}$, $\text{fort}$, $\text{fought}$, $\text{fart}$, etc.).
Principle 5: A more visible morphological process

Everything else being equal, prefer the description couched in terms of the morphological process that is more visible in the relevant form (i.e., do not postulate an abstract process when there is a candidate which is actually observable).

Thus, modification (using an apophony) should be preferred over suffixation in (30b), since the phonemic substitution is directly observable, while the suffix has to be postulated as an abstract entity.

A particular case of Principle 5 is Principle 7, see below.

Principle 6: The most general morphological process

Everything else being equal, prefer the description couched in terms of the most general morphological process—i.e., the process applicable in most, if not all, cases of the same type.

In the Russian abstract noun šir’ ‘wide space’, derived from the adjective šir(+ok+ij) ‘wide’, two morphological phenomena are observable which can be described in terms of a categorial-paradigmatic conversion_3 (N ⇒ A) plus a modification of palatalization (r ⇒ r’). The situation is similar with a few other nouns, such as rvan’ ‘torn things’ ~ rvan(+yj) ‘torn’, etc. What is the morphological process used here? Modification is higher than conversion_3 and more visible, too—according to Principles 4 and 5 it should be preferred as the sign which expresses the derivateme in question. However, Principle 6 precludes this solution: conversion_3 here is more general, since it is also used for nouns derived from adjectives whose roots end in a palatalized consonant and where palatalization is thus physically impossible (i.e., it would be invisible): ran’ ‘early hours’ ~ ran(+yj) /ran’/, sin’ ‘blue space’ ~ sin(+i)/sin’, etc. Therefore, in conformity with Principle 6, all such Russian formations are described in terms of conversion_3, while palatalization (where it occurs) is taken to be an accompanying meaningless alternation.

Principle 7: Zero as last resort

Everything else being equal, prefer the description couched in terms of a non-zero morphological process (i.e., do not postulate a zero where some observable phenomenon is present).

Thus, conversion_3 should be preferred over zero affixation in (30c). As far as zero affixes are concerned, there is a special principle involved that stipulates that a zero affix should contrast in the given position with a non-zero affix, that there are no zero affixes for derivatemes (which are not obligatory), etc. (This principle—the Zero Sign Introduction Principle—is discussed in Chapter 9, p. 470ff.)
As one can easily see, methodological principles can come into conflict, requiring additional meta-principles to guide our choices in such cases. Of course, the principles themselves have to be justified, and this can be done only by reference to the generality, simplicity and elegance of the resulting description.

Notes

1 (1, p. 288) I do not know who first introduced the term morphological process or when this happened. Personally, I learnt it from Sapir’s Language (1921). In Mel’čuk 1982: 77 I defined ‘morphological process’ as an elementary sign which expresses a grammatical meaning within a wordform. But since then, I have changed my terminology (cf. Mel’čuk 1996b). A sign which expresses a grammatical meaning is now quite naturally called a grammatical sign, while a morphological process is considered to be an operation: namely, the application of a sign, which is not necessarily grammatical, to another sign within the bounds of a wordform. (Thus, one of the morphological processes is composition, and composition deals with lexical signs, i.e. roots/stems.)

2 (1, p. 288) Morphological means are formal linguistic means used strictly within the boundaries of wordforms. They fall into five major types:

I. Entities: 1. phonemic strings (= segments) 2. prosodemic configurations (= suprasegmentals)
II. Operations: 3. modifications (= transformations of signifiers – i.e., alternations and replications) 4. conversions (= transformations of syntactics)
III. Order: 5. linear order of elements within the wordform.

3 (2.1, p. 289) Compounding (as well as a particular case thereof, incorporation) is lexicalization since it selects a lexeme for a given meaning under given conditions. However, ordinary lexicalization puts the lexeme selected into the Deep-Syntactic Structure (of the sentence being synthesized) as a separate node; but compounding, being a special case of lexicalization, puts the lexeme it chooses into a wordform being synthesized – that is, associates it with the same node of the DSyntS as the stem of this wordform.

4 (2.3, p. 294) Formally, one could consider the Dargwa complex ending -lis as a single dative suffix and thus try to avoid replacive signifieds. However, this solution will not work because the form of the dative mechanically retains all the irregularities of the ergative: if the ergative is built on a suppletive stem, the dative has the same stem; if the ergative has a non-standard alternation, so does the dative; etc. Therefore, if the researcher decides to consider -lis as a single dative suffix, he is obliged to repeat for it all the restrictions concerning the ergative suffix. Moreover, he has to repeat them again and again for each ‘complex’ suffix of each secondary case – and there can be a couple of dozens of secondary cases!
(3.3.2, p. 299) Note that:

1. The signified of an interfix is purely syntactic (similar to that of a syntactic case I.b): it indicates that the preceding stem enters into a particular configuration with the following one.

2. The term *interfix* is commonly used in quite a different sense: to designate empty suffixes, as *-in* in Rus. Jal’t(+a) [a town in Crimea] ~ *jal’t+jal’* ‘of Jalta’ [cf. Berlin ~ *Berl’in+jal’*] or -č in Lt. *prat(+o)’meadow’ ~ *prat’+ič* ‘meadow, DIMINUTIVE’ [cf. *pied+ič* ‘feet, DIMINUTIVE’]; see Dressler and Merlini-Barbaresi 1994: Ch. 5, 529ff.

3. The same interfix is used in Russian to mark the compounding of two nominal roots as well:

   *samolet+o*+stroenie tovar +*o*+oborot

   aircraft construction merchandise circulation

(3.3.3, (24), p. 306) This description presupposes a particular model of conjugation in Spanish. On the surface, a Thematic Vowel does not appear in the present indicative before *-o* of the 1SG. But the proposed treatment of the subjunctive forms is the following: the Thematic Vowel is taken to be always present in the *MORPHIC* representation of a Spanish verb, so that we have *cant+e+o* [IND.PRES.1SG] vs. *cant+a+O* [SUBJ.PRES.1SG], etc., with the Thematic Vowel *+a* automatically deleted before a vocalic suffix of person-number. (A complete description of Spanish verbal morphology is found in Mel’čuk 1994a and 1993 – 2000, vol. 5: 117 – 172.)
11 (5.3, (29), p. 312) In a recent description of Alutor (Kibrik et al. 2000: 233ff), the imperative is described as optative and the conditional as conjunctive.

12 (6.2, Principle 3, p. 316) In fact, the suffixes -en and -t do express the meaning of the participle, but only in verbs that are not stressed on the first syllable of the radical. These verbs include:

- verbs with inseparable prefixes – e.g., *ermordet ‘murdered’ → *geermordet;
- verbs with the suffix -er(+)en – e.g., *m arschiert ‘marched’ → *gemarschiert;
- a few borrowed or slang verbs, such as MALÓCHEN ‘[to] sweat away, work in difficult conditions’ or PROPHEZÉIEN ‘[to] prophesy, predict’.

(Thanks to an anonymous reviewer, who pointed out the last fact to me.)

13 (6.2, Principle 7, p. 317) This principle is explicitly formulated as Principle 4 in Nida 1961: 54ff. – In connection with the problem ‘conversion vs. zero affixation’, see an interesting discussion in Lieber 1981: Ch. 3, 187ff.
II.3. Morphological syntactics

As with morphological signifiers, morphological syntactics is too broad a topic to be studied here in all its detail. In *ATM*, I will consider only one feature of morphological syntactics, but the one which is among the most important features and therefore one of the most interesting—grammatical gender/noun class.
Chapter 6. Gender and noun class

1. Introductory remarks

Grammatical gender (French *un* pain ‘a bread’ vs. *une* main ‘a hand’) and noun class (Kikongo *mu+ntu mu+ndombi*, lit. ‘man+Ø black+Ø’ vs. *ki+nkutu ki+ndombi*, lit. ‘garment+s black+s’) have been a source of fascination for linguistics for at least two hundred years. The corresponding concepts are discussed in hundreds, if not thousands, of writings, among them many books dedicated entirely to the subject. Researchers have tried to find in grammatical gender and noun class links to such things as national psychology, universals of human thought, etc. Although I will not risk an expedition into the swampy terrain of ethno-psychology or linguistic philosophy here, even from the purely linguistic viewpoint, gender and noun class play a very important role in the morphology and syntax of natural languages and thus fully deserve a detailed discussion. I begin with the two following provisos.

1. Gender and noun class are not conceptually identical, but they are intuitively close enough, which justifies my decision to consider them together. Both are particular cases of a more general concept: (noun) agreement class. Agreement class hinges on the concept of morphological dependency; this concept is linked, in turn, to agreement and government (morphological dependency manifests itself as agreement or government). These four concepts have been defined, discussed and illustrated in Chapter 1, p. 31 ff, so that here I can use them as the basis of my description.

2. The terms gender and (noun) class are ambiguous. Two senses have to be distinguished for each of them:
   - Gender 1 and class 1 are syntactic features of the noun, they are by no means inflectional categories: a noun is not declined in gender 1/class 1, but simply belongs to one as an element.
   - Gender 2 and class 2 are syntactic inflectional categories of the adjective and/or the verb: adjectives are declined in gender 2/class 2 in order to agree with their controlling nouns (Rus. *xoroš+ij xleb* ‘good bread [MASC]’, *xoroš+a ja kolbasa* ‘good sausage [FEM]’, *xoroš+ee maslo* ‘good butter [NEU]’); verbs are conjugated in gender 2/class 2 to agree with their Subjects and/or Objects (Rus. *Mal’čik [MASC] spal+Ø* ‘[The] boy slept [MASC]’, *Devočka [FEM] spal+a* ‘[The] girl slept [FEM]’, *Čudovišče [NEU] spal+o* ‘[The] monster slept [NEU]’).
This chapter deals basically with gender and class. (For a very clear review of gender and class in 600 plus languages of Africa, see Heine 1982; a general discussion of agreement class is found in Plungian 2000: 142–160; the extremely important distinction between gender and class, on the one hand, and the inflectional type/class of the noun, on the other, is thoroughly analyzed in Aronoff 1994: 89ff; a general review is presented in Corbett 1991.)

2. Gender vs. Class

Agreement classes, although logically feasible for lexemes of any part of speech, are typically found only in nouns. Noun agreement classes are subdivided into two major types—gender and class. Faithful to the principle stated in the Introduction, 3.1, p. 15, I start with prototypical instances of gender (as found in Indo-European languages) and class (as represented in Bantu), trying to isolate their most salient properties. According to preliminary analyses, gender and class are opposed according to the eight following features:

1) The small/large number of classes.
2) Relevance/irrelevance of biological sex as the basis of classification.
3) Absence/presence of semantic motivation for classification.
4) Absence/presence of an autonomous and non-cumulative marker (of the agreement class) in the noun.
5) Absence/presence of an autonomous and non-cumulative marker reflecting the agreement class of the controller noun in the target (= agreeing) wordform. (For the terms controller and target, see Chapter 1, 2.1.1, p. 33.)
6) Relevance/irrelevance of classification to the formal aspect of the noun’s inflection.
7) Autonomy/non-autonomy of classes with respect to inflectional meanings (first of all, with respect to grammatical number).
8) Autonomy/non-autonomy of classes with respect to derivational meanings (for instance, with respect to diminutivity).

These features ARE BY NO MEANS A SET OF NECESSARY AND SUFFICIENT CONDITIONS: each of them can be violated for a given major type of agreement classes. Thus, generally speaking, gender presupposes a small number of classes, and class a big number; but nothing prevents the existence of class systems with a small number of classes (two or three). Similarly, class is basically characterized by the absence of semantic links to sex, but there can be a system of classes correlated with the sex distinction, and so forth. Under the present approach, gender and class are cluster concepts—each of them is based on the sum of indications.
supplied by the above features. For prototypical genders\textsubscript{1} (for instance, as found in Indo-European languages), all these properties have a positive value, while for prototypical classes\textsubscript{1} (for instance, as in Bantu languages), they all have a negative value. However, intermediate cases abound; we know of many systems of agreement classes for which some of the above properties have a negative value, but the others have a positive one. As a result, it often happens that the researcher is unable to qualify in a non-ambiguous way the partition of nouns in a given language \( L \): in some respects, noun agreement classes of \( L \) seem to be like genders\textsubscript{1} and in some others, like classes\textsubscript{1}. This, however, is not very serious: for any practical or theoretical purpose, it is enough to specify agreement classes under consideration with necessary precision. The name that we decide to give them—\textit{genders\textsubscript{1}} or \textit{classes\textsubscript{1}}—is, after all, not that important.

3. Gender\textsubscript{1}

I begin with the definition of gender\textsubscript{1}, supplying it with detailed comments. After this, I will describe, as an illustration, several gender\textsubscript{1} systems found in natural languages. (Concerning gender\textsubscript{1} in general, see Ibrahim 1973, Corbett 1991 and Unterbeck \textit{et al.} 2000, which contain rich bibliographies.)

3.1. The concept of gender\textsubscript{1}

Suppose that we have already established, in language \( L \), a system of agreement classes; the task is now to decide whether these are genders\textsubscript{1} or noun classes\textsubscript{1}.

\textbf{Definition 6.1: Gender\textsubscript{1}}

We say that agreement classes of the noun in \( L \) are genders\textsubscript{1} if and only if the following eight conditions are simultaneously satisfied to a sufficient degree:

1. The number of these classes is small: 2 to 4.
2. They manifest a direct link with the biological sex of the being denoted by the noun: a noun referring to a male belongs to one class and that referring to a female to another class.
3. Beside the sexual division, these classes do not show a sufficiently visible semantic motivation: in most cases, there is no direct link between the meaning of a noun and its gender\textsubscript{1}.
4. These classes do not have an autonomous and non-cumulative marker in the noun: gender\textsubscript{1} is not expressed in a nominal wordform by a special morphological means, for instance, by an affix which exclusively expresses gender\textsubscript{1}. (Gender\textsubscript{1} is rather a \textit{covert category}.)


5. The corresponding markers in wordforms that agree with the noun are cumulative: gender, which reflects gender, is expressed, as a rule, in combination with other grammemes, such as number or case.

6. These classes are relevant for the formal aspects of the noun’s inflection: the choice of particular number/case affixes depends on the agreement class of the noun.

7. A change in the agreement class of a noun is not used in to express an inflectional meaning characterizing this noun—for instance, grammatical number—not does it systematically accompany the expression of an inflectional meaning by a separate linguistic sign (see below, 3.2, 6, p. 328).

8. A change in the agreement class of a noun is not used in to express a derivational meaning characterizing this noun—for instance, diminutivity.

3.2. Comments on Definition 6.1

1. Fuzzy border between gender1 and class1

As I have pointed out, no waterproof division separates gender1 and class1. Therefore, Def. 6.1 contains an expressly vague formulation ‘to a sufficient degree’: it is required that the conditions for gender1 be satisfied to a sufficient degree, but this degree is not specified. Such an approach leaves the researcher who is exploring a particular agreement class system a great deal of room to maneuver, especially in dubious, intermediate cases. He must, of course, establish the characteristics of the agreement class system under consideration with maximum precision, so that it is described exhaustively, after which the choice of the name for it—gender1 or class1—is not crucial. In what follows, we will see that this ambivalence is typical of the concepts of gender1 and class1.

2. Condition 2

First, Condition 2 of Definition 6.1 does not of course require a one-to-one correspondence between sex and gender1 for all nouns. It stipulates only the presence of all names for males in one class (= the masculine) and of all those for females in another class (= the feminine)—as always, allowing for a few exceptions. In this, and only in this, sense, we say that agreement classes that are genders1 are geared to sex distinction. It is not, however, required that the masculine and the feminine be limited to the names for males and females. The situation is rather opposite: according to Condition 3 (the absence of semantic motivation for the distribution of nouns between genders1), the masculine and the feminine tend to include many inanimate nouns which are distributed between these two genders1 in an arbitrary way. However, it is not impossible that in, the masculine includes only the names for males and the feminine only those for females (all other nouns belonging to the neuter). We will see two illustrations of this state.
of affairs further on: in Dravidian and Iroquoian languages, examples (12) and (13), pp. 334–335.

Second, although the link between biological sex and grammatical gender is a defining property of the latter, several curious deviations are not excluded.

– A language that has a well-established system of genders can possess masculine or neuter gender nouns that specifically denote women:
  - Modern Greek to korasion [NEU] ‘little girl’;
  - German das Mädchen ‘young girl’, das Fräulein ‘miss’ and das Weib ‘woman’ (the three nouns are neuter);
  - Russian син+ий ėcholok [MASC] ‘bluestocking’ = ‘woman who is thought to be too educated and not feminine enough’.

– The inverse is also possible — i.e., feminine nouns can denote women or men, and sometimes even only men:
  - French une personne ‘person’ [of either sex], une sentinelle ‘sentinel’, une recrue ‘[a] recruit’, une vedette ‘[movie etc.] star’ [of either sex], une fripouille ‘rogue, scoundrel’ [a man], une canaille ‘scoundrel’ [rather a man], une ordure ‘bastard’ [a man], une andouille ‘fool, moron’ [of either sex], Majesté ‘[Your] Majesty’, Seigneurie ‘[Your] Lordship’, Excellence ‘[Your] Excellency’;
  - Italian una guida ‘guide’, una spia ‘spy’, una SS ‘S.S.’;
  - Romanian o calfă ‘apprentice [of a craftsman]’, o călauză ‘guide’ [rather a man];
  - Polish/Russian т+a/ét+a osoba ‘this person’ [of either sex];
  - Russian ét+a svoloc ‘this scoundrel’, vulg. ét+a bljad’, lit. ‘this whore’ = ‘bastard’ [both apply to either sex];
  - Serbian [On/Ona je] velik+a cicija ‘[He/She is a] big miser/skinflint’, [On/Ona je] velik+a budala ‘[He/She is a] big fool’ [both also apply to either sex].

– Masculine gender nouns often denote humans irrespective of their sex:

However, such cases are rather exceptional and unsystematic. Most of them have a formal explanation (thus, the German nouns Mädchen and Fräulein include a diminutive suffix that imposes the neuter: -chen, -lein) or a pragmatic one (the French nouns ministre, professeur, médecin refer to the positions or professions that recently enough were out of reach for women).
Third, in certain cases, motivation of gender1 by sex yields its place to motivation by one of the two other characteristics which are equally anthropomorphic: either the distinction “alive [= animate] ~ non-alive [= inanimate],” or the distinction “human ~ non-human.” Genders1 based on these oppositions seem to be less frequent than sexual genders1, but they exist, and we will see examples of them later.

3. Condition 3
The absence of semantic motivation for gender1 is not absolute. To begin with, a derivational suffix often imposes a particular gender1 on the derived noun and in this way establishes a correlation between meaning and gender1. Even among non-derived nouns, a number of semantically related nouns can end up regrouped in the same gender1 under the influence of semantic analogy. Thus, for example, Zubin and Köpcke (1986) show the existence of semantic similarities of nouns in German genders1:
- generic terms are mostly neuter;
- names of types of clothing, of winds and precipitations, and of strong alcoholic beverages are almost always masculine;
- names of types of knowledge and scientific disciplines, as well as names for ropes used on ships are feminine;
- names of games and of metals are mostly neuter; etc.

However, once again, this phenomenon is rather exceptional for gender1; it is limited and disparate. To discover semantic motivation of gender1 for a group of nouns requires special research (while for class1 special research is needed to establish and systematize deviations from semantic motivation).

4. Condition 4
Similarly, genders1 can have formal expression in the noun, although, as a general rule, such expression is neither regular nor systematic. Thus, in French, leaving aside nouns with a gender-imposing suffix (which can be masculine—as with -age or -ème, or feminine, as with -tion, -son or -ture), feminine nouns tend to end in a plosive consonant or in a group ‘plosive consonant + liquid’. Ending in a vowel or in a liquid signifies the masculine (cf. Mel’čuk 1958). In Spanish, the formal expression of gender1 is even more explicit and systematic: roughly speaking, nouns in -a are feminine, all the others are masculine (with a few exceptions). I even think that Spanish has special suffixes -o and -a that mark the gender1 of the noun in question. However, the suffixal expression of gender1 of the noun in Spanish is by no means fully systematic: a large number of nouns do not have an explicit marker of gender1.
Chapter 6. Gender and noun class

5. Condition 6

Gender in Slavic or Latin is very relevant to the formal side of noun inflection: the type of declension—that is, in the final analysis, the choice of the number/case suffixes—depends on the gender of the noun. On the other hand, in French or in Spanish, the role of gender in the inflection of the noun is minimal (especially if we remember that these languages have no nominal case). However, even in French this role is not zero: for instance, the formation of plural by the apophony /al/ → /o/ and /aj/ → /o/ (of the type caporal ‘corporal’ ~ caporaux ‘corporals’, corail ‘coral’ ~ coraux ‘corals’) is possible only in masculine nouns.

6. Condition 7

The gender of a noun N never changes in order to express (for N) a grammeme—for instance, the plural. Exceptionally, however, the gender of N can change when a grammeme is expressed for N by some other independent means. This is a very subtle, but important, distinction: change of gender can automatically accompany the expression of number (or of case) by an independent affix—but this change should not be an exclusive marker, say, of the plural, nor should it be systematic enough in a gender system. Let us consider an example.

(3) Italian has a score of masculine nouns that, when they are pluralized (by the plural suffix -a), become feminine:

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>braccio</td>
<td>bracci+e</td>
</tr>
<tr>
<td>a</td>
<td>lungo</td>
<td>lunghe+e</td>
</tr>
<tr>
<td>a</td>
<td>caviglia</td>
<td>caviglie+e</td>
</tr>
<tr>
<td>a</td>
<td>caro</td>
<td>cari+e</td>
</tr>
<tr>
<td>a</td>
<td>caro</td>
<td>cari+e</td>
</tr>
</tbody>
</table>

The plural suffix -a (of the noun) is by no means a feminine pluralizing suffix (as a rule, -a marks the singular of feminine nouns). But the agreement in gender (of determiners, adjectives, past participles of compound verbal forms) with a plural noun of the type considered here is realized in exactly the same way it is with any feminine noun in the plural:

b. su+e braccia+e [inherent MASC, PL] lunghe+e che io ho vedut+e

‘his/her long arms that I have seen’. And

le su+e gamba+e [inherent FEM, PL] lunghe+e che io ho vedut+e

‘his/her long legs that I have seen’. Example (3) illustrates my point rather well: the plural of the nouns in (3) is not expressed by their change to feminine, but they become feminine as a consequence of their pluralization by an independent suffix. The same phenomenon is found in Romanian, except that there it is much more widespread, see example (24), 3.6, p. 341ff.2
French also has three masculine nouns, which show the same behavior — namely, they become feminine in the plural: AMOUR ‘love’, DELICE ‘delight’, and ORGUE ‘organ [musical instrument]’. However, they also slightly change their meaning in the plural: amours tumultueuses [FEM] ‘tumultuous amorous adventures’, les délices infinies de l’amour [FEM] ‘infinite transports of love’, les grandes orgues (d’une cathédrale) [FEM] ‘[one] big organ [in a cathedral]’. Therefore, one has to treat these plural forms as lexical units different from singular forms: les amours, les délices et les orgues (in the indicated senses) are pluralia tantum and do not constitute a legitimate example of a gender changing in the plural.

Such changes do not perturb a system of genders as long as they are as restricted and non-systematic as in Italian and French. But being regular and systematic (as in Daghestanian languages, see 4.3, 1, p. 350) they signal the presence of classes.

7. Condition 8

Differences in gender can be exploited by the language in order to express certain derivatemes, but always in an irregular, unsystematic way — that is, in isolated cases. For instance, in French, the transfer of a feminine noun N into the masculine can mean ‘person who manages/operates N’: la radio ‘radio’ ~ le radio ‘radio operator’, la trompette ‘trumpet’ ~ le trompette ‘trumpeter’, etc. In Spanish, transfers between genders which express various derivatemes (that is, gender conversions) are even more widespread. Nevertheless, as with the preceding properties, this is still rather an exceptional situation: it is too capricious (because it is too lexicalized) to seriously affect the essence of a gender system. Yet Spanish possesses a derivateme which is expressed by a gender conversion in a sufficiently regular way to be of interest — namely, the derivateme ‘of feminine sex’:

(4) Spanish

<table>
<thead>
<tr>
<th>Gender</th>
<th>Masculine</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>brother</td>
<td>herman</td>
<td>herman+a</td>
</tr>
<tr>
<td>son</td>
<td>hij</td>
<td>hij+a</td>
</tr>
<tr>
<td>uncle</td>
<td>ti</td>
<td>ti+a</td>
</tr>
<tr>
<td>grandfather</td>
<td>abuel</td>
<td>abuel+a</td>
</tr>
<tr>
<td>husband</td>
<td>espos</td>
<td>espos+a</td>
</tr>
<tr>
<td>boy</td>
<td>muchach</td>
<td>muchach+a</td>
</tr>
<tr>
<td>dog</td>
<td>perr</td>
<td>perr+a</td>
</tr>
<tr>
<td>spy</td>
<td>[el] espi</td>
<td>[la] espi</td>
</tr>
<tr>
<td>student</td>
<td>[el] estudiante</td>
<td>[la] estudiante</td>
</tr>
</tbody>
</table>

This emphasizes once more the important link between gender and sex.

Our quick review of the defining properties that oppose genders and classes clearly shows two important facts:
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– these properties are not independent of each other;
– they do not have all the same weight.

Of course these two facts are, in their turn, also closely related, but I am not in a position to study their links in a deeper fashion. Note, however, that the small number of genders I is conditioned by the crucial role of sex: a gender I language can have two genders I for two sexes plus maybe one or two more for sexless things. This fact makes it impossible to have good semantic motivation for agreement classes: all nouns cannot be semantically distributed between just two or three genders. The absence of autonomous gender markers in the noun entails the difficulty of using the change of gender to express grammemes or derivatemes, etc. Perhaps certain properties— for instance, the small number of classes and the absence of an autonomous marker in the noun— should be posited as basic properties, from which all other properties follow. These basic properties could have a special weight, so that they will have more influence on our decision (gender I or class I?) with respect to a given noun classification.

3.3.   Examples of gender I systems

Definition 6.1 stipulates the existence of gender I systems with two, three, or four members.

Two-gender I systems

– Masculine ~ feminine

Such systems are known in Romance and Semitic languages. These are the prototypical genders I, sensitive to sexual distinctions—in the sense that the names of males are in the masculine gender I, and the names of females in the feminine. Let me illustrate such systems from French and Arabic.

(5) French

<table>
<thead>
<tr>
<th>masculine</th>
<th>feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>'father' père</td>
<td>'mother' mère</td>
</tr>
<tr>
<td>'son' fils</td>
<td>'daughter' fille</td>
</tr>
<tr>
<td>'insect' insecte</td>
<td>'spider' araignée</td>
</tr>
<tr>
<td>'snake' serpent</td>
<td>'grass snake' couleuvre</td>
</tr>
<tr>
<td>'market' marché</td>
<td>'stock market' bourse</td>
</tr>
<tr>
<td>'bench' banc</td>
<td>'chair' chaise</td>
</tr>
<tr>
<td>'book' livre</td>
<td>'review' revue</td>
</tr>
<tr>
<td>'sun' soleil</td>
<td>'moon' lune</td>
</tr>
</tbody>
</table>

'intéressant' +Ø

'interesting'

'interesting' +e

(‘intéressant’ +Ø)
Animate ~ inanimate

Gender1 systems with two members of a different type are widespread in Algonquian languages, where nouns are divided into two agreement classes: animate (in the first place, nouns denoting ‘living’ beings, but also other entities and facts) and inanimate.

Here, the distribution of nouns between the two agreement classes is not at all linked to sex: names of living beings of both sexes are in the same class. This means that Condition 2 of Definition 6.1 is not satisfied. Nevertheless, Algonquian agreement classes are genders1, because the other seven defining properties have positive values.

(7) Menomini

<table>
<thead>
<tr>
<th>animate</th>
<th>inanimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘man’</td>
<td>enæníw</td>
</tr>
<tr>
<td>‘woman’</td>
<td>metæmoh</td>
</tr>
<tr>
<td>‘child’</td>
<td>ničian</td>
</tr>
<tr>
<td>‘butterfly’</td>
<td>mìmìkwaew</td>
</tr>
<tr>
<td>‘dog’</td>
<td>ańæm</td>
</tr>
<tr>
<td>‘tree’</td>
<td>máćëtek</td>
</tr>
<tr>
<td>‘rock’</td>
<td>aঊsan</td>
</tr>
<tr>
<td>‘cauldron’</td>
<td>ahkëh</td>
</tr>
<tr>
<td>‘plum’</td>
<td>akëhsemen</td>
</tr>
<tr>
<td>‘raspberry’</td>
<td>anõhkan</td>
</tr>
<tr>
<td>‘wagon’</td>
<td>oțačékwàn</td>
</tr>
<tr>
<td>‘his/her nail’</td>
<td>oskàs</td>
</tr>
<tr>
<td>‘onion’</td>
<td>sekàkæhsyàh</td>
</tr>
<tr>
<td>‘board’</td>
<td>napàkæhnakæsèw</td>
</tr>
</tbody>
</table>

It is easy to see that the semantic motivation is not very strong here. All the names of living beings are in the animate gender1, but the inverse is not true: the ani-
mate gender includes many names of objects, and there is no rule for this distribution. For instance, ‘cauldron’ is animate, but ‘pillow’ inanimate; ‘raspberry’ animate, but ‘strawberry’ inanimate; ‘board’ animate, but ‘stick’ inanimate; etc.

Gender in Menomini has no autonomous expression in the noun: it is a covert feature that is manifested only in agreement with the verb. An intransitive verb agrees—in gender (animate/inanimate)—with its Subject, while a transitive verb agrees with its Direct Object.

b. The verb OSÅW- ‘[to] be brown’ [intransitive]

\[
\begin{align*}
\text{Nčian} & \quad \text{Osåw+en} & \quad \text{The child is brown}. \\
\text{Otäčekwan} & \quad \text{The wagon}
\end{align*}
\]

vs.

\[
\begin{align*}
\text{Antpiakhan} & \quad \text{Osåw+iw} & \quad \text{The leaf is brown}. \\
\text{Atōmopīn} & \quad \text{The car}
\end{align*}
\]

The verb TÅN- ‘[to] have’ [transitive]

\[
\begin{align*}
\text{Nōhnær} & \quad \text{Tån+ēw} & \quad \text{My father has a child}. \\
\text{Nčian} & \quad \text{Otäčekwan} & \quad \text{a wagon}
\end{align*}
\]

vs.

\[
\begin{align*}
\text{Nōhnær} & \quad \text{Tån+ām} & \quad \text{My father has a leaf}. \\
\text{Antpiakhan} & \quad \text{Atōmopīn} & \quad \text{a car}
\end{align*}
\]

The distinction “animate ~ inanimate” in Algonquian is relevant to the inflection of the noun: Menomini animate nouns have the plural suffix -ak (and its morphonological variants), but inanimate nouns have -an/-on. Compare:

c. animate inanimate

<table>
<thead>
<tr>
<th>sg</th>
<th>pl</th>
<th>sg</th>
<th>pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>enēniw</td>
<td>enēniw</td>
<td>+ak</td>
<td>wēkeyom</td>
</tr>
<tr>
<td>metēmoh</td>
<td>metēmoh</td>
<td>+sak</td>
<td>ašekan</td>
</tr>
<tr>
<td>Nčian</td>
<td>Nčian</td>
<td>+ok</td>
<td>ačemwan</td>
</tr>
<tr>
<td>anēm</td>
<td>anēm</td>
<td>+ok</td>
<td>atāwēwikamek</td>
</tr>
<tr>
<td>ašsan</td>
<td>ašsan</td>
<td>+yak</td>
<td>onēhkēhsēh</td>
</tr>
<tr>
<td>ahkēh</td>
<td>ahkēh</td>
<td>+kok</td>
<td>mætek</td>
</tr>
</tbody>
</table>

The change of gender in the noun in order to express an inflectional or derivational meaning is unknown in Menomini.

It is clear that Menomini genders are very similar to the genders of French, German or Russian, with a single difference: Menomini genders are not at all linked to the sex of the referent of the noun in question. They are based on a different, but no less important characteristic of the referent of the noun: its animacy or inanimacy.
Gender systems distinguishing masculine ~ feminine ~ neuter are typical of Classical, Germanic and Slavic languages.

(8) Latin

<table>
<thead>
<tr>
<th>masculine</th>
<th>feminine</th>
<th>neuter</th>
</tr>
</thead>
<tbody>
<tr>
<td>father</td>
<td>mater</td>
<td>insect</td>
</tr>
<tr>
<td>son</td>
<td>daughter</td>
<td>face</td>
</tr>
<tr>
<td>dog</td>
<td>snake</td>
<td>wound</td>
</tr>
<tr>
<td>market</td>
<td>soil</td>
<td>good</td>
</tr>
<tr>
<td>book</td>
<td>glory</td>
<td>good</td>
</tr>
<tr>
<td>field</td>
<td>forest</td>
<td>sea</td>
</tr>
<tr>
<td>bed</td>
<td>lectus</td>
<td>mare</td>
</tr>
<tr>
<td></td>
<td>table</td>
<td>domicile</td>
</tr>
<tr>
<td>pater</td>
<td>mater</td>
<td>insectum</td>
</tr>
<tr>
<td>filius</td>
<td>filia</td>
<td>vulnum</td>
</tr>
<tr>
<td>canis</td>
<td>serpens</td>
<td>bonum</td>
</tr>
<tr>
<td>mercatus</td>
<td>humus</td>
<td>bonum</td>
</tr>
<tr>
<td>liber</td>
<td>gloria</td>
<td>bonum</td>
</tr>
<tr>
<td>ager</td>
<td>silva</td>
<td>bonum</td>
</tr>
<tr>
<td>lectus</td>
<td>mensa</td>
<td>bonum</td>
</tr>
</tbody>
</table>

(9) German

<table>
<thead>
<tr>
<th>masculine</th>
<th>feminine</th>
<th>neuter</th>
</tr>
</thead>
<tbody>
<tr>
<td>father</td>
<td>mother</td>
<td>girl</td>
</tr>
<tr>
<td>son</td>
<td>daughter</td>
<td>woman</td>
</tr>
<tr>
<td>dog</td>
<td>cow</td>
<td>book</td>
</tr>
<tr>
<td>market</td>
<td>review</td>
<td>rabbit</td>
</tr>
<tr>
<td>book</td>
<td>wall</td>
<td>rabbit</td>
</tr>
<tr>
<td>field</td>
<td>tree</td>
<td>palm</td>
</tr>
<tr>
<td>bed</td>
<td>table</td>
<td>bed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vater</td>
<td>Mutter</td>
<td>Mädchen</td>
</tr>
<tr>
<td>Sohn</td>
<td>Tochter</td>
<td>Web</td>
</tr>
<tr>
<td>Hund</td>
<td>Kuh</td>
<td>Buch</td>
</tr>
<tr>
<td>Brief</td>
<td>Zeitschrift</td>
<td>Kaninchen</td>
</tr>
<tr>
<td>Band</td>
<td>Wand</td>
<td>Band</td>
</tr>
<tr>
<td>Baum</td>
<td>Palme</td>
<td>Ost</td>
</tr>
<tr>
<td>Tisch</td>
<td>Tafel</td>
<td>Bett</td>
</tr>
</tbody>
</table>

(10) Russian

<table>
<thead>
<tr>
<th>masculine</th>
<th>feminine</th>
<th>neuter</th>
</tr>
</thead>
<tbody>
<tr>
<td>father</td>
<td>mother</td>
<td>person</td>
</tr>
<tr>
<td>son</td>
<td>daughter</td>
<td>child</td>
</tr>
<tr>
<td>spider</td>
<td>house</td>
<td>insect</td>
</tr>
<tr>
<td>stone</td>
<td>rock</td>
<td>lake</td>
</tr>
<tr>
<td>market</td>
<td>stock exchange</td>
<td></td>
</tr>
<tr>
<td>pencil</td>
<td>pen</td>
<td>place</td>
</tr>
<tr>
<td>table</td>
<td>bed</td>
<td>armchair</td>
</tr>
<tr>
<td></td>
<td>tisch</td>
<td>kreslo</td>
</tr>
<tr>
<td>otec</td>
<td>mat</td>
<td>lico</td>
</tr>
<tr>
<td>syn</td>
<td>daughter</td>
<td>ditia</td>
</tr>
<tr>
<td>pank</td>
<td>voš</td>
<td>naekomoe</td>
</tr>
<tr>
<td>kamen</td>
<td>skala</td>
<td>lake</td>
</tr>
<tr>
<td>rynaok</td>
<td>birža</td>
<td>ozero</td>
</tr>
<tr>
<td>karandaš</td>
<td>pen</td>
<td>place</td>
</tr>
<tr>
<td>stol</td>
<td>ručka</td>
<td>pero</td>
</tr>
</tbody>
</table>

Four-gender systems

A clear-cut four-gender system can be found in Dyirbal. (Another – but very different – four-gender system exists in Iroquoian languages – cf. Oneida, example (13), p. 335.)

(11) Dyirbal distinguishes four grammatical genders:

masculine ~ feminine ~ vegetable [edible] ~ neuter.

The gender of a noun controls the agreement of the determiner bala-/ba-(which has a role similar to that of the article in English or French and is very important for the structure of the sentence); however, adjectives and verbs in Dyirbal do not agree in gender.
Chapter 6. Gender and noun class

For a detailed description of a four-gender system in another Australian language, Mayali, see Evans 1997 and Evans et al. 2002.

3.4. Semantic motivation of genders

In some languages, genders are semantically well motivated, which violates Condition 3 of Definition 6.1. Here are two examples, from Dravidian and Iroquoian languages.

Dravidian languages manifest a system of three genders:

- masculine ~ feminine ~ neuter,

which are semantically fully motivated. Nouns referring to men belong all to the masculine, nouns referring to women belong to the feminine, and all other nouns belong to the neuter. A Dravidian noun functioning as a SSynt-Subject imposes agreement in gender on the verb, which distinguishes, accordingly, three genders (there is no other agreement).

(12) Kannada

The verb kare- ‘[to] call’ in the present indicative

<table>
<thead>
<tr>
<th>Gender</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASC</td>
<td>guru +yu</td>
<td>kareyutt +ane guru +galu</td>
</tr>
<tr>
<td>FEM</td>
<td>hudugi +yu</td>
<td>kareyutt +ade hudugi +yaru</td>
</tr>
<tr>
<td>NEU</td>
<td>kuri +yu</td>
<td>kareyutt +ade kuri +galu</td>
</tr>
</tbody>
</table>

\[ \text{masculine} \]
- man
- father
- fishing line
- erection
- green frog
- wallaby
- falcon
- eel spear
- moon
- unclear words

\[ \text{feminine} \]
- woman
- mother
- shield handle
- [woman’s] breast
- bird
- mother
- dog
- speak
- fresh water
- sun
- unclear words

\[ \text{neuter} \]
- tree/wood
- hand
- mouth
- iron
- blood
- tavern
- stone ax
- plateau
As we see, the opposition “masculine ~ feminine” is not observed in the plural: the verb in the plural has just one form for any human noun. This phenomenon—the neutralization of the opposition of genders in the plural (see the following subsection)—is typical of all Dravidian languages. However, some of these languages neutralize the opposition of genders in a different way: in the plural, they oppose masculine nouns to all the others (i.e., to feminine + non-human ones).

Remarks

1. In Kannada, there are a few exceptions to the rule that the nouns are divided into genders exclusively according to sex. Thus, the nouns SÖRYA ‘sun’ and ČANDRA ‘moon’ as well as all the names of planets are masculine; BA-SA-VÄ ‘bull’ and KO-NÄ ‘male buffalo’ are masculine in the singular and neuter in the plural; KUSU and MAGU, both meaning ‘child’, are neutral (but can be used in the masculine or the feminine, if one wants to underscore the sex of the child).

2. In Kannada, gender1 is not expressed in the noun, expression of gender2 in the verb is cumulative (gender2 + number + person), and gender1 is relevant to declension: the declension group of a noun depends on its gender1.

Oneida has a system of four genders, which are semantically no less motivated than Kannada genders:

- masculine ~ feminine-fertile ~ feminine-indefinite ~ neuter.

The names of males (not necessarily of men, as in Dravidian) belong all to the masculine, and the names of inanimate objects and of beings whose sex is not obvious belong to the neuter. However, the names of female beings are distributed between two genders: ‘FEMININE-FERTILE’ for females of reproductive age, and ‘FEMININE-INDEFINITE’ for females who are too young or too old for reproduction. The noun as the SSynt-Subject imposes its gender on the verb (Oneida does not have other types of agreement).

(13) Oneida

<table>
<thead>
<tr>
<th>Gender</th>
<th>Example</th>
<th>Noun</th>
<th>Verb</th>
<th>Verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASC</td>
<td>‘bear’</td>
<td>ohkwãl</td>
<td>ITAKLÄHSE</td>
<td>[‘to fall’]</td>
</tr>
<tr>
<td>FEM-FERT</td>
<td>‘my mother’</td>
<td>ak+nülh</td>
<td>xi+taklähse</td>
<td>lí</td>
</tr>
<tr>
<td>FEM-INDEF</td>
<td>‘my grandmother’</td>
<td>ak+hsötha</td>
<td>ki+taklähse</td>
<td>y</td>
</tr>
<tr>
<td>NEU</td>
<td>‘hat’</td>
<td>hantalole</td>
<td>ye+taklähse</td>
<td>yak+ёние?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ka+taklähse</td>
<td>k</td>
</tr>
</tbody>
</table>

Depending on its conjugation group, an Oneida verb selects agreement prefixes which express its person, number and gender2 as a function of its SSynt-Subject.

For partial semantic motivation of genders in Mayali, see Evans et al. 2002.
3.5. **Gender1 neutralization**

It is well known that in some languages the distinction between genders1 can be ‘abolished,’ or neutralized, in the plural. This means that a wordform agreeing with a noun in the plural (an adjective or a verb) does not reflect its gender1. Such a neutralization happens, for instance, in German and Russian.

(14) German: agreement of the adjective

<table>
<thead>
<tr>
<th>Gender</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASC</td>
<td>‘apple’</td>
<td>großer</td>
</tr>
<tr>
<td>FEM</td>
<td>‘hand’</td>
<td>groß</td>
</tr>
<tr>
<td>NEU</td>
<td>‘window’</td>
<td>großes</td>
</tr>
</tbody>
</table>

(15) Russian

a. Agreement of the adjective

<table>
<thead>
<tr>
<th>Gender</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASC</td>
<td>‘house’</td>
<td>bol’sjyj</td>
</tr>
<tr>
<td>FEM</td>
<td>‘hand’</td>
<td>bol’sja</td>
</tr>
<tr>
<td>NEU</td>
<td>‘window’</td>
<td>bol’soe</td>
</tr>
</tbody>
</table>

b. Agreement of the finite verb in the past

<table>
<thead>
<tr>
<th>Gender</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASC</td>
<td>‘house’</td>
<td>Pojavil+Ø+ja</td>
</tr>
<tr>
<td>FEM</td>
<td>‘hand’</td>
<td>Pojavil+a+s’</td>
</tr>
<tr>
<td>NEU</td>
<td>‘window’</td>
<td>Pojavil+a+s’</td>
</tr>
</tbody>
</table>

To prevent any misunderstanding, let me emphasize that the expression “the distinction between genders1 is neutralized” does not mean that this distinction disappears in the noun: the German or Russian noun in the plural retains its inherent gender1. What actually happens is that adjectives or verbs which agree with the plural noun cease distinguishing their genders1 – IN SPITE OF the fact that the corresponding distinction in genders1 is present in the noun. We see that this distinction is present because, among other things, German and Russian plural nouns continue to impose their gender1 on adjectives in the elective construction:

(16) a. German

<table>
<thead>
<tr>
<th>Gender</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASC</td>
<td>‘apple’</td>
<td>ein+er (d+er größte)</td>
</tr>
<tr>
<td>FEM</td>
<td>‘hand’</td>
<td>ein+e (d+ie größte)</td>
</tr>
<tr>
<td>NEU</td>
<td>‘window’</td>
<td>ein+Ø (d+as größte)</td>
</tr>
</tbody>
</table>

b. Russian

<table>
<thead>
<tr>
<th>Gender</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASC</td>
<td>‘house’</td>
<td>odin+Ø (sam+yj bol’s+aj)</td>
</tr>
<tr>
<td>FEM</td>
<td>‘hand’</td>
<td>odn+a (sam+a+ja bol’s+aja)</td>
</tr>
<tr>
<td>NEU</td>
<td>‘window’</td>
<td>odn+a (sam+oe bol’s+oe)</td>
</tr>
</tbody>
</table>
Therefore, it would be more precise to speak of the neutralization of genders (i.e., ‘reflected’ genders) in the adjective and the verb. The extant usage—such expressions as “the neutralization of gender in the noun”—is confusing and should be abandoned.

While German and Russian neutralize their genders in the plural, this is, of course, not the case in all languages that have genders. For instance, all Romance languages and some Slavic languages retain the opposition of genders in the plural. Thus, we find this state of affairs in Spanish and Serbo-Croatian:

(17) Spanish

<table>
<thead>
<tr>
<th>Gender</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>'beautiful palace'</td>
<td>MASC</td>
<td>palacio</td>
</tr>
<tr>
<td>'beautiful house'</td>
<td>FEM</td>
<td>casa</td>
</tr>
</tbody>
</table>

(18) Serbo-Croatian

<table>
<thead>
<tr>
<th>Gender</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>'beautiful city'</td>
<td>MASC</td>
<td>lep + O</td>
</tr>
<tr>
<td>'beautiful hand'</td>
<td>FEM</td>
<td>lep + a</td>
</tr>
<tr>
<td>'beautiful village'</td>
<td>NEU</td>
<td>lep + o</td>
</tr>
</tbody>
</table>

We have seen an example of neutralization of masculine and feminine genders in the plural in Kannada. Another Dravidian language, Telugu, manifests an even more complex gender neutralization: in the singular, it neutralizes the opposition “feminine ~ neuter,” while in the plural, the opposition “feminine ~ masculine.”

(19) Telugu

The verb CHEPPU ('to speak, say') in the present indicative

<table>
<thead>
<tr>
<th>Gender</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASC</td>
<td>anna</td>
<td>chepputunn + ādu</td>
</tr>
<tr>
<td>FEM</td>
<td>strt</td>
<td>chepputunn + adi</td>
</tr>
<tr>
<td>NEU</td>
<td>pāmu</td>
<td>chepputunn + avi</td>
</tr>
<tr>
<td>1 older brother</td>
<td></td>
<td>2 chepputunn + āru</td>
</tr>
<tr>
<td>1 woman</td>
<td></td>
<td>2 chepputunn + āru</td>
</tr>
<tr>
<td>1 snake</td>
<td></td>
<td>2 chepputunn + āru</td>
</tr>
</tbody>
</table>

At this point, a warning is in order. There is a phenomenon which is superficially very similar to the neutralization of genders (in the sense explained above), but in reality is quite different: I mean the HOMOPHONY of the markers of gender.

Let us take an example.

(20) In Russian, the difference between the masculine and neuter genders of a noun is reflected by the modifying adjective only in the nominative and the accusative of the singular:
What do we find here? Is this neutralization of the masculine and the neuter genders in the adjective? The answer is no. (20) shows the non-distinction of these two genders; but this happens not because of a neutralization. I think that Russian masculine and neuter adjectival forms in the singular are different, but homophonous. In other words, I propose the following:

A Russian adjectival form such as bol’shie (big, PLURAL), which is the same for the nouns of the three genders, is described as having no grammeme of gender:

\[ \text{BOL’ŠOJ}_{\text{pl, nom}} \]

this is what I would like to call ‘neutralization.’ But the adjectival form in the dative singular bol’somu, which is the same for the masculine and neuter nouns, is described as two different lexes whose signifiers are identical:

\[ \text{BOL’ŠOJ}_{\text{masc, sg, dat}} \text{ vs. } \text{BOL’ŠOJ}_{\text{neu}, \text{sg, dat}} \]

This is caused by the homophony of the suffixes -omu (MASC, SG, DAT) and -omu (NEU, SG, DAT).

Remark

The admission of the neutralization of genders in the plural entails the partial status of the inflectional category of gender in the adjective and the verb: the gender of the Russian adjective and of the Russian verb is valid only for the subparadigm of the singular.

From the strictly logical viewpoint, a case of neutralization can always be described by recourse to the homophony of markers; by the same token, the homophony of markers of the type under consideration can always be avoided in any description, if we allow the neutralization of the relevant category. This means that we are facing here a case of alternative morphological descriptions. I cannot seriously discuss this here, and I will limit myself to indicating that, in this particular case, the choice of the preferred solution is made following a methodological principle called the Principle of simplest restriction. Roughly, this principle requires that the neutralization be postulated only 1) if it applies to a whole single category (that is, all the grammemes are affected: none are opposed anymore) and 2) if the condition of this neutralization (= ‘restriction’) can be formulated with respect to a single grammeme. Thus, the neutralization of Russian adjectival/verbal genders in the plural is specified by the fol-
lowing formulation: “The category of gender (the whole category!) is neutralized in the plural” (the condition is a single grammeme: ‘PLURAL’). But a similar formulation is not possible to express the fact that the masculine and the neuter are not distinguished in the oblique cases in the singular. First, the feminine remains distinct, so that the whole category is not neutralized. Second, the masculine and the neuter have non-distinctive forms only in some cases, not in all cases, so that the condition of neutralization cannot be expressed by the reference to a single grammeme.

3.6. Marked/unmarked character of genders

Genders of a language are usually not equal in that one of them is unmarked while the others are marked. The unmarked gender has several properties which set it apart, but the most visible ones are perhaps the following three:

**Agreement with a conjoined string**

If a clause has a conjoined string of nouns of different genders, the agreement (of an adjective or a finite verb) with this string as a whole is for the unmarked gender (see Remark 2 below for an additional proviso).

This type of agreement is also known as default agreement (Aronoff 1994: 97). Looking ahead, I would like to point out that default agreement is also typical of noun class. Thus, in Arapesh, if a conjoined strings of nouns acting as a Subject contains nouns of different classes, the verb always agrees with it in class VIII, no matter what the classes of the Ns in the string are. Class VIII is the unmarked class in Arapesh.

**Agreement with a plural noun**

If the agreement in the plural (of an adjective or a finite verb) is not necessarily for the same gender as in the singular, it is for the unmarked gender.

**Congruence with an indefinite pronoun**

Congruence with an indefinite pronoun is for the unmarked gender.

Let me illustrate these three properties.

– In French, where there are several conjoined nouns, the gender of agreeing adjectives and verbs is masculine, because the masculine is the unmarked gender (of nouns) in French:
Chapter 6. Gender and noun class

Remarks

1. The unmarked character of the nominal masculine in French manifests itself in other linguistic phenomena as well. Thus, some masculine human nouns in the plural can refer to a set of people of both sexes, while the corresponding feminine human nouns in the plural refer only to women. For example, the form étudiant [MASC] means only ‘male student’, while the plural étudiants can refer to a set of male and female students; however, the form étudiante [FEM] means ‘female student’ and the plural étudiantes refers only to women (‘female students’). The same is true for such pairs as les Parisiens ‘the Parisians’ vs. les Parisiennes ‘the female Parisians’, les Américains ‘the Americans’ vs. les Américaines ‘the female Americans’, les ouvriers ‘the workers’ vs. les ouvrières ‘the female workers’, etc.

2. The problem of agreement in gender with conjoined strings including nouns of different genders is thoroughly discussed in Corbett 1983a, b and 1986. It is shown there that the relation between the unmarked character of a gender and its capacity to impose – upon the string of conjoined nouns – a particular type of gender agreement is not as simple as my formulation suggests. Semantic and pragmatic factors can enter into play. Thus, even a strongly marked gender of the noun N can impose its type of agreement onto the conjoined string which comprises N if the use of this gender is semantically/pragmatically motivated. Thus, in Polish, a masculine human noun imposes agreement for the masculine human gender on any string that contains also feminine and/or neuter nouns for purely semantico-pragmatic reasons (in spite of the fact that the masculine human gender is marked in Polish): male humans are considered in Polish to be more prominent as participants in a situation. Similar phenomena, found in diverse languages, require a proviso of the following type to be added to the formulation of the main property of the
unmarked gender: “... except in case where semantic/pragmatic factors outweigh the impact of the unmarked gender.”

– In literary Arabic, it is the feminine that is the unmarked gender from the viewpoint of agreement with the noun in the plural. Thus, a non-human noun in the plural requires agreement of the adjectives and the finite verb in the feminine singular, independently of the gender of the noun (Kilean 1968, Barlow 1992: 254–281):

(22) Arabic

<table>
<thead>
<tr>
<th>Gender</th>
<th>Word</th>
<th>Gender</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kutub [MASC, PL]</td>
<td>1</td>
<td>waṣal+at</td>
</tr>
<tr>
<td>1</td>
<td>Kīlab [MASC, PL]</td>
<td>2</td>
<td>big FEM.SG</td>
</tr>
<tr>
<td>1</td>
<td>Maṣālāt [FEM, PL]</td>
<td>1</td>
<td>arrived FEM.SG</td>
</tr>
<tr>
<td>1</td>
<td>Bāqarāt [FEM, PL]</td>
<td>2</td>
<td>kabār+al.</td>
</tr>
</tbody>
</table>

Cf.: *Kutub kībār [MASC.PL] waṣal+ā [MASC.PL].

or

*Maṣālāt kabārāt [FEM.PL] waṣal+na [FEM.PL].

– Again in French (and in Russian), congruence with an indefinite pronoun is in the unmarked gender – that is, the masculine:

(23) French/Russian

a. Si quelqu'un me demande, tu [MASC] prie de m'attendre. ~

   Esli kto-nibud' menja budet spravis'v', skaži emu [MASC], ětoby podoždal

   'If somebody asks for me, tell him to wait'.

b. Quand je découvre qui a brisé mon appareil, je [MASC] punirai. ~

   Kogda ja ustanovlju, kto slomal moj apparat, ja ego[MASC] nakažu

   'When I discover who broke my camera, I’ll punish him'.

3.7. Problematic genders: two case studies

The time is ripe now to consider two more difficult examples: genders in Romanian and Spanish.

Gender in Romanian

(24) Romanian has two nominal genders, masculine and feminine, which, as French or Italian, do not admit the neutralization of the adjectival genders in the plural:
Chapter 6. Gender and noun class

a. singular | plural
---|---
MASC | un | a-MASC.SG forest | un | a-MASC.PL forest +i frumoas+i
FEM | o | a-FEM.SG table | une | a-FEM.PL table +le frumoas+e

However, a huge number of Romanian nouns are masculine in the singular, but feminine in the plural:

b. singular | plural
---|---
MASC | un | a-MASC.SG forest | un | a-MASC.PL forest +i frumoas+i
FEM | o | a-FEM.SG table | une | a-FEM.PL table +le frumoas+e

This situation immediately recalls what we have seen in Italian (example (3), p. 328), but with one important difference: in Italian, the set of masculine nouns that become feminine in the plural is closed and very small (these nouns are exceptions, as in French), while in Romanian such chameleon nouns are very numerous, and their set is open: recent borrowings join it easily. These nouns are by no means exceptional.

The phenomenon presented in (24b) can be described in one of the two following ways:

Three-gender description. According to traditional grammar, the Romanian noun has three genders, namely – masculine, feminine and neuter, the last including only the nouns that are masculine in the singular and feminine in the plural. Thus, CODRU ‘forest’ is masculine, MASĂ ‘table’ feminine, and SCAUN ‘chair’, neuter. (For some interesting arguments in favor of this viewpoint, see Mallinson 1984.)

In some older grammars, Romanian neuter is called ambigene, that is, ‘having two genders’. However, I am opposed to this terminological usage: the term ambigene must be applied only to such nouns that, without changing their form, can be masculine or feminine as a function of the sex of the being referred to. Such is, for instance, the Russian noun SIROTA ‘orphan’: you can say et+ot [MASC] nesčastryj [MASC] sirota ‘this poor orphan’, speaking about a boy, and et+a [FEM] nesčastryjaja [FEM] sirota ‘this poor orphan’, speaking about a girl. SIROTA is a real ambigene noun: more precisely, there are two lexemes here—that is, SIROTA1 [MASC] and SIROTA2 [FEM], each lexeme having one gender. French has many similar cases: un CONCIERGE [MASC] ‘a male janitor’ ~ une CONCIERGE [FEM] ‘a female janitor’, etc. are also genuine ambigenes.
Two-gender description. Based on my definition of genderI (Definition 6.1), I claim that the Romanian noun has only two gendersI, masculine and feminine, but many inanimate masculine nouns change their genderI when they are pluralized; this change must be specified for corresponding nouns in the dictionary by a syntactic feature. I cannot accept the traditional description in terms of three gendersI, because gendersI are agreement classes, and an agreement class must be minimal—no agreement class should be defined in terms of other agreement classes (see Chapter 1, 2.2.3, p. 53). Therefore, as a particular case of agreement class, a genderI must also be minimal—that is, a genderI cannot be defined in terms of (or by reference to) other gendersI. It is exactly this constraint that the traditional description of Romanian gendersI violates: the neuter is defined by reference to the masculine and the feminine (“A noun is neuter if and only if in the singular it is masculine and in the plural, feminine”).

Under the proposed approach, Romanian genderI deviates only slightly from the ideal of genderI. It violates just Condition 7 of Definition 6.1, which requires that “a change in the agreement class of a noun ... does not systematically accompany in \( L \) the expression of an inflectional meaning characterizing this noun—for instance, grammatical number” (cf. also Comment 6, p. 328). All other conditions of our definition of genderI are satisfied, so that Romanian agreement classes can safely be considered to be well-established gendersI.

GenderI in Spanish

(25) Spanish manifests certain particularities in its two nominal gendersI that oppose them to the gendersI of other Romance languages.

1. The masculine and the feminine have an autonomous non-cumulative marker in the noun; a similar marker expresses the gender2 in the agreeing adjective (libr+o ‘book’ buen+o ‘good’ [MASC] ~ cam+a ‘bed’ buen+a [FEM]; -o vs. -a):

<table>
<thead>
<tr>
<th>masculine</th>
<th>feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘people’ puebl+o</td>
<td>‘sand’ aren+a</td>
</tr>
<tr>
<td>‘gesture’ gest+a</td>
<td>‘face’ cas+a</td>
</tr>
<tr>
<td>‘success’ exit+a</td>
<td>‘bed’ car+a</td>
</tr>
<tr>
<td>‘car’ aut+a</td>
<td>‘piece of news’ notici+a</td>
</tr>
<tr>
<td>‘river’ ri+a</td>
<td></td>
</tr>
</tbody>
</table>

Note that in Italian, for instance, the final -o and -a are not non-cumulative markers of genderI nor of gender2: here, -o expresses the masculine and the singular together, and -a expresses the feminine and the singular, also together. The same happens with the plural markers -i and -e—they express the number and the genderI/2 together as well. Cf.:
Chapter 6. Gender and noun class

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th></th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASC</td>
<td>It. popol+a</td>
<td>buon+a</td>
<td>It. popol+i</td>
</tr>
<tr>
<td></td>
<td>people MASC SG</td>
<td>good MASC SG</td>
<td>people MASC PL</td>
</tr>
<tr>
<td></td>
<td>Sp. puebl+a+Ø</td>
<td>bueno+Ø</td>
<td>Sp. puebl+a+s</td>
</tr>
<tr>
<td></td>
<td>people MASC SG</td>
<td>good MASC SG</td>
<td>people MASC PL</td>
</tr>
<tr>
<td>FEM</td>
<td>It. cosa+a</td>
<td>buon+a</td>
<td>FEM cosa+e</td>
</tr>
<tr>
<td></td>
<td>thing FEM.SG</td>
<td>good FEM.SG</td>
<td>thing FEM.PL</td>
</tr>
<tr>
<td></td>
<td>Sp. cosa+a+Ø</td>
<td>bueno+Ø</td>
<td>Sp. cosa+a+s</td>
</tr>
<tr>
<td></td>
<td>thing FEM.SG</td>
<td>good FEM.SG</td>
<td>thing FEM.PL</td>
</tr>
</tbody>
</table>

The non-cumulative nature of suffixes marking gender in Spanish nouns is seen also in the diminutives derived from the nouns that do not end in -o or -a. For instance, the Spanish masculine nouns ARBOL ‘tree’ and PASTOR ‘shepherd’ have the diminutives arbol+it+a and pastor+cit+a, while the feminine nouns CALLE ‘street’ and NOCHE ‘night’ have calle+cit+a and noche+cit+a. Consider as well [el] JOVEN ‘young man’ ~ joven+cit+a vs. [la] JOVEN ‘young girl’ ~ joven+cit+a.

b.
Changing gender of a noun (with or without change of gender’s suffixal marker) is used in Spanish to express derivational meanings – this is, of course, conversion:

(i) The change “masc ⇒ fem” for the name of a being X (with the change of the gender suffix) means ‘female of [X]’ or ‘[X] of feminine sex’:
   ‘son’ hij+a ~ ‘daughter’ hij+a
   ‘he-cat’ gat+a ~ ‘she-cat’ gat+a

Cf. example (4), p. 329.

NB: The basic character of the masculine nouns in Spanish is demonstrated by the same properties as those of the masculine nouns in French – see Subsection 3.6, p. 339. In Spanish, as in French, the masculine gender is unmarked – it is the default gender: the plural hijos can refer both to male and female offsprings, a string of coordinated nouns of both genders requires agreement in the masculine, etc.

(ii) The change “fem ⇒ masc” for the name of an activity X/artifact X (without change of the gender suffix) means ‘person who [does X]/[makes function X]’:
   ‘aid’ la ayuda ~ ‘[an] aid’ el ayuda
   ‘defense’ la defensa ~ ‘back, fullback’ el defensa [soccer]
   ‘guard’ la guardia ~ ‘guardsman’ el guardia
   ‘police’ la policia ~ ‘policeman’ el policia
   ‘trumpet’ la trompeta ~ ‘trumpeter’ el trompeta

In (25b-ii), we see a particular type of conversion different from the type of conversion present in (i), (iii) and (iv).
(iii) The change “fem ⇒ masc” for the name of a fruit X (with the change of the gender1 suffix) means ‘tree which bears [the fruit X]’:

- ‘plum’ coruel +a ~ ‘plum tree’ coruel +o
- ‘cherry’ cerez +a ~ ‘cherry tree’ cerez +o
- ‘orange’ naranj +a ~ ‘orange tree’ naranj +o
- ‘apple’ manzan+a ~ ‘apple tree’ manzan+o
- ‘grapefruit’ toronj +a ~ ‘grapefruit tree’ toronj +o

(iv) The change “masc ⇒ fem” (also with the change of the gender1 suffix) can mean ‘[X] of big size’ [especially speaking of containers]:

- ‘pot’ jarr +o ~ ‘tankard, pitcher’ jarr +a
- ‘basket’ banast+o ~ ‘big basket’ banast+a
- ‘handbag’ bols +o ~ ‘bag’ bols +a
- ‘pitcher’ cántar+o ~ ‘big pitcher’ cántar+a
- ‘puddle’ charc +o ~ ‘pool, pond’ charc +a

Spanish gender1 deviates from the ideal model of gender1 by violating Conditions 4, 5 and 8 of Definition 6.1. In this respect, Spanish gender1 is similar to noun class1, which will be described below, in Section 4, p. 346ff. However, the ‘deviations’ of Spanish gender1 are sporadic and irregular. Thus, a great number of Spanish nouns and adjectives have no gender1 marker (-o or -a): there are numerous nouns and adjectives ending in -e or a consonant. As for the derivationally-loaded changes of gender1, these are equally unsystematic (except for cases (25b-i) and (25b-iii), of which the last covers a very restricted field). These deviations are by no means sufficient to undermine the status of genders1 in Spanish: they are genders1, but genders1 with special features.

3.8. Double noun classification

A language can combine the existence of agreement classes with the existence of a noun classification by classifiers. A good example of such a state of affairs is found in Jacaltec.

(26) In Jacaltec (Craig 1986), the noun distinguishes three genders1:

- human ~ animal ~ inanimate

Gender1 is not expressed on the noun, but the noun imposes agreement on the quantifying numeral, where the corresponding gender2 is shown by the suffixes -wañ ‘HUMAN’, -coñ ‘ANIMAL’ and -b ‘INANIMATE’. Moreover, some nouns – but not all! – must be preceded by one of 24 special lexemes, which resemble Vietnamese classifiers (see Chapter 1, p. 54ff). As a result, Jacaltec features expressions of the following type \{c = /k/, j = /x/, x = /̃x/, ch = /ɔ/, ń = /ɲ\}: 
Chapter 6. Gender and noun class

The first column shows gender agreement suffixes (boldfaced), while the third column contains classifiers (also boldfaced).

The coexistence, in the same language, of genders and noun classes is very improbable, because both are particular subclasses of the concept of agreement class. At any rate, I do not know of a language that has both genders and classes. However, there is no logical reason why this could not be the case. For instance, one can imagine a language where nouns are distributed both in classes and in genders, so that these classifications overlap—for instance, an adjective agrees with the noun according to its class, and a verb, according to its gender. Nevertheless, since actual combinations of gender and class in the same language are unknown, I do not include them in my discussion of gender and class.

4. Noun class

A very good theoretical treatment of noun classes is found in Dixon 1982: Part D, 159–233, and then in Corbett 1991 (an excellent general review). Kadima 1969 presents rich data on the systems of classes in Bantu languages (typology and distribution of class markers, their forms, pairings of classes for the expression of the opposition “singular ~ plural,” etc.). For the distinction “gender vs. class,” see Lehmann 1982: 243, Tiffou 1984 and Craig (ed.) 1986. More recently, Aronoff 1994 discusses noun classes in depth, including their relation to inflectional types, as well as their links with the phonemic composition of the radical. For the distinction between lexical classes specified by classifiers and agreement classes, see Dixon 1982: 211–233.

4.1. The concept of noun class

As with gender, I begin by defining class, and then offer a few examples.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Classifier</th>
<th>Class</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>two HUM PL</td>
<td>classifier ‘man’</td>
<td>man</td>
<td>‘two men’</td>
</tr>
<tr>
<td>two ANIMAL PL</td>
<td>classifier ‘animal’</td>
<td>animal</td>
<td>‘two animals’</td>
</tr>
<tr>
<td>two INAN</td>
<td>classifier ‘plant’</td>
<td>house</td>
<td>‘two houses’</td>
</tr>
<tr>
<td>two INAN</td>
<td>classifier ‘animal’</td>
<td>saddle</td>
<td>‘two saddles’</td>
</tr>
<tr>
<td>two INAN</td>
<td>classifier ‘stone’</td>
<td>rifle</td>
<td>‘two rifles’</td>
</tr>
</tbody>
</table>
Definition 6.2: Noun class 1

We say that agreement classes of the noun in $L$ are noun classes 1 if and only if the following eight conditions are simultaneously satisfied to a sufficient degree:

1. These classes are numerous: 4 to 20 or more.
2. They do not manifest a direct link with biological sex of the being denoted by the noun: the name of a male and that of a female belong to the same class.
3. They show a sufficiently visible semantic motivation: as a general rule, there are obvious links between the meaning of a noun and its class 1.
4. They have an autonomous and non-cumulative marker in the noun: class 1 is expressed in a nominal wordform by a special morphological means, for instance, by an affix which expresses exclusively class 1. (Noun class 1 is prototypically an overt category.)
5. The corresponding markers in the target wordforms (= which agree with the noun) are also autonomous (i.e. non-cumulative) and highly regular: class 2 which reflects class 1 is expressed alone, without being combined with other grammemes, such as number or case.
6. These classes are not relevant for the formal aspects of the noun’s inflection: the choice of particular number/case affixes does not depend on the agreement class of the noun.
7. A change in the agreement class of a noun is regularly used in $L$ to express an inflectional meaning characterizing this noun – for instance, grammatical number – or, at least, such a change regularly accompanies the expression of an inflectional meaning.
8. A change in the agreement class of a noun is used in $L$ to express a derivational meaning characterizing this noun – for instance, diminutivity or augmentativity.

4.2. Comments on Definition 6.2

1. Condition 2

The link between sex and class 1 is not excluded. While Bantu languages do not show any correlation between the sex of the animate being referred to and the class 1 to which the corresponding noun belongs, Daghestanian languages link sex and class 1 systematically: see example (29) below, p. 350.

2. Condition 3

The semantic motivation of classes 1 is never absolute. Thus, for example, Kirundi has a clear-cut system of classes 1, where the distribution of nouns in classes 1 is as follows:

(27) Kirundi

<table>
<thead>
<tr>
<th>Class</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>I, II</td>
<td>exclusively human nouns;</td>
</tr>
<tr>
<td>III, IV</td>
<td>names of big trees, miscellaneous other nouns;</td>
</tr>
<tr>
<td>V, VI</td>
<td>deverbal nouns, names of spherical objects,</td>
</tr>
<tr>
<td></td>
<td>miscellaneous nouns;</td>
</tr>
</tbody>
</table>
Chapter 6. Gender and noun class

VI – names of ‘natural’ liquids (tears, sweat, blood, etc.), names of special moments, names of some properties;

VII, VIII – names of various objects, some animal nouns, names of languages;

IX, X – animal nouns, names of some artifacts, miscellaneous nouns;

XI, XII – names of small animals and insects, collective nouns singularia tantum (only class I XI), miscellaneous nouns;

XIII, XIV – miscellaneous nouns;

XVI – collective nouns pluralia tantum, country names, names of properties and relations, miscellaneous nouns;

XVII – names of non-spherical body parts, miscellaneous nouns;

XIX – names of places.

[Kirundi classes are numbered here in such a way as to bring them into correspondence with classes of general Bantu; classes XV and XVIII of general Bantu are absent from Kirundi.]

Even here, however, the semantic correlations between a noun’s meaning and its class are far from straightforward. All Kirundi classes (except I, II and XIX) include miscellaneous nouns, which do not fit semantically. In addition, there are numerous examples of nouns that should, on semantic grounds, appear in one class, but actually belong to another, for instance:

1) Some human nouns appear outside of classes I and II: UMUSÓRE ‘young man’ belongs to class III, IKIJÚUJÚ [i = /ʃ/] ‘idiot’ to class VII, INTORE ‘nice person’ to class IX, URUYOYÁ ‘baby’ to class XI, etc.

2) Names of artificial liquids are distributed between different classes:

UMIVINYÚ ‘wine’ belongs to class III, IRISÀANSI ‘gasoline’ [= Fr. essence /êsãs/] to class V; IVYÉERI ‘European beer’ [= Fr. bière /bjɛʁ/] to class VII, IMPÉKE ‘Burundian beer’ to class IX, URWÁARWÁ ‘banana wine’ to class XI, etc.

Nevertheless, the distribution of Kirundi nouns into classes is more predictable from their meaning than the distribution, say, of French nouns into genders. This is exactly what Condition 3 of Definition 6.2 intends—everything else being equal, the semantic motivation of classes is much more visible than that of genders.

3. Conditions 7 and 8

Using noun class conversion as a means to express inflectional (e.g., number) and derivational (e.g., diminutivity) meanings can in principle enter in conflict with the semantic motivation of noun distribution among classes. However, since the semantic characterization of a noun class is most of the time very heterogeneous, this conflict is never very acute. Thus, in Swahili, the class VII in-
cludes the names of languages, the nouns referring to people with physical de-
fects and diminutive nouns. Therefore, any noun of a class 1 different from VII,
if transferred to this class 1, becomes diminutive.

Terminological remark
In languages with class 1 conversion, where the forms of a noun can appear in
various noun classes, it is imperative to distinguish the ‘starting’ class 1, or the
class 1 to which the lexicographic form of the noun N belongs. This class 1 will
be called inherent class 1 of N. A noun in its inherent class 1 is singular (except
for pluralia tantum) and does not include any derivateme. Thus, consider the
noun -TABU ‘book’ in Kirundi:

its inherent class 1 is VII : i+gi+tabu ‘book’
in class 1 VIII it is plural : i+bi+tabu ‘books’
in class 1 XIII it is diminutive : a+ga+tabu ‘small book’
in class 1 XI it is pejorative augmentative : u+ru+tabu ‘big bad book’
in class 1 VI it is pejorative collective : a+ma+tabu ‘several bad books’
(For more details, see example (33) in the next subsection, p. 355.)

4.3. Examples of class 1 systems
The minimal number of classes 1 in a language is 4, and the maximal number is
theoretically unlimited. Bantu languages possess between 10 and 20 classes 1,
Fulfulde has 25, Nauru (spoken on the atoll of Nauru, in the Pacific) 40, and Na-
sioi, a non-Austronesian language of New Guinea, has no less than 115 classes 1:
names of social groups, body parts, animals, bamboos, bananas, coconuts, hous-
es, containers, money, tools, cloths, etc. These classes 1 trigger agreement of ad-
jectives, possessive pronouns and numerals:

(28) Nasioi

\[
\begin{array}{cccc}
pavanava & na+nava & nkana+nava & neraka+nava \\
\text{house} & \text{one} & \text{my} & \text{new} \\
\end{array}
\]

vs.

\[
\begin{array}{cccc}
mosika & na+voro & nkana+voro & neraka+voro \\
\text{dog} & \text{one} & \text{my} & \text{new} \\
\end{array}
\]

Agreement suffixes, i.e., class 2 suffixes which reflect classes 1 of nouns, are
boldfaced.

Nouns in Yagua are divided into 40 classes 1 and impose agreement on
demonstratives, numerals and adjectives; these target elements have a suffix that
reflects the class 1 of the controller. (Note that 10 of the Yagua classes 1 contain
each just one noun; thus, the nouns meaning ‘hair’, ‘trunk of a standing banana
tree’ and ‘egg’ are unique in their respective class 1.)
I will present, as an illustration, five typical class I systems: the Nakh-Daghestanian system, the Bantu (and Bantoid) system, two different Papuan systems and the class I system of Yurok. After that, I will analyze three problematic cases.

1. Nakh-Daghestanian languages

Nakh-Daghestanian languages (with the exception of Lezgian, Agul and Ud) have a system of noun classes with basically four members. This system will be illustrated with data from Chechen, Avar, Tsez, and Archi.

**NB:** In examples (29)–(34), I omit, for simplicity's sake, zero suffixes of the singular and of the nominative.

(29) In Chechen, nouns are distributed in four classes, which control the agreement of some verbs, qualitative adjectives, the numeral 1 'four' and a few adverbs. The markers of class II in the target wordforms (which agree with the noun in class I) are as follows:

```
I : -w-  III : -b-
II : -j-  IV : -d-
```

Unlike the Bantu noun (see below), the Chechen noun (and more generally, the Nakh-Daghestanian noun) does not express its class explicitly.5

Chechen nouns are distributed in classes I partially according to the sex of the referent, and partially in an arbitrary manner:

- I : names of rational male beings
- II : names of rational female beings and some other nouns
- III : names of non-rational beings, physical objects, substances, phenomena, abstract notions, etc.
- IV :

Note that the noun ADAM 'human being' belongs to class IV.

(a) (i)

```
<table>
<thead>
<tr>
<th></th>
<th>kant</th>
<th>w + u</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>this boy, I</td>
<td>'This boy'</td>
</tr>
<tr>
<td>I</td>
<td>girl, II</td>
<td>j + u</td>
</tr>
<tr>
<td>I</td>
<td>stone, III</td>
<td>b + u</td>
</tr>
<tr>
<td>I</td>
<td>child, IV</td>
<td>d + u</td>
</tr>
</tbody>
</table>
```

(b) (ii)

```
<table>
<thead>
<tr>
<th></th>
<th>+t</th>
<th>kant</th>
<th>w + u</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>'boys'</td>
<td>'This boy'</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>'girls'</td>
<td>'This girl'</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>'stones'</td>
<td>'This child'</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>'children'</td>
<td>is good'</td>
<td></td>
</tr>
</tbody>
</table>
```

The important fact about noun classes in Chechen, as well as in other Nakh-Daghestanian languages, is the change of the class of a noun in the plural. However, the plural itself is not expressed by the transfer of the noun from one class to another, as is the case in Bantu. Rather, the plural is expressed by special suffixes that trigger the change in class. In Chechen, the noun plural suffixes are -(a)š and -(i)j, sometimes accompanied by an alternation of the radical vowel.

For instance:

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>I (boy)</td>
<td>kant</td>
</tr>
<tr>
<td>II (girl)</td>
<td>još</td>
</tr>
<tr>
<td>III (stone)</td>
<td>tulg</td>
</tr>
<tr>
<td>IV (child)</td>
<td>ber</td>
</tr>
</tbody>
</table>

The agreement of verbs, adjectives, etc. with nouns in the plural shows that the noun’s class changes according to the following rules:

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>I [w]</td>
<td>III [b]</td>
</tr>
<tr>
<td>II [j]</td>
<td>III [b]</td>
</tr>
<tr>
<td>III [h]</td>
<td>III [b]</td>
</tr>
<tr>
<td>IV [d]</td>
<td>IV [d]</td>
</tr>
</tbody>
</table>

b.

(i) \(Kant + \emptyset\) dika \(w+u\). boy, I SG good I be
    ~ \(Kent+ij\) dika \(b+u\). boy, I PL good III be

(ii) \(Jo\š + \emptyset\) dika \(j+u\). girl, II SG good II be
    ~ \(Još + ij\) dika \(b+u\). girl, II PL good III be

(iii) \(So\) dika \(w+u\). I [man], I good I be
    ~ \(Waj\) dika \(d+u\). we, III good IV be

(iv) \(So\) dika \(j+u\). I [woman], II good II be
    ~ \(Waj\) dika \(d+u\). we, III good IV be
Before proceeding, I have to draw the reader’s attention to an important theoretical problem in connection with the description of a system of noun classes in Nakh-Daghestanian languages or any other language with noun classes. Given that in many of these languages, a noun necessarily changes its class in the plural, the classes can be established in two ways:

- The ‘ISOLATIONIST’ way, where each class is isolated without paying attention to the difference between the singular and the plural forms of each noun. Consequently, the forms of the singular and the plural of the same lexeme can belong to different classes. This approach corresponds to the definition of (noun) class given above (Def. 6.2), and it is followed in this book.

- The ‘UNIONIST’ way, where the singular and the plural forms of the same lexeme are obligatorily united in the same class. To put it differently, a unionist class always corresponds to a pair of isolationist classes. For instance, in Chechen, one has to establish 8 unionist classes (shown in brackets in the two right columns) against 4 isolationist classes (shown in brackets in the two right columns):

<table>
<thead>
<tr>
<th>unionist class</th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>[I]</td>
<td>[III]</td>
</tr>
<tr>
<td>II</td>
<td>[I]</td>
<td>[IV]</td>
</tr>
<tr>
<td>III</td>
<td>[II]</td>
<td>[III]</td>
</tr>
<tr>
<td>IV</td>
<td>[II]</td>
<td>[IV]</td>
</tr>
<tr>
<td>V</td>
<td>[II]</td>
<td>[III]</td>
</tr>
<tr>
<td>VI</td>
<td>[III]</td>
<td>[III]</td>
</tr>
<tr>
<td>VII</td>
<td>[III]</td>
<td>[IV]</td>
</tr>
<tr>
<td>VIII</td>
<td>[IV]</td>
<td>[IV]</td>
</tr>
</tbody>
</table>

I will discuss the problem in more detail in Subsection 4.4, beginning with 367ff. after having considered a few more cases, and I will explain the factors that make me choose the isolationist approach to the establishment of noun class systems in various languages.

(30) Avar distributes its nouns between the same four noun classes as Chechen (the class marker *[r] of Avar corresponds historically to *[d] of Chechen), but the distribution is different.
First, singular nouns appear only in three classes: I [-w-], II [-j-] and III [-b-]; class IV [-r-] contains only plural nouns. Thus, Avar nouns change their class in plural, just as in Chechen, but in a completely standard way:

\[
\begin{align*}
\text{singular} & \quad \text{plural} \\
\{ & \text{I} \\
\text{II} & \\
\text{III} & \} \quad \Rightarrow \quad \text{IV} \\
\end{align*}
\]

(the plural is expressed by particular suffixes).

Second, a noun’s inclusion into a noun class is semantically well motivated (much better than in Chechen):

\[
\begin{align*}
\text{I} & \quad \text{-w-} \quad \text{human male nouns} \\
\text{II} & \quad \text{-j-} \quad \text{human female nouns and some other nouns} \\
\text{III} & \quad \text{-b-} \quad \text{non-human nouns of various types} \\
\text{IV} & \quad \text{-r-} \quad \text{inanimate nouns only} \\
\end{align*}
\]

As is the case in Chechen and Avar, a Tsez noun changes its class in the plural (which is always expressed by a suffix) according to the following simple schema:

\[
\begin{align*}
\text{singular} & \quad \text{plural} \\
\{ & \text{I} \\
\text{II} & \\
\text{III} & \} \quad \Rightarrow \quad \text{IV} \\
\end{align*}
\]
(32) Archi has the same four noun classes¹, except that, for purely phonological reasons, two of its class¹ markers are different with respect to previously considered languages:

II = -r- (instead of -j-)

and

IV = -ֵt- (instead of -r-/-d-).

The distribution of nouns between the classes¹ is semantically better motivated than in Tsez (but less than in Avar):

- I -w- : human male nouns
- II -r- : human female nouns
- III -b- : animal nouns (except young animals and a few small animals), names of cereals and miscellaneous nouns
- IV -ֵt- : names of young and small animals, metals and miscellaneous nouns

The class¹ of plurals for nouns of all classes¹ is III:

\[
\begin{array}{c c c}
\text{singular} & \text{plural} \\
\{ I \} & \Rightarrow & \text{III} \\
\end{array}
\]
4. Noun class 1

We see here several formal complications with respect to what has been presented above:

– morphonological modifications of class 1/2 markers;
– agreement of the adjective with the modified noun not only in class 1 but also in number (the suffix -tu in the singular vs. the suffix -ti in the plural);
– infixation of the class 2 marker in the verb: the verb 

If we disregard this, the system of classes 1 in Archi manifests the same properties as those of other Nakh-Daghestanian languages.

2. Bantu and Bantoid languages

The Bantu class 1 system will be illustrated based on three languages: Kirundi, Bafia and Bushong; to these I will add two West-African Bantoid languages: Fulfulde (= Ful) and Wolof.

Kirundi has 17 noun classes 1 (Mel’čuk and Bakiza 1987), which are marked in the noun by prefixes. A noun N imposes class agreement (also marked by prefixes):

1) on ‘genuine’ modifying adjectives,
2) on pronominal adjectives,
3) on the Main Verb of which N is the SSynt-Subject and
4) on the transitive verb (including the infinitive) of which it is the Dir(ect) O(bject).

[The accent symbol represents high tone.]

a.

(i)  

'I this  I man  I bad  I be  far'

'This bad man is far.'
The criteria for the distribution of Kirundi nouns between noun classes have been presented above, in 4.1, example (27), p. 347; it is immediately obvious that noun classes in Kirundi have no link with sex (the names of men as well as those of women are contained in the same class: I), and that the classification of nouns is semantically motivated, although there are many exceptions.

Since the noun in Kirundi has no inflection in the strict traditional sense of the term (no case, no affixal marking of the plural), classes of this language cannot be relevant to nominal inflection. However, change of noun class (= class conversion) is actively exploited to express the inflectional meaning of the plural and several derivational meanings. (33a) clearly shows that the plural of the noun N is expressed in Kirundi by the transfer of N from its original class, which is always numbered with an odd number \( n \), into another class, which receives an even number \( n+1 \):

<table>
<thead>
<tr>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>III</td>
<td>IV</td>
</tr>
<tr>
<td>V</td>
<td>VI</td>
</tr>
<tr>
<td>VII</td>
<td>VIII</td>
</tr>
</tbody>
</table>

\[...............\]
The same formal process is used in Kirundi to express certain derivational meanings:

b.
(i) **DIMINUTIVE** [≈ ‘small’] is expressed by the transfer of the noun in question into class XIII (ka-):

- ‘man’ $u+mu+gabo$, I $\sim a+ka+gabo$, XIII ‘small man, dwarf’
- ‘young man’ $u+mu+sôre$, III $\sim a+ga+sôre$, XIII ‘small young man’
- ‘school’ $i+\emptyset +shuûre$, V $\sim a+ga+shuûre$, XIII

(ii) **PEJORATIVE AUGMENTATIVE** [≈ ‘big bad X’] is expressed by the transfer of the noun into class XI (ru-):

- ‘man’ $u+mu+gabo$, I $\sim u+ru+gabo$, XI ‘big bad man’
- ‘young man’ $u+mu+sôre$, III $\sim u+ru+sôre$, XI ‘big bad young man’
- ‘school’ $i+\emptyset +shuûre$, V $\sim u+ru+shuûre$, XI ‘big bad school’
- ‘book’ $i+\emptyset +tabu$, VII $\sim u+ru+tabu$, XI ‘big bad book’

These augmentatives cannot have a plural, and the nouns that are inherently of class XI (for instance, akabaati ‘cupboard’ and agakwâavu ‘rabbit’) have no diminutive.

(iii) **PEJORATIVE COLLECTIVE** [≈ ‘several bad Xs’] is expressed by the transfer of the noun into class VI (ma-); this collective is, of course, not possible either for nouns of class V (for them class VI forms the plural) and of class VI (pluralia tantum of the type amaâzi ‘water’ or amatâ ‘milk’), or for human nouns of any class:

- ‘handle’ $u+mu+hini$, III $\sim a+ma+hini$ ‘several bad handles [of tools]’
- ‘book’ $i+\emptyset +tabu$, VII $\sim a+ma+tabu$ ‘several bad books’
- ‘cow’ $i+n+kâ$, IX $\sim a+ma+kâ$ ‘several bad cows’
- ‘cupboard’ $a+ka+baati$, XIII $\sim a+ma+baati$ ‘several bad cupboards’

(34) Bafia has 12 noun classes, which are marked in the noun by prefixes in the same way as in Kirundi. A Bafia noun N imposes class agreement on:

1) the non-pronominal adjective, 2) the pronominal adjective and 3) the Main Verb of which N is the SSynt-Subject. Here is the list of Bafia classes, with their prefixes [the symbols ‘’ and ‘’ indicate high and low tones, respectively]:

```
a.
I mè-, Ø- IV mè-/mj- VII fi- X Ø-
II fiè- V ri- /dj- VIII ki- XI fi-
III ñ(w)- VI ma-/m- IX Ø- XII ti-
```
The distribution of nouns between classes I in Bafia is less semantically motivated than in Kirundi. Thus, class I allows, together with human nouns, some names of animals, artifacts, physiological states, etc. (for instance, the nouns FJÁS ‘swallow’, KÍLÀ ‘hat’, BÀM ‘bag’, KÍRÌ ‘big basket’ and SÈÈSÈL ‘nausea’ are of the class I).

The plural of nouns is formed in Bafia exactly the same way it is in Kirundi – by class 1 conversion:

b.  
<table>
<thead>
<tr>
<th>sg</th>
<th>pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>III</td>
<td>IV</td>
</tr>
<tr>
<td>V</td>
<td>VI</td>
</tr>
<tr>
<td>VII</td>
<td>VIII</td>
</tr>
<tr>
<td>IX</td>
<td>X</td>
</tr>
<tr>
<td>XI</td>
<td>XII</td>
</tr>
</tbody>
</table>

b. sg pl   singular  plural
I → II  ‘reader’  m +bàlì ~ bìë+ßàlì ‘readers’
III → IV  ‘mouth’  ūw+öm ~ mj+öm ‘mouths’
V → VI  ‘nose’  dj +òl ~ m +òl ‘noses’
VII → VIII  ‘language’  kì +tòkì ~ ìì +tòkì ‘languages’
IX → X  ‘hen’  Ø +zàj ~ Ø +zàj ‘hens’
XI → XII  ‘arrow’  ìì +gêñì ~ ìì +gêñì ‘arrows’

However, derivational meanings are not expressed in Bafia by a class I conversion, but by prefixes which are added to the noun before the class I prefix and do not change its class:

c.   sg pl
| ‘DIMINUTIVE’ | máá– bìì– |
| ‘AUGMENTATIVE’ | cóó– bììó– |

We have then:

‘head’ ñ +tò ~ máá+ìì +tò ‘small head’
‘heads’ mìì+tò ~ bììí mìì+tò ‘small heads’

The noun NTÒ ‘head’ being of class I III, its diminutive form máántò ‘small head’ remains in the same class I; this holds for all diminutive and augmentative forms. This allows us to conclude that derivational prefixes are outside of the system of classes I: they are ‘genuine’ derivational prefixes.

Remarks

1. These derivational prefixes of Bafia are different in the singular and the plural—that is, they resemble, in this respect, the class I prefixes. At the same time, they show an interesting and rare type of cumulation: the derivateme ‘DIMINUTIVE/AUGMENTATIVE’ is cumulated with the grammeme ‘SINGULAR/PLURAL’.

2. As one can see, in Bafia derivational (diminutive and augmentative) prefixes are linearly further removed from the radical than inflectional prefixes (of class I). In other words, derivation is carried out here starting from a complete inflectional form. This means that inflectional elements are found closer to the radical than a derivational element, rather than farther from it, which is much more common. (We see here the phenomenon referred to loosely as ‘inflection inside derivation.’)
I would also like to mention an interesting detail concerning the distribution of Bafia nouns into classes. Nouns of classes IV and VI (= in the plural) have formally identical agreement patterns:

\[
\begin{align*}
\text{d. } & mj+öm \quad m+åå \quad måë+rí \quad måë+fín \\
\text{IV mouth} \quad \text{IV their} \quad \text{IV be} \quad \text{IV black}
\end{align*}
\]

and

\[
\begin{align*}
\text{m+ } & öm \quad m+åå \quad måë+rí \quad måë+fín \\
\text{VI package} \quad \text{VI their} \quad \text{VI be} \quad \text{VI black}
\end{align*}
\]

(Their mouths packages are black).

However, in the singular, the nouns ÖM ‘mouth’ and ÖM ‘package’ belong to two different classes: III (gow+öm) and V (dj+öm), since they have different agreement patterns.

Following Definitions 1.2 (= agreement class, Chapter 1, 2.2.1, p. 7) and 6.2 (= noun class 1, p. 346) literally, one could put plural nouns of the type mjöm ‘mouths’ and möm ‘packages’ in the same class and thus have one noun class less in the description of Bafia. Yet we cannot proceed in this way: what stops us is the minimal character that is required of any noun class; cf. the following restriction (Chapter 1, 2.2.3, p. 53):

An agreement class must be minimal—in the sense that no agreement class in \( L \) can be specified by reference to other agreement classes already established in \( L \) for independent reasons.

Plural nouns of class IV (type mjöm) have, before a vowel, the prefix mj-, while plural nouns of class VI (type möm) have, in the same position, the prefix m-. If we abolish the distinction between classes IV and VI and unite the nouns of both these classes in the same hypothetical class \( n \) (because they impose the same agreement pattern), we will have to formulate the distribution of the class prefixes mj- and m- in the nouns of class \( n \) as follows:

Before a vowel,
- radicals of class IV whose singular form is in class III have the prefix mj-: ‘mouth, III gow+öm \( \sim mj+öm \);
- radicals of class IV whose singular form is in class V have the prefix m-: ‘package, V dj+öm \( \sim m+öm \).

But this is exactly what is forbidden by the above-mentioned restriction: namely, it does not permit the characterization of a noun class (here, \( n \)) by reference to other classes (here, III and V). As a result, we have to distinguish noun classes IV and VI in Bafia, even if their agreement patterns are formally identical.

(35) Bushong has 14 noun classes, which closely resemble those of Kirundi and Bafia, with the following difference: Bushong has more complex correspondences between the classes of the singular and those of the plural.
Chapter 6. Gender and noun class

Recall (cf. p. 352) that, from the purely logical viewpoint, noun classes of Bantu languages can be established in one of two ways: either with the isolationist approach that I have been using up to now or with the unionist approach. A systematic comparison of the two approaches to the establishment of noun classes will be presented below, in 4.4, p. 367.

Examples (29)–(35) may give the reader the impression that class markers are always prefixes. This, however, is incorrect: many Niger-Congo languages have noun classes that are marked on the noun by suffixes. As an example I can cite Ful (or Fulfulde), an Atlantic language.

(36) Ful nouns are divided into 25 noun classes; they impose class agreement on the modifying adjective and participle (the verb in Ful does not agree either with its SSynt-Subject or its Direct Object). Moreover, Ful shows congruence of the substitute pronoun with the noun that it replaces, so that there are 25 substitute pronouns.

Recall (cf. p. 352) that, from the purely logical viewpoint, noun classes of Bantu languages can be established in one of two ways: either with the isolationist approach that I have been using up to now or with the unionist approach. A systematic comparison of the two approaches to the establishment of noun classes will be presented below, in 4.4, p. 367.

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### Noun class

<table>
<thead>
<tr>
<th>Noun class</th>
<th>Noun</th>
<th>The adjective MAW 'big'</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>suù</td>
<td>maw+nde</td>
</tr>
<tr>
<td>II</td>
<td>hoo</td>
<td>maw+ndi</td>
</tr>
<tr>
<td>III</td>
<td>pallar</td>
<td>maw+ndi</td>
</tr>
<tr>
<td>IV</td>
<td>maw</td>
<td>maw+mba</td>
</tr>
<tr>
<td>V</td>
<td>bala</td>
<td>maw+ngal</td>
</tr>
<tr>
<td>XI</td>
<td>X</td>
<td>maw+ngal</td>
</tr>
<tr>
<td>XII</td>
<td>labi</td>
<td>maw+ki</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Noun class</th>
<th>Noun</th>
<th>The adjective MAW 'big'</th>
</tr>
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<tbody>
<tr>
<td>I</td>
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</tr>
<tr>
<td>II</td>
<td>hoo</td>
<td>maw+ndi</td>
</tr>
<tr>
<td>III</td>
<td>pallar</td>
<td>maw+ndi</td>
</tr>
<tr>
<td>IV</td>
<td>maw</td>
<td>maw+mba</td>
</tr>
<tr>
<td>V</td>
<td>bala</td>
<td>maw+ngal</td>
</tr>
<tr>
<td>XI</td>
<td>X</td>
<td>maw+ngal</td>
</tr>
<tr>
<td>XII</td>
<td>labi</td>
<td>maw+ki</td>
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<th>Noun class</th>
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<td>maw+ndi</td>
</tr>
<tr>
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<td>pallar</td>
<td>maw+ndi</td>
</tr>
<tr>
<td>IV</td>
<td>maw</td>
<td>maw+mba</td>
</tr>
<tr>
<td>V</td>
<td>bala</td>
<td>maw+ngal</td>
</tr>
<tr>
<td>XI</td>
<td>X</td>
<td>maw+ngal</td>
</tr>
<tr>
<td>XII</td>
<td>labi</td>
<td>maw+ki</td>
</tr>
</tbody>
</table>
XVIII  pai  +kun  ‘child’  maw+kun
XIX  jiw  +o  ‘girl’  maw+do

........
XXV  yim  +fe  ‘people’  maw+fe

20 noun classes I of Ful include nouns in the singular, and 5 classes I are for nouns in the plural (classes I in -be, -de, -di, -ko and -kon). The Ful noun is pluralized by changing its inherent class I, which is very typical of noun classes I.

Change of class I is also used for the expression of several derivational meanings: thus, transfer into class I -nje expresses the diminutive, transfer into class I -kal expresses the meaning ‘a little/a few ...’ (kos+am ‘milk’ ~ kos+al ‘a little milk’; con+di ‘flour’ ~ con+al ‘a little flour’, etc.), and transfer into class I -pa expresses the augmentative. Noun classes I in Ful are relatively well-motivated from the semantic point of view.

Contrary to what we see in examples (29) – (36), in some languages noun classes I are not marked on the noun at all – that is, property (iv) of noun classes I is not satisfied. This is the case in Wolof, another Atlantic language (and in Nakh-Daghestanian languages).

(37) Wolof has 8 noun classes I in the singular and 2 in the plural. Strictly speaking, a Wolof noun does not feature a class I marker, but it imposes class II agreement on the determinant (the definite and indefinite articles) and the pronominal adjective (demonstrative, indeterminate, interrogative, quantificative). The class II marker appears as suffix on the indefinite article, elsewhere it is a prefix:

<table>
<thead>
<tr>
<th>noun class</th>
<th>noun</th>
<th>indefinite article</th>
<th>definite article</th>
<th>‘each’</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>xale</td>
<td>a+b</td>
<td>b+a</td>
<td>b+epp</td>
</tr>
<tr>
<td>II</td>
<td>goor</td>
<td>a+g</td>
<td>g+a</td>
<td>g+epp</td>
</tr>
<tr>
<td>III</td>
<td>njaay/njaj</td>
<td>a+j</td>
<td>j+a</td>
<td>j+epp</td>
</tr>
<tr>
<td>IV</td>
<td>nit</td>
<td>a+k</td>
<td>k+a</td>
<td>k+epp</td>
</tr>
<tr>
<td>V</td>
<td>njeg</td>
<td>a+l</td>
<td>l+a</td>
<td>l+epp</td>
</tr>
<tr>
<td>VI</td>
<td>mburu</td>
<td>a+m</td>
<td>m+a</td>
<td>m+epp</td>
</tr>
<tr>
<td>VII</td>
<td>ndaw</td>
<td>a+s</td>
<td>s+a</td>
<td>s+epp</td>
</tr>
<tr>
<td>VIII</td>
<td>fas</td>
<td>a+w</td>
<td>w+a</td>
<td>w+epp</td>
</tr>
<tr>
<td>IX</td>
<td>definite non-human</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>plural or indefinite plural</td>
<td>a+y</td>
<td>y+a</td>
<td>y+epp</td>
</tr>
<tr>
<td></td>
<td>define human plural</td>
<td>p+a</td>
<td>p+a</td>
<td>p+epp</td>
</tr>
</tbody>
</table>

Thus, we have ag goor ‘a man’ ~ goor ga ‘the man’ ~ ay goor ‘[some] men’ ~ goor pa ‘the men’ or ab tool ‘a field’ ~ tool ba ‘the field’ ~ ay tool ‘[some] fields’ ~ tool ya ‘the fields’.
Remarks
1. As can be seen from the examples, in Wolof the indefinite article precedes the noun and the definite article follows it. This situation resembles what is found, for instance, in Romanian (un lup ‘a wolf’ ~ lup+ul ‘the wolf’) and Norwegian (et hus ‘a house’ ~ hus+et ‘the house’).

2. Many Wolof nouns have a fossilized class I prefix (cf. Note 5, p. 380). Thus, class I includes many nouns in b- (bopp ‘head’, ...), class II has many nouns in g- (goor ‘man’, geej ‘sea’, ...), class III contains nouns in j- (jabar ‘wife’, ...), etc. Several nouns show alternation of the initial consonant in the plural; this reflects an archaic class I conversion, in which the plural was expressed by moving the noun into a different class [ɪ = /ɔ/]:

\[\begin{align*}
\text{‘eye’} & \sim \text{gët ‘eyes’} \\
\text{‘tooth’} & \sim \text{bëp ‘teeth’} \\
\text{‘thing’} & \sim \text{yëf ‘things’} \\
\text{‘stick’} & \sim \text{bant ‘sticks’}
\end{align*}\]

However, in modern Wolof, this alternation does not mark a change of class. For instance, a plural noun such as gët (‘eyes’) does not belong to class II, as this would be the case if g- still were a class I prefix; it belongs to class IX: gët ya ‘the eyes’ (gët ga).

3. Comparison between two types of noun class systems:

the Bantu type vs. the Nakh-Daghestanian type

I will now compare the Nakh-Daghestanian system of noun classes with the Bantu (and Bantoid) one, considering one after the other the defining features of noun classes.

(i) As far as their number is concerned, Nakh-Daghestanian noun classes are less typical as classes than the classes in Bantu: they number four at most, and in Tabassaran, their number even falls below the numerical threshold for classes, since Tabassaran has just two classes (class -r- for humans and class -b- for non-humans; in the plural, all Tabassaran nouns belong to class -r-). This means that Nakh-Daghestanian classes are in this respect closer to genders than Bantu classes.

(ii) Nakh-Daghestanian classes are linked to the sex of the referent, unlike Bantu classes. However, this link is less coherent than in Indo-European and Semitic genders: only the sex of humans is relevant, the sex of animals is completely ignored.

(iii) In both linguistic families, the semantic motivation of noun classes is not very strong, although it is still much more pronounced than it is for typical genders.

(iv) Nakh-Daghestanian classes do not possess autonomous class markers on the noun: they are covert, as Indo-European genders. Bantu classes, on the other hand, are, for the most part, overt.

(v) Markers of Nakh-Daghestanian classes in the target wordforms that agree with the noun are always autonomous and never cumulative. This consti-
tutes a typical feature of the class 1, as opposed to gender 1. The same state of affairs is found in Bantu languages.

(vi) In both families—Nakh-Daghestanian and Bantu—noun classes 1 are hardly, if at all, involved in the formal side of inflection (in Nakh-Daghestanian languages, the choice of plural and case suffixes does not depend on the class 1 of the noun; Bantu languages have no cases and the plural is not marked by a special affix).

(vii) Change of class 1 in the plural is a highly typical feature of nominal inflection in Nakh-Daghestanian: this change always accompanies pluralization. In Bantu, the plural is formed exclusively by change of class 1—that is, by class conversion 2.

(viii) I have very little information about the change of the inherent class 1 of a noun in Nakh-Daghestanian being used to express a derivateme. However, some data indicate that this might be possible. Thus, in Ingush, the transfer of a noun from its inherent class 1 into a different class 1 expresses, in a regular way, the pejorative:

\[
\begin{align*}
j + \text{okkxa} & \quad \text{merāž ‘a big/long nose’} \\
\text{II big nose, II} & \\
\text{vs.} & \\
d + \text{okkxa} & \quad \text{merāž ‘an ugly big/long nose’} \\
\text{IV big nose, IV} &
\end{align*}
\]

However, since the Nakh-Daghestanian noun does not have itself an overt class 1 marker, this process cannot be widespread: it is applicable only in a context that includes a wordform agreeing with the noun in question; in other contexts, there is no way to indicate a change in class 1.

Bantu languages, on the other hand, exploit class conversion 2 very extensively in order to express derivational meanings.

On the whole, it would seem that Nakh-Daghestanian classes 1 are less typical classes 1 than Bantu classes 1 and that, consequently, they are closer to genders 1. Nevertheless, I would maintain that they differ from genders 1 on enough points so that they should still be considered noun classes 1.

Now I will consider Papuan languages, where classes 1 are also well represented, to provide more examples of noun classes 1 of different types.

4. Papua-New Guinea languages

Here are two examples: noun classes 1 in Baining and in Yimas.

(38) Baining has 8 noun classes 1, which are reflected in the agreement of the modifying adjective and the numeral:
I – nouns referring to human males + miscellaneous nouns
   a xwat +ka ‘man’
   a lamasa+xa ‘coconut’
   a mung +ka ‘tree’
II – nouns referring to human females + miscellaneous nouns
   a nan +ki ‘woman’
   a ei +xo ‘water’
III – diminutive nouns
   a dang +ini ‘small dog’
   a mung +ini ‘small tree’
IV – nouns referring to something long and thin
   a mung +it ‘stick, shaving’
   a xwat +it ‘tall thin man’
V – nouns referring to pieces (of something)
   a mung +ing ‘piece of wood’
VI – nouns referring to parts that are autonomous objects
   a xawr +e ‘banana’
VII – nouns referring to something big that can be naturally
   divided into autonomous objects
   a avr +ar ‘big house with several rooms’
VIII – nouns referring to something big that cannot be naturally
   divided into autonomous objects
   a dul +es ‘rock’

The characteristics of the class I system of Baining are obvious:
(i) classes I are overt (markers of class I on the noun are suffixes);
(ii) classes I are semantically relatively well motivated;
(iii) they are linked to sex, but only to the sex of humans;
(iv) they are exploited for derivational purposes (class conversion):

<table>
<thead>
<tr>
<th>Class</th>
<th>Radical</th>
<th>Example</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>mung+ka</td>
<td>a xwat</td>
<td>‘man’</td>
</tr>
<tr>
<td>III</td>
<td>mung+ini</td>
<td>a nan</td>
<td>‘woman’</td>
</tr>
<tr>
<td>IV</td>
<td>mung+it</td>
<td>a xwat</td>
<td>‘tall thin man’</td>
</tr>
<tr>
<td>V</td>
<td>mung+ing</td>
<td>a mung</td>
<td>‘piece of wood’</td>
</tr>
<tr>
<td>VII</td>
<td>mung+ar</td>
<td>a avr</td>
<td>‘big house with several rooms’</td>
</tr>
<tr>
<td>VIII</td>
<td>mung+es</td>
<td>a dul</td>
<td>‘rock’</td>
</tr>
</tbody>
</table>

Classes I in Papuan languages of the same family (= Lower Sepik family) and those of the Toricelli family have an interesting feature, which is rather rare in the world’s languages: the distribution of nouns between classes I is conditioned there, to a high degree, by the phonemic composition of the radical. The existence of certain correlations between the form of the radical of the noun and its agreement class is known in many languages (for instance, in French); but in Yimas and several other Papuan languages the impact of phonology on classes I is by far more extensive than in any other languages I am aware of.

What is even more astonishing is that, in spite of this property, classes I in Yimas have, at the same time, a very visible semantic motivation.

(39) Yimas (Foley 1991, Aronoff 1994: 114–121) has 11 noun classes I, of which 4 are semantically motivated, while 7 others are characterized by a particular terminal string of phonemes in the radical. Yimas classes I have a direct impact on nominal inflection: they control the choice of singular and plural suffixes, as can be seen from the following examples.
4. Noun class1

a. singular  plural
I  –  nouns referring to human males : -Ø  -um, -i, -ŋkat 9
II – nouns referring to human females : -maŋ -um, -i, -mput
III – nouns referring to higher animals : -Ø  -wi
IV – nouns referring to plants : -um  -(uŋ)i, -ŋkat
V  – nouns ending in -p, -k, -t, -m, ... : -Ø  -ra, -t, -i, -ŋkat
VI – nouns ending in -ŋk [not -uŋk] : -Ø  -i
VII – nouns ending in -mp : -Ø  -at
VIII – nouns ending in -i : -Ø  -mput
IX – nouns ending in -aw : -Ø  -t
X  – nouns ending in -uk : -Ø  -at
XI – nouns ending in -uŋk : -Ø  -i

[I have simplified the description by omitting regular allomorphs of number suffixes and leaving aside the question of their distribution.]

b. The noun imposes class 2 agreement on all its adjectival modifiers and, when it is the SSynt-Subject, the DirO or IndirO of a verb, on this verb.

Markers of agreement in class 2 with the noun

<table>
<thead>
<tr>
<th>class1</th>
<th>adjective verb</th>
<th>class1 adjective verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>sg : -n na-</td>
<td>VII - sg : -mp p-</td>
</tr>
<tr>
<td></td>
<td>pl : -um pu-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>pl : -ra Ø-i-a-</td>
</tr>
<tr>
<td>II</td>
<td>sg : -maŋ na-</td>
<td>VIII - sg : -i i-</td>
</tr>
<tr>
<td></td>
<td>pl : -mput pu-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>pl : -ra Ø-i-a-</td>
</tr>
<tr>
<td>III</td>
<td>sg : -n na-</td>
<td>IX  - sg : -aw ųa-</td>
</tr>
<tr>
<td></td>
<td>pl : -um pu-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>pl : -ut ųa-a-</td>
</tr>
<tr>
<td>IV</td>
<td>sg : -um mu-</td>
<td>X   - sg : -uŋk ku-</td>
</tr>
<tr>
<td></td>
<td>pl : -ra Ø-i-a-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>pl : -ra Ø-i-a-</td>
</tr>
<tr>
<td>V</td>
<td>sg : -n na-</td>
<td>XI  - sg : -uŋk ku-</td>
</tr>
<tr>
<td></td>
<td>pl : -ra Ø-i-a-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>pl : -uŋkw ku-i-a-</td>
</tr>
<tr>
<td>VI</td>
<td>sg : -ŋk k-</td>
<td></td>
</tr>
<tr>
<td></td>
<td>pl : -ŋk-i k-i-a-</td>
<td></td>
</tr>
</tbody>
</table>

c. 

\[
\begin{align*}
\text{Maŋariŋ} & \quad \text{ipa+wa+ntut} \\
\text{other-day} & \quad \text{IPL go REM.PAST} \\
\text{pusiŋk} & +i \\
\text{rafter} & \text{VI, PL} \\
\text{iraki} & +Ø \\
\text{wood} & \text{VIII, SG} \\
\text{wastaw} & +Ø \\
\text{beam} & \text{IX, SG} \\
\end{align*}
\]

awt+ik.

(The other day, we went to look for [lit. ‘in order to get’] rafter/wood/beams).
Chapter 6. Gender and noun class

We came with them/it/them here.

For still another type of noun class system, one may consider another Papuan language—Arapesh, which is thoroughly analyzed in Aronoff 1994: 90–114.

5. Yurok

(Yurok (Northern California) distributes its nouns in 16 classes, which are semantically determined. A noun imposes class agreement on the numeral and the modifying adjective (Yurok has no more than a score of adjectives):
Yurok noun classes are not linked to the sex of the referent of the noun; they are numerous and semantically well-motivated. Moreover, they do not have any impact on the inflection of the noun because the Yurok noun has no inflection: it does not distinguish numbers, possession or cases. At the same time, Yurok classes are not expressed on the noun at all (it is a partition without explicit marking – that is, Yurok classes are covert); change of class is not used and class markers in numerals and adjectives are morphologically rather variegated – they differ as a function of the numeral/adjective (they have different allomorphs for the numeral and for different types of adjectives). At the same time, they are autonomous and non-cumulative.

4.4. Establishing a noun class system: a methodological problem

As indicated above (p. 352), the class system of a language may be established using one of the two following methods:

– either ISOLATIONIST, that is, establishing classes without taking into account the formation of the singular and the plural and therefore accepting that the singular and plural forms of the same lexeme belong to different classes;

– or UNIONIST, that is, establishing classes as a function of the singular/plural formation so that the singular and plural forms of the same lexeme always belong to the same class.

In the literature both approaches are represented but the isolationist approach seems more widespread. The more so since isolationist descriptions of class systems usually specify, for any given noun, the pair of classes which express its singular and its plural – for instance, ‘the singular of the noun N₁ is of class V and its plural is of class VI (= V/VI); the singular of N₂ is also of class V but its plural is of class IV (= V/IV); ...,’ and so forth.

I follow strictly the isolationist approach; here are three reasons for doing so.

1) Non-cumulative character of class markers

In the unionist approach, the class marker on the noun (as well as the marker of class 2 on the target wordform, which agrees with the noun), is necessarily cumulative: it expresses noun class and number together. For instance, in Bantu, the unionist class markers would be as follows: mu- ‘CLASS 1, SINGULAR’, ba- ‘CLASS 1, PLURAL’, etc. However, I believe that the most typical property of noun class markers – as opposed to gender markers – is exactly their non-cumulative character; therefore, based on this intuition, I prefer a treatment of class markers that allows us to avoid introducing cumulative class markers. Classes are of course intimately related to the expression of the grammatical number,
but they express the number by class conversion $\text{2}$ rather than via cumulation of grammemes by class $\text{1}$ markers on the noun.

2) Class conversion $\text{2}$ both in inflection and derivation

Under the isolationist approach, inflection (i.e., plural formation) and derivation (diminutive, augmentative, pejorative, collective, etc. formation) are treated alike—the technique used in all instances is class conversion $\text{2}$. However, the unionist approach faces the following dilemma.

- If change of class $\text{1}$ (= class conversion $\text{2}$) is used only to describe the expression of derivational meanings (diminutive, augmentative, etc.), while the inflectional meaning of number is expressed by affixation (= by the class $\text{1}$ prefixes—that is, with cumulation of grammemes), this means different treatment of a basically unitary phenomenon: why, indeed, should ‘PLURAL’ and ‘DIMINUTIVE’ be expressed by radically different formal techniques? Note that from the viewpoint of agreement, class $\text{1}$ markers always behave in the same way, no matter whether a given class $\text{1}$ is used in inflection or derivation.

- The idea of change of class $\text{1}$ is dropped altogether, and in all forms only cumulative class $\text{1}$ markers are considered. As a result, each class $\text{1}$ marker of a given language can be ‘multiplied’: thus, in Kirundi (example (33b), p. 357), the class $\text{1}$ prefix ka- (XIII) has to be represented as two signs—ka- ‘CLASS $\text{1}$ XIII, SINGULAR’ and ‘CLASS $\text{1}$ XIII, SINGULAR, DIMINUTIVE’. In more complex instances, the same class $\text{1}$ prefix may appear as three or four different signs. But again, in agreement all of them would be indistinguishable.$^{10}$

3) Multiple correspondences between class $\text{1}$ in pluralization

Many languages that have noun classes $\text{1}$ do not feature a simple correspondence between the classes $\text{1}$ of the singular and those of the plural, such as that found, for instance, in Avar (p. 353) or in Bafia. It often happens that the same class $\text{1}$ expresses the singular for one noun, but the plural for another one. This is the case in Chechen (p. 351). I will give here two more examples for this phenomenon in Bantu languages. (For a detailed description of different pairings of noun classes $\text{1}$ in Bantu, see Toporova 1987.)

(41) Aghem

Class $\text{1}$ II ($\hat{\text{a}}$-) marks the plural for classes $\text{1}$ I ($\emptyset$-) and IV ($\hat{\text{e}}$-):

\[ \emptyset + \text{wé} ‘\text{child}’ \sim \hat{\text{a}} + \text{wé} ‘\text{children}’; \hat{\text{e}} + \text{ghóm} ‘\text{egg}’ \sim \hat{\text{a}} + \text{ghóm} ‘\text{eggs}’ \]

Class $\text{1}$ III ($\hat{\text{e}}$-) marks the singular of various nouns, but the plural of the nouns of the class $\text{1}$ V [ki-]:

\[ \hat{\text{e}} + \text{k5} ‘\text{ladder}’ [\text{SINGULAR}]; \hat{\text{k}} + \text{fu} ‘\text{rat}’ \sim \hat{\text{a}} + \text{fu} ‘\text{rats}’ \]
Class I IV (é-) marks the singular of some nouns, but the plural of the nouns of the class I III [ó-]:

é+ghóm 'egg' [SINGULAR]; ó+kó! 'ladder' ~ é+kó! 'ladders'

Correspondences between the class I of the singular and that of the plural in Aghem are as follows:

\[
\begin{align*}
\text{sg} & \quad \text{pl} \\
I & \quad \Rightarrow \quad I \\
III & \quad \Rightarrow \quad III \\
IV & \quad \Rightarrow \quad IV \\
V & \\
\end{align*}
\]

(42) Aka has 11 isolationist classes I, of which three are 'monosemic' (classes I and III express only the singular, and class II only the plural), one is ambiguous (class XI [vi-] expresses the singular and the plural of diminutives) and 7 other classes are 'bisemic'—that is, each of them expresses the singular for some nouns and the plural for others:

<table>
<thead>
<tr>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>class VII dí+pindi 'penis'</td>
<td>dí+kénté 'rocks'</td>
</tr>
<tr>
<td>class VIII mà+mbí 'dropping'</td>
<td>mà+pindi 'penises'</td>
</tr>
<tr>
<td>mà+kotò 'intestines'</td>
<td></td>
</tr>
<tr>
<td>class IX bò+kotò 'intestine'</td>
<td>bò+mbí 'droppings'</td>
</tr>
</tbody>
</table>

We see here the following correspondences:

\[
\begin{align*}
\text{sg} & \quad \text{pl} \\
... & \quad ... \\
VII & \quad \Rightarrow \quad VII \\
VIII & \quad \Rightarrow \quad VIII \\
IX & \quad \Rightarrow \quad IX \\
\end{align*}
\]

The number of unionist classes in Aka—that is, the number of relevant pairs 'sg/pl' which actually occur in the language—would be 30!11

Note that, theoretically, the upper limit for the number of unionist classes in a language with \( n \) isolationist classes is \( n! \), which is the number of all possible ordered pairs of \( n \) elements. This means a huge amount: thus, if \( n = 10 \), \( n! = 3 \, 628 \, 800 \).

Of course, even a significant enough fraction of all theoretical possibilities is never actually realized in a language, but I find this fact important for my choice.

The frequency of bisemic noun classes constitutes for me a serious argument in favor of the isolationist approach. In addition, the unionist approach forces the researcher to treat any pairing of agreement classes in the singular and the plural, even an exceptional one as a separate class I—at the same level as all
the other classes1. Thus, a very rigorous unionist description gives for Archi 11 classes1, instead of 4 isolationist classes1 (Kibrik 1972; the more recent Kibrik 1998 distinguishes 4 basic and 4 minor classes1).

From the purely logical viewpoint, the description of agreement in Archi in terms of 11 unionist classes1 and the description of the same phenomenon in terms of 4 isolationist classes1 plus the indication, in the syntax of the noun, of the change of the class1 in the plural are equivalent. However, from the linguistic viewpoint, I prefer to indicate morphological particularities of some specific nouns as features of their syntax in the very drastic way—the inventory of noun classes1 in the language.

However, the number of classes1 established in a given language \( \mathcal{L} \) under one or the other approach does not have as such an absolute value. Often the number of unionist classes1 in \( \mathcal{L} \) is inferior to that of isolationist classes1; this happens wherever there is a consistent unique correspondence between the singular and the plural noun classes1 and derivation does not present additional problems. Thus, for Swahili, the isolationist approach gives 14 classes1, while under the unionist approach it is probably possible to do with only 8 (if we disregard derivation). In Bafia, for instance, the latter would posit six classes1 instead of our twelve:

<table>
<thead>
<tr>
<th>unionist noun classes1 of Bafia</th>
<th>sg</th>
<th>pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>m-</td>
<td>ñae-</td>
</tr>
<tr>
<td>II</td>
<td>(\ddot{\eta}(w)-)</td>
<td>mæ-/mj-</td>
</tr>
<tr>
<td>III</td>
<td>ri-/dj-</td>
<td>mæ-/m-</td>
</tr>
<tr>
<td>IV</td>
<td>fi-</td>
<td>ki-</td>
</tr>
<tr>
<td>V</td>
<td>Ø-</td>
<td>Ø-</td>
</tr>
<tr>
<td>VI</td>
<td>fi-</td>
<td>ti-</td>
</tr>
</tbody>
</table>

The decrease in the number of classes1 under the unionist approach depends on the relations between classes1 in language \( \mathcal{L} \)—that is, on the type of correspondence between the singular and plural classes1 and on derivational patterns found in \( \mathcal{L} \). Therefore, even if the unionist approach can ensure a numerical gain in a particular case, a smaller number of classes1 obtainable only in such a case cannot be used as a valid argument in a general theoretical discussion of the establishment of noun classes1.

To sum up, the unionist approach tends to make noun classes1 closer to genders1, by consciously ignoring, in the description, two differences between them that I judge extremely relevant: the non-cumulative character of class1 markers and the use of class conversion2 both in inflection and derivation. In contrast, the isolationist approach insists on these differences between class1 and gen-
der1, treating them as two distinct particular cases of the general phenomenon of agreement class.

5. Genders1, classes1 or neither? Three case studies

I would like to consider three cases where the existence of agreement classes and their nature are far from obvious. These cases come from Ket, Athapascan languages, and Japanese.

1. Ket

Ket has agreement classes beyond any doubt; its nouns are partitioned into three subsets as a function of three agreement phenomena:

1) agreement of the Main Verb with its (SSynt-)Subject;
2) agreement of the transitive verb with its DirO;
3) agreement of the predicative adjective with its Subject. (The attributive adjective and other modifiers do not feature agreement.)

(43) Ket

a.  

\[ t'\text{em} \ du \ +daqg/qo\text{q}+\text{aes}+a \ +taq \]

\text{goose} 3SG.SUB fried lost 3SG.SUB become

\text{The goose is being fried/getting lost}'.

vs.

\[ kil \ da \ +daqg/qo\text{q}+\text{aes}+i \ +taq \]

crow 3SG.SUB fried lost 3SG.SUB become

\text{The crow is being fried/getting lost}'.

vs.

\[ kit \ bim \ +daqg/qo\text{q}+\emptyset \ +taq \]

\text{meat} 3SG.SUB fried lost 3SG.SUB become

\text{The meat is being fried/getting lost}'.

[In these sentences, the present is marked by a zero suffix, which is not shown in the interlinear gloss. The element -\text{aes}- is one of many empty morphs found in Ket conjugation—cf. -\text{e}-, -\text{t}-, -\text{y}-, etc. in the following examples. The verb \text{qo}\text{q}-\text{taq} \ '[:to get lost' is a compound–\text{qo}\text{q}'lost'+\text{taq}'become'.]

b.  

\[ bu \ t'\text{em} \ d \ +bu \ +\gamma +a \ +n' +\text{aem} \]

\text{he} goose 3SG.SUB 3SG.SUB 3SG.OBJ AOR take.away

\text{He took the goose away}'.

vs.

\[ bu \ kil \ d \ +bu \ +r+i \ +n' +\text{aem} \]

\text{he} crow 3SG.SUB 3SG.SUB 3SG.OBJ AOR take.away

\text{He took the crow away}'.

vs.
Chapter 6. Gender and noun class

He took the meat away.

The goose is bad.

The crow is bad.

The meat is bad.

The first subset of Ket nouns (the type TEM ‘goose’) is cross-referenced:
in the Main Verb by the subjectal prefix du-, the subjectal infix -a- and the objectal prefix -a;
in the predicative adjective by the predicative suffix -du.

The second subset (the type KIL ‘crow’) is cross-referenced:
in the Main Verb by the subjectal prefix da-, the subjectal infix -i- and the objectal prefix -i;
in the predicative adjective by the predicative suffix -da.

The third subset (the type KIT ‘meat’) is cross-referenced:
in the Main Verb by the subjectal prefix b-/bim-, the subjectal infix -Ø- and the objectal prefix -b;
in the predicative adjective by the predicative suffix -am.

Specialists have been debating for a long time now the nature of these three agreement classes in Ket: are they genders or noun classes? Let me try to answer this question applying to Ket agreement classes Definitions 6.1 and 6.2.

(i) Ket agreement classes are not numerous: there are just three. This fact argues in favor of genders.

(ii) Ket agreement classes manifest a systematic link with sex: the class TEM includes all nouns referring to human males (hiy ‘man’, ob ‘father’, hib ‘son’, i’et ‘husband’, ...), the class KIL all nouns referring to human females (qim ‘woman’, am ‘mother’, hun ‘daughter’, bám ‘old woman’, ...), and the class KIT, all inanimate nouns. The names for the males and females of the most animals are also distributed accordingly. This obviously argues in favor of genders (masculine ~ feminine ~ neuter). The link of biological sex and noun classes in Ket is so strong that Ket even has two suppletive radicals for the verb ‘[to] say’: bada for a male speaker [= ‘he said’] and mana for a female speaker [= ‘she said’].

(iii) The semantic motivation of the distribution of Ket nouns in agreement classes is not obvious – except, of course, for its link to sex. Thus, QIT ‘wolf’, QAJ ‘elk’ and S’UJ ‘mosquito’ belong to the first class, but
5. Genders 1, classes 1 or neither? Three case studies

Qahren ‘fox’, Besh ‘hare’ and Tit ‘black fly’ to the second; Ei ‘pine’, Sul ‘dog sledge’ and Sutusohn ‘yurt [= nomads’ tent] pole’ are of the first class, but Imelt ‘pine cone’, Qit ‘bow [weapon]’ and Qus ‘yurt’ of the third; and so forth. This is again more typical of gender 1.

(iv) The agreement classes of the Ket noun do not have explicit markers on the noun itself; the classification is completely covert, what is to be expected with gender 1.

(v) The markers of agreement in class on the verb and on the predicative adjective are all cumulative (while being autonomous): they also express the number of the controller noun, just as ‘normal’ markers of agreement in gender 1 do.

(vi) The agreement class of Ket nouns is relevant to the choice of case allomorphs under inflection: all nouns of the first class have case suffixes in -a- (genitive -da, dative -daŋa, adessive -daŋt, ablative -daŋal’), and the nouns of the two other classes have case suffixes in -i- (genitive -di, dative -diŋa, adessive -diŋt, ablative -diŋal’). The dependence of inflectional affixes on gender 1 is one of its characteristic features. Noun class 1 (cf. classes 1 of Daghestanian languages, which have cases) does not have this feature.

(vii) Ket nouns do not change their agreement class in order to express inflectional meanings. The plural is expressed by the suffixes -n and -n (93% of nouns), segmental apophonies (ses ‘river, sg ~ sas’ ‘river, pl’) and suprasegmental apophonies (qaipq ‘fly, sg ~ qaipoq ‘fly, pl’, accent symbol marking high tone). This property also argues in favor of gender 1.

NB: In the plural, distinctions between agreement classes are neutralized, so that the verb and the predicative adjective agree with all plural nouns in the same way.

(viii) Ket nouns can change their agreement class in order to express some derivational meanings. This happens in the three following ways:

- Change of agreement class for the expression of the meaning ‘X of feminine sex’:


<table>
<thead>
<tr>
<th>first class</th>
<th>~</th>
<th>second class</th>
</tr>
</thead>
<tbody>
<tr>
<td>bisèb</td>
<td>‘brother’</td>
<td>‘sister’</td>
</tr>
<tr>
<td>qal</td>
<td>‘grandson’</td>
<td>‘granddaughter’</td>
</tr>
<tr>
<td>goj</td>
<td>‘uncle’</td>
<td>‘aunt’</td>
</tr>
<tr>
<td>dil</td>
<td>‘boy’</td>
<td>‘girl’</td>
</tr>
<tr>
<td>sele</td>
<td>‘male hare’</td>
<td>‘female hare’</td>
</tr>
<tr>
<td>qit</td>
<td>‘wolf’</td>
<td>‘she-wolf’</td>
</tr>
</tbody>
</table>
– Change of agreement class for the expression of the meanings ‘a part of
the animate being X’, ‘food prepared from the animal X’, ‘what remains
of an animate being/of a plant after its death’:

<table>
<thead>
<tr>
<th>Class</th>
<th>Example</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>First class</td>
<td>oks’</td>
<td>living tree</td>
</tr>
<tr>
<td>Third class</td>
<td>is’</td>
<td>living fish</td>
</tr>
</tbody>
</table>

– Change of agreement class for the expression of the meaning ‘a smaller X’:

<table>
<thead>
<tr>
<th>Class</th>
<th>Example</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>First class</td>
<td>tap</td>
<td>big ring</td>
</tr>
<tr>
<td>Third class</td>
<td></td>
<td>[= circle, tire]</td>
</tr>
</tbody>
</table>

Changing agreement class for derivational purposes is in principle more typical of noun classes than genders. However, this phenomenon is quite well known in gender systems: compare, for instance, the case of Spanish, example (25b) above, p. 343. French has similar cases as well: *lion* ‘lion’ ~ *lionne* ‘lioness’, *renard* ‘fox’ ~ *renarde* ‘vixen’, *faisan* ‘pheasant’ ~ *faisane* ‘female pheasant’, *loup* ‘wolf’ ~ *louve* ‘she-wolf’, *ours* ‘bear’ ~ *ourse* ‘she-bear’, etc., even if they are rarer in French. (In point of fact, the French pairs of the type *lion* ~ *lionne*, etc. are not quite parallel to the three types of class changes in Ket: in French, contrary to Ket, the change of the gender of the noun is formally marked. From the morphological viewpoint, a French phenomenon much closer to Ket is the existence of non-systematic pairs of the type *[une] aide* ‘aid [action]’ ~ *[un] aide* ‘aid [person]’, *[la] radio* ‘radio’ ~ *[le] radio* ‘radio operator’, *[la] trompette* ‘trumpet’ ~ *[le] trompette* ‘trumpeter’, etc.)

Let me sum up. The three agreement classes of Ket nouns are genders: masculine ~ feminine ~ neuter. Recall that Ket nouns do not change their agreement class in the plural, which is another typical particularity of gender as opposed to class.

2. Athapaskan languages

Linguists often talk about noun classes in Athapaskan languages. Thus, for instance, Navajo distinguishes 12 classes of nouns such that the class of the noun N determines the choice of the transitive verb whose DirO is N. These classes correspond, roughly speaking, to the type of the object denoted by a noun and are as follows:

1) nouns denoting flat and flexible objects (‘similar to a sheet of paper’),
2) nouns denoting long, thin and rigid objects (‘similar to a stick’),
3) nouns denoting roundish objects (‘similar to a stone/an apple’),
4) nouns denoting containers, etc.
When a Navajo says ‘Give me a blanket!’, the verbal form meaning ‘give!’ ( = nílcdôz!) is different from the verbal form having the same meaning in ‘Give me a rope!’ (‘give!’ is here nilâ!) or in ‘Give me a pencil!’ (‘give!’ = nitâ!), and so forth. It looks as if there were agreement of the transitive verb in class with its DirO. However, this is not the case. Let me present the Navajo facts and analyze them in a more fine-grained way.

Navajo (Hoijer 1945) has 12 transitive verbal stems called classificatory verbs, which all mean roughly ‘[to] move Y’ and differ only by the semantic restrictions imposed on their DirO:

- `[to] move a SPHERICAL object` - ñá
- `[to] move a LONG RIGID object` - tá
- `[to] move a LONG FLEXIBLE object` - lá
- `[to] move a FLAT FLEXIBLE object` - ñòz
- `[to] move a VOLUMINOUS object` - ñòd
- `[to] move a MASS` - ñá?'
- `[to] move a LIVING BEING` - t'h
- `[to] move a SET of objects` - nil
- `[to] move a SET OF PARALLEL objects` - ñòžzh
- `[to] move a CONTAINER` - k'á
- `[to] move an object SIMILAR TO WOOL` - ñòl
- `[to] move an object SIMILAR TO DIRT` - -l'é

Using derivational prefixes, Navajo derives from these stems the verbs that express meanings such as `[to] give’ (the prefix ní- ‘from the speaker towards someone’), `[to] take’ (ha- ‘from a location towards the speaker’), `[to] put’, etc.

It is true that these verbs induce the partition of the set of Navajo nouns in 12 subsets, but the latter are by no means classes. First of all, they are not agreement classes: a Navajo noun used as a DirO selects the corresponding verbal lexeme, yet it does not impose a grammeme on the verbal lexeme in question. The situation with Athapaskan classificatory verbs reminds one rather of Vietnamese numerical classifiers (see Chapter 1, 2.2.4, p. 54). Athapaskan noun classes are lexical classes – however, they are not involved in inflectional phenomena and thus cannot be considered agreement classes.

Note that these classes are relevant only from the viewpoint of an extremely limited group of transitive verbs listed in (44) and of a few intransitive verbs whose meaning is roughly ‘[to] be located in ...’ (in this case, it is the noun in the role of SSynt-Subject that selects the verb). With respect to all other verbs of the language, the nouns of different classes behave in the same way. Moreover, the correspondence between classificatory verbs and their DirO has a purely semantic character. It can be compared, for instance, to the correspondence that we observe in French or
in Russian, when we say *Il a EMMENÉ l’enfant/*On *UVÉL rebênka* ‘He took the child with him’, but *Il a EMPORTÉ le cadeau/*On *UNÉS podarok* ‘He took the present with him’: we can say *Il a EMPORTÉ l’enfant/*On *UNÉS rebênka*, if the child was very young, unconscious or dead, and *Il a EMMENÉ le cadeau/*On *UVÉL podarok*, if the present was a person or an animal (capable of walking). The difference between *emmener/*uvesti, on the one hand, and *emporter/*unesti, on the other, is a difference of meaning, by no means a difference of distribution as a function of the DirO.

We can illustrate the semantic character of the correspondences between a classificatory verb and its DirO or its SSynt-Subject in Athapaskan languages with the following example.

(45) In Chipewyan, a noun can be used with different classificatory verbs, and the choice of a different classificatory verb corresponds to a different meaning. Here are four such verbs:

a. *θe̱+tã* ‘X, which is an empty container, is here’.
   *θe̱+tã* ‘X, which is a full container, is here’.
   *θe̱+ʔa* ‘X, which is an inanimate object, is here’.
   *θe̱+kã* ‘X, which is a liquid, is here’.

[θe- is a localization prefix meaning ‘here’; Chipewyan classificatory verbs are different from those of Navajo].

b. With the nouns *listelî* ‘box’ and *tu* ‘water’ the following sentences can be constructed:

(i) *listelî θetã* ‘An empty box is here’.
   *listelî θetã* ‘A box with something inside is here’.

(ii) *tu θetã* ‘There is some water here, in a container’.
   *tu θetã* ‘There is here a container with some water’.
   or
   ‘There is water as an object here’ =
   ‘There is a lake here’ (or: ‘There is a lake here’).

Summing up the evidence, we see that the use of classificatory verbs in Athapaskan is semantically motivated rather than implicated in syntactic and morphological phenomena. Therefore, we have to exclude the classes of Athapaskan nouns from agreement classes—and, consequently, from noun classes I.
In Japanese, a numeral must have a special suffix as a function of the noun this numeral quantifies. Take, for instance, the numeral SAN ‘three’:

(46) Japanese

<table>
<thead>
<tr>
<th>Noun</th>
<th>Suffix</th>
<th>Numerical Suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>child</td>
<td>-o</td>
<td>san+nin</td>
</tr>
<tr>
<td>pencil</td>
<td>-o</td>
<td>san+bon</td>
</tr>
<tr>
<td>magazine</td>
<td>-o</td>
<td>san+satu</td>
</tr>
<tr>
<td>towel</td>
<td>-o</td>
<td>san+mai</td>
</tr>
<tr>
<td>letter</td>
<td>-o</td>
<td>san+tu</td>
</tr>
<tr>
<td>car</td>
<td>-o</td>
<td>san+dai</td>
</tr>
<tr>
<td>pair of shoes</td>
<td>-o</td>
<td>san+zoku</td>
</tr>
<tr>
<td>shop</td>
<td>-o</td>
<td>san+gen</td>
</tr>
<tr>
<td>egg</td>
<td>-o</td>
<td>san+ko</td>
</tr>
<tr>
<td>mosquito</td>
<td>-o</td>
<td>san+biki</td>
</tr>
<tr>
<td>bird</td>
<td>-o</td>
<td>san+ba</td>
</tr>
</tbody>
</table>

i.e., ‘I (YouSG, He/She, ...) saw three children (three pencils, three magazines, three letters, ...)’.

Remarks

1. In Japanese, the pronominal Subject is systematically omitted; -o is the suffix of the accusative. The numeral syntactically depends on the Main Verb.

2. The forms of the type san+nin, san+bon, etc. are considered single wordforms rather than two-word phrases because they undergo sandhis (truncations and assimilations) which happen only inside wordforms: i+ichi+satu ⇒ issatu ‘one volume’, 3+ju+ko ⇒ 3+ikkō ‘ten pieces’ [apples, eggs, boxes], -/h/ ⇒ -/b/, -/h/ ⇒ -/p/, -/k/ ⇒ -/g/, -/s/ ⇒ -/z/, etc.

The numerical suffixes correspond to loosely characterized semantic classes of nouns: -nin is used to quantify nouns denoting people, -bon/-bon appears with nouns denoting long thin objects, -satu—with nouns denoting books or magazines, etc.

If we admit that san+nin, san+bon, san+satu, etc. are inflectional forms of the same lexeme SAN ‘three’ chosen according to the controlling (= quantified) noun, then we have to postulate for Japanese a score of agreement classes (our list in (46a) is incomplete). These would be, of course, (noun) classes1.

However, it is not at all clear whether we can consider the numeral forms in question as inflectional forms (and thus agreement forms) rather than new lexemes regularly derived of SAN. Along with the cited forms, Japanese has a number of other forms that, being constructed in the same way as the forms in (46a), resemble derivations rather than inflections:
b.  
\begin{itemize}
  \item \textit{san+do} \hspace{1em} ‘three times’
  \item \textit{san+bai} \hspace{1em} ‘three cups/glasses’
    \[\text{ Mizu}+\text{o san+bai kudasai! ‘Give [me please] three glasses of water!’}\]
  \item \textit{san+gai} \hspace{1em} ‘three stories [in a house]’
  \item \textit{san+peizi} \hspace{1em} ‘three pages’
  \item \textit{san+pun} \hspace{1em} ‘three minutes’
  \item \textit{san+kagetu} \hspace{1em} ‘three months’
\end{itemize}

In (46b), each suffix has a very precise meaning: \textit{-do} = ‘time(s)’, \textit{-hai/-pai/-bai} = ‘cup/glass’, \textit{-gai} = ‘story’, etc., and the corresponding forms are not selected according to agreement rules: they are used for the sake of their own meaning. The same use is also possible for forms of type (46a):

c.  
\begin{itemize}
  \item \textit{Kami+o san+mai kudasai!}
    \hspace{1em} paper \hspace{1em} ACC \hspace{1em} three sheet please.give
      \hspace{1em} \hspace{1em} ‘Give [me please] three sheets of paper!’,
    \hspace{1em} where \textit{-mai} has quite a concrete meaning: ‘sheet [of paper]’.
\end{itemize}

This forces me to consider all Japanese numeral forms as derived lexemes that have their own meaning: \textit{SANNIN} ‘three people’, \textit{SANBON} ‘three sticks’, \textit{SANSATU} ‘three books’, etc. These lexemes are selected \textit{more or less} according to this meaning, such that (46a) illustrates a quasi-semantic correspondence rather than morphological agreement.\textsuperscript{14} I would like to emphasize that Japanese does not possess agreement at all, except for this highly controversial case of numerals. The coherence with this typical trait of the language further reinforces the analysis of numerals of the type \textit{sanbon, sannin}, etc. as derived lexemes. If we accept this last analysis, Japanese turns out to lack agreement classes and, consequently, noun classes\textsuperscript{1}.

\section{Syntactic genders\textsubscript{1}/classes\textsubscript{1} vs. morphological genders\textsubscript{1}/classes\textsubscript{1}}

To conclude this chapter, I would like to draw the reader’s attention to an important distinction, established in Zaliznjak 1967: 146\textsuperscript{ff}, but nevertheless too often disregarded. As a general rule, nouns that belong to the same agreement class (gender\textsubscript{1} or noun class\textsubscript{1}) have very similar, and sometimes identical, inflectional forms. Thus, in Russian most feminine nouns are declined according to the same pattern—in declension group 1 (\textit{kniga} ‘book’, \textit{golova} ‘head’, etc.); most masculine nouns are declined according to a different pattern: they belong to declension group 2 (\textit{dom} ‘house’, \textit{karandaš} ‘pencil’, etc.). Therefore, when we say that the noun \textit{N} is feminine, we tend to think about its agreement properties and its declensional properties at the same time. But this can lead to confusion, since the above correspondence is far from absolute. Russian, for instance, has many
masculine nouns (= nouns with masculine agreement) that are declined as feminine nouns—that is, they belong to declension group 1. For instance, the masculine nouns PAPA (dad) and SUDJA (judge) are declined exactly like the feminine nouns POPA (bum, behind) and LADJA (castle [chess]). As a result, it is possible to say that they are morphologically feminine, while syntactically they are 100% masculine (moj+Ø papa ‘my father’ vs. moj+a popa ‘my behind’).

An interesting example of such a ‘discrepancy’ between the morphological and syntactic nominal gender is found in Mayali (Evans 1997: ‘quirky agreement’):

(47)  

\begin{align*}
\text{man} & +\text{dewk} & \text{na} & +\text{kimuk} & \text{kun} & +\text{ak} & \text{man} & +\text{bu} \\
\text{VEG} & \text{rain} & \text{MASC} & \text{big} & \text{NEU} & \text{fire} & \text{VEG} & \text{that} \\
\text{man} & +\text{kun} & \text{na} & +?\text{ni} & \text{kun} & +\text{rerrg} & \text{man} & +\text{bu} \\
\text{VEG} & \text{honey} & \text{MASC} & \text{this.here} & \text{NEU} & \text{firewood} & \text{VEG} & \text{that}
\end{align*}

Some nouns that morphologically belong to the vegetable gender (which is shown by their prefix) control agreement in the masculine gender, and some nouns belonging to the morphological neuter control agreement in the vegetable gender.

Note that this conflict between the morphological and syntactic gender/noun class is more typical of genders. Therefore, in case of doubt concerning the status of the agreement class in language, the presence and the frequency of the conflict can serve as an argument in favor of gender. This is, however, no more than a tendency—as shown in Aronoff 1994: 61ff, the discrepancy between syntactically determined (noun) classes and morphologically determined (inflectional) types of noun can be characteristic of noun classes as well.

Notes

1 (1, p. 322) Cf. Plungjan and Romanova 1990: 232, where it is stated outright that gender and noun class “are simply two different specific linguistic realizations of the same grammatical category agreement class.”

2 (3.2, 6, p. 328) The Italian nouns that have the property in question denote objects coming in groups of a typical or expected size (several body parts and organs come in twos, eggs are sold by the dozen, etc.); this has an obvious historical explanation.

3 (3.6, p. 339) In this book, classes of a language are numbered consecutively with Roman numbers.

4 (4.1, Def. 6.2, Condition 3, p. 347). The semantic motivation for a class can be manifested, roughly speaking, as a formal or substantive determination between class Ki and a semantic component ‘m’ (Plungjan and Romanova 1990: 240): “formal determination” means that most lexemes belonging to K have ‘m’ in their meaning, and “substantive determination” means that most lexemes having ‘m’ in their meaning belong to Ki.
A few Chechen nouns have an initial consonant that reflects the ancient fossilized class prefix: \( w+\)aša 'brother' \( \sim j+iša \) 'sister', \( j+oš \) 'young girl', etc.

Note the singular of a noun modified by a numeral: this is a typical feature of many languages (among others, Uralo-Altaic).

The real picture is more complex: see Kibrik 1972.

Kirundi forms in (33a) call for the following three remarks:

1. In these examples, the nouns do not have the augment—a morph that in Kirundi normally precedes the class prefix, as, for instance, in (33b). This morph is obligatorily omitted in certain contexts—among these, following a demonstrative pronoun.

2. In example (33a-ii), formal agreement of the verb is violated: the verb '[to] be' has the prefix of the class II, while it should have the prefix of class II, i.e. u-. This is a manifestation of what is known as semantic agreement. UMUSORE (class I III) signifies a human being, and the verb (but not the adjective!) agrees with this lexeme as with the lexemes of class I, which is par excellence the class I of human beings. A non-human noun of class I III, e.g., UMUKUBUZO 'broom', controls ordinary agreement:

\[
\begin{align*}
\text{um+ryá} & \quad \text{mu+kábuuzo} & \quad \text{mu+bi} & \quad \text{u+i kure} \\
\text{III} & \quad \text{this} & \quad \text{III} & \quad \text{broom} & \quad \text{III} & \quad \text{be far away}
\end{align*}
\]

'This bad broom is far away.'

3. In the wordform (i+)gi+tabu (in (33a-iv)) we observe the following morphological phenomenon: the prefix ki- of class VII undergoes automatic voicing before the initial voiceless consonant of the radical (a regressive non-contact dissimilation). Kirundi has the following morphonological rule:

\[
\text{ki+} \Rightarrow \text{gi+} | _{/C\text{-voice}/}. 
\]

This rule is known as Dahl’s Law. The same phenomenon is seen in three forms of (33b-i):

\[
\begin{align*}
\text{ka+} & \Rightarrow \text{ga+} | _{/C\text{-voice}/}.
\end{align*}
\]

The diversity of plural suffixes for a given class I in this case, as in other cases below, does not destroy the unity of the class I: all Yimas nouns that belong to the same class I require the same agreement of the adjective, the verb, etc., independently of their own number suffix—see below, (39b).

I strongly suspect that different treatment of inflection and derivation in Bantu languages, as well as all attempts to postulate cumulative class I markers are simply due to Eurocentrism of the first students of these ‘exotic’ languages and to their reluctance to use completely different descriptive techniques.

In each bisemic class I of Aka, one of the two numbers is clearly much more frequent—it appears in more than 90% of cases. Thus, in class IV, 98.5% of nouns are plural and only 1.5% are singular, in class VII, 95% of nouns are singular and only 5% are plural, and so forth.

The expressions bada and mana are invariable defective verbs which introduce direct speech; they are similar to the Latin verb ait ‘he/she said’.

As mentioned above, in the singular Ket masculine nouns have case suffixes in -a- (‘father’ ob+dapa [DAT], ob+dapal [ABL], etc.), while feminine and neuter nouns have similar suffixes with -i- (‘mother’ am+diqa [DAT], am+diqal [ABL] or ‘nail’ ödes+diqa [DAT], ödes+diqal [ABL], etc.). Now, in the plural the distribution of these two characteristic vowels is different: masculine and...
feminine nouns have -a-, but neuter nouns retain their -i- (cf. ‘fathers’ ob+an+daŋa [DAT], ob+an+daŋal’ [ABL] ~ ‘mothers’ am+an+daŋa [DAT], am+an+daŋal’ [ABL], but ‘nails’ ōdes’n+dìŋa [DAT], ōdes’n+dìŋal’ [ABL]).

Changing the characteristic vowel in the case suffixes of feminine nouns in the plural represents the change of the declensional group. As such, this change has parallels in various languages having nominal inflection. By way of comparison, consider the following phenomenon from Russian: the case 1.1b suffixes on masculine nouns of the 2nd declension and those on feminine nouns of the 3rd declension are different in the singular, but identical in the plural. Thus:

---

<table>
<thead>
<tr>
<th>Case</th>
<th>Masculine</th>
<th>Feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOM</td>
<td>/kôn/’horse</td>
<td>/t’éń/’shadow</td>
</tr>
<tr>
<td>GEN</td>
<td>/kôn+k/</td>
<td>/t’éń+i/</td>
</tr>
<tr>
<td>DAT</td>
<td>/kôn+k̥/</td>
<td>/t’éń+i/</td>
</tr>
<tr>
<td>INSTR</td>
<td>/kôn+k̥m/</td>
<td>/t’éń+ju/</td>
</tr>
</tbody>
</table>

---

This phenomenon has no impact on gender1, since it is not reflected in the agreement imposed by the noun. Similarly, the change i ∼ a in the Ket case 1.1b suffixes can be safely ignored in the discussion of gender1.

14 (5, 3, after (46c), p. 378). The distribution of Japanese classifying suffixes cannot be specified by rule based on their meaning or that of the quantified noun (for an interesting discussion, see Lakoff 1986). Thus, Japanese nouns that require numerals in -hon/-bon ‘stick’ include nouns denoting competitions, telephone calls, radio and TV programs, films, injections, etc. (The explanation is historical: written documents used to be transported wrapped around a stick.) Strictly speaking, in a Japanese dictionary each noun must be marked for its numerical classifier.
II.4. Morphological signs

*ATM* considers four aspects of morphological signs. First (Chapter 7), I will present the most common type of morphological sign—the elementary segmental sign, or morph. At the same time, I will define the notion of “-eme”, X-eme being a set of synonymous signs X which are (roughly) in complementary distribution; as main representative of “-emes”, I will characterize the morpheme. Second (Chapter 8), I will analyze an important type of relation between signs, that of suppletion (it holds, first and foremost, between morphological signs). Third (Chapter 9), I will examine a particular type of sign, the zero sign; again, the most typical zero signs are morphological. And fourth (Chapter 10), I offer a general review of all the possible semantic and formal relations between linguistic—in particular, morphological—signs.
Chapter 7. Morph and morpheme

1. Introductory remarks
The notions of ‘morph’ and ‘morpheme’ play an extremely important, even central, role in linguistic morphology. Nevertheless (or maybe exactly because of that!), the notions are rather vague, even after many decades of intensive research. Although the term morpheme was introduced over 100 years ago, in late 19th century – by Jan Baudouin de Courtenay, a Polish-Russian linguist (with a French name), it continues to be used by modern linguists in many poorly defined senses, as shown in Mugdan 1986 and 1990. Unfortunately, the situation seems to have changed very little since the time Mugdan’s papers were published. This chapter attempts to resolve the problem in keeping with the general program of ATM – by proposing rigorous definitions for concepts of morph and morpheme. It goes without saying that I have to renounce even a superficial review of all the existing uses of the terms morph and morpheme, since any such review would require a special study.\(^1\)

2. Definitions of the concepts ‘morph’ and ‘morpheme’
I will start with five concepts that are necessary for the definitions of morph and morpheme – linguistic sign, segmental linguistic sign, operation of linguistic union \(\oplus\), elementary linguistic sign, and phonetic phrase.

Definition 7.1: Linguistic sign

A linguistic sign is an ordered triplet

\[ X = \langle \text{X}; /X/; \Sigma_x \rangle, \]

where \(\text{X}\) is a signified, /\(X\)/ a corresponding signifier, and \(\Sigma_x\) is the syntactics of the pair \(\langle \text{X}; /X\rangle\).

Here, signified (= signatum, signifié) and signifier (= signans, significant) are taken in their Saussurian sense; syntactics is a set of all combinatorial properties, or features, of the sign \(X\) that are determined neither by its signified nor by its signifier. These are such features as part of speech, inflectional class, agreement class (in particular, grammatical gender or noun class\(^1\)), government pattern, possible syntactic constructions, restricted lexical co-occurrence, etc.

Linguistic signs include:
2. Definitions of the concepts 'morph' and 'morpheme'

- simple morphs — radicals, as in (1)-1, or affixes, as in (1)-5
- derived stems (= combinations of morphs), as in (1)-3 and (1)-4
- wordforms, as in (1)-2
- free phrases, as in (1)-6
- set phrases (= phrasemes), as in (1)-7
- reduplications, as in (2)
- apophonies, as in (3)
- conversions, as in (4)

(1) Russian

**morph: radical**

1. okn = (‘window’; /okn/; Σ = radical, noun, neuter, ...)

**wordform**

2. oknom = (‘window, SINGULAR’; /aknóm/; Σ = wordform, noun, neuter, instrumental case, ...)

**group of morphs: derived stem**

3. okoškI = (‘small window’; /akóšk/; Σ = derived stem, noun, neuter, ...)
   (izbuška s dvumja okoškami [a] small rural house with two small windows')

4. okoškII = (‘counter, window’; /akóšk/; Σ = derived phraseologized stem, noun, neuter, ...)
   (okoško kassy, lit. ‘counter of the cash register, teller')

**morph: suffix**

5. -u = (‘1ST PERSON SINGULAR’; /u/; Σ = verbal suffix, in a non-past tense, ...)

**free phrase**

6. ždu avtobusa = (‘am-waiting for a bus, INDICATIVE, PRESENT’; /zdu aftóbusa/; Σ = free ‘Verb + DirObject’ phrase, 1st person, singular, ...)

**set phrase (= phraseme)**

7. ostalsja s nosom = (‘[X] did not get what [X] was supposed to get ..., INDICATIVE, PAST, PERFECTIVE ASPECT’; /astáls’a snósam/; Σ = phraseologized ‘Verb + PrepObject’ phrase, singular, masculine, ...)
   [literal gloss of this phraseme is ‘remained with [his] nose’]
Chapter 7. Morph and morpheme

(2) Wolof

Reduplication

8. \(\text{Red}_{\text{INTENS}}\) = \(<\text{intensely}^3; R \Rightarrow R' + R; \Sigma = \text{left full reduplication, applies to verbal radicals marked } \text{«intens-redupl}}, \ldots>)

Examples: \(\text{fete} \{\text{[to] rub}\} \sim \text{fete-fete} \{\text{[to] rub energetically}\}, \text{rey} \{\text{[to] kill}\} \sim \text{rey-rey} \{\text{[to] kill cruelly and/or many people } \approx \text{slaughter}\}, \text{xame} \{\text{[to] recognize}\} \sim \text{xame-xame} \{\text{[to] recognize with certainty}\}.

The reduplication \(\text{Red}\) of a verbal radical expresses intensification of its meaning (\(R\) stands for ‘radical,’ and \(R'\) for ‘repeated radical’).

(3) Albanian

Apophony

9. \(\text{A}_{\text{PL}}^{C/\Rightarrow C'} = \langle\text{PLURAL}^3; /C/ \Rightarrow /C'/; \Sigma = \text{apophony, applies to nouns marked } \text{«palatalization}}, \ldots)\)

Examples: \(\text{armik} \{\text{enemy}\} \sim \text{armiq} /\text{armik}' / \{\text{enemies}\}, \text{portokall} \{\text{orange}\} \sim \text{por-tokaj} \{\text{oranges}\}, \text{bir} \{\text{son}\} \sim \text{bij} \{\text{sons}\}.

Apophony of palatalization \(\text{A}_{\text{PL}}^{C/\Rightarrow C'}\) expresses the plural in (some) nouns.

(4) Russian

Conversion

10. \(\text{C}_{\text{CLOTH}} = \langle\text{cloths of color } X^3; \text{Adj } \Rightarrow \text{N, neuter, singular}; \Sigma = \text{conversion, applies to Adj denoting colors, } \ldots>)\)

Examples: \([\text{dama } v \text{lilovom} \{\text{[a lady in] violet}\}, [\text{Ej idët } golu\text{boe} \{\text{Light-blue [suits her]\}}, [\text{Devoček odevajut } v \text{rozovoe} \{\text{Little-girls are usually dressed in] rose}\}, [\text{V mode } sejčas } beloe \{\text{[Now,] white [is in vogue]}\}.

Conversion \(\text{C}_{\text{CLOTH}}\) – substantiation of a color adjective in the neuter singular – expresses the meaning ‘cloths of [.. color]’.

Definition 7.2: Segmental linguistic sign

A segmental (linguistic) sign is a sign whose signifier is segmental – that is, a string of phonemes supplied, if necessary, with relevant prosodemes.

Signs of types 1-5 are segmental, signs of types 6-10 are not. (In free and phraseologized phrases – types 6 and 7 – the signifier includes prosodemes, that is, pauses and contours, not shown in our examples; the signifier of signs of types 8-10 is a linguistic operation.)

Definition 7.3: Operation of linguistic union

Operation of linguistic union \(\oplus\) is an operation applicable to pairs of linguistic units (of language \(\mathcal{L}\)) – in particular, to signs – which unites them, according to their syntactics and/or the general rules of (the grammar of) \(\mathcal{L}\).
2. Definitions of the concepts 'morph' and 'morpheme'

The operation \( \odot \) is, in point of fact, a meta-operation, because it can be applied to linguistic operations. It unites linguistic units according to their combinatorial properties and also following some general rules of \( \mathcal{L} \). Uniting linguistic signs is, of course, carried out in different ways for the signs of different type. For two segmental signs the operation \( \odot \) can be implemented as simple concatenation (Rus. \( \tilde{z}d \odot -u \Leftrightarrow \tilde{z}du \), Eng. wait \( \odot -s \Leftrightarrow \text{waits} \)), while for a linguistic operation, such as an alternation or a reduplication, \( \odot \) means application of this operation to the corresponding sign (Eng. foot \( \odot \text{ApL} \Leftrightarrow \text{feet} \)); as for prosodemes, the operation \( \odot \text{superimposes} \) them on strings of phonemes.

**Definition 7.4: Elementary linguistic sign**

An elementary linguistic sign of language \( \mathcal{L} \) is a sign that cannot be fully or partially represented in terms of two (or more) other signs of \( \mathcal{L} \) and the operation \( \odot \).

‘Partially’ is to be understood here as ‘either only in the signified, or only in the signifier’. Such partial representability is called quasi-representability. (A sign quasi-representable only in its signified is a megamorph suppletive with respect to some morphs: the signified of the English verbal form am is representable in terms of the signifieds of other English signs – ‘be’, ‘1st person’, ‘singular’, ‘present’, ‘indicative’; but its signifier is not representable in terms of the corresponding signifiers. A sign quasi-representable only in its signifier is a phraseologized expression consisting of elementary signs: for instance, the noun fighter ‘military aircraft designed to combat enemy aircraft’ is representable in its signifier as /faɪtə/ + /-ər/ – that is, in terms of the signifiers of other English signs, but it is not representable in its signified in terms of the corresponding signifieds. Such signs are quasimorphs, see below, 3.1, p. 390.)

Let me stress the following: a sign \( s' \) can be representable in terms of another sign \( s \) and an alternation \( A \) of \( \mathcal{L} \) (recall that an alternation is not a sign); that is, \( s' = s \odot A \). This, however, does not prevent \( s' \) from being elementary. Thus, the English sign wive (in the plural wordform wive+\( s \)) is representable in terms of the sign wife and the voicing alternation \( \text{ApL} \): wive = wife \( \odot \text{ApL} \); however, it is still an elementary sign. To be non-elementary a sign must be representable (or quasi-representable) in terms of at least two other signs.

Signs of types 1, 5 and 8–10 are elementary, but signs of types 2–4 and 6–7 are not: the sign oknom is representable of terms of the signs okn and -om; the sign okoški\( l \) ‘small window’ is representable in terms of the signs okoš ‘window’ and -k ‘diminutive’; the sign okošk\( l \) ‘window, counter’ is quasi-representable in terms of the signs okoš and -k (‘quasi-representable,’ because its signified is phraseologized – i.e., not representable in terms of the signifieds of okoš and -k, while its signifier is fully representable in terms of their signifiers); the sign...
Ždu avtobusa is representable in terms of the wordforms Ždu, avtobusa and the prosodemes necessary in this phrase; finally, the sign ostalsja s nosom is quasi-representable (its signified is phraseologized as well) in terms of the wordforms ostalsja, s and nosom, plus the corresponding prosodemes.

**Definition 7.5: Phonetic phrase**

A phonetic phrase of language \( \mathcal{L} \) is a maximal speech segment of \( \mathcal{L} \) within the limits of which apply the phonemic and phonetic rules of \( \mathcal{L} \).

Thus, in Russian, a preposition constitutes a phonetic phrase with the following wordform, be it a N or an Adj: the Prep can take the stress from the N (réku ‘river, sg.ACC’ ~ zá reku ‘across [the] river’), and it assimilates in voicing to the first phoneme of the following wordform (v krasnom plat’e /fkrásnam/ ‘in [a] red dress’ ~ v želtom plat’/e /vžóltam/ ‘in [a] yellow dress’).

Now everything is in place for the definitions of morph and morpheme.

**Definition 7.6: Morph**

A morph (of language \( \mathcal{L} \)) is an elementary segmental sign (of \( \mathcal{L} \)).

**Definition 7.7: Morpheme**

A morpheme (of language \( \mathcal{L} \)) is a non-empty set of all morphs (of \( \mathcal{L} \)) \( m_1, m_2, \ldots, m_n = \{m_i\} \), such that they satisfy simultaneously the following three conditions:

1. The signifieds of all \( m_i \) are identical.
2. All \( m_i \) belong to the same major class of morphs [all \( m_i \) are either roots or affixes].
3. a. Either all \( m_i \) have different (roughly speaking, complementary) distributions that can be described by rules that
   (i) are sufficiently general
   and
   (ii) mention elements of the context within the limits of the phonetic phrase where appears \( m_i \).
   
   b. Or some \( m_i \) have identical, i.e. optional, distributions, and then:
      – either all \( m_i \) are affixes;
      – or all \( m_i \) are roots, and then:
      (i) the set \( m_i \) (= roots in optional distribution) contains a root \( m' \) such that any \( m_i \) is representable in terms of \( m' \) and some alternations of \( \mathcal{L} \) (plus, of course, the operation of linguistic union \( \oplus \));
      (ii) all the other \( m_k \) (i.e., the difference \( m_i - m'_i \)) satisfy Condition 3a.

A morpheme is written as \( \{M\} \): the curly brackets indicate that it is a set.

**Example**
The following six Russian morphs:
3. Comments on morphs and morphemes

3.1. Morph and quasimorph

According to Definition 7.6, a morph (of $\mathcal{L}$) is an elementary sign—that is, it is not representable nor quasi-representable in terms of two other signs (of $\mathcal{L}$). Elementary signs, in particular morphs, must be stored in the lexicon: they cannot be produced from some other signs according to some standard rules. Therefore, one could think that the lexicon of $\mathcal{L}$ must contain all and only morphs of $\mathcal{L}$. Roughly speaking, this is correct; there are, nevertheless, two important deviations from this simple principle.

On the one hand, the lexicon of $\mathcal{L}$ needs not contain all the morphs of $\mathcal{L}$: some of them can be obtained from other morphs by standard alternations of $\mathcal{L}$. These are so-called predictable allomorphs, and they will be discussed in some detail in 3.3 below. Thus, an English lexicon must contain the allomorph *wife*, but not the allomorph *wive* (which appears in the plural form *wive+s*): in principle, the latter can be constructed from the former by an alternation rule.

On the other hand, the lexicon of $\mathcal{L}$ needs to contain not only morphs of $\mathcal{L}$: languages do have, and even in large quantities, another important type of segmental sign that has to be stored—quasimorphs. A quasimorph is a sign $\text{qm}$ which is composed of morphs $m_1, m_2, \ldots, m_n$ (of $\mathcal{L}$) in a way that may be completely obvious for the speakers, but which nevertheless has to appear in the lexicon as a whole. There are two possible reasons for this:

- Either the signified of the quasimorph $\text{qm}$ has been phraseologized, so that $\langle \text{qm} \rangle \neq \langle m_1 \rangle \circ \langle m_2 \rangle \circ \cdots \circ \langle m_n \rangle$.

A vast majority of quasimorphs are like this; cf. the example of *fighter* above.
Or else the combination \( m_1, m_2, \ldots, m_n \) itself is not 100\% regular and productive, so that the sign \( qm \) cannot be constructed by available rules. This happens, for instance, with the Russian noun \( pop+ad^j(-a) \) ‘wife of a pop [\text{\textit{orthodox priest}}]’, where we see the unique feminizing suffix \( -ad^j \), found only in this word.

A \textit{quasimorph} is thus a quasi-representable sign of a particular type—that is, a sign representable in the signifier but not in the signified (the prototypical case) or else representable both in the signifier and the signified but not productively constructed (a few isolated cases). A classical example of a quasimorph is the stem of the Russian noun \( RUČKA_{II} \) ‘[a] pen’. For a Russian speaker, it is immediately obvious that the radical of this noun includes the element \( ruk \) ‘hand/arm’ and the element -\textit{k \textit{DIMINUTIVE}}— in the same way as in \( RUČKA_{I} \) ‘small (and pleasant) hand/arm’.

However, the meaning of \( RUČKA_{II} – ‘writing instrument having the form of a small stick supplied with ...’ \) cannot be constructed from the meanings ‘hand/arm’ and ‘small (and pleasant)’. Therefore, contrary to \( RUČKA_{I} ‘small (and pleasant) hand/arm’, the noun \( RUČKA_{II} ‘writing instrument ...’ \) must be stored in a dictionary: its radical is \( ručk \), and this is a quasimorph. It must be obvious now that, with this approach,

the majority of the stems of lexical units in the lexicon of any language turn out to be quasimorphs.

As a result, the notion of quasimorph is very important. However, for the purposes of the present chapter, the distinction between morphs and quasimorphs is not very relevant;\(^3\) it is possible to ignore it in what follows, subsuming both under the name of \textit{morph}.

3.2. Morpheme

According to Definition 7.7, a morpheme is a set of morphs that satisfy three conditions:

Condition 1— all the morphs belonging to one morpheme are fully synonymous—expresses the theoretical essence of all “-emes” [\textit{\textit{-emic units}}, see 4.1, p. 399].

Condition 2— the morphs belonging to one morpheme are either all root/radicals or all affixes, but not a mixture of both— aims to preserve the dividing line between roots/radicals and affixes.

Finally, Condition 3— all the morphs belonging to one morpheme are distributed in wordforms in a particular way— traces the distinction between morphs of the same morpheme and morphs of different, albeit synonymous, morphemes.

Condition 1 is obvious; on the other hand, Conditions 2 and 3 call for some comments.
3. Comments on morphs and morphemes

1. **Condition 2**: ‘segregation’ of roots/radicals and affixes

   This condition reflects the different nature of roots and affixes. They should by no means be united in the same morpheme—even in the case when their signifi-

   - **Rus. žitel’** ‘inhabitant’1 ~ -anin. -ič (-er/-ian/...?)
     
     (žitel’+i Moskv+i y ‘inhabitants of Moscow’= moskv+iči ‘Muscovites’)

   - **Sp. golpe** ‘[a] blow’3 ~ -azo ‘[a] blow with ...’
     
     (golpe de botella ‘[a] blow with a bottle’= botella+azo [idem])

   - **Czech jazyk** ‘language’ ~ -ština(-a) ‘language of ...’
     
     (jazyk český ‘Czech language’= če+ština [idem])

   The synonymy of roots/radicals and affixes is widely represented in what are known as **lexical affixes** of Salish, Siouan, Chimakuan and other Amerindian languages: these affixes are (more or less) synonymous with roots. For instance, in Quileute we have:

   noun | lexical suffix
   --|---
   ‘head’ | dökutčit ~ -leck
   ‘child’ | tcoóptsk ~ -4kwa
   ‘arrow’ | haecát | -ki

   Kalispel, Bella Coola and other Salishan languages have each about 50 such lexical affixes. But even if fully synonymous with a root, a lexical affix belongs to a different morpheme.

   Note, however, that a root morph used freely and a root morph with the same meaning but used only in compounding (or in incorporation) must be united in one morpheme. Thus, consider two Russian signs: the (quasi)morph **francuzsk**,4 which is the radical of a relative adjective from **Francij(-a)** ‘France’, and the morph **frank**(o), also a radical, but appearing exclusively as the first member in compound adjectives of the type **franko-bel’gijskie** (peregovory) ‘Franco-Belgian (negotiations)’ or **franko-korejskoe** **obščestvo** ‘[a] Franco-Korean (society)’.

   These two morphs belong to the same morpheme:

   \[\{\text{FRANCUZSK}\} \leftrightarrow \text{francuzsk} \leftrightarrow \text{frank}\]

   (Note that **frank** cannot be considered a prefix: not only does it belong to an open set of morphs, but it is obligatorily followed by the interfix -o-, which unambiguously signals a compound.)

   The opposition of roots and affixes is manifested also in their different treat-

   - **Condition 3b**: optional (free) distribution is allowed for suppletive allo-

   - morphs—that is, morphs distributed according to some rules, but not related by
any morphonological alternations—only if they are affixes; morphonologically unrelated synonymous roots cannot be allomorphs of one morpheme, but belong to different morphemes.

2. **Condition 3a**: morphs of the same morpheme vs. morphs of different synonymous morphemes

Definition 7.7 does not require that allomorphs of a morpheme be necessarily related by alternations; thus, suppletive allomorphs are possible. It is this admission that raises the problem: How do we know that two morphs whose signifiers are not linked by an alternation of \( \mathbb{L} \) are allomorphs of a morpheme rather than morphs of different synonymous morphemes? The answer is distribution: allomorphs belonging to one morpheme have a formally characterizable distribution, in the prototypical case—complementary distribution.

Let me start with the first requirement of Condition 3a: the sufficient generality of rules for the distribution of morphs belonging to one morpheme. What does it actually mean for a rule ‘to be sufficiently general’? Roughly speaking, this means being formulated in terms of properties—phonological or grammatical—of linguistic signs (i.e., in terms of classes of signs) rather than in terms of individual signs.

Here is a well-known example. Russian has a series of derivational suffixes that mean ‘inhabitant of Y’ and are added to the names of places Y—mainly cities and towns (see Chapter 8, 4.5, p. 450):

(5)

\[-ič \quad \text{(moskvič, om+ič, kosterom+ič)} \quad -čanin \quad \text{(xar’kov+čanin, min+čanin)}\]

\[{-ec \quad \text{(leningrad+ec, berlin+ec)} \quad -it \quad \text{(odess+it)} \]

\[-anin \quad \text{(pariž+anin, kiev+janin)} \quad -jak \quad \text{(tul+jak, perm+jak)}\]

The distribution of these suffixes cannot be described by general rules based, for instance, on the phonemic structure of the root of Y: cf. Novosibirščik ~ novosibir+ec, Omsk ~ om+ič, Kursk ~ kür+janin and Minsk ~ min+čanin. More than that, many names of settlements form the name of inhabitant in a highly irregular way (as, e.g., in Arxangelščik ~ arxangelogorodec, Mcensk ~ amčanin, Florencija ~ florentiec) or not at all (thus, Russian has no derived names for inhabitants of Kuzneck, Voronež, Timbuktu, Accra, or Ankara). Therefore, the suffix of inhabitant must be lexicographically specified for each place name (though some useful partial generalizations are still possible). Consequently, all such suffixes are morphs of different, albeit perfectly synonymous, morphemes.

In sharp contrast, the suffixes of a grammatical case in a given number—for instance, suffixes of the Russian genitive in the plural—are considered to be
morphs of the same morpheme. However, the distribution of case suffixes is also arbitrary to a considerable degree, so that pretty often it has to be lexically specified (cf. čulk+i 'stockings, PL.NOM ~ čulok+Ø 'stockings, PL.GEN', but nosk+i 'socks, PL.NOM ~ nosk+ov 'socks, PL.GEN'; or proféssor+Ø 'professor, SG.NOM ~ professor+á 'professor, PL.NOM', but agréssor+Ø 'aggressor, SG.NOM ~ agréssor+ý 'aggressor, PL.NOM', etc.). Russian abounds in such cases. To describe the distribution of case/number suffixes, Russian nouns must be broken down in morphological subclasses, i.e., declension groups, and the declension group of a noun has to be specified in the noun’s syntactics—that is, in the lexicon. The rules for the distribution of the morphs of a case/number morpheme have to address this lexicographic information, but in spite of this, they are deemed to be general enough, since they are formulated in terms of classes rather than individual lexemes. This allows us to include all the suffixes of a case in a given number into one morpheme.

At the same time, the distribution of the suffixes of inhabitant does not entail a partition of Russian nouns into morphological subclasses which could be specified in the lexicon for the names of places. As a result, the rules for the distribution of the suffixes of inhabitant are not considered general enough: they address individual nouns rather than noun classes.

Now, from a purely formal, or logical, viewpoint, there is no particular difference between Russian case suffixes and the suffixes of inhabitant. Logically, nothing prevents us from partitioning Russian nouns which are names of places into morphological subclasses (fully analogous to declension groups) according to the appropriate suffix of inhabitant: class I—place names taking the suffix -ič, class II—place names taking the suffix -ec, etc. Similarly, we could partition the nouns that are names of objects into morphological classes A, B, C, etc., according to the appropriate diminutive suffix they take, and into classes α, β, γ, etc., according to the appropriate agentive suffix. What then underlies our decision to treat the suffixes of inhabitant and the case suffixes in Russian in two different ways?

The important fact is that from the viewpoint of linguistic content, the difference between these two types of suffixes is quite essential:

- Case suffixes are inflectional markers, and they concern all Russian nouns. These suffixes show at least the following four particular characteristics important in the present context:
  First, they are cumulative suffixes, since they express simultaneously case and number. In other words, they express two grammemes characterizing all Russian nouns without exception; what is more, the Russian noun does not have other grammemes.
Second, the set of different suffixes for each particular combination of number and case is small (at most three), and they combine with a huge set of radicals.\textsuperscript{6}

Third, each class of nouns isolated according to the suffixes it accepts—that is, each declension type—is valid for the full set of these suffixes: if one knows to what declension type a given noun belongs, one knows, \textit{ipso facto}, all its case/number suffixes.

Fourth, the selection of a case/number suffix is conditioned by the grammatical gender of the noun, so that the corresponding classification is related to another morphological property of the concerned stems.

– Inhabitant suffixes are derivational markers, and they concern only a small subset of Russian nouns—the names of certain places. At the same time, they are numerous—over a dozen (plus a number of irregular formations). This is the case of all derivational affixes: they express derivatemes, which are rather numerous in Russian nouns; each derivateme, however, is applicable to a restricted set of nouns. A derivateme often has many arbitrarily distributed markers, each of which is combinable with a limited number of radicals. A noun class isolated according to its combinability with a particular derivational affix is valid only for this particular suffix alone.

Therefore, inflectional affixes (in our case, case/number markers) induce one partition of all Russian nouns—namely, declension types. The number of these types is only five (plus some exceptions). This partition serves the expression of all nominal grammemes, and in a very compact way—by specifying the full set of necessary suffixes.

Derivational affixes, on the other hand, require not one, but numerous (= dozens of) partitions of nouns into very special subclasses; each such subclass is needed just for a single one of several possible derivatemes. In our case (inhabitant suffixes in Russian), the partition would give about 20 classes, totally unrelated to any other morphological property of the noun.

That is why we accept morphological classes for inflectional suffixes, but not for derivational ones. As a result, the rules describing the distribution of inflectional affixes are considered to be general—they deal with a few indications that specify morphological classes in the syntactics of nouns. The derivational affixes do not have general distribution rules, since there are no corresponding morphological classes.

Now, to the second requirement of Condition 3a: rules for the distribution of allomorphs of a morpheme can address the context within a phonetic phrase (rather than simply within a wordform). This requirement is linked to the following well-known fact: the distribution of the morphs of a morpheme in a word-
form \(w_1\) can be determined by another wordform \(w_2\), such that \(w_1\) and \(w_2\) form a phonetic phrase. Here are three examples, two from Russian and one from Serbo-Croatian.

(6) The radical morpheme of the Russian 3rd person substitute pronouns ON/ONA/ONI \(^3\)he/she/it/they\(^3\) includes two suppletive allomorphs:

\[ j (/j+ivó/, /j+imú/, ...) \text{ and } n'/ (/n'+ivó/, /n'+imú/, ...). \]

The allomorph \(n'\) is selected, if the pronoun follows immediately its syntactic governor, which is

\(-\) either a simple preposition (s \(nim\) ‘with him’, do \(neč\) ‘before her’, u \(nix\) ‘at them’, ...),

\(-\) or an adjective/an adverb in the comparative that ends in \(-še/-že\) (bol\(še\) \(nego\) ‘more than he’, \(vuše\) \(necē\) ‘higher than she’, \(dorože\) \(nega\) ‘more expensive than it’; but si\(l\) \(nee\) \(ego\) \(/jivó/ (*/n'ivó/) ‘stronger than he’, krasivee \(ix/ \(/jix/ (*/n'iix/) ‘more beautiful than they’).

The allomorph \(j\) is selected in all other cases.

This allomorph selection rule is general, since it is formulated in terms of grammatical classes and properties, rather than those of particular lexemes, and it functions within limits of a phonetic phrase. As a result, morphs \(j\) and \(n'\) satisfy the conditions of the unification of morphs in one morpheme. (See also Chapter 8, 3.1, (30), p. 431.)

(7) 11 Russian prepositions have two or three allomorphs, of the type \(k \sim ko\) ‘to’, \(s \sim so\) ‘with’, \(o \sim ob \sim obo\) ‘about’. The basic rules for the distribution of these allomorphs are formulated in terms of three factors (Otkupščikova 1971, Es'kova 2000):

\(-\) The initial consonant cluster in the wordform \(w\) that immediately follows the preposition and hosts it as a clitic (\(w\) can be the N that depends on the preposition or an Adj modifying this N): s \(xramom\) ‘in [the] temple’, but so \(zratvoj\) ‘with grub’, v \(znake\) ‘in [the] sign’, but vo \(vězde\) ‘in [the] entrance’, etc.

\(-\) The phonomorphological structure of \(w\) (mono- vs. polysyllabic; with/without a fleeting vowel in the radical: \(s\) dnevno\(g\) ‘from day’-, but \(s\) \(dnja\) ‘from the day’\(^2\), v \(živost\) ‘in deception’, but vo \(ži\) ‘in [the] lie’, so l’\(vom\) ‘with [a] lion’, but s \(l’vicej\) ‘with [a] lioness’, etc.

\(-\) The grammatical properties of \(w\) (its pronominal character): v \(ves\) ‘in weight’, but vo \(ves\) ‘in all/whole ...’, v \(skorosti\) ‘in a short time’, but vo \(skol’ko\), lit. ‘in how much’, k \(mneniju\), lit. ‘to opinion’, but ko \(mne\) ‘to me’, etc.
In addition, there are many lexical exceptions: *s vkusnym ‘with tasty [one]*, but *so vkusom ‘with taste* and *vo vkusnom*; *k dvoreckomu ‘to [the] butler*, but *ko dvoru ‘to [the] court*; etc.

Even if these rules are fairly complex and cumbersome, they are nevertheless general, since they address phonemic and grammatical properties of lexemes (several lexical exceptions do not destroy their generality). Their scope is a phonetic phrase. As a result, variants of Russian prepositions – with the fleeting /o/ or without it – satisfy Definition 7.7 and are taken to be morphs of the same morpheme.

(8) In Serbo-Croatian, the pronoun ONA ‘she’ has two clitic forms in the accusative of the singular (Miličević 1999: 237):

\[\text{ju} \sim \text{je}.
\]

These forms are composed of the radical *j* and the number/case suffixes *-u* and *-e*, which are selected according to the external context of the sign: *-u* is used only immediately before the clitic *je* (which can be the 3sg present form of the verb *BITI* [to be] or the form of the singular genitive of another occurrence of the pronoun ONA, something like *lišiti ju je* [to deprive] her [of] her); *-e* appears elsewhere.

Other widely known examples of the external context affecting the selection of the allomorphs of a given morpheme include:

– Celtic mutations (which, incidentally, feature many lexical exceptions);
– variation of the article in some languages according to the initial phonemic string of the wordform following the article: *il* ~ *lo* in Italian, *la/le* ~ *l’* in French, *la* ~ *el* in Spanish (*el águila* ‘eagle [FEM]*), rather than *la águila*), *a* ~ *an* in English;
– Sanskrit external sandhis; etc.

3. **Condition 3b:** optionally distributed morphs of the same morpheme

Optional distribution of the morphs of one morpheme can be easily confused with the synonymy of morphs of different morphemes. Why indeed do we want to say that the Russian signs *rasprost(-it’ šia)* and *rasprošč(-at’ šia)*, both meaning ‘[to] say good-bye, take leave’, are morphs of the same morpheme, while *ku-guar* and *pum(-a)*, both meaning ‘puma’, are morphs of different morphemes? As we shall see, optional distribution of morphs requires a special proviso.

According to Definition 7.7, roots and affixes are treated differently in this respect:
3. Comments on morphs and morphemes

- (Fully) synonymous affixes featuring optional distribution are included in one morpheme independently of their signifiers. It is not required that they be related by morphonological alternations—optionally distributed affixes may be suppletive. In other words, if optionally distributed affixes are synonymous they are in one morpheme; the synonymy of affixes implies their allomorphy.
- (Fully) synonymous roots featuring optional distribution are included in one morpheme only if they are related by morphonological alternations. This means that optionally distributed roots cannot be suppletive.

This requirement ensures the distinction between synonymous roots belonging to two different morphemes and radical allomorphs of the same morpheme. Let us consider two examples.

(9) Russian radical morphs ogromn and gromdn, both meaning ‘enormous, huge’, are distributed (more or less) optionally: where one can say ogromnyj, one can say gromadnyj as well; the same holds with respect to pairs of roots pum(-a) ~ kuguar (both meaning ‘puma’), klozet ~ tualet ~ uborn(-aja) ~ sortir (all four meaning ‘bathroom’) or smotr(-et) ~ gljad(-et’), both ‘[to] look’. These morphs are not related by any Russian alternation; therefore, in conformity with Condition 3b of Definition 7.7, they belong to different (but synonymous) morphemes.

(10) Sranan has numerous series of roots which are optionally distributed:

- dukrú, dukú, dukrú, dukú ‘duck’ (≡ Eng. duck)
- kó, kó ‘[to] come’ (≡ Eng. come)
- drapé, dapé ‘there’
- úmá, úma ‘woman’ (≡ Eng. woman)
- horlójsi, holójsi ‘[a] watch’ (≡ Fr. horloge)

In every such series, all radical morphs belong to one morpheme: they are related by two optional regular alternations:

\[
/\text{V}+/ \Rightarrow /\text{V}+/
\]
and

\[
/\text{t}/ \Rightarrow \Lambda
\]

3.3. Allomorphs

First of all, a morpheme may contain just one allomorph: a one-element set is still different from this element. It is, however, required that a morpheme be non-empty—so that a morpheme always contains at least one allomorph.

Allomorphs of the same morpheme fall into the following two classes:
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– Allomorphs \( m_i \) that are related by morphonological alternations of \( L \) such that some of them, say \( m'_i \), can be obtained by these alternations from an allomorph \( m \); the allomorph \( m \) is called basic, or underlying, while \( m'_i \) are predictable. For instance, for the six Russian allomorphs of the morpheme \{OKN(-o)\} – okn, okn’, ókn, ókon, okón, okóš – we postulate a basic allomorph okon; all ‘real’ allomorphs are derivable from it (directly or indirectly) according to standard alternation rules of Russian. (These rules are given here in an approximate form, without conditions of their application; it is supposed that the wordform in question has already received stress.)

1) /o/ \( \Rightarrow \Lambda \) : ókon \( \sim \) okn, ókn

This alternation describes the truncation of a fleeting /o/: s´ist´ör ~ s´óstr(-i) ‘sisters’ [PL.GEN ~ PL.NOM], m´išák ~ m´išk(-á) [SG.NOM ~ SG.GEN] ‘bag’, etc.

2) /C/ \( \Rightarrow \) /C’/ : okn \( \sim \) okn’

This is palatalization of the radical’s final consonant before the suffix -e: s´istr(-á) ~ s´istr(-é) [SG.NOM ~ SG.DAT], m´išák ~ m´išk(-é) [SG.NOM ~ SG.PREP], etc.

3) /n/ \( \Rightarrow \) /š/ : okón \( \sim \) okóš

This is the derivational alternation /n/ ~ /š/ before a diminutive suffix: karmá+n ‘pocket’ ~ karmáš+ek ‘small pocket’, bará+n ‘ram’ ~ baráš+ek ‘small ram’, etc.

In such cases, the morpheme is represented in the lexicon of \( L \) by its basic allomorph; all its other allomorphs are produced from the basic one according to (general enough) rules.

– Allomorphs \( m_i \) that are not related by morphonological alternations of \( L \) such that none of them can be obtained by some alternations from an allomorph \( m \); allomorphs \( m_i \) are suppletive. For instance:

\begin{itemize}
  \item Russian genitive suffixes in the plural: -ov (dom+ov ‘of houses’), -ej (noč+ej ‘of nights’) and -O (sten+O ‘of walls’);
  \item Russian radicals čelovek ‘man [= human being]’ in SG ~ ljud(-i) ‘man’ | in PL and god ‘year’ | in SG and in PL, non GEN ~ let ‘year’ | PL.GEN.
\end{itemize}

Suppletive allomorphs constitute one of the three major classes of suppletive units (along with suppletive megamorphs and suppletive phrasemes; see Chapter 8, 3.1, p. 420ff).

Adherents of the Moscow Phonological School (V.N. Sidorov, A.A. Reformatskij, P.S. Kuznecov) have insisted on a different concept of morpheme: they
require the allomorphs of the same morpheme to be related by regular alterna-
tions, such that there cannot be suppletion within a morpheme: only different
morphemes as such, rather than morphs, can stand in a relation of suppletion.
This narrow interpretation of the term *morpheme* allows for a much simpler def-
inition, but immediately leads to another problem: How should we describe dif-
ferent suppletive morphemes? It seems that we will have then to introduce a new
linguistic unit that will include suppletive morphemes—a ‘morphememe.’ This,
however, entails an unnecessary complication of the whole system of descrip-
tive means. (See Chapter 8, 2.4.1, p. 414.)

4. Discussion of the concepts introduced

4.1. What is the use of the proposed concept of morpheme?

By uniting all equi-significant morphs in one morpheme, the linguist acquires
the capacity to describe their morphological behavior—the way they express
their signifieds and combine with other morphs—completely ignoring the vari-
ability of their signifiers, which can be quite involved. Let us see an instructive
example.

(11) In Maung, the verbal prefix that marks the future tense has 24 variants,
shown in the table below (Pike and Pike 1980: 238):

<table>
<thead>
<tr>
<th>Before a monosyllabic radical</th>
<th>Not before a monosyllabic radical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before /i/ or /u/</td>
<td>Not before /i/ or /u/</td>
</tr>
<tr>
<td>Not in the below contexts</td>
<td>bana, ban, ba, b</td>
</tr>
<tr>
<td>After /i/ or /u/</td>
<td>wana, wan, wa, w</td>
</tr>
<tr>
<td>Not after /i/ or /u/</td>
<td>dana, dan, da, d</td>
</tr>
<tr>
<td>after /n/</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>after /g/</td>
<td>gan, ga, g</td>
</tr>
<tr>
<td>after the class1 V prefix</td>
<td>ana, an, ba, b</td>
</tr>
</tbody>
</table>

The basic, or underlying, allomorph is here *bana*; all the other allomorphs are
obtainable from it according to simple rules of alternation, in conformity with
the conditions stated in the table. Without an explicit concept of morpheme as a
set of morphs, a linguist describing the Maung language would have to specify
the behavior of every future verb form mentioning in every case all 24 variants.
of the future prefix. However, with the concept of morpheme in place, one needs not to speak about concrete prefixes (in this case, the individual future markers); one can refer to the morpheme {BANA} and switch to specific morphs only when the purely formal side of the wordform is under analysis—that is, on the morpho-
nological and phonological levels.

From the viewpoint of general linguistic theory, the fact that the correlation of the type ‘morph ~ morpheme’ also holds between other linguistic units is especially important; we see the same pattern, for instance, in:

phone ~ phoneme  lex ~ lexeme  syntagm ~ syntagmeme

To put it differently, we can postulate the following proportional relationships between (allo-)Xs and X-emes:

\[
\frac{X}{X-eme} = \frac{phone}{phoneme} \approx \frac{morph}{morpheme} \approx \frac{lex}{lexeme} \approx \frac{syntagm}{syntagmeme}
\]

Different Xs are different linguistic units of level \(n\) that possess common prop-
erties such that at a deeper level \(n-1\) they can be, without any informational loss, united in one X-eme (ignoring their differences); in other words, this X-eme is considered at the level \(n-1\) as one unanalyzable unit.

Describing phonetic, morphological, syntactic and lexical linguistic units in terms of “-emes” ensures a more general and more homogeneous structure of linguistic models.

4.2. Fused expression of two or more morphemes: megamorph

At the Deep-Morphological level, a wordform is represented by specifying the corresponding lexeme plus all its inflectional characteristics—i.e., the set of its grammemes. Representations of wordforms in terms of morphemes, or morphemic representation, belong to the Surface-Morphological level. For instance, the Spanish wordform *trabajariamos* ‘we would work’ is represented at both levels as follows:

DMorphR: TRABAJAR ['to'] work\(\text{cond, 1, pl}\)

SMorphR: \{TRABAJ(-ar)\} \oplus \{Thematic Element\}^8 \oplus \{COND\} \oplus \{1PL\}

Each morpheme is a set of allomorphs (which can contain just one allomorph). In the transition from the SMorphR to the Deep-Phonological level of the representation of wordforms, for each morpheme \{M\}, an appropriate allomorph \(m\) is selected; \(m\) is said to implement \{M\}. As a result, we get a morphic repre-
sentation of the wordform, which constitutes an intermediate level—between the
SMorphR and the DPhonR. In our example, the morphic representation looks as follows: \textit{trabaj+a+ria+mos}.

In this connection, it is important to mention the following ‘deviant’ phenomenon: in some cases, several morphemes are implemented by one indivisible linguistic sign. Here is an example.

(12) The French verbal wordform \textit{sommes /sɔm/ – 1pl of the verb \textit{ÊTRE} [to be]} in the present of the indicative--corresponds to three morphemes:

\begin{align*}
\{\text{ÊT(-re)}\} &= \text{é}t /\acute{e}t\text{[\acute{e}tais]}, \text{ét} /\acute{e}t\text{[\acute{e}tre]}, \text{se} /\acute{s}a/ [\text{serai, ...}] \\
\{\text{PRES.IND}\} &= -\text{O} [\text{chante, marche, ...}] \\
\{1\text{PL}\} &= -\text{ons} /\acute{\text{s}}/ [\text{chantons, marchions, serons, ...}]
\end{align*}

The sign \textit{sommes} cannot be represented in terms of any actual morphs of these morphemes—in fact, it cannot be decomposed into morphs belonging to these or to any other morphemes. Moreover, it cannot be represented in terms of any other signs of French, including operational signs, like apophonies. The only way to represent it is to say that it manifests, or implements, the three morphemes together:

\begin{align*}
\{\text{ÊT(-re)}\}, \{\text{PRES.IND}\}, \{1\text{PL}\} &\Rightarrow \textit{sommes}
\end{align*}

A segmental sign that implements several morphemes (without belonging itself to any particular morpheme) is called a \textit{strong megamorph}.\(^9\) (A \textit{weak megamorph} is a non-elementary sign representable in terms of several other elementary signs, but linearly indivisible. Examples of weak megamorphs: Eng. \textit{feet} = \textit{foot} \oplus \textit{APL oo}‰

\textit{ee}; Rus. /\textit{bagáctv(-o)}/ = /\textit{bagat} \oplus \textit{stv}/ \textit{wealth}, lit. \textit{rich+ness}. A weak megamorph appears as a result of one of the two possible phenomena:

\begin{itemize}
  \item either an application to a morph of a significative operation—an apophony, as in \textit{feet};
  \item or an application to a sequence of morphs of a morphono logical \textit{fusion} alternation, which destroys an intermorphic border, as in /\textit{bagactv}/, where the final and the initial phonemes of two adjacent morphs are fused into one phoneme: /\textit{t+s}/ \Rightarrow /\textit{c}/.
\end{itemize}

4.3. \textit{A difficulty in the definition of morpheme}

The proposed definition of morpheme runs into the following complication: the distribution of allomorphs of a morpheme may depend on the factors situated \textit{outside} of the phonetic phrase. At least two instances of this phenomenon are known to me—interestingly, both involve grammatical case\textit{L.1b} markers. Both have already been presented in Chapter 2, Section \textbf{5}, p. 129\textit{ff}, examples (11) and (12), in a different connection. I will repeat them here for the convenience of the reader.
The German genitive

In German, the genitive of a proper name can be marked by one of two suffixes: -s or -Ø. The first is selected if the proper name in the genitive N_GEN does not have a determiner or modifying adjective, while the second occurs when N_GEN has such a dependent:

(12) a. Leo+s (*Leo+Ø) Ankunft war unerwartet
    ‘Leo’s arrival was unexpected’.
    vs. Die Ankunft meines lieben Leo+Ø (*Leo+s) war unerwartet
    ‘The arrival of my beloved Leo was unexpected’.

b. die Häuser Montreal+s (*Montreal+Ø) ‘Montreal’s houses’
   vs. die Häuser des/eines schneebedeckten Montreal+Ø (*Montreal+s)
    ‘the houses of snow-covered Montreal’

The determiner does not necessarily form a phonetic phrase with the N_GEN; for instance, meines lieben, seit vielen Jahren nicht gesehenen Leo, lit. ‘of my beloved, since many years not seen Leo’.

The Serbo-Croatian instrumental

In Serbo-Croatian, the instrumental singular in some lexically marked feminine nouns of the 4th declension (nouns ending in a consonant) N_INSTR can be expressed by one of two suffixes: -(j)u or -i; their distribution is described by the following rule:

-(j)u is always possible; but
if N_INSTR has a modifying adjective, the suffix -i is admissible;
if N_INSTR has a modifying adjective and is introduced by a preposition, the suffix -i is normal.

(13) a. pameć+u/*pamet+i ‘intelligence, sg.instr’ or ljubavl+ju/*ljubav+i ‘love, sg.instr’

b. velikom pameć+u / velikom ‘pamet+i ‘great intelligence, sg.instr’
   takvom ljubavl+ju / takvom ‘ljubav+i ‘such love, sg.instr’

   c. sa velikom pameć+u / sa velikom pamet+i
      ‘with great intelligence, sg.instr’
      sa takvom ljubavl+ju / sa takvom ljubav+i ‘with such love, sg.instr’

In both (12) and (13), the choice of the case allomorph of the noun N depends on the presence of a particular syntactic partner of N: a determiner, a modifying
adjective, a preposition. And the corresponding syntactic groups are not necessarily phonetic phrases.

This phenomenon probably requires making Definition 7.7—the concept of morpheme—more precise (and consequently, more complex). Namely, in order to have the distribution of case suffix allomorphs in German and Serbo-Croatian covered, it is necessary to add to Condition 3a of Definition 7.7 a formulation allowing the rules for the distribution of allomorphs of a morpheme \{M\}, which is part of the wordform \(w_1\), to consider properties of another wordform \(w_2\) that is syntactically directly linked with \(w_1\), such that \(w_1\) and \(w_2\) do not necessarily form a phonetic phrase. It is not excluded that this formulation has to be additionally restricted, with something like “for case affix allomorphs only.” At present, I am unable to foresee the undesirable effects of this addition.

Notes

1 (1, p. 384) Since the literature on the question is huge, I will limit myself to mentioning only a few classic works: Harris 1942 and 1947: 197ff (Chs. 13 and 14), who was, to the best of my knowledge, the first to introduce explicitly the problem of unification of morphs under one morpheme; and three later publications, which successfully develop this theme: Garvin 1957, Lyons 1968: 183–187 and Pike and Pike 1980: 91–109 (Ch. 5) and 173–220 (Ch. 8). Welte 1974: 394–396 offers a fairly complete bibliography on morphs and morphemes. Various problems related to these concepts are discussed in detail in Kasevič 1988: 127–161; attempts to get rid of them completely (Aronoff 1976, Anderson 1992) are analyzed in Rhodes 1992.

2 (2, (1)-6, p. 385) The fact that a free phrase is a linguistic sign requires serious discussion, which cannot be provided in this chapter. Let me indicate only that the information \(’1s0\)\), which constitutes the signified of the verbal suffix -\(u\), when it is considered within the whole verbal wordform—and even more so, within a phrase constructed around this wordform—is an element of the syntactics: this information is not directly linked to the semantic representation of the phrase, but bears rather on its cooccurrence—with the personal pronoun ja ’I.’ Thus, we see that a phrase has syntactics—that is, linguistic data on its cooccurrence with other linguistic units—and therefore is a sign. A complete sentence has no linguistic syntactics and, as a consequence, is not a sign.

3 (3.1, p. 390) In principle, this difference may be quite relevant. ‘Former’ morphs (called morphoids) inside quasimorphs may manifest their properties in inflection. I would like to emphasize that the concept of quasimorph itself has been introduced as a result of numerous, and sometimes heated, discussions of this problem with N. Pertsov.

4 (3.2, 1, p. 391) Russian speakers easily analyze the sign francuzsk into franc, -\(uz\), and -\(sk\). This, however, is irrelevant for the status of this sign as a quasimorph—that is, as a radical—since it cannot be constructed by some standard, general rules from the radical \(franci/j\), which we see in Franci/j(-a) ’France’, and thus has to be stored in the lexicon. Franc+uz is ‘Frenchman’; to appreciate the irregularity of this formation, cf.:
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5 (3.2, after (5), p. 392) I remember that somewhere in the mid-60s, the researchers employed by the Institute of Russian language of the Academy of Sciences of the ex-USSR had to solve— for official administrative purposes—the problem of naming the female inhabitants of the town of Kryžopol’: should they be called kryžopol´ki, kryžopoljanki or simply kryžopki? (The funny part is the homophony with ŽOP(-a), a vulgar word for ‘butt’.)

6 (3.2, p. 394) I mean here only morphologically distributed suffixes: for instance, in Russian, for the grammeme combination (PLURAL, GENITIVE) these suffixes are -ov, -ej and -Ø. Phonologically conditioned, (i.e., predictable) suffixal morphs are more numerous, but this is irrelevant for our discussion.

7 (3.2, (9), p. 397) Note, however, ogromnoe spasibo ‘thank you very much’, lit. ‘[a] huge thank-you’, vs. *gromadnoe spasibo. But this is a phraseme which includes a particular lexeme.

8 (4.2, p. 400) The morpheme {Thematic Element} contains empty allomorphs -a, -e, -i, that is, morphs whose signified is empty. Although empty signs, or signs with an empty signified, sound paradoxical, they are encountered in natural languages. Along with thematic elements, I can point to so-called expletive pronouns, like IT in It is important that you read my text or I’ll see to it that he is well paid. For more on empty signs, see Chapter 9, 3.3, p. 477ff.

9 (4.2, p. 401) A current name for strong megamorph is portmanteau morph. The term is, however, not quite felicitous, since a portmanteau morph is by no means a morph (similar to adopted son, who is not a son). I prefer avoiding complex terms which are in fact phrasemes—i.e., not 100% compositional.
Chapter 8. Suppletion

1. Introductory remarks

The notion of suppletion has long been and still is intensively used in the morphological descriptions of languages; it is an almost obligatory topic in the morphology section in linguistic handbooks and manuals. Discussed in numerous publications, it continues to attract the interest of linguists. Yet suppletion seems to be a rather marginal phenomenon. In many languages it does not occur at all; and in the languages where it exists, it is quite restricted—affecting, as a rule, only a few lexical items. What makes it interesting is its theoretical importance. Being rare, irregular and unsystematic by its very nature, suppletion is an essential touchstone for any formalized theory of linguistic morphology.

The notion of suppletion and the term itself (Ger. Suppletivwesen) can be traced back, as far as I know, to Osthoff 1899, where suppletion refers to irregular forms of the type of Lat. bon(+)us) 'good' ~ mel(+ior) 'better' or fer(+)ō 'I carry' ~ tul(+)ī 'I have carried' ~ lāt(+)um 'in order to carry'; cf. also Eng. good ~ bett(+er) ~ be(+st) or I am ~ you are ~ he is ~ be, Ger. viel /fīl/ 'much' ~ mehr /mēr/ 'more', etc. All these irregularities stand out against the background of thousands of parallel regular formations.

However, in spite of a century of research, there still is no generally accepted definition of suppletion: the phenomenon is recognized and described but not defined, in the strict logical sense of the word. The goal of this chapter is to propose a rigorous definition of the concept 'suppletion' and richly illustrate it. The chapter thus has a double orientation. On the one hand, it is metalinguistic, as are the most chapters in this book. It attempts to contribute to the formal language of linguistics, by refining one of its most important and popular concepts. On the other hand, this chapter is descriptive as well: on the basis of published work and my own research, I try to offer the reader a relatively complete overview of different types and cases of suppletion, so that as much data as possible should be readily available for future research.

2. The concept of suppletion

2.1. An informal characterization of suppletion

The current notion of suppletion can be reduced to the following two statements.

1) Logical characterization. Suppletion is not a linguistic unit—neither an entity nor an operation; it is not a linguistic sign, nor a part of a sign, nor a
complex of signs. It is a relation between two segmental linguistic signs X and Y (of language \(L\)). More specifically, suppletion is a binary relation of the same kind that holds for synonyms (\([to]\) back ~ \([to]\) support), antonyms (\(old\) ~ \(young\)) or conversives (\([to]\) give ~ \([to]\) receive). In an explicit form, it should be referred to as follows: “X and Y stand in relation of suppletion” = “X is suppletive with respect to Y”/“Y is suppletive with respect to X” = “X and Y \(\langle Y \text{ and } X \rangle\) are suppletive”.

2) **Substantive Characterization.** Suppletion is a relation between signs X and Y such that:

- the semantic difference ‘\(d\)’ between the signs X and Y is **maximally regular** in \(L\) – that is, ‘\(d\)’ is grammatical in \(L\) (‘grammatical’ = ‘inflectional or derivational’);

- the formal (i.e., phonological) difference \(d\) between them is **maximally irregular** – that is, \(d\) cannot be described by an alternation of \(L\); it is (close to being) unique in \(L\), since it obtains between the two given signs only and is not similar to any difference in any other pair of signs of \(L\), as, e.g., in \([I]\) am ~ \([I]\) was or \(go \sim wen(\pm t)\).

These two pivotal features – 1) the relational character of suppletion and 2) the maximal regularity of the semantic relation between two signs coupled with the minimal regularity of phonological relation between them – are present, albeit implicitly, in the traditional notion of suppletion; they are retained in the proposed definition. However, several linguistic restrictions built into the traditional notion (of the type ‘applicable to roots only’, etc.) are rejected by the new notion so as to construct the most general concept possible; these restrictions are then used to specify relevant subtypes of suppletion.

Being, so to speak, an extreme case of irregular alternations, suppletion entails the least ‘iconic’—i.e., the most opaque—formal differences between semantically related signs and thereby violates an important linguistic (in fact, semiotic) principle: ‘Express the similar through the similar.’ This is why suppletion is a relatively marginal phenomenon in all languages that have it. In spite of this, it is, as noted above, of considerable interest for linguistics, for the following three reasons:

(i) as a theoretical challenge, it is vital for defining such crucial concepts as morpheme and lexeme;

(ii) as a source of historical evidence, it often reflects older features of language, representing discontinuities in its development (cf. Markey 1985);

(iii) as a serious problem for language learners, it affects rather most frequent lexical items in \(L\), cf. the suppletive forms of the English verbs \([to]\) BE, \([to]\) HAVE and \([to]\) GO.
2.2. A rigorous definition of suppletion

In order to formulate a definition of suppletion, the following concepts must be assumed as given (actually, they are characterized or defined in the Introduction to ATM):

1. Linguistic unit [= an entity or an operation found in a language $\mathcal{L}$].
2. Linguistic sign (of $\mathcal{L}$).
4. Meta-operation of linguistic union $\otimes$.
5. Represent; representable.
6. Quasi-representable.
7. Elementary linguistic sign [= which is not representable nor quasi-representable].
8. Quasi-elementary sign [= which is quasi-representable].
9. Minimal sign [= which is not representable: elementary or quasi-elementary].
10. Morph, morpheme, allomorph.
11. Grammatical meaning [a grammeme or a derivateme].

In the classification of suppletive pairs of signs and in the discussion of examples, a few further concepts are used:

12. Lex, lexeme, allolex. A lex is an element of a lexeme—either a wordform or a phrase being an analytical form of the lexeme in question. Lexes belonging to the same lexeme are its allolexes—eats, ate, has been eating, will be eaten, etc. are allolexes of the lexeme EAT.
13. Root vs. affix.
   
   NB: In this book, roots are approached strictly from a synchronic viewpoint, without any regard for etymology.
15. Idiom.
16. Alternation [= substitution of phonemic strings or prosodemic complexes such that, if applied to an appropriate signifier of $\mathcal{L}$, it produces another signifier of $\mathcal{L}$].
17. Apophony (in the wider sense) [= a meaningful alternation, as in foot ~ feet].

Everything else needed for the discussion will be explained below. I will begin by introducing two auxiliary notions: to be corepresentable and to be grammatically corepresentable.
Chapter 8. Suppletion

Definition 8.1: To be corepresentable

Linguistic units [not necessarily signs!] X and Y are corepresentable if and only if they can both be represented in terms of the unit Z and perhaps some other units.

Symbolically:
\[ \text{COREPRES}(X, Y) \equiv (\exists Z)[X = \oplus \{Z, P_1, \ldots, P_m\} \& Y = \oplus \{Z, Q_1, \ldots, Q_n\}] \]

For instance, the signifiers **laughing** \([= X]\) and **laughed** \([= Y]\) are corepresentable in terms of the signifiers **laugh** \([= Z]\), -ing \([= P_1]\) and -ed \([= Q_1]\); the signifiers **thief** and **thieve** are corepresentable in terms of the signifier **thief** \([= Z]\) and the alternation \(f \Rightarrow v \)[= Q_1].

**NB:** For two multilexemic units \([= \text{phrase}mes]\) to be corepresentable, their constituent lexemes must be respectively corepresentable—that is, \(X_1 + X_2 + X_3\) and \(Y_1 + Y_2 + Y_3\) are corepresentable if and only if \(X_1\) and \(Y_1\) are corepresentable, as well as \(X_2\) and \(Y_2\), and \(X_3\) and \(Y_3\). This special condition is necessary to cover idioms, cf. below, (38), p. 435.

Any two identical units are corepresentable by definition (= are trivially corepresentable). If two linguistic signs are corepresentable, then their signifieds, their signifiers and their syntactics are corepresentable.

Corepresentability of linguistic units X and Y means that one of them can be derived from the other (or both can be derived from a common source) by rules of \(L\), which put together smaller units constituting X and Y—thus, two corepresentable units are regularly related (by definition).

Since the notion of regularity (of relations between linguistic units) is vital for the present chapter, let me dwell a little on it. In what follows, regularly (related) is understood strictly in the sense of \(\forall(\text{related})\) by rules \(\exists\). The rules themselves can be non-standard or non-productive (i.e., restricted to small subclasses of units). The only factor that counts for there to be regularity is the presence of some rules. Of course, one rule may be valid for a few pairs of units only, while another one covers a huge class thereof. As a result, we have to consider degrees of regularity; there can be very regular relations between units, as well as relations that show very little regularity (some regularity still being present). I will return to the gradable character of regularity in Subsection 2.4.3, p. 418.

The notion of grammatical corepresentability applies only to a particular case of linguistic units—namely, to signifieds and, by extension, to signs. Let there be, in \(L\), corepresentable signifieds \(\langle X'\rangle\) and \(\langle Y'\rangle\):

\[ \langle X'\rangle = \oplus \langle Z', \langle P_1', \ldots, P_m'\rangle \rangle, \quad \langle Y'\rangle = \oplus \langle Z', \langle Q_1', \ldots, Q_n'\rangle \rangle. \]
Definition 8.2: To be grammatically corepresentable

The signifieds ‘X’ and ‘Y’ are grammatically corepresentable if and only if the semantic differences ‘X’ − ‘Z’ = ‘P₁’, ..., ‘Pₘ’ and ‘Y’ − ‘Z’ = ‘Q₁’, ..., ‘Qₙ’ can be completely represented in terms of grammatical, i.e. inflectional or derivational, meanings of L.

Symbolically:

\[ \text{GRAM-COREPRES}('X', 'Y') = \{(X) = \{Z, \{P₁\}, ..., \{Pₘ\}\}, \]
\[ \& \{(Y) = \{Z, \{Q₁\}, ..., \{Qₙ\}\}, \]
\[ \& \text{all the meanings } \{P₁\} \text{ and } \{Qₙ\} \text{ are grammatical in } L. \]

Two signs X and Y are grammatically corepresentable if and only if their signifieds are. For instance, the signs laughing, laughs and laughed are pairwise grammatically corepresentable, as are laughing, laughter and laugher: their signifieds differ only by grammatical meanings.

And now, the definition of suppletion itself.

Definition 8.3: Suppletion

The concept of suppletion is applicable to pairs of minimal segmental signs only—i.e., to morphs, strong megamorphs and idioms.

Two minimal segmental signs X and Y of language L are in a relation of suppletion (= suppletive with respect to each other) if and only if Conditions 1 and 2 are simultaneously satisfied:

1. The signifiers of X and Y are not corepresentable.
2. The signifieds of X and Y are corepresentable and:
   a. either the signifieds ‘X’ and ‘Y’ are identical [‘X’ = ‘Y’] and X and Y are allomorphs of the same morpheme [X ∈ {M} & Y ∈ {M}];
   b. or the signifieds ‘X’ and ‘Y’ are not identical and ‘X’ and ‘Y’ are grammatically corepresentable.

Thus the notion of suppletion is intentionally made contingent upon the inflectional and derivational meanings of L.

Definition 8.3 may be rewritten in logical form. Let SUPPLET stand for {to} be suppletive, X and Y, for different minimal segmental signs of L, and {M}, for a morpheme. Then we can write:
SUPPLET(X, Y) =
1. not COREPRES(X, Y);
&
2. COREPRES(X', Y'), &
   (a) either 'X' = 'Y', & X, Y ∈ {M};
   (b) or 'X' ≠ 'Y', & GRAM-COREPRES('X', 'Y').

Let me briefly characterize the logical type of the relation of suppletion.

Like synonymy, suppletion is SYMMETRICAL: if X is suppletive with respect to Y, Y is necessarily suppletive with respect to X. Therefore:

X and Y are suppletive (with respect to each other) =
X and Y stand in a relation of suppletion.

Unlike synonymy, however, suppletion is ANTI-REFLEXIVE: no sign X can be suppletive with respect to itself. Suppletion is also NON-TRANSITIVE: if X is suppletive with respect to Y and Y is suppletive with respect to Z, then X can either be or not be suppletive with respect to Z. Thus, in English, am is suppletive with respect to is and is is suppletive with respect to are, and am is also suppletive with respect to are; however, in Russian, xuž(+'e) 'worse' is suppletive with respect to plox 'bad' and plox is suppletive with respect to xud(+'š+i'j) 'worst', but xuž(+'e) is not suppletive with respect to xud(+'š+i'j): these two morphs are related by a regular alternation of Russian, namely, /d/ → /ž/.

Note, however, widely used expressions of the type ‘[to] be a suppletive X of the X-eme A,’ as in ‘Eng. am is a suppletive lex of the lexeme BE’ or ‘Fr. i is a suppletive allomorph of the morpheme {ALL(+er)}.’ Such expressions denote a different – anti-symmetrical – relation and should be interpreted as abbreviations for ‘[to] be suppletive with respect to the basic, or underlying [= regular], X of the X-eme A.’ (Strictly speaking, the English sign am is suppletive with respect to the English sign be, and the French sign i is suppletive with respect to the French sign all.)

2.3. Examples of suppletion

I will begin with two typical examples of suppletion and two typical examples of what can be (and sometimes is) mistaken for suppletion, checking them against Definition 8.3. If signs X and Y are not suppletive according to Definition 8.3, this can mean one of two things:

– either X and Y are 'LESS THAN' suppletive – that is, they are formally related in a regular enough way (= by an alternation);
– or X and Y are 'MORE THAN' suppletive – that is, they are not semantically related in a regular way and therefore they are not within the same lexeme nor within a pair of two derivationally related lexemes.
In other words, the researcher who considers the signs X and Y (of \( \mathcal{L} \)) as suppletive with respect to each other automatically commits himself to the truth of the following two statements:

1) There are no alternations in \( \mathcal{L} \) to relate the signifiers of X and Y;
2) X and Y are forms or are contained in forms of either the same lexical unit (= lexeme or idiom) or of two derivationally related lexical units.

Therefore, establishing the stock of \( \mathcal{L} \)'s alternations, as well as enumerating \( \mathcal{L} \)'s inflectional and derivational meanings (and paradigms) is a prerequisite for any formal discussion of suppletion in \( \mathcal{L} \).

Here are the examples.

1) French

\text{all}(+ons) \equiv X \sim i(+r+ons) \equiv Y,

as in \textit{Nous allons} 'We go' \sim \textit{Nous irons} 'We will go', -r being a future marker:

- the signifiers \text{all} and \text{i} are not corepresentable in French [neither of them can be derived from the other according to some rules of French], but the signifieds \text{all} and \text{i} are corepresentable [both mean 'go']: Condition 1 and the first requirement of Condition 2 are satisfied;
- \text{all} = \text{i}, so that Subcondition 2a applies and is satisfied: \text{all} and \text{i} are allomorphs of the same morpheme \{\text{ALL}(+er)\};
- therefore, the French signs \text{all} and \text{i} stand in a relation of (inflectional) suppletion: they are suppletive allomorphs of the same morpheme.

2) English

\text{am} \equiv X \sim \text{was} \equiv Y:

- the signifiers \text{am} and \text{was} are not corepresentable in English: Condition 1 is satisfied;
- \text{am} \neq \text{was}, so that Subcondition 2b applies and is satisfied: \text{am} and \text{was} are grammatically corepresentable, \text{'Z'} being \text{be, INDIC, SG}\ ['X' = \text{am} = \text{be, INDIC, PRES, 1ST PERS, SG}]; \text{'Y'} = \text{was} = \text{be, INDIC, PAST, SG}]; the semantic differences \text{X} - \text{Z} and \text{Y} - \text{Z} are fully reducible to inflectional meanings: \text{'PRES', 'PAST', '1ST PERS'};
- therefore, the English signs \text{am} and \text{was} also stand in relation of inflectional suppletion: they are suppletive strong megamorphs–allolexes of the lexeme \text{be}.

3) French

\text{un} /œ/ \equiv X \sim \text{une} /ün/ \equiv Y], indefinite articles in the masc. sg and fem. sg:

- the signifiers /œ/ and /ün/ have no phonemes in common, but nonetheless they are corepresentable in French, since they are related by the regular
alternation /œ/ ~ /ün/ (cf. /brœ/ ~ /brün/ 'brown [MASC ~ FEM]', /kəmœ/ ~ /kəmün/ 'common', /ɔpɔrtœ/ ~ /ɔpɔrtün/ 'convenient', /šakœ/ ~ /šakün/ 'each', etc.; hence, Condition 1 is not satisfied;
• therefore, the French signs un and une do not stand in relation of suppletion:
  they are less than suppletive, being regular allolexes of the lexeme UN 'a'.

(4) a. Russian

<table>
<thead>
<tr>
<th>Russian</th>
<th>~</th>
<th>Russian</th>
</tr>
</thead>
<tbody>
<tr>
<td>syn</td>
<td>'son'</td>
<td>~</td>
</tr>
<tr>
<td>doč’</td>
<td>'daughter'</td>
<td>~</td>
</tr>
<tr>
<td>brat</td>
<td>'brother'</td>
<td>~</td>
</tr>
<tr>
<td>sestra</td>
<td>'sister'</td>
<td>~</td>
</tr>
</tbody>
</table>

In these pairs we observe the following:
• the corresponding signifiers (syn ~ zjat’, etc.) are not corepresentable in Russian: Condition 1 is satisfied;
• ‘son’ ≠ ‘son-in-law’, so that Subcondition 2b applies: ‘son’ and ‘son-in-law’ are corepresentable, but not grammatically corepresentable: ‘Z’ being ‘son’ [‘X’ = ‘son’, ‘Y’ = ‘son-in-law’], the semantic differences ‘X’ – ‘Z’ and ‘Y’ – ‘Z’ are not reducible to grammatical meanings: the meaning ‘in-law’ = ‘through marriage’ is not inflectional nor derivational in Russian, having no separate morphological expression. Thus, Subcondition 2b is not satisfied;
• therefore, the Russian signs syn and zjat’, etc. do not stand in relation of suppletion: they are more than suppletive, being lexes of different lexemes, which are not derivationally related.

b. French

With the Fr. bru ‘daughter-in-law’ ~ fille ‘daughter’ the situation seems to be different:
• the meaning ‘in-law’ is grammatical (namely, derivational) in French, being expressed by the ‘prefix’ beau-/belle-: beau-fils ‘son-in-law’, belle-fille ‘daughter-in-law’, beau-frère ‘brother-in-law’, belle-sœur ‘sister-in-law’, belle-mère ‘mother-in-law’, etc. Against this background, we can say that for the pair bru ~ fille Subcondition 2b is satisfied;
• therefore, the French signs fille and bru stand in relation of suppletion: they are derivationally related and manifest a particular type of suppletion – radical derivational suppletion between a morph and a megamorph, see below, 3.1, p. 423ff.3

2.4. Comments on Definition 8.3

The proposed definition will be justified in three steps: first, the conditions and subconditions in the definition are taken up in order to point out the reasons for
their introduction; second, I indicate in what respects this definition differs from the most current uses of the term suppletion as found in the literature; and third, the gradable character of suppletion is discussed.

2.4.1. The rationale for the conditions in Definition 8.3

Condition 1 (= absence of corepresentability of /X/ and /Y/) is necessary to exclude from suppletion all pairs of linguistic signs with a regular formal correlation between them, especially cases where the signifiers have no phonemes in common but, in spite of this, are related by rules. In other words, these are cases of alternation, similar to what we see in (3). Further examples of such non-suppletive pairs include:

(5) a. Spanish

/ y /i/ ~ / e/ ‘and’ / before an /i/, as in ... e hijos ‘and sons’
/ o /o/ ~ / u/ ‘or’ / before an /o/, as in ... u otros ‘or others’

The substitutions /i/ ~ /e/ and /o/ ~ /u/ can be considered alternations of Spanish, since they are formally similar to the substitutions /i/ ⇒ /e/ and /o/ ⇒ /u/ typical of Spanish conjugation – cf. pedir(+ir) [to] ask – pieder(+o) IND.PRES.1SG or morir(+ir) [to] die – murir(+i) IND.PRET.3SG, etc.

b. Modern Irish

feair /f´ar/ ‘man’ ~ (an) fhir /ir´/ (the) man’s [SG.GEN(itive)];
the difference between /f´ar/ and /ir´/ (no shared phonemes!) is reducible to three standard alternations in Irish:

/ /f´/ ⇒ A [lenition] (feoil /f´öl´/ ‘meat’ ~ GEN (an) beoil /ööl´/)
/a/ ⇒ /i/ [Umlaut] (cearc /k´ar/ ‘hen’ ~ GEN circe /k´ir´k´a/) 
/C/ ⇒ /C´/ [palatalization] (gasúr /gasu´r/ ‘child’ ~ GEN gasuir /gasuir´/) 

c. Romanian

oast(+e) /wast/ ‘army3 ~ oast(+i) /ošt´/ ‘armies’
oa(+je) /wa/ ‘ewe3 ~ oj(+i) /oj/ ‘ewes3’
oar(+a) /war/ ‘time3 ~ or(+i) /or´/ ‘times3’

All the differences observed here are described by two standard alternations of Romanian:

/wa/ ⇒ /o/ [fusion], sufficiently illustrated here; and

/C/ ⇒ /C´/ [palatalization],

The frequent assertion that the members of a suppletive pair should have no shared phonemes in their signifiers is unacceptable: this condition is neither necessary nor sufficient. Its non-necessity is demonstrated by the examples such as the pairs much ~ more, little ~ less, which are obviously suppletive, although they do share one phoneme in the same (= initial) position. Its non-sufficiency is demonstrated by the pairs of signs in the examples (3) and (5) – which are just as obviously non-suppletive – although they do not share any phoneme.

Condition 2 (= corepresentability of \(X\) and \(Y\)) is obvious: to be in a relation of suppletion, two signs must be semantically related—that is, their signifieds must share a semantic component. Indeed, they may be identical.

Subcondition 2a (= synonymous suppletive signs must be allomorphs of the same morpheme) protects us against lexical synonyms. Without it, all pairs of synonyms would become suppletive pairs: Fr. vélo ~ bicyclette ~ bécane ‘bicycle’, avion ~ appareil ‘aircraft’, Rus. ogromn(+yj) ~ gromadn(+yj) ‘huge’, kuguar ~ puma ‘puma’, Ger. Verb ~ Zeitwort ‘verb’, Lift ~ Fahrstuhl ~ Aufzug ‘elevator’, Medizin ~ Arznei ‘medicine’, etc. This would empty the notion of suppletion of all positive content.

Concerning the suppletion of allomorphs, an important remark is in order. In some approaches, especially in that of the Moscow Phonological School, it is maintained that allomorphs of the same morpheme should always be linked by (mor)phonological alternations, so that allomorphs cannot stand in a relation of suppletion: “Suppletive formation characterizes only different morphemes which have identical meaning and function” (Reformatskij 1955: 110–111; translation is mine.—IM.). The whole issue revolves around the concept of ‘morpheme’—a problem that I cannot delve into here (cf. Chapter 7, p. 388ff). Let me, however, point out that by refusing to admit suppletive allomorphs we complicate the resulting morphological description: we are forced to introduce another additional level of representation—that lying between morphemes and wordforms. In my conceptual system for morphology, I distinguish between derived, or predictable, allomorphs (of a morpheme), which can be produced by (mor)phonological alternations, and underlying, or basic, allomorphs, which—if they are more than one in a morpheme—are suppletive with respect to each other and have to be listed in the lexical entry.

Subcondition 2b (= non-synonymous suppletive signs must differ grammatically) bars lexical hyponymy and lexical pairs with shared semantic compo-
2. The concept of suppletion

2.4.2. Definition 8.3 vs. traditional definitions of suppletion

Definition 8.3 differs from traditional definitions of suppletion in the following four respects.

1. **Suppletion is not a morphological process.** Traditionally, suppletion is often placed among grammatical processes such as affixation, modification (= reduplications and meaningful alternations), suprafixation, etc. (see, for instance, Reformatskij 1967: 311–313 or Anderson 1985: 170–171). Definition 8.3 bars such an interpretation, which is due to an inaccurate use of terms. Indeed, all grammatical—or, to be more precise, morphological—processes consist in using a particular type of linguistic sign—that is, distinguishable entities each having a signified and a signifier. Thus, affixation is adding an affix; modification is applying (actually, also adding) a reduplication or a meaningful alternation (= an apophony), etc. But suppletion (even for those who call it a morphological process, let alone for Definition 8.3) is not a distinguishable entity and by no means a sign or the application of a sign: it is, as has been said, a relation between two signs. It cannot be separated from its relanda.
and cannot exist without them—unlike an affix, an apophony or a prosodic sign. Therefore, suppletion, because of its logical nature, cannot express meaning. We may, of course, speak of a ‘suppletive sign,’ but this is no more than an abbreviation for a ‘sign standing in a relation of suppletion to another sign’. For instance, in Eng. am ~ was the meaning ‘PAST [tense]’ in was is by no means transmitted by any distinguishable and observable entity called suppletion. This meaning is simply part of the signified of was, exactly as it is the (entire) signified of the suffix -ed or of the apophony /æ/ (as in ring ~ rang or begin ~ began, etc.). The same is true with respect to the meanings (4) and (×10) in Rus. sorok ‘40’, cf. (13b), p. 423: they are expressed synchronically—directly by the root sorok itself; the expression of these meanings has nothing to do with suppletion. (But the root sorok ‘40’ is a (strong) megamorph manifesting a set of two morphemes: 

{ČETYRE ‘4’}, {-DESJAT ‘×10’} ⇔ sorok;

this megamorph is suppletive with respect to the morph četyr.)

Common statements like ‘Such and such a person of the given verb is formed through/by suppletion’ should be understood in the sense that the form in question is a separate sign suppletive with respect to some other forms of the verb. In this case it would be more expedient to say ‘The form of such and such a person of the given verb is suppletive with respect to such and such other personal form of the verb.’

2. Signs that can be suppletive. Traditionally, suppletion applies exclusively to roots, but Definition 8.3 does not restrict the morphological status of signs that are allowed to be in the relation of suppletion. We subsume under suppletion relations between roots and between affixes, between morphs and megamorphs and even between two forms of an idiom or between an idiom and a megamorph. There is no a priori reason to limit a general theoretical concept to one specific class of signs. It seems more rewarding to apply the concept of suppletion in the broadest way possible, and then to distinguish between different types and subtypes of suppletion. (Cf. Introduction, 3.2, p. 17, Item 4.)

3. The origin of the formal difference between suppletive signs. Traditionally, suppletion applies exclusively to etymologically unrelated elements (actually, to roots; cf. Rudes 1980: 660). In sharp contrast, Definition 8.3 does not mention etymology: etymological considerations should play no role in defining a synchronic theoretical concept. From the viewpoint of Definition 8.3, two signs can be suppletive no matter what the respective etymologies are—provided, of course, there is not enough regularity in their formal correlation but enough regularity in their semantic correlation. The following examples are from Rudes 1980 (7a–c) and Werner 1977 (7d–e):
2. The concept of suppletion

(7) a. Polish
`
[to cut] IND.PRES.1SG tn(+-+-) /tn(+-+-)/ ~ INF(initive) cia(+-+-) /c’on(+-+-)/;
both tn and cia are regular reflexes of Proto-Indo-European root *tem-.
`
b. Romanian
`
[to take] IND.PRES.1SG ia(+-+-) /ja(+-+-)/ ~ IND.PRES.1PL lu(+-+-) /lú(+-+-)/;
both ia and lu are regular reflexes of Proto-Romance root *lewa-.
`
c. Hittite
`
[to say] IND.PRES.1SG te(+-+-) ~ IND.PRES.1PL tar(+-+-);
both te and tar are regular reflexes of Proto-Indo-European root *deg-.
`
d. German
`
[to be] IND.PRES.3SG is(+-+-) /is(+-+-)/ ~ IND.PRES.3PL sind(+-+-);
both ist and sind are regular reflexes of the allolexes *éš+ti and *(e)s+énti, including the same Proto-Indo-European root.
`
e. Faroese
`
[sheep] SG.NOM ær /ær/ ~ PL.DAT óm /óm/;
both ær and óm are regular reflexes of Proto-Norse forms *aw+iR and *
aum.
(Interestingly, in sharp contrast to Faroese, in Old Norse the same pair ær ~ óm is not suppletive: here -r and -m still are productive suffixes of SG.NOM and PL.DAT, and the alternations æ ~ å ~ ó are still alive.)
`
For Rudes, the boldfaced signs in (7) are pseudo-suppletive; for me, they are perfectly suppletive. (I propose to retain the term pseudo-suppletive for a different phenomenon: see Section 7, p. 458.)

4. The nature of the semantic difference between suppletive signs. Traditionally, the term suppletion applies exclusively to different inflectional forms of the same lexeme (cf. Aronoff 1976: 2, Wurzel 1987: 492). Definition 8.3 is broader: it admits any grammatical differences, derivational as well as inflectional. Thus, for me such pairs as Eng. father ~ paternal or one ~ first are suppletive. Note that the usefulness of considering suppletive derivation was explicitly acknowledged, e.g., in Bally 1950: 178 – 185, Ullmann 1952: 129, Mel’čuk 1972, Apresjan 1974: 168 – 175, Dressler 1985a, c, Carstairs 1988, Adouani 1993. Most interestingly, the founding father of the theoretical study of suppletion, H. Osthoff, included under the heading of suppletion ‘Femininbildung’ of the type German Bruder ’brother’ ~ Schwester ’sister’, Sohn ’son’ ~ Tochter ’daughter’, Bulle ’bull’ ~ Kuh ’cow’, Hengst ’stallion’ ~ Stute ’mare’ (Osthoff 1899: 15 – 19) and the formation of ordinal numerals, as well as of the names for tens and multiplicative adverbs (ibid., 31 – 37) – that is, phenomena that obviously belong to derivation and which he himself called ‘Wortableitung.’
However, there is a price to pay for such a broadmindedness. Inflectional meanings, or *grammemes*, are obligatory; an inflectional category (such as number, case, tense, mood, etc.) is in principle valid for all the elements of a given word class for which this category is defined. Therefore, the presence of a grammeme is 100% obvious, so that when we deal with two signs whose semantic difference equals a grammeme (or several grammemes), the semantic relation between them is absolutely regular—beyond the shadow of a doubt. Not so derivational differences, or *derivatemes*: being non-obligatory, they do not form categories and are not necessarily valid for all—or even the majority of—elements in the corresponding word class. As a result, for two formally unrelated lexemes whose semantic difference corresponds to a derivateme of *L* it is not automatically clear that they are derivationally related. Thus, I assume that *boy* and *girl* are not derivationally related, although their semantic difference—*male* vs. *female*—corresponds to a derivateme in English (= *female*: tiger ‘male tiger’ ~ *tigr+ess* ‘female tiger’, actor ~ *actr+ess*, count ~ *count+ess*, etc. But this derivateme does not apply to basic human nouns and kinship terms. However, for instance, in Spanish, *niño* ‘boy’ and *niña* (little) girl are derivationally related (cf. Note 17, p. 462). Here, statistical factors come into play—and with them, the gradable character of semantic regularity; this leads, in turn, to semantic gradability of suppletion.

Because of differences 3 and 4, Definition 8.3 does not use the concept of *paradigm*, which is often linked to that of suppletion. In the literature, it is currently said that the essence of suppletion is borrowing a form from one paradigm to use it in order to fill an empty cell of another paradigm (‘paradigm’ in this sense is the set of all the wordforms of a lexeme, each wordform being associated with a combination of grammemes). Thus, for the verb [to] GO the cell for *PAST* is filled not with the ‘expected’ wordform *goed*, which does not exist, but by the wordform *went*, coming from the Middle English verb WENDAN (cf. Ger. WENDEN ‘[to] turn’), which does not exist as such in Modern English. However, such a link between suppletion and paradigms exists only for etymologically unrelated radicals in inflection and thus corresponds to a very particular case of suppletion. It cannot be reflected in a general definition.

### 2.4.3. The gradable character of suppletion

According to Definition 8.3, suppletion is a *gradient* concept (two signs can be more or less suppletive)—in spite of the quite rigorous, ‘sharp’ character of the definition itself. This paradox is explained by the following fact: The definition uses in an essential way the concepts ‘[to] be corepresentable’ and ‘[to] be grammatically corepresentable.’ These two concepts are based on the notion of regu-
2. The concept of suppletion

Regularity, semantic as well as formal. But regularity is unavoidably gradable. First, regularity of a phenomenon $P$ depends on whether it is sufficiently widespread or not: this can be an absolute quantitative measure (moreover, we have to distinguish frequency in language vs. frequency in text). Second, regularity of $P$ depends on the proportion of units that feature it among all units that in principle could feature it: this is clearly a relative quantitative measure. Third, regularity of $P$ depends on the presence of other phenomena similar to $P$: relatedness of $P$ to something in the language diminishes its isolation and makes it more regular. For instance, consider the French verbal radical morphs /pø/ $\text{peux}$ $\{[I]\}$ can’ $\sim$ /puv/ $\text{pouv}(+\text{ons})$ $\{[we]\}$ can’. Is the substitution /ø/ $\sim$ /uv/ regular—that is, is it an alternation of French? At first glance, the answer seems to be no. But this substitution is not quite unique: first, it appears in another verb: $\text{je}$ $\text{meux}$ $\{[I]\}$ move’ $\sim$ $\{\text{nous}\}$ $\text{mouv}(+\text{ons})$ $\{[we]\}$ move’; and second, it is formally similar to a number of substitutions found in French conjugation: /ø/ $\sim$ /ul/ ($\text{veux}$ $\{[I]\}$ want’ $\sim$ $\text{vou}(+\text{ons})$ $\{[we]\}$ want’), /ø/ $\sim$ /al/ ($\text{vaux}$ $\{[I]\}$ am worth’ $\sim$ $\text{va}(+\text{ons})$ $\{[we]\}$ are worth’), /ø/ $\sim$ /aw/ ($\text{sais}$ $\{[I]\}$ know’ $\sim$ $\text{sa}(+\text{ons})$ $\{[we]\}$ know’), etc. Therefore, all these substitutions are not quite irregular: they are slightly regular. As a result, the pairs of morphs of the type $\text{peux}$ $\sim$ $\text{pouv}$ should not, strictly speaking, be considered suppletive: they can be derived by rules, however non-standard and restricted these rules are.

If the researcher decides to exclude rules of such low regularity from his description and bars the above alternations from the grammar of French, the morphs $\text{peux}$ and $\text{pouv}$ have to be listed in the lexicon as suppletive (= underlying) allomorphs of the same morpheme $\{\text{POUV}(+\text{oir})\}$. But, since there is some regularity in their formal correlation, they still will be less suppletive than, say, $i$ and $\text{all}$ in $\{\text{ALL}(+\text{er})\}$, given in (1): the formal relation between these latter morphs is absolutely unique in French. Thus, we see how suppletion can be a matter of degree. (This is by no means the only way in which suppletion is gradable: this problem is considered in more detail in Subsection 3.2, p. 438ff.)

To sum up: The proposed definition of suppletion tries to be as general as possible. It imposes no restrictions on the types of signs involved, so that it applies to all logically possible types of minimal segmental signs, independently of etymology. It covers both derivation and inflection; and being based on fuzzy notions of semantic/formal regularity, it entails the graduality of suppletion. Put in a nutshell, Definition 8.3 stipulates that for the signs $X$ and $Y$ to be suppletive their semantic correlation should be maximally regular, while their formal correlation is maximally irregular: if there is a semantic difference between them, it is grammatical (i.e., inflectional or derivational) in $L$, but their formal difference is not grammatical in $L$ (i.e., it is not covered by any alternation of $L$).
3. The typology of suppletion

Pairs of suppletive signs established by Definition 8.3 can be classified along two major axes:

– Types of signs standing in a relation of suppletion.
– Degree of suppletion between the two suppletive signs (from the semantic and the formal viewpoint).

I will now examine the classes we thus obtain.

3.1. Types of signs standing in a relation of suppletion

Let there be two signs, X and Y, standing in a relation of suppletion. To characterize the type of suppletion we are dealing with more closely, the following three features should be considered:

– The type of semantic difference between X and Y. This tells us whether it is derivational or inflectional suppletion (cf. Mel’čuk 1976b, Dressler 1986). More precisely, if the semantic difference between X and Y is non-zero, its character determines the type of suppletion in a straightforward way—namely, if the difference is derivational, the suppletion is derivational, and if the difference is inflectional, the suppletion is inflectional. If this difference is zero (i.e., the signifieds of X and Y are identical), then:

• If X and Y are affixes, the type of these affixes determines the type of suppletion: the suppletion of derivational affixes is derivational; if the affixes are inflectional, their suppletion is inflectional.
• If X and Y are radicals, the type of suppletion is determined by the factors conditioning the choice between X and Y: if these factors are derivational, the suppletion of X and Y is derivational; if they are inflectional, the suppletion of X and Y is inflectional.

– The morphological type of both X and Y (do they involve roots, or are they affixes only?); thus we distinguish radical vs. affixal suppletion.
– The major linguistic class to which the signs X and Y belong this determines whether we have morph, strong megamorph or idiom suppletion.

The above classificatory parameters combine with each other, producing $2 \times 2 \times 3 = 12$ logically possible classes of suppletive pairs. However, only nine of these are actually realized. The remaining three—derivational affixal megamorph suppletion, derivational affixal idiom suppletion, and inflectional affixal idiom suppletion (see their characterization below)—are linguistically highly improbable, and I do not know of any examples.10
In what follows, I present a systematic review of all known types of suppletion. Many of the examples come from Koneckaja 1973, Dressler 1985a, 1986, Rudes 1980 and Wurzel 1985, 1987. Let it be emphasized that the goal of this subsection is not an exhaustive enumeration of all known cases of suppletion; nevertheless, I try to present sufficiently complete and variegated data so as to illustrate all types of suppletion.

For each case of suppletion, I give a series of regular forms that constitute the necessary ‘background’: they show that the semantic difference in question is grammatical, so that the pairs on display are indeed suppletive.

I. Derivational suppletion

I.1. Radical suppletion

1. Morphs (two radical allomorphs distributed as a function of a derivational meaning)

(8) Verb ~ corresponding agent noun:

Rus. stir (+at’) ‘[to] do laundry’ ~ pr(+ačk(+a)) ‘laundress’

Here, -ačk is a derivational suffix of female agent – or, more precisely, a combination of two derivational suffixes: -ač+k, which can be added not only to a verb stem but to nominal and adjectival stems as well (cf. skripk(+a) ‘violin’ ~ skrip+ačk(+a) ‘female violinist’, etc.).

The radical morphs stir and pr belong to the same morpheme {STIR(+at’) ‘[to] do laundry’} since their distribution is automatic and morphologically conditioned; pr before -ačk, and stir elsewhere.

Similar cases of suppletion are: leč(+it’) ‘[to] treat medically’ ~ vr(+ač) ‘medical doctor’, kov(+at’) ‘[to] forge’ ~ kuzn(+ec) ‘blacksmith’, kazn(+it’) ‘[to] execute [a criminal]’ ~ pal(+ač) ‘executioner’ (the radical pal being a uniroot: it does not combine with any other affix and cannot be used alone).

Compare the numerous regular cases such as pe(+t’) ‘[to] sing’ ~ pev+ec ‘sing+er’, oxot(+it’ja) ‘[to] hunt’ ~ oxot+nik ‘hunting+er’, čisti(+t’) ‘[to] clean’ ~ čisti+l’ščik ‘clean+er’, spasa(+t’) ‘[to] save’ ~ spasa+tel’ ‘life-guard’, etc.

(9) Noun ~ corresponding denominal adjective (= relational adjective):

a. English

| father     | patern(+al)  | root      | radic(+al) |
| earth      | terrestr(+al) | sun       | sol(+ar)   |
| law        | leg(+al)     | church    | ecclesiast(+ic) |

Regular cases: equator+ial, lacun+ar, capsul+ar, education+al, custodi+al, context+ual, etc.
b. French

        mariage 'marriage'  ~  nupt(+/ial) 'wedding-, nuptial'
        racine 'root'  ~  radic(+/al) 'radical'
        ville 'city'  ~  urb(+/ain) 'urban'
        cheval 'horse'  ~  hipp(+/ique) 'horse-, equestrian'
        œil 'eye'  ~  ocul(+/aire) 'ocular'

Regular cases: océan+ique, post+al, téâtr+al, ministér+iel, village+ois, etc.

(10) 'Settlement' ~ 'inhabitant of this settlement':

French
Fontainebleau  ~  Bellifont(+ain)
Monaco  ~  Monég(+asque)
Rodez  ~  Ruthén(+ois)
Saint-Étienne  ~  Stéfan(+ois)
Châteauroux  ~  Castelrouss(+in)
Trois Rivières  ~  Trifluv(+ien) [in Quebec]
Le Puy  ~  Anic(+ien)

Regular cases: Paris ~ Paris+ien, Berlin ~ Berlin+ois, Marseille ~ Marseille+ais, ...

(11) 'Animal' ~ 'meat of this animal':

Russian korov(+a) 'cow' ~ govjad(+in(+a))

Regular cases: svin('+ja) 'pig' ~ svin+in(+a) 'pork', baran 'ram' ~ baran+in(+a) 'mutton, lamb', olen 'deer' ~ olen+in(+a) 'deer meat', krolik 'rabbit' ~ krolik+at+in(+a) 'rabbit meat', medved 'bear' ~ medved+at+in(+a) 'bear meat', ...

(12) 'Quality' ~ '[to] begin to possess this quality':

Russian krasiv(+/yj) 'pretty' ~ xoroš+e(+τ) '[to] become prettier'
nekrasiv(+/yj) 'ugly' ~ durn+e(+τ) '[to] become uglier'

Regular cases: tolst(+yj) 'fats' ~ tolst+e(+τ) '[to] become fatter', xud(+oj) 'thin' ~ xud+e(+τ) '[to] become thinner', zelên(+yj) 'green' ~ zelen+e(+τ) '[to] become greener', ...

An interesting case of radical morph suppletion, which will not be analyzed here (I do not have enough reliable data), is suppletion that occurs in compounding, especially in incorporation. What I mean is a radical morpheme that has at least two suppletive allomorphs one of which is used in an independent wordform,
while the other appears within compounds and incorporated complexes. An approximate example could be such morphemes as \{FRANCE\}, which contains two allomorphs: France, used everywhere, except as the first element in coordinate adjectival compounds; and Franc(-o-), used only as the first element in such compounds: Franco-American trade. Further examples of the same type include such morphemes as:

\{CHINA\} = \{China, Sin(-o-\}) (Sino-Japanese negotiations),
\{GREECE\} = \{Greece, Grec(-o-\}) ,
\{SPAIN\} = \{Spain, Hispan(-o-\}) , etc.

2. Morph ~ megamorph (a morph of a radical morpheme and a strong megamorph manifesting the sequence of the same radical morpheme and a derivation-al morpheme)

(13) ‘Number of arithmetical units’ ~ ‘the same number of tens’:
  a. Fr. \textit{deux} /dø/ ‘two’ ~ \textit{vingt} /vē/ ‘twenty’\(^{13}\)
  b. Rus. \textit{četyre} ‘four’ ~ \textit{sorok} ‘forty’\(^{9}\)

The meaning \(\times 10\(^{3}\) is grammatical (= derivational) in French and Russian: it is expressed, respectively, by suffixes Fr. \textit{-ante} /ãt/ (\textit{trente} ‘30’, \textit{quarante} ‘40’, …), Rus. \textit{-decat’} and \textit{-desját/-desjat’}\(^{14}\) (\textit{dvadcat’} ‘20’, \textit{tridcat’} ‘30’, …, \textit{pjat’ desjat’} ‘50’, …). Therefore we have:

\{DEUX\}, \{-ANTE\} \Leftrightarrow \textit{vingt}
\{ČETYRE\}, \{-DESJAT\} \Leftrightarrow \textit{sorok}

c. Greek \textit{dúo} ‘two’ ~ \textit{eíkosi} ‘twenty’\(^{3}\)

(14) ‘Human first name’ ~ ‘hypocoristic form of the same name’:
  a. Eng. Richard ~ Dick, Robert ~ Bob, Margaret ~ Peggy, …

The meaning ‘HYPOCORISTIC’ in proper (first) names is derivational in English:\(^{15}\) it is regularly expressed either by the suffix -\textit{ie}/-\textit{y}, as in \textit{Ann} ~ \textit{Ann}+\textit{ie}, or by truncation apophony, as in \textit{Benjamin} ~ \textit{Ben}, \textit{Thomas} ~ \textit{Tom}, or else by a combination of both, as in \textit{Rebecca} ~ \textit{Beck}+\textit{y}, \textit{Virginia} ~ \textit{Ginn}+\textit{y}. So, for (14a) we obtain:

\{RICHARD\}, \{HYPOCORISTIC\} \Leftrightarrow \textit{Dick}, etc.

b. Russian
\begin{align*}
\text{Georg(+ij)} & \sim \text{Žor(+a)}, \quad \text{Aleksandr} \sim \text{Šur(+a)}, \\
\text{Ann(+a)} & \sim \text{Njur(+a)}, \quad \text{Evdokij(+a)} \sim \text{Dus’i(+a)},
\end{align*}

The meaning ‘HYPOCORISTIC’ in proper (first) names is also derivational in Russian: it is regularly expressed either by truncation apophony, as in
Boris ~ Boır′/(+a), Zinaid/(+a) ~ Zin/(+a), etc., or by a combination of this apophony with the suffix -š/(+a), as in Mixail ~ Miš/(+a), Natal′j/(+a) ~ Nataš/(+a), etc.

(15) Verb ~ corresponding deverbal noun (= nomen actionis/processi):

French

<table>
<thead>
<tr>
<th>French</th>
<th>Deverbal Noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>tomber</td>
<td>chute</td>
</tr>
<tr>
<td>dormir</td>
<td>sommeil</td>
</tr>
<tr>
<td>se taire</td>
<td>silence</td>
</tr>
<tr>
<td>croire1</td>
<td>avis</td>
</tr>
<tr>
<td>croire2</td>
<td>foi</td>
</tr>
<tr>
<td>enlever</td>
<td>ablation</td>
</tr>
<tr>
<td>frapper</td>
<td>coup</td>
</tr>
</tbody>
</table>

These deverbal nouns in English and French are suppletive with respect to their underlying verbs because they contrast with numerous (semi)productive and (semi)regular deverbal nouns in -ment, -age, -tion, -sion, etc. In other words, the difference between the signified of (the root of) a deverbal noun and that of the underlying verb is derivational in these languages.

(16) ‘Male animal’ ~ ‘corresponding female’:

Russian

<table>
<thead>
<tr>
<th>Russian</th>
<th>Deverbal Noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>byk</td>
<td>korov(+a)</td>
</tr>
<tr>
<td>petux</td>
<td>kuric(+a)</td>
</tr>
</tbody>
</table>

These (and a few other similar) noun pairs can be considered suppletive (i.e., derivationally related) in Russian against the background of dozens of regular female formations:

<table>
<thead>
<tr>
<th>Russian</th>
<th>Deverbal Noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>tigr</td>
<td>tigr+ic(+a)</td>
</tr>
<tr>
<td>medved</td>
<td>medved+ic(+a)</td>
</tr>
<tr>
<td>slon</td>
<td>slon+ix(+a)</td>
</tr>
<tr>
<td>osël</td>
<td>osl+ic(+a)</td>
</tr>
</tbody>
</table>

(17) X ~ ‘the antonym of X’ [of a particular semantic type]:

Esperanto

<table>
<thead>
<tr>
<th>Esperanto</th>
<th>Deverbal Noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>bruligi(+i)</td>
<td>esting(+i)</td>
</tr>
<tr>
<td>varm(+a)</td>
<td>frid(+a)</td>
</tr>
</tbody>
</table>

These pairs can be considered suppletive, since in Esperanto antonyms of these two semantic types are, as a rule, derived by the prefix mal-:
3. The typology of suppletion

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a. 

ferm(+i) \[\text{[to close]}\] \[\text{[= ’cause to be closed’}\]

\sim mal+ferm(+i) \[\text{[to open]}\] \[\text{[= ’cause not to be closed’}\]

lev(+i) \[\text{[to lift]}\] \[\text{[= ’cause to be up’}\]

\sim mal+lev(+i) \[\text{[to let down]}\] \[\text{[= ’cause not to be up’}\]

aper(+i) \[\text{[to appear]}\] \[\text{[= ’begin to be here’}\]

\sim mal+aper(+i) \[\text{[to disappear]}\] \[\text{[= ’begin not to be here’}\]

sekig(+i) \[\text{[to dry]}\] \[\text{[= ’cause to be dry’}\]

\sim mal+sekig(+i) \[\text{[to wet]}\] \[\text{[= ’cause not to be dry’}\]

plifortig(+i) \[\text{[to strengthen]}\] \[\text{[= ’cause to be stronger’}\]

\sim mal+plifortig(+i) \[\text{[to weaken]}, \text{etc.}\] \[\text{[= ’cause to be weaker’}\]

b. 

jun(+a) \[\text{’young’}\] \ ~ mal+jun(+a) \[\text{’old’}\]

plen(+a) \[\text{’full’}\] \ ~ mal+plen(+a) \[\text{’empty’}\]

alt(+a) \[\text{’high’}\] \ ~ mal+alt(+a) \[\text{’low’}\]

grand(+a) \[\text{’big’}\] \ ~ mal+grand(+a) \[\text{’small’}\]

vast(+a) \[\text{’broad’}\] \ ~ mal+vast(+a) \[\text{’narrow’}, \text{etc.}\]

(18) ‘Cardinal number\(^2\) \sim ’corresponding ordinal numeral\(^3\):’

Russian and English

odin \[\text{’one’}\] \ ~ perv(+j) \[\text{’first’}\]

dva \[\text{’two’}\] \ ~ vtor(+oj) \[\text{’second’}\]

This case is well-known; it is found in many languages.

(19) ‘Cardinal number\(^2\) \sim ’corresponding multiplicative adverb’ \[\text{[= ’n times’}\]:’

a. Latin ñunus \[\text{’one’}\] \ ~ sem(+el) \[\text{’one time’}\]

duo \[\text{’two’}\] \ ~ b(+is) \[\text{’two times’} \[\text{[bis } \sim *dysis}\]

Cf. ter \[’three times’\], quater \[’four times’\], ...

b. Sanskrit ek(a+s) \[’one’\] \ ~ sa(+krt) \[’one time’\] \[sa- \ \sim *sm-\]

c. Anc. Greek heî(+)s \[’one’\] \ ~ há(+)paks \[’one time’\] \[ha- \ \sim *sm-\]

The case of Fr. bru \~ fille (cf. (4b), p. 412) also belongs here.

3. Idioms (an idiom and a radical morph which is \sim from a purely semantic

viewpoint – a derivational correspondent of the former)

(20) Russian
govorit’ krasnó \[’to talk in a high-flown manner, blarney’\] \ ~ krasnobaj \[’one who talks in a high-flown manner, who blarneys’ \ \approx \ ’phrase-monger’
Chapter 8. Suppletion

molot’ jazykom [to] talk nonsense ~ pustozvon ‘one who talks nonsense’
= lit. [to] thrash with one’s tongue

I.2. Affixal suppletion

1. Morphs (two affixal allomorphs of a derivational morpheme)

(21) Russian -ënok/-enk ~ -jat

These are suppletive allomorphs of the derivational suffix {-ENOK} ‘the young one of ...’:

LEV ‘lion’ : l’v+ënok ‘lion cub’ ~ l’v+jat(+a) ‘lion cubs’;
MEDVED’ ‘bear’ : medvež+önok ‘bear cub’ ~ medvež+at(+a) ‘bear cubs’; etc.
(-ënok/-enk and -jat are etymologically related).

(22) Dutch -er ~ -der ~ -aar (Carstairs 1988: 84 – 85)

These are suppletive allomorphs of the derivational agentive suffix {-ER},
distributed according to the phonological composition of the stem:

STRIJ D ‘[to] fight’ : strijd +er
SPAAR ‘[to] save’ : spaar +der
TROMMEL ‘[to] drum’ : trommel+aar

2. Morph ~ megamorph (an affixal morph of a derivational morpheme and a strong megamorph manifesting the same morpheme plus some other – maybe, inflectional? – morpheme)

Once again, I do not know of an actual example of derivational affixal suppletion involving megamorphs; however, theoretically such a case is possible, although in practice very unlikely. It should be a derivational suffix -X which in one of the inflectional forms (of the derived lexeme) merges with the following inflectional suffix -Y — to produce the sign -Z, suppletive with respect to -X and to -Y. (A hypothetical example: one of the English nomina agentis in -er has in the plural the suffix -oof, instead of -er+s, which all the other nouns have: (swimm)+er+s, (eat)+er+s, etc., but (sing)+oof (*sing+er+s); the megamorph -oof, which cumulatively expresses ‘one who...’ and the plural, would be suppletive with respect to -er and to -s.)

3. Idioms (an affixal morph of a derivational morpheme and an affixal idiom such that it manifests the sequence of the same morpheme plus some other morpheme)

I cannot find an actual example for this case either. In purely logical terms, though, nothing precludes such a phenomenon from occurring. (A hypothetical example: suppose the plural of sing+er is sing+ed+um, where -ed+um is an affixal idiom meaning ‘ones who ...’ [-ed and -um exist independently, but -ed
3. The typology of suppletion

alone never means ‘agent’, and -um alone never means ‘plural’; -ed+um is suppletive with respect to -er and to -um.)

II. Inflectional suppletion

II.1. Radical suppletion

1. Morphs (two radical allomorphs distributed as a function of an inflectional meaning)

(23) Suppletion of nominal radical morphs according to number [cf. (31)]:

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Russian</td>
<td>čelovek(+Ø) ~ ljud(+i)</td>
<td>rebēnok(+Ø) ~ det(+i)</td>
</tr>
<tr>
<td>'human being'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>'child'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Lak</td>
<td>ššarssa(+Ø) ~ qam(+i)</td>
<td>ču(+Ø) ~ dučr(+i)</td>
</tr>
<tr>
<td>'woman'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>'horse'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reg. cases: ka 'hand' ~ ka(+ra), ččan 'foot' ~ ččan(+nu), ...

c. Chechen | jett(+Ø) ~ x´ěl(+i) | jo(+Ø) ~ mexkar(+i) |
| 'cow' | | |
| 'daughter, girl' | | |

Reg. cases: kor 'window' ~ kör(+aš), belxalar 'worker' ~ belxalo(+), ...

d. Maasai | (ol+)kít(Ø) ~ (il+)món(+) | (ol+)ósòwù~(il+)osówuan(+) |
| 'ox' | | |
| 'girl' | | |

[ marks the high tone, ' – the low tone; the middle tone is not shown; the prefix is a gender marker]

Reg. cases: 'buffalo' (ol+)ósòwiù ~ (il+)osówuan(+i), 'nail' (ol+)oisó~toò ~ (il+)oisótoò(+i), ...

e. Burushaski | helés ~ dúlaš(+u) | dasén ~ gušēŋ(+ia) |
| 'boy' | | |
| 'girl' | | |
| 'his daughter' | (ē+)jù ~ (Ø+)yugus(+)iwa | |

(24) Suppletion of nominal radical morphs according to possession:

a. Jacaltec (Day 1973)

<table>
<thead>
<tr>
<th></th>
<th>non possessed</th>
<th>possessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>'house'</td>
<td>ūlah /jah/</td>
<td>(w+)atut 'my house'</td>
</tr>
<tr>
<td>(ha w+)atut 'your SG house'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(y+)atut 'his/her house'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 8. Suppletion

'tortilla’ wah (w+)och /oč/ 'my tortilla'
((ha w+)och 'yourSG tortilla'
(y+)och 'his/her tortilla'

Regular cases: oje /oxe/ 'foot' – (w+)oj 'my foot', (ha w+)oj 'yourSG foot', ... amigo 'friend' – (w+)amigo 'my friend', (ha w+)amigo 'yourSG friend', etc.

b. Zapotec (Butler 1980: 198-199)

non possessed possessed
'tortilla' yet (ch+)ixoʃ /čivoʃ/ 'tortilla of...
'clothes' lachoʃ /laʃoʃ/ (x+a) /ya/ 'clothes of...

Regular cases: cabey 'horse' ~ (x+)cabey 'horse of...'
jeid /xejd/ 'hen' ~ (x+)jeid 'hen of... (x+)jeid+boʃ 'his hen', ...
nis 'water' ~ (x+)is 'water of...', etc.

c. Blackfoot

non possessed possessed
'house' moyis (no+) kóa 'my house'
(ko+) kóa 'yourSG house'
(o+) kóa+i 'his/her house'
'child' pokau (no+) kós 'my child'
(ko+) kós 'yourSG child'
(o+) kós+i 'his/her child'

Regal cases: [ngw ~ mb ~ m and mh ~ nh are alternations of Chichimeco; accents indicate tones]

d. Chichimeco (de Angulo 1932) presents an interesting case – suppletion of radical morphs in the possessed noun according to the person of the possessor:

1st person non-1st person

Possessor Possessor
'father' (tä+) tá (ü+) ngwɛ 'your father', (ü+) mé 'his father', ... 'mother' (nä+) ná (ü+) tsũ 'your mother', (ü+) tsũ 'his mother', ... 'grandfather' (tä+) lé (ü+) mhɛ 'your grandfather', (hɛ+) mhɛ 'his grandfather', ...

[ngw ~ mb ~ m and mh ~ nh are alternations of Chichimeco; accents indicate tones]
Regular cases:

(ná+)mbi 'my thing' ~ (ù+)ngwi 'your SG thing', (ù+)mi 'his thing';
(nù+)khü 'my child' ~ (nì+)khü 'your SG child', (nì+)khü 'his child';
(ù+)ré 'my older brother' ~ (ù+)ré 'your SG older brother', (è+)né 'his older brother'; etc.

Thus, 'my father' ('mother', 'grandfather') is referred to by a special morph – completely different from the morph used to refer to anyone else's father.

(25) Suppletion of nominal radical morphs according to case I.1b:

a. Tabassaran

<table>
<thead>
<tr>
<th>Case</th>
<th>Nominative</th>
<th>Ergative</th>
</tr>
</thead>
<tbody>
<tr>
<td>'girl'</td>
<td>riš (+Ø)</td>
<td>šur (+u)</td>
</tr>
<tr>
<td>'heart'</td>
<td>juš (+Ø)</td>
<td>k+w (+a)</td>
</tr>
<tr>
<td>'who'</td>
<td>fuž (+Ø)</td>
<td>šl (+i)</td>
</tr>
</tbody>
</table>

Regular cases: ul 'eye' ~ ul(+i), ular 'eyes' ~ ular(+i), maš 'face' ~ maš(+i), mašar 'faces' ~ mašar(+i), ūnt 'front' ~ ūnt(+u), ūntar 'fronts' ~ ūntar(+i), ...

b. Lak

<table>
<thead>
<tr>
<th>Case</th>
<th>Nominative</th>
<th>Genitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>'I'</td>
<td>na (+Ø)</td>
<td>ttu (+l)</td>
</tr>
<tr>
<td>'youSG'</td>
<td>ina (+Ø)</td>
<td>vi (+l)</td>
</tr>
<tr>
<td>'father'</td>
<td>ppu (+Ø)</td>
<td>butta (+l)</td>
</tr>
<tr>
<td>'month'</td>
<td>barz (+Ø)</td>
<td>zuru (+l)</td>
</tr>
</tbody>
</table>

c. Russian

<table>
<thead>
<tr>
<th>Case</th>
<th>Singular, Nominative, Plural, Genitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>'year'</td>
<td>god (+Ø) ~ let (+Ø)</td>
</tr>
<tr>
<td></td>
<td>[the regular form god + ov is also possible in certain contexts and/or speech varieties]</td>
</tr>
</tbody>
</table>

d. Georgian

<table>
<thead>
<tr>
<th>Case</th>
<th>Singular, Nominative, Singular, Genitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>'God'</td>
<td>γmert (+i) ~ γvt (+is)</td>
</tr>
<tr>
<td></td>
<td>[the regular form γmert + is is also possible in certain contexts]</td>
</tr>
</tbody>
</table>

e. Latin

<table>
<thead>
<tr>
<th>Case</th>
<th>Singular, Nominative, Singular, Genitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Jupiter'</td>
<td>Juppiter ~ Jov (+is)</td>
</tr>
<tr>
<td></td>
<td>[Juppiter ← *Jov+pater ← i.e. *djεu pater]</td>
</tr>
</tbody>
</table>

f. Finnish

<table>
<thead>
<tr>
<th>Case</th>
<th>Singular, Singular, Singular, Nominative, Accusative, Partitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>'who'</td>
<td>kuka (+Ø) ~ kene (+t) ~ ke (+tū)</td>
</tr>
</tbody>
</table>
(26) Suppletion of verbal radical morphs according to tense (in the indicative, 1sg):

<table>
<thead>
<tr>
<th>Language</th>
<th>Tense</th>
<th>Radical Morphs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russian</td>
<td>Present</td>
<td>( \text{id}(+u) ) \text{} ~ ( \tilde{\text{s}}\tilde{\text{e}}(+l) ) [+MASC] / ( \tilde{\text{e}}(+l+a) ) [+FEM]</td>
</tr>
<tr>
<td>Maasai</td>
<td>Present</td>
<td>( \hat{\text{a}}+(\text{Ø}) ) \text{} ~ ( \hat{\text{a}}+\text{shom}(\text{Ø}) )</td>
</tr>
<tr>
<td>Albanian</td>
<td>Present</td>
<td>( \text{j}(+am) ) \text{} ~ ( \text{qe}(+sh\tilde{\text{e}}) ) /( \text{t}\tilde{\text{e}}\text{s} )</td>
</tr>
<tr>
<td></td>
<td>Present</td>
<td>( \text{j}+(am) ) \text{} ~ ( \text{pat}(+a) )</td>
</tr>
<tr>
<td></td>
<td>Present</td>
<td>( \text{b}(+\text{Ø}) ) \text{} ~ ( \text{prur}(+a) )</td>
</tr>
<tr>
<td></td>
<td>Present</td>
<td>( \text{b}(+\text{Ø}) ) \text{} ~ ( \text{ra}(+sh\tilde{\text{e}}) )</td>
</tr>
<tr>
<td></td>
<td>Present</td>
<td>( \text{s}(+\text{Ø}) ) \text{} ~ ( \text{erdh}(+a) )</td>
</tr>
<tr>
<td></td>
<td>Present</td>
<td>( \text{r}(+\text{Ø}) ) \text{} ~ ( \text{ndenj}(+a) )</td>
</tr>
</tbody>
</table>

Regular cases:

- "I endure" \( \text{duro}j \) \text{} ~ \( \text{duro} \) , "I open" \( \text{hap} \) \text{} ~ \( \text{hap} \) , "I decide" \( \text{vendos} \) \text{} ~ \( \text{vendos} \) , ... |

(27) Suppletion of verbal radical morphs according to the number of the subject: Maasai, the verb "[to] go" in the present indicative

<table>
<thead>
<tr>
<th>Subject</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \hat{\text{a}}+\text{g} ) \text{}</td>
<td>( \text{i}+\text{g} ) \text{} ~ ( \text{ki}+\text{p}\tilde{\text{u}}\tilde{\text{o}} ) \text{} ~ ( \text{we} \text{go} )</td>
<td></td>
</tr>
<tr>
<td>( \hat{\text{i}}+\text{g} ) \text{}</td>
<td>( \hat{\text{i}}+\text{g} ) \text{} ~ ( \text{pu}\tilde{\text{u}}\tilde{\text{p}}\tilde{\text{o}} ) \text{} ~ ( \text{you} \text{pl} \text{go} )</td>
<td></td>
</tr>
<tr>
<td>( \hat{\text{e}}+\text{g} ) \text{}</td>
<td>( \hat{\text{e}}+\text{g} ) \text{} ~ ( \text{pu}\tilde{\text{u}}\tilde{\text{o}} ) \text{} ~ ( \text{they} \text{go} )</td>
<td></td>
</tr>
</tbody>
</table>

Regular cases: "[to] die" \( \hat{\text{a}}+\text{v} \), \( \hat{\text{i}}+\text{v} \), \( \hat{\text{e}}+\text{v} \), \( \hat{\text{ki}}+\text{v} \), \( \hat{\text{ki}}+\text{v} \), etc.
3. The typology of suppletion

(28) Suppletion of verbal radical morphs according to person of the subject:

Hittite, the verb ‘[to] go’ in the imperative (Friedrich 1960: 90)

<table>
<thead>
<tr>
<th>2nd person</th>
<th>3rd person</th>
</tr>
</thead>
<tbody>
<tr>
<td>sg i(+)t</td>
<td>pāi(+)du</td>
</tr>
<tr>
<td>pl i(+)tten</td>
<td>pā(+)andu</td>
</tr>
</tbody>
</table>

The morph i- (⇔ I.-E. *ei) appears only in the 2nd person of the imperative; all other forms of all moods and tenses have the radical morph pāi- (⇔ I.-E. *bhe [prefix] + *ei). (Thus in (28) we see another example of suppletion between etymologically related units, cf. 2.4.2, 3, p. 416.)

On suppletion of the radical morphs of the verbs meaning ‘[to] give’ according to the person of the recipient, see Comrie 2003.

(29) Suppletion of adjectival radical morphs according to degree [cf. (37)]:

<table>
<thead>
<tr>
<th>Positive</th>
<th>Comparative</th>
<th>Superlative</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. English</td>
<td>good</td>
<td>bett(+)er</td>
</tr>
<tr>
<td>b. Latin</td>
<td>bon(+)us</td>
<td>mel(+)ior</td>
</tr>
<tr>
<td>c. Ancient Greek</td>
<td>agath(+)ós</td>
<td>amein(+)ôn</td>
</tr>
<tr>
<td>d. Russian</td>
<td>xoroš(+)ij</td>
<td>luč(+)še</td>
</tr>
<tr>
<td>e. Hungarian</td>
<td>sok /šok/</td>
<td>tō(+)bb</td>
</tr>
<tr>
<td>f. Welsh</td>
<td>bach</td>
<td>llei(+)af</td>
</tr>
</tbody>
</table>

For more on suppletion in adjectival gradation, see Wurzel 1987: 487–502.

(30) Suppletion of radical morphs of a substitute pronoun (3rd person) according to the syntactic governor:

Russian i/j ‘he/she/it/they’ ~ /n’ [idem, syntactically depending on a preposition or a comparative degree adjective]:

<table>
<thead>
<tr>
<th>Small</th>
<th>Close</th>
</tr>
</thead>
<tbody>
<tr>
<td>bach</td>
<td>agos</td>
</tr>
<tr>
<td>llei(+)af</td>
<td>nes(+)af</td>
</tr>
</tbody>
</table>
Chapter 8. Suppletion

/j+imú/ emu ‘he/it’ [DAT] ~ /k n’+imú/ k nemu ‘to him/it’
/j+iʃó/ eé ‘she’ [GEN] ~ /xūzi n’+iʃó/ xuže neé ‘worse than she’


2. Morph ~ megamorph or megamorph ~ megamorph (a morph of a radical morpheme and a strong megamorph manifesting the sequence of the same radical morpheme plus an inflectional morpheme/morphemes; or a strong megamorph manifesting a radical morpheme plus an inflectional morpheme/morphemes and another strong megamorph manifesting the same radical morpheme plus a different inflectional morpheme or morphemes)

(31) Suppletion of nominal radical megamorphs according to number [cf. (23)]:

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. French</td>
<td></td>
</tr>
<tr>
<td>‘eye’ œil /œj/ ~ yeux /jø/</td>
<td></td>
</tr>
<tr>
<td>b. Breton</td>
<td></td>
</tr>
<tr>
<td>‘human being’ den ~ tud /tüt/</td>
<td></td>
</tr>
<tr>
<td>‘dog’ ki ~ chas /šas/</td>
<td></td>
</tr>
<tr>
<td>‘cow’ buoc’h /bwox/ ~ saout /saut/</td>
<td></td>
</tr>
<tr>
<td>‘horse’ marc’h /marx/ ~ rönsed /rɔnset/ or else kezeg /kezek/</td>
<td></td>
</tr>
</tbody>
</table>

Regular cases: ‘boy’ paotr ~ paotr(+ed), ‘thing’ tra ~ tra(+ou), ...

c. Anywa |         |
| ‘woman’ aðaago ~ mään |
| ‘village’ pacc ~ mëri |

d. !Xũ (= Kung) |         |
| ‘man’ !ôngwā ~ n|æ(+u) |
| ‘child’ da’amá ~ de?ebi |

[!/ is a palatal plosive voiceless click, /!/– a palatal fricative voiceless click, /ɡ/– a pharyngealized /a/]

Regular cases: ba ‘father’ ~ ba+sĩ ‘fathers’, tšama ‘bird’ ~ tšam+hi ‘birds’, ...

(32) Suppletion of pronominal/nominal radical megamorphs (or of a morph and a megamorph) according to case:

a. Eng. I ~ me, we ~ us, she ~ her
b. Rus. ja ‘I’ ~ me/n’/(+a) [ACC], mn/(+of) [INSTR], m/n’/(+o) [DAT], ...

on ‘he’ ~ /j/(+ogo) [ACC], /j/(+im) [INSTR], /j/(+emu) [DAT], ...
c. Lezgian ce ‘water’ [SG.NOM] ~ jad [SG.ERG]

(33) Suppletion of verbal radical megamorphs (or of a morph and a megamorph) according to person and number:

a. Fr. suis /sju/ ‘[I] am’ ~ est /e/ ‘[he] is’
   vais /vɛ/ ‘[I] go’ ~ all(+ons) ‘[we] go’

b. Ger. bin ‘[I] am’ ~ ist ‘[he] is’ ~ sind ‘[we] are’

(34) Suppletion of verbal radical megamorphs according to singularity/multiplicity of the subject or the object (cf. the discussion of this phenomenon in Subsection 4.2, p. 444ff):

a. Karok (California; Bright 1957: 88, 112–113)
   ikri ‘one person lives’ ~ ?arâ:rahitih ‘several people live’

   In the absolute majority of Karok verbs the multiplicity of the subject or the object is expressed regularly (by suffixes or prefixes):
   
<table>
<thead>
<tr>
<th>single subject</th>
<th>multiple subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>čūphi</td>
<td>čūphi+nā</td>
</tr>
<tr>
<td>ihēra</td>
<td>ihēra+nā</td>
</tr>
<tr>
<td>?āv</td>
<td>?ām+vúna</td>
</tr>
<tr>
<td>višrih</td>
<td>višrih</td>
</tr>
</tbody>
</table>

b. Ainu (Shibatani 1990: 51)
   rayke ‘[to] kill [one being]’ ~ ronnu ‘[to] kill many beings, [to] massacre’
   arpa ‘[to] go [one person]’ ~ paye ‘[to] go [several people]’
   an ‘[to] exist [one entity]’ ~ oka ‘[to] exist [several entities]’

   Cf. predominantly regular expression of the multiplicity of the subject or the object by the suffix -pa: rai ‘[one person] die’ ~ rai+pa ‘[several people] die’, ama ‘[to] put one N’ ~ ama+pa ‘[to] put several Ns’, kote ‘[to] tie one N’ ~ kot+pa ‘[to] tie several Ns’, etc.

(35) Suppletion of verbal radical megamorphs according to aspect:

a. Russian

   imperfective   perfective
   ‘[to] take’   br(+at) ~ v/z’/(+at)
   ‘[to] say’   govor(+it’) ~ skaz(+at’)
   ‘[to] put down’   klas(+t’) [≡ klad] ~ polož(+it’)

   The morphemic representation of the forms involved is as follows:
   \{BR(+at’), IMPERF\} \approx br
   \{BR(+at’\}, PERF\} \approx v/z’, etc.
Thus, in these (and many similar) verbs the root expresses the lexical meaning and the aspectual meaning ‘fused together’—that is, cumulatively.

b. Old Church Slavonic

\[
\begin{array}{ll}
\text{imperfective} & \text{perfective} \\
\{\text{to throw}\} & \text{met(ati)} \sim \text{vrěš(+ti)} \\
\{\text{to say}\} & \text{glagol(ati)} \sim \text{reš(+ti)} \\
\end{array}
\]

(36) Suppletion of verbal radical megamorphs according to mood and tense:

a. French \textit{vais} /\textit{va}/ [I go] \{IND.PRES\} \sim \textit{aille} /\textit{a}/ [that I go] \{SUBJ.PRES\}

b. Lezgian

\[
\begin{array}{ll}
\text{indicative} & \text{imperative} \\
\{\text{to eat}\} & \text{lü} \sim \text{ne?} \\
\{\text{to come}\} & \text{atu} \sim \text{ša} \\
\{\text{to go}\} & \text{f} \sim \text{alad} \\
\{\text{to hold}\} & \text{qi} \sim \text{jaq} \\
\end{array}
\]

(37) Suppletion of adjectival radical megamorphs according to degree [cf. (29)]:

<table>
<thead>
<tr>
<th>Positive</th>
<th>Comparative</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{small}</td>
<td>\textit{beag} /\textit{b<code>ag}/ \sim \textit{лю} /\textit{l</code>u}/</td>
</tr>
<tr>
<td>\textit{easy}</td>
<td>\textit{fuiriste} /\textit{fur<code>ašt</code>a}/ \sim \textit{usa} /\textit{usa}/</td>
</tr>
<tr>
<td>\textit{good}</td>
<td>\textit{maith} /\textit{mah}/ \sim \textit{fearr} /\textit{f`ar}/</td>
</tr>
<tr>
<td>\textit{bad}</td>
<td>\textit{olc} /\textit{olk}/ \sim \textit{measa} /\textit{m`as}/</td>
</tr>
</tbody>
</table>

b. English

\begin{align*}
\text{bad} & \sim \text{worse} \\
\text{much} & \sim \text{more} \\
\text{few} & \sim \text{less}
\end{align*}

c. Welsh

\[
\begin{array}{llllll}
\text{positive} & \text{equative} & \text{comparative} & \text{superlative} \\
\{\text{big}\} & \textit{mawr} & \sim \textit{maint} & \sim \textit{fwy} & \sim \textit{mwy(+af)} \\
\{\text{good}\} & \textit{da} & \sim \textit{tal} & \sim \textit{well} & \sim \textit{gorau}
\end{array}
\]
3. **Idioms** (two idioms such that one is an inflectional form of the other)

(38) Suppletion of idioms:

a. According to nominal number:
   Rus. *sukin syn* ‘son of a bitch’ ~ *sukiny deti* ‘sons of bitches’,
   lit. ‘children of bitches’
   [the regular plural of *syn* ‘son’ – outside of this phraseme – is *synov’ja* ‘sons’, not *deti* ‘children’; see Mel’čuk 1983a]

b. According to verbal tense:
   Fr. *s’en aller gaiement* ‘[to] leave light-heartedly’ ~
   **Il s’en fut gaiement** ‘He left light-heartedly’
   [the regular Simple Past form of *ALLER* ‘to go’ – outside of this idiom – is *alla*, not *fut*].

II.2. **Affixal suppletion**

1. **Morphs** (affixal allomorphs of an inflectional morpheme)

The notion of suppletion appeared and has traditionally been considered as applicable to roots only. To the best of my knowledge, it was first formulated to apply to affixes as well in Mel’čuk 1972 (and then in Mel’čuk 1976b); this standpoint seems to have been accepted since, at least by some (e.g., Carstairs 1988). Yet it is worthwhile to argue again for the absolute legitimacy of affixal suppletion. In point of fact, the relation between suppletive allomorphs of an affixal morpheme is formally and substantially identical to that between suppletive allomorphs of a radical morpheme, so that a logical and general enough definition of suppletion will automatically cover both. Trying to formulate the definition of suppletion for roots alone is like trying to specify an arithmetical operation (say, addition) for odd numbers, excluding evens.

(39) Nominal declension suffixes:

a. Hungarian plural suffixes **-k** ~ **-i** [non-possessive vs. possessive forms]

b. German plural suffixes **-n** ~ **-er** ~ **-e** [in different declension types]

c. English plural suffixes **-s** ~ **-i** ~ **-a** ~ **-ta (schemata)** ~ **-en**

d. Breton plural suffixes **-ou** ~ **-ed** ~ **-ien** ~ **-i** [in different declension types]

Regular cases: *kof+ou* ‘stomachs’, *gwaz+ed* ‘men’, *peskataer+ien* ‘fishermen’, *enez ~ iniz+i* ‘islands’
Chapter 8. Suppletion

e. Russian number-case nominal suffixes [in different declension types]:

- singular nominative: -a ~ -Ø ~ -o
- singular genitive: -i ~ -a
- singular dative: -e ~ -i ~ -u
- singular instrumental: -oj ~ -om ~ -ju
- singular prepositional: -e ~ -i
- plural nominative: -i ~ -a ~ -ja

[kniğ+i ‘books’, mo/r´/+á ‘seas’, brúr´+ja ‘brothers’]

- plural genitive: -ov ~ -ej ~ -Ø

f. Kaytetye (Koch 1990) ergative suffixes:

- -qe [after stems of the shape (V)(C)CV] ~ -le [after stems of other shape]

g. Komi number-person possessive suffixes:

1sg: -öj ~ -ym [in different cases I.1b]

(40) Verbal conjugation suffixes:

a. Guugu Yimidhirr, suffixes marking different conjugation groups:

- -y ~ -dhí /dhi/ ~ -nay ~ -rrin

b. Spanish imperfect suffixes: -ba ~ -ia

[trabajá+ba ‘[I] worked’ ~ com+iá ‘[I] ate’]

c. French imperfect suffixes: -ai /e/ ~ -i /ý/

[je parl+aí/s ‘I spoke’ ~ nous par+l+i+ons ‘we spoke’]

d. Latin perfect suffixes: -u ~ -s

[orna+u+i ‘[I] have adorned’ ~ dik+s+i ‘[I] have said’]

e. Kaytetye (Koch 1990: 198) progressive suffixes:

- -rapte [with transitive stems] ~ -rane [with intransitive stems]

f. English past participle suffixes: -ed ~ -en

g. Manam (Lichtenberk 1983: 126) 3sg object suffixes: -i ~ -Ø

h. Alutor object markers:

1 sg object: the suffix -yom [with 3 du/pl subject] ~ the prefix iana- [elsewhere]

2 sg object: the suffix -tok [with 1 du/pl subject] ~ the suffix -yot [elsewhere]

i. Maasai causative markers:

the prefix ita- [1st class verbs] ~ the suffix -ie/-jie [2nd class verbs]

See also Carstairs 1988: 70ff for more examples of suppletive affixes and an interesting discussion of the phonological conditioning of the distribution of some of them.
2. **Morph ~ megamorph** (an affixal morph of an inflectional morpheme and a strong megamorph manifesting the same morpheme plus some other—possibly also inflectional—morpheme)

(41) a. In Kaytetye, the past progressive cumulative suffix -yayne is suppletive with respect to the separate suffixes -rane 'progr' and -ne 'past':

-yayne ⇔ *-rane ⊕ -ne.

Cf. relevant forms of the verb APE '[to] go':

\[
\begin{array}{ll}
\text{future} & \text{progressive} \\
\text{purposive} & \text{past} \\
\hline
\text{non-progressive} & \text{progressive} \\
\end{array}
\]

But: ape + rane + ye

b. In Dakota, the verbal subject-object cumulative prefix -čhi- ('I – youSG') = (1sg Subj – 2sg Obj) is suppletive with respect to the separate prefixes wa- ('I') and ni- (youSG):

-čhi- ⇔ *ni- ⊕ wa-

Cf. relevant forms of the verb KTE '[to] kill':

\[
\begin{array}{ll}
\text{future} & \text{progressive} \\
\text{purposive} & \text{past} \\
\hline
\text{non-progressive} & \text{progressive} \\
\end{array}
\]

But: čhi + kte

(42) In Old Georgian, the number and the case of the noun are expressed by separate morphs except in the genitive/dative/ergative plural, where a strong megamorph appears:

\[
\begin{array}{c}
\text{KAČI 'man'} \\
\text{singular} & \text{plural} \\
\hline
\text{nominative} & \text{kač + 0 + i} & \text{kač + n + i} \\
\text{genitive} & \text{kač + 0 + is} \\
\text{dative} & \text{kač + 0 + s} \\
\text{ergative} & \text{kač + 0 + man} \\
\text{vocative} & \text{kač + 0 + o} & \text{kač + n + o} \\
\end{array}
\]

We have thus:

-ta ⇔ *n ⊕ is / *n ⊕ s / *n ⊕ man

In Modern Georgian, along with the regular form of the plural genitive kač+eb+is 'men, genitive', where -eb marks the plural in all cases and -is marks the genitive in both numbers, the form kač+ta, borrowed from Old Georgian, is also used (in some specific contexts only). The suffix -ta ap-
pears as a strong megamorph syncretically manifesting both morphemes (number and case); it could be considered suppletive with respect to the two inflectional suffixes -eb and -is.

3. Idioms (an affixal morph of an inflectional morpheme and an affixal phraseme such that it manifests the sequence of the same morpheme plus some other morpheme(s))

I have to repeat what I said above about derivational affixal suppletion involving idioms: the phenomenon is too complex and too unnatural to occur often; yet it is not impossible in principle. (A hypothetical example: suppose that the plural suffix -en cooccurs with the possessive suffix -s in almost all nouns: like Eng. (childr+)en+s, but just in one noun instead of *(ox+)en+s we have *(ox+)ed+ing, while -ed alone does not express the plural, and -ing alone never expresses possession; then the combination -ed+ing is an affixal idiom suppletive with respect to -en and -s.)

After this review of the basic types of suppletion, I am ready to start the discussion of a few remaining theoretical points, beginning with the problem of the gradable nature of suppletion.

3.2. Degrees of suppletion

An important aspect of suppletion as defined in Subsection 2.2 is that it is a GRADIENT: the suppletive signs X1 and Y1 can be more/less suppletive than the suppletive signs X2 and Y2. Three types of factors are responsible for this:

– regularity of the semantic difference between X and Y;
– irregularity of the formal difference between X and Y;
– similarity of the signifiers of X and Y.

Regularity/irregularity and similarity are gradable notions; unavoidably, they make suppletion gradable. Let me consider these three factors in turn.

3.2.1. The regularity of the semantic relation between suppletive signs

First of all, let it be stressed once again that 'SEMANTICALLY regular' is understood in this chapter in a technical sense—as 'being grammatical, i.e., inflectional or derivational.' The degree of semantic regularity of the relation between two signs X and Y is thus proportional to the degree to which X and Y can be said to be inflectionally or derivationally related. That is, semantic regularity of a dif-
ference between signs is related to the way this difference is expressed in the language in question.

An inflectional difference is always absolutely regular (by definition), so that problems can arise only in connection with derivational differences. Let us consider the case of the derivateme \( \times 10 \), or the derivational meaning used to derive the names of tens, like five ~ fifty, six ~ sixty, etc. In German, all the names of tens are semantically regular (in the above sense, i.e., they are derivationally related to the names of corresponding units):

(43) zwei ~ zwanzig, drei ~ dreißig, vier ~ vierzig, etc.

Therefore, there is no question about suppletion between the names of units and the names of tens: they are less than suppletive, because they are regularly related derived lexemes.

Unlike German, in Hausa all the names of tens (borrowed from Arabic) are semantically completely irregular—i.e., they are not derivationally related to the names of units:

(44) biyú \( \times 2 \) ~ asirin \( \times 20 \), ṭuku \( \times 3 \) ~ talatin \( \times 30 \), fúdu \( \times 4 \) ~ arbaśin \( \times 40 \), etc.

Here too, there is no suppletion, but for a different reason: the names of units and the names of tens are more than suppletive, because in all possible cases they are different, derivationally unrelated lexemes.

Spanish and Russian are, in a sense, between German and Hausa. With one exception, the names of tens are more or less regular in these languages: Sp. tres \( \times 3 \) ~ treinta \( \times 30 \), cuatro \( \times 4 \) ~ cuarenta \( \times 40 \), cinco \( \times 5 \) ~ cincuenta \( \times 50 \), etc.; Rus. dva \( \times 2 \) ~ двадцать \( \times 20 \), tri \( \times 3 \) ~ тридцать \( \times 30 \), pjat \( \times 5 \) ~ пятьдесят \( \times 50 \), etc. Against this background, the pairs Spanish dos \( \times 2 \) ~ veinte \( \times 20 \) and Russian četyre \( \times 4 \) ~ sorok \( \times 40 \) are of course suppletive.

Now, what about Tatar? Here we find completely irregular formations in four cases out of eight (the first four names of tens):

(45) ike \( \times 2 \) ~ egerme \( \times 20 \), ṭūč \( \times 3 \) ~ uthy \( \times 30 \), dürt \( \times 4 \) ~ kyryk \( \times 40 \), biš \( \times 5 \) ~ ille \( \times 50 \).

The names for 60 and on are regularly derived: alty \( \times 6 \) ~ alt+yys \( \times 60 \), žide \( \times 7 \) ~ žit+mes \( \times 70 \), sigez \( \times 8 \) ~ ski+sán \( \times 80 \), and tuguz \( \times 9 \) ~ tuk+sán \( \times 90 \). Given this state of affairs, the first four pairs are supplicative—but they are less supplotive than, say, the respective pairs in Spanish or Russian: the semantic difference (derivateme) \( \times 10 \) is less regular in Tatar than in these two languages.

I propose then to distinguish two polar degrees of suppletion on the semantic side:

- semantically strong, or ‘genuine,’ suppletion (this is inflectional suppletion);

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I propose then to distinguish two polar degrees of suppletion on the semantic side:

- semantically strong, or ‘genuine,’ suppletion (this is inflectional suppletion);
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– semantically weak, or ‘quasi-,’ suppletion (several cases of derivational suppletion).

The degree of suppletion of a suppletive pair X and Y can be then characterized in terms of the degree of regularity with which the semantic (in this case, derivational) distinction between X and Y is expressed. This degree can be measured by the proportion of pairs in which this distinction (= derivateme) is morphologically expressed, with respect to all the pairs where it could be semantically plausible.

Given a suppletive pair X and Y, the less regular the semantic distinction between X and Y is, the lower the degree of their suppletion.

3.2.2. The irregularity of the formal relation between suppletive signs

Suppletion is a limiting case of alternation—that is, so to speak, an ‘absolutely irregular alternation.’ Genuine alternations are more or less regular by definition; if the substitution of the phonemic strings /X/ ~ /Y/ is quite unique in the language and is not similar to any other substitution, then it should not be called an alternation. Provided the semantic relation between X and Y is regular (i.e., in our terms, grammatical), the signs X and Y are then in a relation of suppletion.

There is an obvious difference between a substitution that occurs in dozens of pairs of signs and one occurring only in two pairs (the lower limit of regularity). Theoretically speaking, the substitution /X/ ~ /Y/ appearing in two pairs of signs should be considered (at least) slightly regular and thus an alternation. But for practical reasons (e.g., simplicity and compactness of description) the researcher might choose to disregard too low a regularity and declare /X/ ~ /Y/ to be irregular; in this case suppletion is automatically allowed. However, even if we agree to call the signs X and Y suppletive, they are ‘not quite’ suppletive, since there is a whiff of regularity in the formal relation between them.

3.2.3. The similarity of the signifiers of suppletive signs

Suppose that the formal relations /X1/ ~ /Y1/ and /X2/ ~ /Y2/ are quite unique in L, not similar to any other such relation and therefore genuinely 100% irregular. Interestingly, there still can be an important difference between the two pairs of signs X1 ~ Y1 and X2 ~ Y2 from the viewpoint of suppletion—namely, with respect to the physical (= phonological) similarity between /X1/ and /Y1/ and /X2/ and /Y2/. For instance, the Russian signs čelovek(+Ø) ‘human being’ [SG] ~ ljud(+i) [PL] and the English signs child(+Ø) ~ childr(+en) are suppletive ac-
3. The typology of suppletion

cording to our definition: the formal correlation in the Russian pair is unique in Russian, and one of the two formal correlations between the members of the English pair (the addition of -r) is unique in English. Yet человек (+Ø) and люд (+i) bear no resemblance to each other, while child (+Ø) and childr (+en) are rather similar; therefore, the latter signs are perceived as 'less suppletive.' In order to reflect this intuition, the similarity of the signifiers will be introduced as a measure of the degree of suppletion.

All this leads us to distinguishing two polar degrees of suppletion on the formal side:

- **formally strong**, or 'genuine,' suppletion;
- **formally weak**, or 'quasi-,' suppletion. 26

While formally strong suppletion is well defined (‘No formal regularity, no formal similarity’), formally weak suppletion cannot be fixed rigidly: as it gets formally weaker, suppletion gradually edges into regular alternations. There is a continuum of lessening formal suppletivity—from formally strong suppletion down to the absence of suppletion (i.e., formal regularity), with an infinity of intermediate cases.

The formal degree of suppletion of a suppletive pair X ~ Y can then be characterized in terms of the following two parameters:

1. **Degree of Irregularity** of the formal distinction between /X/ and /Y/, measured 1) by the relative quantity of pairs in which this alternation appears and 2) by the degree of similarity between this alternation and other alternations of L.

Let us consider the Spanish pair ten (+er) ‘[to] have’ ~ tuv /tub/ [idem, in the preterit of indicative, the past (imperfect and preterit) of subjunctive, etc.]. Are these radical morphs suppletive? The substitution /en/ ~ /ub/ seems to be unique in Spanish; but in point of fact this is not quite the case, since there are a few derived verbs with the same substitution: contener ‘[to] contain’ ~ contuvo, mantener ‘[to] maintain’ ~ mantuvo, sostener ‘[to] sustain’ ~ sostuvo, etc. Moreover, Spanish has verbs (very frequent ones) which feature similar substitutions: /on/ ~ /us/ (poner ‘[to] put’ ~ puso), /er/ ~ /is/ (querer ‘[to] want’ ~ quiso), /ab/ ~ /up/ (saber ‘[to] know’ ~ supo), etc. All these substitutions have the same form—exchange of the two final phonemes of the root—and the same function—they characterize the radical of the aorist indicative and past subjunctive forms. Therefore, the substitution /en/ ~ /ub/ is not isolated: it is slightly regular and can be considered an alternation of Spanish. If we accept that, the pair ten ~ tuv is not suppletive. However, if we decide to disregard the regularity of the substitution /en/ ~ /ub/ as being too low, the pair in question ends up being suppletive—yet this is
not strong suppletion. (It is further weakened by slight similarity between ten and tuv: a shared phoneme in the same position—cf. immediately below.)

Given a suppletive pair X and Y, the more regular the formal distinction between X and Y is, the lower the degree of their suppletion.

– **Degree of similarity** between /X/ and /Y/, measured, for example, by the ratio of shared-to-unshared phonemes in the same order and in the same position.27

Given a suppletive pair X and Y, the more similar the signifiers of X and Y is, the lower the degree of their suppletion.

**Examples**

1) The formal correlations between ‘name of a settlement’ ~ ‘name of an inhabitant of this settlement’ for Fr. **Arras ~ Arrage(+ois)** and **Le Puy ~ Anic(+ien)** are absolutely irregular, since both are unique in French. But the physical similarity between the signifiers of the radical morphs in the first pair — /ara/ ~ /araz/ — is considerable, while in the second pair it is null; therefore, the signs **Le Puy ~ Anic(+ien)** are strongly suppletive and **Arras ~ Arrage(+ois)** only weakly so. One can easily see the increase of the degree of suppletivity in the following series:

<table>
<thead>
<tr>
<th>(46) French city inhabitant regular derivation</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>weak</td>
<td>Paris</td>
<td>Paris</td>
<td>+ien</td>
</tr>
<tr>
<td>London</td>
<td>London</td>
<td>+ien</td>
<td></td>
</tr>
<tr>
<td>Moscou</td>
<td>Moscov</td>
<td>+ite</td>
<td></td>
</tr>
<tr>
<td>strong</td>
<td>Arras /ara/</td>
<td>Arrage</td>
<td>+ois</td>
</tr>
<tr>
<td>Blois</td>
<td>Blés</td>
<td>+ien</td>
<td></td>
</tr>
<tr>
<td>Bézançon</td>
<td>Bistoi</td>
<td>+in</td>
<td></td>
</tr>
<tr>
<td>Reims /rēs/</td>
<td>Rém</td>
<td>+ois</td>
<td></td>
</tr>
<tr>
<td>Rodez</td>
<td>Ruthén</td>
<td>+ois</td>
<td></td>
</tr>
<tr>
<td>Fontainebleau</td>
<td>Bellifont+aïn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Le Puy</td>
<td>Anic</td>
<td>+ien/Ponot</td>
<td></td>
</tr>
</tbody>
</table>

2) Rus. **devjanost⁸** ‘ninety’ is suppletive with respect to **devjat⁸** ‘nine’, as **sorok** ‘forty’ is suppletive with respect to **četyre** ‘four’—since the formal distinction between the members of both pairs is absolutely unique in Russian. However, the physical similarity between the megamorph **devjanost⁸** and the morph **devjat⁸** is considerable: they share a string of four phonemes in the initial position—/d’e’v’a/; therefore, this is a case of weak suppletion.
3) Lat. *ego* [NOM] ~ *m* [ACC] and *tu* ‘youSG’ [NOM] ~ *t* [ACC] both represent inflectional radical suppletion between a megamorph (*ego*/*tu*) and a morph (*m/*t). However, *ego* ~ *m* is strong suppletion, while *tu* ~ *t* is a case of weak suppletion, because of the resemblance between the signifiers *tu* and *te*.

4. **Suppletion: five case studies**

To make the proposed definition more familiar, I will apply it to five problematic cases.

4.1. **‘Suppletion of stems’**

In the Russian linguistic tradition (e.g., Reformatskij 1967: 313), it is (or perhaps was?) a habit to speak of ‘stem suppletion’ as applied to pairs of the following three types (47) – (49):

(47) Russian

<table>
<thead>
<tr>
<th>Stem</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘son’</td>
<td><em>syn</em></td>
<td><em>synov’j</em> (+a)</td>
</tr>
<tr>
<td>‘god-parent’</td>
<td><em>kum</em></td>
<td><em>kumov’j</em> (+a)</td>
</tr>
<tr>
<td>‘miracle’</td>
<td><em>čud</em> (+o)</td>
<td><em>čudes</em> (+a)</td>
</tr>
<tr>
<td>‘sky’</td>
<td><em>neb</em> (+o)</td>
<td><em>nebes</em> (+a)</td>
</tr>
</tbody>
</table>

[There are a couple of dozen nouns of this type in Russian.]

Stems of the singular and the plural are different – but are they suppletive? By no means. I see two possible ways of describing stems such as *synov’j*:

- We can say that *-ov’j* and *-es* are separate suffixes – that is, autonomous signs. If this description is accepted, we have yet to decide whether these suffixes are empty or mark the plural—the latter treatment is applied to the forms in question in Zaliznjak 1967: 243. In this case, the radical morph remains unchanged in the singular and the plural, and there cannot be suppletion between the stems. 28
- Otherwise, we do not accept the elements *ov’j* and *es* as autonomous signs, but consider them as part of the signifiers of the corresponding signs. In this case, the signs *syn* and *synov’j* are allomorphs of the same morpheme with a formal distinction that is not quite irregular: the substitution *A* ~ *ov’j* appears in two stems and is related to a few similar substitution in Russian (*A* ~ *es*, *A* ~ *er*, etc.), so that it can claim the status of a Russian alternation. Therefore, even under this analysis the said stems are not suppletive. To speak about suppletion with respect to pairs in (47) is to create unwarranted terminological confusion.
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(48) Russian prodav+ec ‘salesman’ ~ prodav+ščic(+a) ‘saleswoman’

[There are no forms *prodav+ie(-a) or *prodav+ščik, which would be expected as the more regular correspondences.]

The semantic difference between these two lexemes – ‘person [doing P]’ ~ ‘female person [doing P]’ – is quite regular in Russian, being, beyond any doubt, a derivateme. The formal difference between them is also regular (in the terminological sense of the word regular): it is marked with quite obvious derivational suffixes. True, it is not standard – that it, not ‘quite regular’ in the current sense of the word, because the standard female correspondence to the human suffix -ec is -k(+), as in berlin+ec ‘Berliner’ ~ berlin-k(+a) ‘female Berliner’. But then it is not standard in other similar pairs, such as plov+ec ‘swimmer’ ~ plov+čik(+a) ‘female swimmer’ (*plov+ica), star+ik ‘old man’ ~ star+ux(+a) ‘old woman’ (*star+ica), etc. Moreover, formally speaking, from the standpoint of Definition 8.3 we cannot apply the concept of suppletion to two non-minimal signs like prodav+ec and prodav+ščic(+a). I see absolutely no reason to say that any two different stems which are derivationally related in the way just shown are suppletive, if the derivatemes in question are expressed by regular morphological means. (The question can be asked, though, whether the suffixes -ec and -ščik are suppletive with respect to each other; to be suppletive, they have to belong to the same morpheme. I do not think they do, because their distribution cannot be stated in terms of simple enough rules.)

(49) Latin

1liver3 iecur [SG.NOM] ~ iecin(+is) [SG.GEN] (later iecineris) 
1road3 iter [SG.NOM] ~ itin(+is) [SG.GEN] (later itineris) 
1hip3 femur [SG.NOM] ~ femin(+is) [SG.GEN]

The substitution observed here – r ~ n – appears in three pairs of nominal wordforms and is formally parallel to such Latin alternations as s ~ r (flos ~ flor+is, etc.). Therefore, it is an alternation of Latin and there is no reason to apply the term suppletion to this phenomenon (which happens to have a well established name: heteroclisis). The stems in question are less than suppletive: they are linked by an alternation of Latin.

4.2. Suppletion of verbal roots according to the number of the Subject or Object

One of the most intriguing cases of presumed suppletion is connected with the existence, in many languages, of pairs of verbal roots such that they have the same lexical meaning (they denote the same action or event), but one requires – if the verb is intransitive – a SINGULAR (or rather, semantically speaking,
single) Subject, while the second one, a plural (or rather, multiple) Subject; for transitive verbs, one root requires a single Object and the second, a multiple Object. (The difference reminds one of what we see in the English pairs \([\text{to} \ run] \sim [\text{to} \ stampede] \text{ or } [\text{to} \ kill] \sim [\text{to} \ massacre], \text{ where stampede} \text{ and massacre} \text{ presuppose, respectively, a multiple Subject} \text{ and a multiple Object.}) Quite a typical representative of this state of affairs is found in Georgian (Klimov 1973: 131–134, 223–224):

(50) Georgian

\[
\begin{array}{ll}
\text{single Subject} & \text{multiple Subject} \\
\{[\text{to}] \text{fall}\} & \text{vard}(+na) \sim \text{cviv}(+na) \\
\{[\text{to}] \text{sit down}\} & \text{zd}(+oma) \sim \text{sxd}(+oma) \\
\end{array}
\]

\[
\begin{array}{ll}
\text{single Object} & \text{multiple Object} \\
\{[\text{to}] \text{throw}\} & \text{gd}(+eba) \sim \text{dr}(+a) \\
\{[\text{to}] \text{kill}\} & \text{moâv}(+a) \sim \text{daxoc}(+a) \\
\end{array}
\]

The expression of the grammatical number of the Subject and the Object in the verb is inflectional in Georgian; therefore, at first glance, one is inclined to think of the above pairs as typically suppletive. However, as shown in Durie 1986, this is not the case. The problem is that the choice of the ‘single’ vs. ‘multiple’ Subject/Object root for any such verb is sensitive not so much to the grammatical number of its Subject or Object, as it is to the semantic singularity/multiplicity of the entity involved. Thus, on the one hand, if we apply a verb such as \([\text{to}] \text{sit down}\) to a single person while using the plural polite pronoun \(\text{TKVEN} \) (like French \(\text{VOUS}\)), we still have to pick out the ‘single-subject’ root \(\text{zd} \) (1st/2nd person) \([3\text{rd} \text{person: } \text{zd}] \) and conjugate it in the plural (observing the obligatory syntactic agreement), which it allows without problem:

(51) a. Georgian

\[
\begin{array}{lllll}
\text{Tkven} & \text{da} & +\emptyset & +\text{zd} & +t \\
\text{you.-PL.NOM} & \text{down} & 2\text{pers} & \text{sit} & \text{AOR PL} \\
\end{array}
\]

\(\text{‘You}_{\text{SG}} [\text{one person; plural of politeness}] \text{sat down}.\)

On the other hand, if the Subject is a noun with a numeral, this noun has to be in the singular in Georgian; the ‘multiple-subject’ root \(\text{sxd} \) still has to be used (since the Subject is semantically multiple), but it must be conjugated in the singular (since the Subject is grammatically singular):

b. Sami \(\text{megobar}+\emptyset+i \quad \text{da} \quad +\text{sxd} \quad +a \)

\(\text{‘Three friends sat down}.\)

Thus each of these roots has its own singular and plural forms—and therefore they do not belong to the same lexeme! They are roots of two different, semantically quite close (but by no means synonymous) lexemes. (In Georgian diction-
aries, the verbs ŽD(+oma) and SXD(+oma) are entered separately, as two different lexical entries. Moreover, these lexemes are not in a derivational relation, either, since the difference ‘single subject/object’ ~ ‘multiple subject/object’ is never regularly expressed in Georgian: there is no affix or alternation to signal it. Of course the semantic difference between ‘žek/žd’ and ‘sx’ is not inflectional, either. As a result, the semantic difference between these lexemes is not regular; Subcondition 2b of Definition 8.3 is violated, so that this pair of roots, the pairs of roots quoted in (50) and all similar pairs of roots cannot be said to be suppletive.

Durie 1986 is based on an interesting idea advanced in Jeanne et al. 1984 (a paper delivered at a “Generative Linguistics in the Old World” conference; later it appeared – in an abridged version – as Hale et al. 1991). Working with Hopi and Papago (Uto-Aztecan) and Navajo (Athapascan), Jeanne et al. 1984 cite series of verbal roots which semantically differ only by singularity ~ duality ~ multiplicity of their Subject (in the intransitives) or their Object (in the transitives):

<table>
<thead>
<tr>
<th>(52)</th>
<th>intransitives</th>
<th>transitives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Subject</td>
<td>Subject</td>
</tr>
<tr>
<td>a. Hopi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘[to] run’</td>
<td>wari  yi?ti</td>
<td>‘[to] put’</td>
</tr>
<tr>
<td>‘[to] sleep’</td>
<td>piwi  took?a</td>
<td>‘[to] throw’</td>
</tr>
<tr>
<td>‘[to] enter’</td>
<td>paki  yi?ya</td>
<td>‘[to] take along’</td>
</tr>
<tr>
<td>‘[to] exit’</td>
<td>yama  nö?ga</td>
<td></td>
</tr>
<tr>
<td>b. Papago</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘[to] run’</td>
<td>med  woopo?ö</td>
<td>‘[to] get’</td>
</tr>
<tr>
<td>‘[to] die’</td>
<td>muuk  ko?ö</td>
<td>‘[to] kill’</td>
</tr>
<tr>
<td>c. Navajo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘[to] walk’</td>
<td>ál  ?aš  kah</td>
<td>‘[to] kill’</td>
</tr>
</tbody>
</table>

Jeanne et al. 1984 convincingly demonstrate that in the languages in question this phenomenon is essentially different from number inflection – that is, from marking (with an affix on the verb) of syntactically induced agreement with the Subject/the Object in grammatical number. Their arguments can be summed up as follows:

1. Single vs. multiple Subject/Object roots can serve as the bases for derivation. Thus, the causative may be built upon either root:
4. Suppletion: five case studies

(53) [= (8) in Jeanne et al. 1984]

Hopi

<table>
<thead>
<tr>
<th>basic verb</th>
<th>causative verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>single Subject ‘[to] sleep – one person’ piwí</td>
<td>piw + na ‘[to] put to sleep one person’</td>
</tr>
<tr>
<td>multiple Subject ‘[to] sleep – several people’ tooka</td>
<td>tok + na ‘[to] put to sleep several people’</td>
</tr>
</tbody>
</table>

However, the suffix -ya, a genuine marker of the grammatical plural of the Subject, can never appear ‘inside’ the causative morphology: for hohonaq ‘[to] play’ one gets hohonaq + na ‘[to] cause someone to play’, but not *hohonaq + ya + na. Thus, for an intransitive verb with one root it is impossible to build a causative specifying singularity ~ multiplicity of the Causee. The meaning ‘[to] cause several people to play’ cannot be expressed morphologically; the form hohonaq + na + ya means ‘several people cause someone(s) to play’.

2. Single vs. multiple Subject/Object roots pattern, so to speak, ‘ergatively’: they are sensitive to singularity ~ multiplicity either of their Subject (intransitives) or their Object (transitives), while the inflectional means available (-ya in Hopi, prefixes of person and number in Navajo, forms of the auxiliary verb in Papago) express the grammatical number of their Subject only.

3. There can be conflicts between the semantic singularity ~ multiplicity of the Subject and its grammatical number (of the kind illustrated by the Georgian example in (51)):

(54) [= (20) in Jeanne et al. 1984]

Navajo

a. Ší aškii bi+i dí +š +ʔaš
   I boy he with FUT 1SG go.”dual”
   ‘I will go with the boy’,

where the verb form expresses the grammatical singular—because of the Subject ‘I’ (via the suffix -š) but is semantically dual (due to the ‘dual’ root ʔaš), because of the actual number of people going.

b. Nihí taʔ dí +iid + đí
   we subset FUT 1PL go.”single”
   ‘One of us will go’, lit. ‘We one will go’,

where the verb expresses the grammatical plural—because of the Subject ‘we’, but is semantically single (the ‘single’ root đí), because of the actual number of people going.
These facts show that a pair of related verbal roots in (52) does not represent two inflectional forms of one and the same lexeme; nor are the members of such a pair different lexemes regularly linked by a derivational process. They are different lexical units with a very specific semantic (but not grammatical!) relation between them. Their distribution is governed by semantic congruity rather than by syntactically induced agreement. Thus, although the authors call these pairs suppletive, according to Definition 8.3 they are by no means suppletive (more precisely, they are more than suppletive: they are grammatically unrelated lexemes).

The lesson of Jeanne et al. 1984 and Durie 1986 is double-pronged:

– First, the Georgian examples like these in (50) and the Uto-Aztecan and Athapaskan examples in (52) must be removed from the list of stock examples of verbal root suppletion according to the grammatical number of the Subject/the Object. The same fate is to be reserved for most of the similar cases found by Durie in about 50 languages. Almost all of them seem to represent grammatically unrelated lexemes rather than (suppletive) forms of the same lexeme or lexemes linked by a derivational process. (See the discussion of such cases in Section 7, p. 458ff.)

– Second, analyzing a pair of signs suspected of suppletion, the researcher has to make sure that the semantic difference on which the relation of suppletion is to be based is really a grammatical one, and not lexical, as in (50) or (52). For this, the difference in question must be marked regularly by morphological means—affixes, reduplications, apophonies, as with the multiplicity of the Subject/the Object in Karok and Ainu, cf. example (34), p. 433.30

4.3. Number suppletion in personal pronouns?

Singular and plural pairs of personal pronouns (the 1st and 2nd person) are one of the classic examples of suppletion. Yet from the viewpoint of the proposed definition, Russian pairs JA ‘I’ ~ MY ‘we’ and TY ‘youSG’ ~ VY ‘youPL’ are not suppletive: the semantic difference observed is by no means a simple singular vs. plural—in any event, not in the same sense as in dog ~ dogs. MY ‘we’ does not mean ‘several I’, as VY ≠ ‘youSG’ + youSG’ + youSG’’ + …; MY means ‘I + youSG, or I + youSG + s/he, or I + youPL, …’. In other words, JA and MY are not forms of the same lexeme: they are different and derivationally unrelated lexemes (a fact established already by Apollonius Dyscolus). The same is, of course, true about similar pronominal pairs of other languages.

Things look different in the 3rd person. In Russian, on ‘he’, ona ‘she’, ono ‘it’ and oni ‘they’ are forms of the same lexeme—ON, opposed to each other according to the inflectional categories of gender and number. They are obviously not suppletive, since the formal relation between them is completely regular; they
are less than suppletive. In German, er ‘he’, sie ‘she’, es ‘it’ and sie ‘they’ are also forms of the same lexeme – ER, since they are opposed to each other according to the same inflectional categories of gender and number; but, unlike Russian, these signs are suppletive, since the formal relations between them are quite irregular. In English, however, he, she and it cannot be relegated to the same lexeme, because English does not have the inflectional category of gender: these signs constitute separate lexemes. (Their distribution is determined semantically/lexically, and not grammatically, as it is in Russian and German.) As a result, we cannot unite any one of them with they, which then also has the status of a separate lexeme. Thus, these English pronouns are more than suppletive.

4.4. Suppletion of Russian verbal aspectual stems

One of the most notorious difficulties of Russian is its high number of irregular verbal aspectual pairs, which a learner has to memorize. What about their suppletivity? The aspectual pairs of the megamorphs se(s)/sjad [PERF] ~ sad(+-it’/sja) [IMPF] [to sit down’ and leč/leg/leg’/jag/jjaž [PERF] ~ lož(+-it’/sja) [IMPF] [to lie down’ are suppletive, according to our definition: the formal relations between the members of these pairs are irregular, while in the majority of Russian verbs the aspect is marked by a prefix (most of the perfectives) or a suffix (some perfectives and most of the imperfectives). However, there is certain resemblance in their signifiers, so that these two aspectual pairs represent a case of weak suppletion.

Another problem is created by mood/tense irregular pairs. The radical morph by ‘[to] be’ [PAST] and the megamorph bud ‘[to] be, future’ of the verb BYT ‘[to] be’ are suppletive, but perhaps slightly less suppletive than the aspectual stems above, since this pair appears also in a few synchronically unrelated (but etymologically connected) verbs: ZABYT’ ‘[to] forget’ (zaby(+-l) [PAST] ~ zabud(+-et) [FUT]), PRIBYT’ ‘[to] arrive’ (priby(+-l) [PAST] ~ pribud(+-et) [FUT]), and several derivatives of these verbs and of BYT’. Finally, the three radical morphs of the verb EXAT ≈ ‘[to] go in a vehicle’ ex(+-al) [PAST] ~ ed(+-u) [PRES] ~ ezž(+-aj) [IMPER]–are also weakly suppletive.

There is no need to collect here all such Russian verbs: they are examined in detail in Johnson 1972, who called them semi-suppletive.

4.5. Are Russian suffixes of inhabitant suppletive (with respect to each other)?

To derive the name of an inhabitant from the name of a place (country, city, or town), Russian has a series of suffixes:
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(55) place inhabitant place inhabitant
Moskv (+a) moskv+ič Kiev kiev+l'/ +an +in
Čit (+a) čit +in+ec Pariž pariž +an +in
Odess(+a) odess +it Xar’kov xar’kov+čan+in
Tul(+a) tu’l’/ +ak Minsk min +čan+in
Berlin berlin+ec Omsk om +ič
Troj (+a) troj +an+ec Kipr kipr +iot

Are these suffixes suppletive with respect to each other? According to Definition 8.3, no. Although their signifieds are identical, they are not allomorphs of the same morpheme: Russian has no rules describing their distribution in purely phonological or morphological terms; one has to have recourse to lexical entries (cf. Arapov 1972). Subcondition 2a of Definition 8.3 is thus violated. The suffixes -ič, -(in)ec, -it, -ak, -anin/-čanin, etc., are allomorphs of different, although synonymous, morphemes. (The same holds of French and Spanish inhabitant suffixes.) But the stems of such names of inhabitants, as arxangelogorod(+ec) with respect to Arxangel’sk or amč(+an+in) with respect to Mcensk do stand in a relation of suppletion: they are suppletive allomorphs of the same morpheme (the distribution can be stated in terms of their morphological environment: with or without the suffix of inhabitant).

5. The theoretical importance of suppletion

Under this heading, I will briefly examine two topics:

– Typical domains of suppletion
– Suppletion and phraseologization


5.1. Typical domains of suppletion

I will briefly characterize, first, grammatical (= derivational and inflectional) meanings in connection with which suppletion occurs more frequently, and then the lexemic groups which tend to manifest suppletion.
5. The theoretical importance of suppletion

Grammatical meanings prone to underlie suppletion

**Derivational Suppletion**

<table>
<thead>
<tr>
<th>Syntactic</th>
<th>Semantic</th>
<th>Inflectional Suppletion</th>
</tr>
</thead>
<tbody>
<tr>
<td>deverbal noun</td>
<td>‘female of...’</td>
<td>‘ordinal of...’</td>
</tr>
<tr>
<td>denominal adjective</td>
<td>‘inhabitant of...’</td>
<td>‘hypocoristic of...’</td>
</tr>
<tr>
<td>deadjectival adjective</td>
<td>‘young of...’</td>
<td>‘causative’</td>
</tr>
</tbody>
</table>

(Eng. *good* ~ *well*)

Virtually all inflectional categories present cases of suppletion (in one language or another). I know only of two exceptions. The first one is **voice**: I found no examples of suppletive radical morphs or megamorphs distributed according to a voice distinction. The second exception is **adjectival gender**: the only example of strong suppletion I have for this category is not quite correct since it involves a numeral (or a pronoun?) rather than a genuine adjective:

(a) Anc. Greek

<table>
<thead>
<tr>
<th>masculine</th>
<th>feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>heĩ(+s)</td>
<td>mĩ(+a)</td>
</tr>
</tbody>
</table>

There is also a case of weak suppletion of gender adjectival forms:

(b) French

<table>
<thead>
<tr>
<th>masculine</th>
<th>feminine</th>
</tr>
</thead>
<tbody>
<tr>
<td>vieux /vje/</td>
<td>vielle /vjej/</td>
</tr>
</tbody>
</table>

Lexemic groups prone to manifest suppletion

The semantic domains in which lexemes manifesting suppletion can be expected were successfully staked out more than a century ago in Osthoff 1899. Suppletion is typical of the most frequent and, so to speak, basic words (Markey 1985, Wurzel 1985: 119, 1990). In nouns, these include lexemes with the following meanings:

As for adjectives and adverbs, those which show the most suppletion are such pairs as ‘good’/‘bad’, ‘big’/‘small’, ‘young’/‘old’, ‘much/many’/‘a little/few’. The first two ordinal numerals (‘first’ and ‘second’) and the first two or three names of tens are also very often suppletive. And last, but not least, pronouns show a very high degree of suppletion in their declension.

Suppletion strikes one as affecting, in many diverse languages, a very narrow group of very similar lexemes: a score of nouns, no more than three dozen verbs, and a few adjectives, all of them belonging to the basic lexicon.

The question as to which languages favor suppletion remains open. It seems, however, that agglutinating languages, with their predominant tendency towards formal regularity, admit suppletion much less often and in a more restricted way than inflectional languages. On the other hand, I know of one linguistic family where suppletion abounds—the Oto-Manguean family (Mexico; cordial thanks to P. Levy for the information.) Here are two striking examples. [The numerical superscripts indicate the tone— from highest 1 to lowest 3.]

(57) a. Palantla Chinantec (Merrifield 1968) shows suppletion in many verbs with respect to tense and/or person/number. Thus, all personal forms of the verb ‘[to] sit down’ in the progressive are suppletive:

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>gwïl2</td>
<td>tyaïl13</td>
</tr>
<tr>
<td>2</td>
<td>niïl2</td>
<td>tyeïl2</td>
</tr>
<tr>
<td>3</td>
<td>gwu2</td>
<td>towïl12</td>
</tr>
</tbody>
</table>

Palantla Chinantec is quite prone to morphological irregularity: what are called its ‘regular’ verbs feature 46 different tonal-accentual paradigms, 16 classes of vocalic alternations in the radical, and 7 classes with respect to distribution of segmental radical allomorphs. Small wonder, then, that in addition to such irregularity one finds here a vast stock of outright suppletive signs.
b. A very similar picture is observed in Tlapanec: Suárez 1983 contains several pages listing verbal suppletive radicals. Tlapanec verbs supplet:

for tense:

'\{to be possible\}' pres, fut, past -go\(^2\) ~ negative pres -yo\(^2\) ~ neg. fut -\(\text{ño}\) ~ neg. past -\(\text{kho}\);  

'\{to want\}' pres -\(\text{ndo}\) ~ neg. pres -yo\(^2\) ~ fut -go\(^2\); etc.

for the number of the subject:

'\{to be seated\}' sg -\(\text{gun}\) ~ pl -\(\text{kwiyán}\);  

'\{to fall\}' sg -\(\text{raka}\) ~ pl -\(\text{gri\text{-}gú}\);  

for the person and number of the subject:

'\{to eat\}' sg 1, 3 -kho\(^2\) ~ sg 2 -\(\text{co}\) ~ pl -\(\text{phco}\);  

'\{to sleep\}' sg 1, 3 -\(\text{gu}\) ~ sg 2/pl -\(\text{no}\);  

for the number of the object:

'\{to put\}' sg -\(\text{cihi}\) ~ pl -\(\text{cwahon}\);  

'\{to throw\}' sg -\(\text{rakwa}\) ~ pl -\(\text{grwi\text{-}ya}\);  

'\{to kill\}' sg -\(\text{ši\text{-}yán}\) ~ pl -\(\text{gudim}\); (all in all, 15 verbs).

5.2. Suppletion and phraseologization

Suppletion is a manifestation of an extremely typical feature of human languages: NON-COMPOSITIONALITY OF COMPLEX SIGNS. Actually, two opposite tendencies are constantly at work in natural language. On the one hand, any language \(\mathcal{L}\) aims at maximum COMPACTNESS and maximum EXPRESSIVITY of speech: this is a SPEAKER-DETERMINED tendency. On the other hand, \(\mathcal{L}\) strives for maximum SEMANTIC TRANSPARENCY of its complex signs: this is an ADDRESSEE-DETERMINED tendency. But the interests of the speaker and the addressee are not antagonistic: the speaker also needs semantic transparency, which is an automatic consequence of compositionality, because only in this way can the unlimited creativity of language be ensured. And the addressee also appreciates expressiveness and compactness of speech as well as maximum distinguishability of signs. I am not in a position to develop this point any further, and I will limit myself to emphasizing once more that both these opposed tendencies are quite natural in a natural language, so that any \(\mathcal{L}\) would violate the compositionality of its signs on innumerable occasions.

Now, the compositionality of a complex sign can be violated either in its signified or in its signifier (for simplicity’s sake, I allow myself to disregard syntax). Or, to put it differently, either the meaning of a complex sign is not a regular composition of the meanings of its constituent signs, or its form is not a regular composition of the forms of the constituent signs. The first case gives us
PHRASEMES (of all types, including idioms), the second, pairs of SUPPLETIVE UNITS. In one of his last papers, U. Weinreich (1969: 43) defines an idiom as a phraseologism whose meaning is suppletive [sic!] with respect to the sum of the meanings of its components—i.e., as suppletion in the domain of meaning. Inversely, we can say that suppletion is phraseologization in the domain of form. These close ties between suppletion and phraseologization are theoretically very important: they demonstrate that suppletion is not a malignant growth but rather a normal development.

6. Suppletion viewed diachronically

6.1. The rise of suppletion in languages

In natural languages suppletion comes about in the following two ways (Bally 1950: 185 and Ronneberger-Sibold 1988): through phonological change or through lexical change.34

Suppletion through phonological change

The process of phonological development produces suppletive pairs out of the same etymological source. Two subcases should be distinguished here.

1) Suppletion can come about through REGULAR PHONOLOGICAL CHANGE, which ceases to be valid at some point in time and leads, ultimately, to quite an irregular formal relation between two forms that at the beginning were regularly related. For instance:

(58) Proto-Germanic\(^{35}\) Modern German
\[
\begin{align*}
ma + iz + a & \quad \text{‘more’} \quad \Rightarrow \quad mehr \\
ma + is + t + a & \quad \text{‘most’} \quad \Rightarrow \quad meist
\end{align*}
\]

Both of the phonological developments above are perfectly regular. But while the starting Proto-Germanic forms maiza and maista are in a regular formal relation, the resulting German forms mehr /mēr/ and meist /maist/ are suppletive. See other examples of this phenomenon in (7), p. 417; let me add here Fr. œil ~ yeux ‘eye(s)’ or [je] haïs /e/ ‘[I] hate’ ~ haï/i+ss+ons) /ai+s+5/ ‘[we] hate’, as well as Mod. Irish bean ‘woman’ ~ SG. GEN mná [⇐ */bnās/] and even /mrā˜/ in some dialects (through nasalization of the vowel and dissimilation of nasality).

2) Suppletion can also rise through IRREGULAR PHONOLOGICAL CHANGE, triggered by high-frequency usage:
Suppletion viewed diachronically

Ger. hab(+en) [to] have vs. 2sg ha(+st) and 3sg ha(+t) (*hab(+st), *hab(+t))

Suppletion through lexical change

Suppletion appears through interaction of two different lexemes in order to create a full paradigm. Here, invariably different etymological sources are involved.

6.2. The diachronic evolution of suppletive forms

In complete accordance with both of the above-mentioned countervailing tendencies—the tendency to enhance compactness and expressivity of speech and the tendency to enhance semantic transparency—suppletion can have either effect (see Gorbačevskij 1967: 17ff).
Chapter 8. Suppletion

On the one hand, suppletion is very often preserved through centuries, manifesting extremely old phenomena. Typically, suppletive semantic patterns can be retained, although the specific phonological forms get replaced. Let me give four examples.

1) In some Indo-European languages, a verb keeps the same radical morph in the present (in all languages involved), but introduces different suppletive morphs for the aorist:

(61) The verb ['to eat', 1 sg indicative] present morphs aorist morphs

<table>
<thead>
<tr>
<th>Language</th>
<th>Present</th>
<th>Aorist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancient Greek</td>
<td>ed(+$\partial$)</td>
<td>(+$\partial$)phag(+on)</td>
</tr>
<tr>
<td>Old Armenian</td>
<td>ut(+em)</td>
<td>ker(+i)</td>
</tr>
<tr>
<td>Sanskrit</td>
<td>ad(+mi)</td>
<td>(+$\partial$)ghas(+am)</td>
</tr>
</tbody>
</table>

2) In most Slavic languages the adjective pairs 'good' ~ 'better' and 'bad' ~ 'worse' retain their suppletivity, although in different languages the respective morphs have all materially changed:

(62) a. 'good' 'better' 'bad' 'worse'

<table>
<thead>
<tr>
<th>Language</th>
<th>Good</th>
<th>Better</th>
<th>Bad</th>
<th>Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Church Slavonic</td>
<td>blag</td>
<td>loup(+$ii$)</td>
<td>zl</td>
<td>poušt(+ii)</td>
</tr>
<tr>
<td>Polish</td>
<td>dobr</td>
<td>leap(+sze)</td>
<td>zl</td>
<td>gor(+sze)</td>
</tr>
<tr>
<td>Ukrainian</td>
<td>dobī</td>
<td>krašč(+ij)</td>
<td>pohan</td>
<td>hir(+šě)</td>
</tr>
<tr>
<td>Serbo-Croatian</td>
<td>dobr</td>
<td>bol(+ij)</td>
<td>loš</td>
<td>gor(+ji)</td>
</tr>
<tr>
<td>Russian</td>
<td>xoroš</td>
<td>luč(+šę)</td>
<td>ploļ</td>
<td>xuž(+e)</td>
</tr>
</tbody>
</table>

The same phenomenon is observed in English:

b. Old English   yfel /üfel/ ~ wiersa    micel ~ māra
     Modern English  bad ~ worse    big ~ more

3) In Old English, as in Modern English, the radical morph of the past tense form of the verb ['to go'] is suppletive with respect to the radical morph of other tenses; yet the form of the past radical morph has changed:

(63) present morphs past morphs

<table>
<thead>
<tr>
<th>Language</th>
<th>Present</th>
<th>Past</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old English</td>
<td>gān</td>
<td>eo(+de)</td>
</tr>
<tr>
<td>Modern English</td>
<td>go</td>
<td>wen(+t)</td>
</tr>
</tbody>
</table>

4) In Semitic languages, the morph meaning 'one' has been retained, while for 'first', different languages introduced new different suppletive morphs (Osthoff 1899: 77, note 116):

(64) 'one' 'first'

<table>
<thead>
<tr>
<th>Language</th>
<th>One</th>
<th>First</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syriac</td>
<td>had</td>
<td>qaḏmāja</td>
</tr>
<tr>
<td>Hebrew</td>
<td>aḥāḏ</td>
<td>rīšōn</td>
</tr>
</tbody>
</table>
Moreover, new cases of suppletion are developing even in modern times. Here are three examples:

(65) a. Common Slavic *овьнъ ~ *овьца
    Serbo-Croatian ovan ~ ovca
    Polish baran ~ owca
    Russian baran ~ ovca
    Slovenian kostrum ~ ovca

b. Rus. мо́зно ‘one is allowed’ ~ nel’́зя ‘one is not allowed’ (*нemóзно, *l’́зя).37

c. Latin had regular case forms of the 1pl personal pronoun, while Italian developed megamorph suppletion in this lexeme:

<table>
<thead>
<tr>
<th>Latin</th>
<th>Italian</th>
</tr>
</thead>
<tbody>
<tr>
<td>nominative</td>
<td>nō(+s) ~ nō(+bis)</td>
</tr>
<tr>
<td>oblique</td>
<td>ci</td>
</tr>
</tbody>
</table>

On the other hand, suppletion no less often undergoes analogical leveling. Let me cite three cases:

(66) a. Bulgarian ‘good’ ~ ‘better’ xubav ~ po+xubav
    ‘bad’ ~ ‘worse’ loš ~ po+loš

    Compare the starting–Church Slavonic–forms in (62a).

b. Tadjik ‘one’ jak ~ jak+um

    Compare the starting Old Persian forms: aivās ‘one’ ~ fratarā ‘first’.

c. Swedish positive comparative superlative
   ‘good’ god ~ bāt(+tre) ~ bā(+st)
   ‘tasty’ god ~ god(+are) ~ god(+ast)
   ‘bad’ ond ~ vār(+re) ~ vār(+st)
   ‘mean’ ond ~ ond(+are) ~ ond(+ast)

As one sees, suppletion is lost in the secondary senses of suppleting adjectives (Wurzel 1985: 124).
Chapter 8. Suppletion

Following Dressler 1985b: 333, one might indicate three types of factors that make suppletive pairs more resistant to analogical leveling:

– The high token-frequency of the respective signs. Thus, in It. *uom(*+o) ‘man’ ~ *uomin(+i) ‘men’ [weak suppletion, instead of *uomi, the form uomini “probably was the most frequent of all Latin plurals in -ines (to sg. -o)”].

– The pragmatically basic character of the forms in question. “Pragmatically basic forms are more resistant... since pragmatically basic concepts have a chance of exerting more analogical influence on less basic forms than vice versa.”

– Membership in smaller (= closed) word classes, since “analogical influence is easier within large classes... [with] many regular forms...”

As for the factors contributing to leveling of suppletion, one of them seems to be language contact. Thus, in Balkanic languages (Bulgarian, Romanian) many old Slavic and Romance suppletive pairs have been replaced with new regular formations.

7. Pseudo-suppletion: a related concept

Genuine suppletive pairs should be carefully distinguished from the pairs of lexemes which, due to the ‘defective’ character of their paradigms, have to borrow forms from other lexemes. Two cases are to be distinguished:

Semantic deficiency of a lexeme

The Georgian verb ʒd(+oma) means ‘[to] sit down – one person’, while the verb sxd(+omu) means ‘[to] sit down– several people’. In actual speech, both verbs supplement each other, since only the first one can be used for a single person and only the second one for several people. (Georgian has a few other pairs of lexemes of the same type: cf. examples (50)–(51) and the analysis thereof, p. 445.) However, as shown above, the signs ʒd and sxd are not suppletive since they are not grammatically corepresentable: their actual semantic difference—real (rather than grammatical) singularity/plurality—is not a grammatical meaning in Georgian. These two verbs are different, but semantically closely related, lexemes; their relatedness should be marked in the lexicon.

The Russian verb rassazivatsjaja ‘[to] sit down – more than two people’ cannot be used with a non-multiple subject, even if it is a plural polite pronoun or if it denotes two people: *Rassazivajtes’! is incorrect when addressed to one or two persons. Therefore, it is not suppletively related to the verb sadit’sja ‘[to] sit down’. Again, we have to reflect in the lexicon the semantic relatedness of these two verbs.
Of course ‘semantic deficiency of lexemes’ is only a way of speaking – no more than a convenient metaphor. The lexemes like 3D(+oma) and SXD(+oma) or RASSAŽIVAT´SJA are perceived as semantically ‘incomplete’ only against the background of the absolute majority of the lexemes (of the corresponding language), which do not have the offending restriction and seem therefore semantically more flexible.

**Formal deficiency of a lexeme**

A number of cases can be cited – for example, from Russian – where missing forms of a lexeme are supplemented by forms of a different (near-synonymous) lexeme.

(67) a. The verb VERN(+u+i) ’[to] give back/[to] return’ has no past passive participle: *vërnut+yj; the past passive participle of the quasi-synonymous VOZVRAT(+i+i) is used instead:

* Pora vërnut´ knigu v biblioteku ‘It is time to return the book to the library’. ~
* Knïga byla vozvrashčena v biblioteku ‘The book was returned to the library’.

The signs vern and vozvrat are not suppletive since, even if they are considered fully synonymous, they do not belong to the same morpheme: their distribution cannot be stated in purely morphological terms, and Subcondition 2a of the definition of suppletion (Def. 8.3, p. 409) is thus violated.

b. The verb XOT(+e+i) ’[to] want’ has no present active participle and no verbal adverb (= Rus. deepričastie): *xot+jašč(+ij), *xot+ja. The corresponding forms of the quasi-synonymous ŽELA(+i) are used instead:

* vse kto xočet ‘everyone who wants’ – vse želaj+ušč+ie ‘all those wishing’, želaj+a ‘[while] wanting’. The signs xot and žela are not suppletive since they are not fully synonymous and not grammatically corepresentable: Subcondition 2b of Def. 8.3 is violated.

(I owe examples (67a-b) to C. Chvany.)

c. The noun MEČTA ‘dream’ has no genitive plural – *mečt. Therefore, in a context which requires it, the genitive plural of the quasi-synonymous MEČTANIE is used instead: Mečty – èto xorošo; no dlja takix mečtanj, kak tvoi, nužen osobyj xarakter ‘To have dreams is good; but for dreams like yours a special character is needed’.

Another example can be drawn from English:

(68) The modal verbs CAN and MUST have no infinitive and no future tense: *to can/*to must, *will can/*will must; therefore, in contexts which require
these forms, the infinitive and the future tense of the quasi-synonymous [to] BE ABLE and [to] HAVE [to] are used instead: *I seem not to can / to must find it ~ I seem not to be able / to have to find it; *I hope I will can / must do it tomorrow ~ I hope I will be able / have to do it tomorrow.


All such correlations between different lexemes must be explicitly indicated in a full-fledged description of the language, namely in its lexicon.

I propose to use for the phenomenon in question (= deficiency of a lexeme, be it semantic or formal) the term pseudo-suppletion and say that such forms as vozvrășcăên, etc., are pseudo-suppletive with respect to the forms of the lexemes they are supplementing. It is interesting that although pseudo-suppletion holds between QUASI-synonymous lexemes, in the contexts where pseudo-suppletive forms have to be used, the semantic differences are all but ignored, so that the lexemes in question behave as if they were fully synonymous. In other words, for pseudo-suppletives the language is much more tolerant to semantic ‘blurs’ than ordinarily; the semantic distinctions are neutralized (or almost) when a pseudo-suppletive form appears.

Notes

1 (1, p. 405) The standard works on suppletion can be found in the references to Mel’čuk 1994b, which provide fairly complete coverage of the relevant publications. See also Mel’čuk 1976b as well as Wurzel 1987 and Beard and Szymanek 1988.

2 (2.2, before Definition 8.3, p. 409) This definition is based on the concept as introduced and commented upon first in Mel’čuk 1972, and then in Mel’čuk 1976b; it also uses the formal definition presented in Mel’čuk 1982: 110 – 118 and 1983a. A modification of these earlier attempts is outlined and discussed below, Subsection 2.4.1, p. 413.

3 (2.3, (4b), p. 412) The following two remarks seem in order here. First, the pair bru ~ fille is suppletive only if we agree to treat the sign beau-/belle- as a prefix; if we view it as a composite element, there is no derivational relation and consequently no suppletion here. Second, French has the sign belle-fille, synonymous with bru (and more current); this, however, does not interfere with suppletion of fille and bru.

4 (2.4.1, p. 414) Note that such pairs as Rus. malo ‘little’ ~ men’šč ‘less’ or Ukr. bahato ‘much’ ~ bil’šč ‘more’ cannot be used as examples of non-necessity of the said condition: their first phonemes are different, to wit, /m/ vs. /m´/ and /b/ vs. /b´/, respectively.

5 (2.4.1, p. 415) The superficially similar Ojibwa pair anw- ‘[to] eat [something animate]’ ~ miiži- ‘[to] eat [something inanimate]’ is different: in Ojibwa, the opposition between animate and inanimate DirOs is inflectional ~ it is marked in the verb by special suffixes. For instance:
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\[ ni^+wābam^+θ^+a \]  ‘I see [something animate]’
\[ ni^+wābam^+d^+a^+n \]  ‘I see [something inanimate]’;
\[ ni^+bīmω^+θ^+a \]  ‘I shoot an arrow [through something animate]’
\[ ni^+bīmo^+d^+a^+n \]  ‘I shoot an arrow [through something inanimate]’;
\[ ni^+bīn^+a \]  ‘I bring [something animate]’
\[ ni^+bīd^+ō^+n \]  ‘I bring [something inanimate]’; etc.

Therefore, radicals \textit{amw}-- \textit{miği}-- are suppletive (Rhodes 1992: 420 – 421). More precisely, they are suppletive megamorphs, lexes of the same lexeme meaning \{[to] eat\}.

6 (2.4.2, p. 416) Note that E. Sapir (1921: Ch. IV) did not include suppletion among grammatical processes.

7 (2.4.2, p. 418) There are of course defective paradigms. But paradigmatic defectivity is clearly exceptional—that is, it is restricted to special isolated cases or groups of cases.

8 (2.4.3, p. 419) Formal similarity of two linguistic units is measured, in its turn, in terms of the number and proportion of shared phonemes in their signifiers, correspondence of their linear positions (two related alternations occur in the same position: word-initially or word-finally, etc.), and similarity of their grammatical role.

9 (2.4.3, p. 419) The decision by the researcher to consider or not to consider a given formal difference as a legitimate alternation of \mathcal{L} crucially affects his description of some pairs of signs as suppletive or not. For instance, T. Lightner (1979) proposed that the grammar of Modern English includes alternations relating \textit{star} to \textit{stellar} and \textit{astral}. If we accept this viewpoint, \textit{stell}(+ar) and \textit{astr}(+al) are not suppletive with respect to \textit{star}: they are regular derivatives of the latter. (Thanks to C. Chvany, who drew my attention to this reference.) Therefore, the notion of suppletion is relativized by Definition 8.3 with respect to the notion ‘alternation of \mathcal{L}’—via Condition 1 (the requirement that the signifiers of \(X\) and \(Y\) be not corepresentable).

10 (3.1, p. 420) The non-existence of these cases can be explained by the fact that affixed idioms, especially in the domain of inflection, are very infrequent: the phraseologization of affixal strings contradicts the very nature of affixes, for which semiotic transparency is a crucial property. And it is even more improbable for a rare phenomenon to be found participating in another rare phenomenon, such as suppletion. (For an example of affixed idioms, see Note 20, p. 464.)

11 (3.1, (8), p. 424) This derivation is by no means exceptional in Russian:

\[ \text{trep}(+at\text{-}sja) \sim \text{trep}+\text{ač}(+a) ‘female chitchatter’, \]
\[ \text{lov}(+ij) \sim \text{lov}+\text{ač}(+a) ‘smart woman’, \]
\[ \text{sil}(+a) \sim \text{sil}+\text{ač}(+a) ‘strong woman’, etc. \]

Note that while for all the other cases the masculine form exists (\textit{skrip}+\text{ač} ‘male violinist’, \textit{trep}+\text{ač} ‘male chitchatter’, etc.), there is no \textit{pr}+\text{ač} ‘male launderer’.

12 (3.1, (9), p. 421) This is a well known phenomenon: borrowed (here, Latinate) adjectives standing in suppletion relation to the native (Germanic) nouns. Compare these to the non-suppletive adjectives \textit{fatherly}, \textit{earthly}, \textit{sunny}, etc. with more concrete meanings. A similar situation holds in French: Ullmann 1952: 129 has already report-
ed such ‘suppletive series’ as foie ‘liver’ ~ hépatique ‘liver’; évêque ‘bishop’ ~ épiscopal ‘episcopal’, lettre ‘letter’ ~ épistolaire ‘epistolary’, etc.

13 (3.1, (13a), p. 423) The French pairs quatre /katr/ ‘4’ ~ quarante /karántl ‘40’ and six /six/ ‘6’ ~ soixante /swasánt ‘60’ are different: they illustrate suppletion of morphs rather than that of megamorphs. What is suppletive here are radical morphs quatre ~ quai (the morpheme {QUATRE}) and six ~ soix (the morpheme {SIX}). The suffix -ante ‘-ty’ is regular.

14 (3.1, (13b), p. 423) The suffix -desjat/-desjat ‘-ty’ is not to be confused with the ‘free’ numeral desjat ‘10’; note the difference in stress and palatalization of the last consonant.

15 (3.1, (14a), p. 423) Strictly speaking, hypocoristic is not a meaning: it is a conventional label used here for a rather complex meaning, which is language-specific (Wierzbicka 1989: 758–766).

16 (3.1, (14b, p. 423) Etymologically, the form Šura was derived through a series of diminutivizing transitions: Aleksandr ⇒ Aleksaša ⇒ Saša ⇒ Sašura ⇒ Šura. A similar picture holds for Njura: Anna ⇒ Anjura ⇒ Njura. All intermediate forms exist as well.

17 (3.1, (16), p. 424) As far as animal ‘male’ ~ ‘female’ pairs are concerned, in Russian, as well as in many other languages, two remarks seem to be in order.

- In the pairs of the type tigr ~ tigr+ic(+a) for wild animals—the first member has the sense ‘animal of the species ‘X’ and, at the same time, the sense ‘male of the species ‘X’—as in Eto tigr, a ne tigrica ‘This is a tiger, not a tigress’; the first sense is ignored in this example. Note, however, that for many domestic animals the ‘male’ name does not stand for the species—we find rather triplets of the type sobaka ‘dog—species ... ~ kobel ‘male dog’ ~ suk(+a) ‘female dog’, lošad ‘horse—species ... ~ žerebec ‘male horse’ ~ kobyl(+a) ‘female horse’, gus ‘goose—species ... ~ gusak ‘male goose’ ~ gus+yn(+a) ‘female goose’, etc.

- It could be probably maintained that many names of domestic animals do not form derivational ‘male ~ female’ pairs—in other words, that the derivateme ‘female of ...’ applies preferably to wild animals. In such a case, korov(+a) ~ byk etc. will not be suppletive. Yet there are such pairs as indjuk ‘turkey(f-cock) ~ indjusk(+a) ‘turkey-hen’ or osël ‘donkey’ ~ osel+ic(+a) ‘she-donkey’; one could also mention gus ‘goose’ ~ gus+yn(+a) ‘female goose’ (with a third member—gus+ak ‘gander’, see above).

At this juncture, it is interesting to compare the expression of the feminine sex in kinship terms in Spanish and in French:

<table>
<thead>
<tr>
<th>(i)</th>
<th>Spanish</th>
<th>French</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘son’</td>
<td>hij +a</td>
<td>fils/fíl ’ ~ fille/fíl</td>
</tr>
<tr>
<td>‘brother’</td>
<td>herman +a</td>
<td>frère ~ sœur</td>
</tr>
<tr>
<td>‘uncle’</td>
<td>tío +a</td>
<td>oncle ~ tante</td>
</tr>
<tr>
<td>‘nephew’</td>
<td>sobrin +a</td>
<td>neveu ~ nièce</td>
</tr>
<tr>
<td>‘grandfather’</td>
<td>abuel +a</td>
<td>grand père ~ grand’mère</td>
</tr>
</tbody>
</table>

As we see, the meaning ‘feminine sex’ is regularly expressed in Spanish kinship terms, but not so in French—there are no regular formal distinctions between French ‘male’ ~ ‘female’ kinship terms. Therefore, we are justified to apply the derivateme
To declare a pair of semantically related units suppletive we need a precise and well-defined semantic difference between them, and that is what is normally absent for most antonymic pairs in natural languages. Probably, the domain where suppletive antonyms are most common is that of reversives: verbs naming the action that eliminates the result of the underlying action, as in English: [to] button ~ [to] unbutton, [to] paste ~ [to] unpaste, [to] dress ~ [to] undress, [to] lock ~ [to] unlock, etc. Against this background, one could think that [to] close ~ [to] open (≠ [to] unclose) are suppletives, although even here the semantic parallelism is far from perfect. One might look for suppletive antonyms in Bantu languages, where the verbal reversive is a well-established derivate. There could be suppletive pairs parallel to such regular formations as, for instance:

Swahili

\[
\begin{align*}
\text{fumb}(+a) & \quad [\text{to} \text{ close}] \sim \text{fumb}+u(+a) & \quad [\text{to} \text{ open}] \\
\text{jeng}(+a) & \quad [\text{to} \text{ build}] \sim \text{jeng} +u(+a) & \quad [\text{to} \text{ dismantle}] \\
\text{remb}(+a) & \quad [\text{to} \text{ adorn}] \sim \text{remb}+u(+a) & \quad [\text{to} \text{ take away adornments}] \\
\text{ung}(+a) & \quad [\text{to} \text{ unite}] \sim \text{ung} +u(+a) & \quad [\text{to} \text{ separate}] \\
\text{kunj}(+a) & \quad [\text{to} \text{ fold}] \sim \text{kunj} +u(+a) & \quad [\text{to} \text{ unfold}] 
\end{align*}
\]

Lingala

\[
\begin{align*}
\text{pik}(+a) & \quad [\text{to} \text{ fix on something}] \sim \text{pik} +ol(+a) & \quad [\text{to} \text{ tear away from something}] \\
\text{kang}(+a) & \quad [\text{to} \text{ bind}] \sim \text{kang}+ol(+a) & \quad [\text{to} \text{ unbind}] 
\end{align*}
\]

Notes

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(3.1, (17b), p. 425) It is not fortuitous that in order to illustrate suppletion between antonyms I have to make recourse to Esperanto. In natural languages, the situation with antonyms is by far too complex to warrant simple enough and convincing examples. True, there are affixes marking antonymy—but, as a rule, they are semantically quite heterogeneous, so that a special analysis is in order to establish the status of would-be suppletive pairs. For instance,

\[
\begin{align*}
\text{anti-Darwinist} : \text{Darwinist} & \neq \text{salt}+\text{less} : \text{ salty } & \neq \text{un}+\text{lawful} : \text{ lawful } & \neq \text{dis}+\text{honest} : \text{honest } & \neq \ldots
\end{align*}
\]

To declare a pair of semantically related units suppletive we need a precise and well-defined semantic difference between them, and that is what is normally absent for most antonymic pairs in natural languages. Probably, the domain where suppletive antonyms are most common is that of reversives: verbs naming the action that eliminates the result of the underlying action, as in English: [to] button ~ [to] unbutton, [to] paste ~ [to] un/paste, [to] dress ~ [to] undress, [to] lock ~ [to] unlock, etc. Against this background, one could think that [to] close ~ [to] open (≠ [to] unclose) are suppletives, although even here the semantic parallelism is far from perfect. One might look for suppletive antonyms in Bantu languages, where the verbal reversive is a well-established derivate. There could be suppletive pairs parallel to such regular formations as, for instance:

Swahili

\[
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\text{jeng}(+a) & \quad [\text{to} \text{ build}] \sim \text{jeng} +u(+a) & \quad [\text{to} \text{ dismantle}] \\
\text{remb}(+a) & \quad [\text{to} \text{ adorn}] \sim \text{remb}+u(+a) & \quad [\text{to} \text{ take away adornments}] \\
\text{ung}(+a) & \quad [\text{to} \text{ unite}] \sim \text{ung} +u(+a) & \quad [\text{to} \text{ separate}] \\
\text{kunj}(+a) & \quad [\text{to} \text{ fold}] \sim \text{kunj} +u(+a) & \quad [\text{to} \text{ unfold}] 
\end{align*}
\]

Lingala

\[
\begin{align*}
\text{pik}(+a) & \quad [\text{to} \text{ fix on something}] \sim \text{pik} +ol(+a) & \quad [\text{to} \text{ tear away from something}] \\
\text{kang}(+a) & \quad [\text{to} \text{ bind}] \sim \text{kang}+ol(+a) & \quad [\text{to} \text{ unbind}] 
\end{align*}
\]

(3.1, (21), p. 426) The signs -ënk/-ënk are used in the singular of the derived noun, while -jat is used in the plural. The distribution of -ënk vs. -ënk is purely phonemic: -ënk appears before a pause, and -ënk, before a vowel.
20 (3.1, p. 426) An **affixal idiom** is a combination of affixes such that it cannot be fully represented in terms of constituent affixes because of its semantic unity. (In this, an affixal idiom is the inverse of a megamorph, which cannot be so represented because of its formal unity.) A good example of an affixal idiom is the French conditional suffix **-rai/-ri**, which formally (but not semantically!) can be reduced to **-r** (**FUTURE**) and **-ai-** (**IMPERFECT**). Another example is the Hungarian verbal suffix of the 2PL **-tok**, where one could distinguish the element **-t** (**2 PERSON**) and **-k** (**PLURAL**). An affixal idiom is a particular case of morphological idiom, see Note 22.

21 (3.1, (23a), p. 427) The stem **čelovek** can be used in the plural as well, but only with numerals: 25 **čelo vek** (**25 people**) or **skol’ko čelovek?** (**how many people?**). In these phrases the form **čelovek+Ø** represents what I propose to call, following Zaliznjak (1967: 46 – 48), the ‘adnumerative case I.1b’ (Mel’čuk 1985: 430 – 437; see Chapter 2, 7, Item 2, p. 139). The form **ljudej+ej** – the genitive plural – is also possible in this context: 25 **ljudej/skol’ko ljudej?** (with a slight semantic difference, which I will not make more precise here). As we see, the forms **čelovek** and **ljudej** are not in strict complementary distribution, although they represent two different morphological formations (the adnumerative plural vs. the genitive plural). The stem **čelovek** is also found in plural forms in a couple of idiomatic (biblical) expressions: **Vse my ljudi, vse my čeloveki** (**We all are people, we all are men**) and **ulovlenie čelovekov**, lit. (**fishing for men**).

22 (3.1, (23e), p. 427) The Burushaski plurals quoted here call for the following three comments:

– Along with **dúlaš+u**, some speakers use, as the plural of **helés**, the regular form **heléš+u**. In the varieties of Burushaski where both forms cooccur (and alternate freely), **dúlaš+u** is probably not a suppletive plural of **helés**, but a separate lexeme **DÚLAšU**, a **plurale tantum**, (more or less) synonymous to the regular plural of **HELÉS**. (Cf. **person/persons ~ PEOPLE in English, or GENS 'people' in French, which is semantically very close to the plural of HOMME 'human being'.)

– The stem of the form **gušé+N+ia**, the suppletive plural of **dasén** (**girl**), is diachronically related to the form **guš+iá**, the regular plural of **GUS** (**woman**), featuring a complex ending consisting of two common plural suffixes of Burushaski, **-i** and **-a**. The sign **gušé** is thus a **morphological idiom**: instead of expected *women* it means *girl* but can be used only with a plural suffix. The stem **gušé** is suppletive with respect to the singular stem **dasén** (both are allomorphs of the same morpheme).

– The stem of the wordform (**Ø+)**yúguš+iá – suppletive plural of (**ē+)**iá (**his**) daughter**–** is also diachronically related to the form **yū**, the regular plural of **YE** (**his**) son, plus the root **gus** (**woman**). Thus, the signified of the complex sign **yúguš+iá** ‘his daughters’ can be analyzed as ‘his.sons + woman + PL’; this sign is another morphological idiom.

(I thank Y.-Ch. Morin for the data on Burushaski.)

Let me emphasize, once again, that the etymological analyzability of the signs **gušé** and **yúguš** does not prevent them from being suppletive with respect to other signs of Burushaski. The only crucial factor is the absence of the formal regularity of the
correlation between the members of the respective pairs, whilst their semantic correlation (‘SINGULAR’ ~ ‘PLURAL’) is absolutely regular.

23 (3.1, 30, p. 431) The distribution of /j-/ vs. /n/-/ is more subtle than my approximate formulation implies. First, /n/-/ appears only after etymologically underived (a.k.a. as ‘simple’) prepositions: okolo nego (*ego ‘close to him’), but blagodarja emu (*nemu ‘thanks to him’). Secondly, /n/-/ appears after the comparatives in -e, but not in -e (pointed out by A. Zaliznjak, p.c.); xuž-e nèè (*eè) ‘worse than she’, but interesn-e ee (*nèè) ‘more interesting than she’.

24 (3.1, 32, p. 432) Such forms as hi+m and the+m (cf. also who+m) might be described as containing the suffix of the oblique case -m, while the correlations he /hi/ ~ hi /hi/ and they ~ the could be deemed slightly regular. These forms would be only weakly suppletive or even non-suppletive (depending on the researcher’s willingness to introduce the necessary alternations into English grammar).

25 (3.2.3, p. 441) The other phonological difference – /a/ ~ /i/ – is a regular alternation in English (bible ~ biblical, bite ~ bitten, etc.).

26 (3.2.3, p. 441) The terms strong vs. weak suppletion in the above sense were introduced in Vennemann 1972 (231, fn. 24): “A paradigm is ‘weakly suppletive’ if its forms cannot be derived from each other by generative rules but are nevertheless felt to be phonologically related, e.g. have : had. A paradigm is ‘strongly suppletive’ if no phonological relationship exists, e.g. go : went.” Carstairs 1988: 71 – 72 uses, for the same phenomenon, the terms gross vs. partial suppletion.

27 (3.2.3, p. 442) W. Dressler (1990: 36-37) proposes to grade the suppletion of two signs by taking into account whether the similar (= shared) part of the signifiers is a submorph or not, its prosodic position, its absolute or relative size, etc.

28 (4.1, p. 443) The suffixes -ov’j, -es, etc. are suppletive with respect to each other: they are suppletive allomorphs of the same morpheme, an empty stem-forming suffix.

29 (4.2, after (51), p. 446) It is interesting to quote the remark of K. Tschenkéli (1974: 1997) concerning the verb CVIV(+na) ‘fall—multiple subjects’: ‘it is used when the subject is in the plural or when it denotes a set/a collection of something: 3sg. mo+cvi+na ‘it [= something collective, e.g. the foliage] falls’. In Aronson 1982 the verbs in question are not called suppletive: they are described (pp. 407 – 408) as lexically different ‘singular’ vs. ‘plural’ verbs. (Yet, for instance, in Harris 1981: 57 – 58 they are treated as suppletives.)

30 (4.2, p. 448) The phenomenon of single/multiple Subject/Object stem alternation in the verb is especially typical of North American Indian languages (cf. Anderson 1985: 171). It is found in various families, so that one is tempted to speak of a Sprachbund feature with respect to the proliferation of similar pairs (two or three in some languages, up to several dozen in others). Let me quote a few examples in addition to those in Jeanne et al. 1984:

a. Haida

<table>
<thead>
<tr>
<th>Single Subject</th>
<th>Multiple Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>[to] go</td>
<td>qa ~ is</td>
</tr>
<tr>
<td>[to] sit/dwell</td>
<td>qao ~ ëù</td>
</tr>
<tr>
<td>[to] fly</td>
<td>xìt ~ na(lgal)</td>
</tr>
</tbody>
</table>

b. Creek

<table>
<thead>
<tr>
<th>Single Object</th>
<th>Multiple Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>[he] takes</td>
<td>is(+is) ~ tcâw(+is)</td>
</tr>
<tr>
<td>[he] kills</td>
<td>îñï(+is) ~ pâïcâd(+is)</td>
</tr>
</tbody>
</table>
Chapter 8. Suppletion

c. Coos

- **Single Subject**
  - [to be lying] տըւ ~ հայատ
  - [to speak] լա ~ ըալ
  - [to die] լագամվե ~ էկե

  **Multiple Subject**

  - [to kill] ցխա ~ այ
  - [to insert] լա ~ ըո

  **Single Object**

  - [to be lying] տըւ ~ հայատ
  - [to speak] լա ~ ըալ

  **Multiple Object**

  - [to die] լագամվե ~ էկե
  - [to kill] ցխա ~ այ

  **Single Subject**

  - [to sit/dwell] ծըտկ ~ դակ
  - [to die] նո ~ դաչ
  - [to run] բաչ ~ չոլ

  **Multiple Subject**

  - [to take] գո ~ դոգ
  - [to put into fire] մալկ ~ տյալդատ

  **Single Object**

  - [to be lying] տըւ ~ հայատ
  - [to speak] լա ~ ըալ

  **Multiple Object**

  - [to kill] ցխա ~ այ
  - [to insert] լա ~ ըո

For more similar examples in Uto-Aztecan, see Crapo 1970: 182 – 183.

Single/multiple Subject/Object stem alternation in the Amerindian verb has been studied in depth in Mithun 1988. The author makes (at least) two important points:

- First, “the primary function of [Amerindian verb] stem alternation is not to enumerate entities, but to quantify the effects of actions, states, and events” (p. 214). Therefore, the semantic distinction involved is not the same as with the nominal inflectional number: strictly speaking, Amerindian verbs distinguish not between singular/plural Subject or Object, but rather between the unified, or CONCENTRATED, character of an event, and its multiple, or DISTRIBUTED, character. An event can be distributed over time, over space, or both, or else over participants—so that a multiple verb can take a Singular Subject (“One person did it several times in several locations”), and a singular verb, a plural Subject (“All of them did it together and at once”).

- Second, “the North American verbs that alternate according to the number of entities affected are related ... semantically but not inflectionally. <...> The lexically plural verbs are not unlike English *congregate, disperse, gather and scatter*” (pp. 214–215). Therefore, the pairs under discussion are by no means suppletive.

In this way, Mithun 1988 closes the problem of single/multiple-actant and single/multiple-action presumed suppletion: there is no suppletion in any of the pairs of the above type.

31 (4.5, p. 450) For a discussion of the difference between DERIVATIONAL suffixes of inhabitant and INFLECTIONAL suffixes (for instance, of number/case) from the viewpoint of their being/not being allomorphs of the same morpheme, see Chapter 7, 3.2, Comment 2, p. 392ff.

32 (5.1, p. 451) It might be useful to consider three examples that sometimes are said to be suppletive voice pairs.

- Take the case of Lat. *vene* = *i* am on sale, *i* am being sold vs. *vene* = *i* sell or *per* = *i* perish vs. *per* = *i* destroy, *i* make perish, etc.
The radicals *ven* ~ *vend* and *per* ~ *perd* are obviously corepresentable, so that they are not suppletive.

(ii) In these (and similar) pairs both full forms are morphologically active (like the verb *undergo* which is active in English), so that there can be no question of the radicals being distributed as a function of active/passive markers.

(iii) The semantic difference in said pairs is rather *cause* than *PASSIVE* (*ven-* means *to be on sale*, *-d* means *to cause*, and *vend-* is *to cause to be on sale* ~ *[to] sell*).

- In the Greek pair *apokteín* + ὁ (~ [to] kill) vs. *apoÊneísk* + ὁ (~ [to] die) from someone’s hand both verbs are morphologically active; the possibility of adding an agentive phrase with ὑπό to the second one does not make it passive.

- In Persian, pairs of complex (= analytic) verbs such as *be amal āvardan*, lit. *into production to-bring* = *[to] produce* vs. *be amal āmādan*, lit. *into production to-come* = *[to] be produced*, formally speaking, should not even be considered since they are not minimal signs, so that the definition of suppletion does not apply to them. Such pairs are no more suppletive than similar English pairs *come into existence* ~ *[to] bring into existence*, etc.: first, the semantic difference between them is again *cause* rather than *PASSIVE*, and second, they are by no means elements of the same lexeme and do not belong to two derivationally related lexemes.


<table>
<thead>
<tr>
<th></th>
<th>masc.sg.nom</th>
<th>fem.sg.nom</th>
<th>nom.pl.masc</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>vár</em></td>
<td>~</td>
<td><em>ór</em></td>
<td>~ oss*er</td>
</tr>
</tbody>
</table>

should probably not be considered as suppletion, since the forms in question can be linked by regular alternations (such as ā ~ ē and s ~ r).

34 (6.1, p. 454) The third way mentioned in Ronneberger-Sibold 1988 – morphological change by analogy with the rest of the paradigm (illustrated by the pair Mod. Ger. *hab*(+en) vs. Middle-High Ger. ḥā(+n)) – concerns leveling of suppletive pairs by paradigmatic attraction rather than the rise of new pairs.

35 (6.1, (54), p. 458) As represented in this case by actual Gothic forms.

36 (6.1, p. 455) The verb BAISER still exists with its former meaning *[to] kiss* in a few special contexts, such as *[to] kiss someone’s hand* (*baiser la main à qqn*) or *[to] kiss a banner* [as a symbolic gesture] (*baiser le drapeau*). However, the meaning *He kissed Mary* can be rendered in French only as *Il embrassa Marie* or *Il a donné un baiser à Marie* *He gave Mary a kiss*, by no means as *Il a baisé Marie*, which can only mean *He screwed Mary*.

37 (6.2, (65b), p. 457) Cf. Polish *można* *one is allowed* ~ *nie można* *one is not allowed* and Czech *lze* *one is allowed* ~ *nelze* *one is not allowed*. In the early 19th century, one still finds in Russian the expression *ne možno* *You cannot harness in one wagon a horse and a gracous doe*.

38 (6.2, (66b), p. 457) The historical development is as follows: *aivâ+ka* (~ *ka* being an empty adjectival stem-forming suffix) ⇒ *évak* ⇒ *jak*.
1. The concept of zero sign

Strange as it may seem, in spite of the wide-spread and fruitful use of zero signs in linguistics, there is no universally accepted definition of the concept of zero linguistic sign itself. A maximally general definition which would cover all possible types of zero signs and, at the same time, be rigorous and logically satisfactory has, to my knowledge, yet to be formulated. Paradoxically, such a definition is easy to supply, stemming as it does from the basic concept of linguistic sign as an ordered triplet (‘Signified’; /Signifier/; Σ = Syntactics), or – symbolically – X = (‘X’; /X/; ΣX) (cf. Definition 7.1, Chapter 7, p. 384):

Definition 9.1: Zero linguistic sign

A zero linguistic sign X is a sign whose signifier is empty: X = (‘X’; /Λ/; ΣX).

Here Λ stands for ‘the empty set’; a zero sign is written as Ø.

The concept of zero sign is thus obtained as a natural extension of the concept of linguistic sign—by allowing one of its three components, namely the signifier, to be empty.

Note this ‘emptiness’ of the signifier of a zero sign is by no means realized as a perceptible phonetic pause. It is in fact the absence of an overt signifier in a position where a signifier of a particular inflectional category is otherwise expected (cf. Janda and Manandise 1984: 234 against the identification of linguistic zeroes with phonetic pauses). The addressee of an utterance with a zero sign—such as, Rus. ruk+Ø ‘of hands’, where the zero suffix expresses ‘PLURAL, GENITIVE’—recognizes this zero not because of a silence (the next wordform may follow ruk without any slightest pause), but because the perceptible form ruk is not followed by one of the overt possible inflectional suffixes, marking its number and case (which are obligatorily marked).

However, even if Definition 9.1 is clear and rigorous, it is in and of itself insufficient: it does not constrain the use of zero signs by linguists. Zero is a powerful device, and a linguist can be easily tempted into postulating zeroes everywhere as soon as a zero helps to make his description more consistent or elegant. An unrestricted use of zeroes in linguistic description empties them of any positive content; they become a sort of a convenient stopgap used to salvage a theory-driven
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analysis—LINGUIST’s zeroes, instead of being genuine linguistic signs, i.e., LANGUAGE zeroes. Zero signs should be a generalization of ‘more normal’ non-zero (i.e., overt) signs. As W. Haas (1957: 34) aptly insisted, the use of the novel term ‘ZERO sign’ must not be allowed to interfere with the established uses of the old term ‘sign’ as applicable to overt signs. Therefore, we need a stringent principle to constrain the introduction of zeroes; such a principle is proposed below.

2. The Zero Sign Introduction Principle

The Zero Sign Introduction Principle embodies two important postulates:

– It is aimed at avoiding zeroes wherever you can avoid them: “If you can do without a zero, you should do without a zero” (Plungjan 1994: 149; translation is mine—IM.).
– The introduction of zero signs (as everything else in this book) is considered exclusively from the viewpoint of TEXT SYNTHESIS, or of speaking—that is, in the process by which the speaker moves from meanings to texts. In simple terms, I will study how some meanings present in the Semantic Representation of the intended utterance are expressed on a higher level—syntactic or morphological—by the absence of physical signals. Metaphorically speaking, a zero linguistic sign is essentially a ‘meaningful absence,’ and the Zero Sign Introduction Principle is an attempt to capture this essence.

Let there be an expression $E$—a clause or a wordform—of language $L$; a zero sign at the clause level is a SYNTACTIC zero (= a zero wordform), while a zero sign at the wordform level is a MORPHOLOGICAL zero (= a zero morph or a zero morphological operation).

Zero Sign Introduction Principle [= ZSI Principle]

A zero linguistic sign $X$ in $E$ is admitted if and only if the following three conditions are simultaneously satisfied:

1. Expressiveness: $E$ carries the meaning ‘$X$’ or the value $\gamma$ of a syntactic feature such that ‘$X$’ or $\gamma$ has to be ascribed to $X$, respectively, as $X$’s signified or as (a part of) $X$’s syntactics.¹
2. Exclusiveness: $E$ does not contain a non-zero signifier to which ‘$X$’ or $\gamma$ could be ascribed in a systematic and natural way at any level of representation.²
3. Contrastiveness: If $X$ carries the meaning ‘$X$’, $E$ allows, in the corresponding position, a semantic contrast between $X$ and another non-zero sign $X'$ that carries the meaning ‘$X'$ of the same category as ‘$X$’ [in other words, $X$ has a distinctive value; this condition does not of course apply to zeroes carrying only a value of a syntactic feature, but no meaning].
In sum, a zero sign 1) must always do a clearly circumscribed job (= express some content really present in the utterance – i.e., carry an information payload); 2) it must do so in the absence of other contenders (= be exclusive on the job – i.e., constitute the very last resort of our description); and if it is `semantic,' 3) it must be opposed to non-zero signs (= distinguish two utterances – i.e., participate in a semantic contrast with overt signs).

To the ZSI Principle, I would like to add the following methodological requirement:

Since the signifier of a zero sign is empty (i.e., a zero sign has no phonemic content), one should avoid ascribing to zero signs any (mor)phonological properties or admit purely phonological conditions of their use.

This requirement plays a role in such cases as those described in (22), p. 501, and (25), p. 503.

With these basic statements in place, I can proceed to the discussion of zero linguistic signs.

3. Comments on the concept of zero sign

3.1. Different types of zero signs

The above formulation of the ZSI Principle allows for various types of linguistic zeroes.

1) Morphological grammatical zeroes. Let me begin with some clear-cut morphological grammatical zero signs – more specifically, zero affixes. The best-known examples from Russian include:

   The number/case suffix of nouns:

<table>
<thead>
<tr>
<th>NOS `nose'</th>
<th>STENA `wall'</th>
</tr>
</thead>
<tbody>
<tr>
<td>nominative</td>
<td></td>
</tr>
<tr>
<td>singular</td>
<td>nőː +Ø</td>
</tr>
<tr>
<td>plural</td>
<td>nőː +ý</td>
</tr>
<tr>
<td></td>
<td>nos +yn</td>
</tr>
<tr>
<td>genitive</td>
<td></td>
</tr>
<tr>
<td>singular</td>
<td>nőː +a</td>
</tr>
<tr>
<td>plural</td>
<td>nőː +őv</td>
</tr>
<tr>
<td></td>
<td>nos +ův</td>
</tr>
<tr>
<td>dative</td>
<td></td>
</tr>
<tr>
<td>singular</td>
<td>nőː +u</td>
</tr>
<tr>
<td>plural</td>
<td>nőː +ům</td>
</tr>
<tr>
<td></td>
<td>nos +ům</td>
</tr>
<tr>
<td>accusative</td>
<td></td>
</tr>
<tr>
<td>singular</td>
<td>nőː +ý</td>
</tr>
<tr>
<td>plural</td>
<td>nőː +ý</td>
</tr>
</tbody>
</table>

In masculine nouns (of the 2nd declension), two zero suffixes express the nominative and the accusative in the singular; in feminine nouns (of the 1st declension) another zero suffix expresses the genitive in the plural.

   The gender suffix of finite verbs in the past and of predicative adjectives:
Chapter 9. Zero sign in morphology

In the past form of the verb and in the predicative adjective zero suffixes mark the masculine gender in the singular (in the plural, genders are not distinguished in Russian).

2) Morphological, but non-grammatical zeroes—i.e., zero radicals in wordforms having non-zero affixal parts. I will cite three examples of zero radicals.

(1) Kirundi

Deictic demonstratives in Kirundi in different classes

<table>
<thead>
<tr>
<th>Deictic Demonstrative</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘this—close to the 1st person’</td>
<td>uwu</td>
<td>aba</td>
<td>uwu</td>
<td>iyi</td>
<td>iri</td>
<td>aya</td>
</tr>
<tr>
<td>‘this—close to the 2nd person’</td>
<td>uwo</td>
<td>abo</td>
<td>uwo</td>
<td>iyo</td>
<td>iryo</td>
<td>ayo</td>
</tr>
<tr>
<td>‘this—close to the 3rd person’</td>
<td>uryá</td>
<td>bárya</td>
<td>uryá</td>
<td>iryá</td>
<td>rirá</td>
<td>aryá</td>
</tr>
<tr>
<td>‘that—very far from the 1st and 2nd persons’</td>
<td>uriíya</td>
<td>báriíya</td>
<td>uriíya</td>
<td>ririíya</td>
<td>areíya</td>
<td>areíya</td>
</tr>
</tbody>
</table>

In lines 2–4, we see the radicals -o, -rya and -rííya, preceded by class 2 prefixes, which mark the agreement in class 2 with the modified noun: u-, ba-, i-, ri- and a-, as in, e.g., (uw)u (u+wo, u+ryá, u+rííya) mwrána ‘this/that child’ — (a)ba (a)b+o, bá+rya, bá+rííya) bárána ‘these/those children’. Now, what is the radical of the wordforms in line 1? They consist of a class 2 prefix preceded by an epenthetic vowel (because of forbidden monosyllabicity of wordforms in Kirundi): u =⇒ uu [⇒ uwu], ba =⇒ aba, etc. But a class 2 prefix is a prefix—it must precede a radical, which has to carry the deictic meaning. Therefore, these wordforms have to contain a zero radical — ØTHIS, a sign of the following structure:

ØTHIS = (‘this—close to the 1st person’ ; /A/ ; Σ = radical, demonstrative ADJ, …)

(2) Serbo-Croatian 3rd person pronominal clitics (Miličević 1999).

These clitics exist only in the genitive-accusative and the dative. Here are their masculine and neuter singular forms (‘he’, ‘it’) and their plural forms (‘they’) in parallel with the corresponding full forms:
3. Comments on the concept of zero sign

<table>
<thead>
<tr>
<th>Case</th>
<th>Full Form</th>
<th>Clitic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genitive = Accusative</td>
<td>nj+ega</td>
<td>ga</td>
</tr>
<tr>
<td>Dative</td>
<td>nj+emu</td>
<td>mu</td>
</tr>
</tbody>
</table>

Except for the nominative, the radical of the pronoun ON ‘he’ [= 3sg.masc] in the full forms of all cases of the two genders in the singular and of the three genders in the plural is \( nj\). The signs -ega, -emu, -ih /ix/ and -ima are cumulative suffixes expressing adjectival gender, adjectival number and adjectival case together. These are the same suffixes as those found in all adjectives of the corresponding declensional type such as VRUČ ‘hot’:

\[
\begin{align*}
\text{[SG, MASC/NEU]} & \quad \text{GEN VRUČ}+\text{ega}(a), & \quad \text{DAT VRUČ}+\text{em}(u), \\
\text{[PL]} & \quad \text{GEN VRUČ}+\text{ih}, & \quad \text{DAT VRUČ}+\text{im}(a).
\end{align*}
\]

The clitic wordforms consist of only (abridged) suffixes; the meaning ‘he’ is expressed by the absence of a radical which would ‘support’ these suffixes, that is, by a zero radical allomorph of the morpheme {ON ‘he’}. The morphic representation of these clitics is as follows (for economy’s sake, I omit the genitive forms, homophonous with those of the accusative):

\[
\begin{align*}
\text{ga} &= \mathcal{O}^{\text{HE}} = \langle \text{‘he’} \rangle; /\text{A}; \Sigma = \text{radical, of a clitic pronoun, 3rd person, } ... \\
\oplus \\
\text{ga} &= \langle \text{MASC, SG, ACC} \rangle; /\text{ga}; \Sigma = \text{suffix, of a clitic pronoun, 3rd person, } ... \\
\text{mu} &= \mathcal{O}^{\text{HE}} = \langle \text{‘he’} \rangle; /\text{A}; \Sigma = \text{radical, of a clitic pronoun, 3rd person, } ... \\
\oplus \\
\text{mu} &= \langle \text{MASC, SG, DAT} \rangle; /\text{mu}; \Sigma = \text{suffix, of a clitic pronoun, 3rd person, } ... \\
\text{ih} &= \mathcal{O}^{\text{HE}} = \langle \text{‘he’} \rangle; /\text{A}; \Sigma = \text{radical, of a clitic pronoun, 3rd person, } ... \\
\oplus \\
\text{ih} &= \langle \text{PL, ACC} \rangle; /\text{ix}; \Sigma = \text{suffix, of a clitic pronoun, 3rd person, } ... \\
\text{im} &= \mathcal{O}^{\text{HE}} = \langle \text{‘he’} \rangle; /\text{A}; \Sigma = \text{radical, of a clitic pronoun, 3rd person, } ... \\
\oplus \\
\text{im} &= \langle \text{PL, DAT} \rangle; /\text{im}; \Sigma = \text{suffix, of a clitic pronoun, 3rd person, } ...
\end{align*}
\]

Zero radicals are paradoxical entities, and as such they are rare in human languages. This is understandable: radicals are meant to express a huge number of poorly organized signifieds (= lexical meanings), and it is difficult to use an absence to signify something if there is no fixed position in which a limited number of elements is supposed to appear, so that this absence could readily contrast with one of few ‘presences.’ For this reason, both of the above zero radicals are found in a strongly grammaticized part of the lexicon: among pronouns, where the number of possible signifieds is small and the oppositions are well-marked.
Another example of a zero radical is the radical of the verb meaning ‘[to] give’ in some Papuan languages, for instance, in Awa and Amele:

(3) Awa

a. \( \emptyset +nuw +\text{éhq} = \text{Nuwéhq} \)
   give mine PAST.3SG
   ‘[He] gave something mine’.

b. \( \text{Néne són nuwéhq} \)
   my garden give.mine-PAST.3SG
   ‘[He] gave my garden [to someone else]’.

c. \( \text{Keki}+\text{nuw}+\text{éhq} = \text{Kekinuwéhq} \)
   burn mine PAST.3SG
   ‘[He] burnt something mine’.

d. \( \text{Néne són kekinuwéhq} \)
   my garden burn.mine-PAST.3SG
   ‘[He] burnt my garden’.

Comparing (3a–b) to (3c–d), we see that the meaning ‘give’ is expressed by the absence of a radical before the inflectional ending -nuwéhk; this means a zero radical.

(4) Amele (Roberts 1987: 316, 386, 390)

a. \( \text{Ija dana leis sab } \emptyset +\text{al} +\text{ig} +\text{a} \)
   I man two food give 3DU.IndirOBJ 1SG.SUB PAST
   ‘I gave the two men food’.

b. \( \text{Ija dana leis sab iha} +\text{al} +\text{ig} +\text{a} \)
   I man two food show 3DU.IndirOBJ 1SG.SUB PAST
   ‘I showed the two men food’.

c. \( \text{Uqa ija sab } \emptyset +\text{te} +\text{i} +\text{a} \)
   He I food give 1SG.IndirOBJ 3SG.SUB PAST
   ‘He gave me food’.

d. \( \text{Uqa ija sab iha} +\text{te} +\text{i} +\text{a} \)
   He I food show 1SG.IndirOBJ 3SG.SUB PAST
   ‘He showed me food’.

The verb ‘[to] give’ is also used in Amele as a semi-auxiliary in impersonal constructions with the names of feelings and sensations (that is, as a ‘light’ verb; cf. the identical uses of the verb [to] GIVE in English: give a speech, give a look, give hope, etc). Thus, ‘I am hungry’ is literally ‘It gives me hunger’, ‘I am afraid’ is ‘It gives me fear’, etc.:
3. Comments on the concept of zero sign

Note that grammatical morphological zeroes are all inflectional—i.e., they are inflectional zero affixes (= they always express grammemes). As stated in Section 6, derivational zeroes are not allowed in our model.

3) NON-MORPHOLOGICAL ZEROES. These are zero wordforms (i.e., zero lexes) or zero lexemes—which can be called syntactic, or lexical, zeroes. In most cases, zero wordforms are zero megamorphs. Such is, for instance, the Russian copula BYT’ [to] be’ in the present indicative: ØBYT’. cf. Ja/Ivan bolen ‘I/Ivan [am/is] sick’, where no overt copula is possible, vs. Ja/Ivan byl (budu/budet) bolen ‘I/Ivan was (will be) sick’, where an overt copula is obligatory. Examples of zero lexemes include the Russian lexemes ØPEOPLE and ØELEMENTS, which appear as Subjects in the syntactic structure of the sentences such as Ivana ubili ≈ [‘They’ ≈ ‘some indefinite people’] killed Ivan’ vs. Ivana ubilo ≈ [‘It’ ≈ ‘something mysterious’] killed Ivan’: see Mel’čuk 1974b [1995: 178–188]; for a semantic description of ØPEOPLE, see Bulygina 1990 and Guiraud-Weber 1990.

4) The ZSI Principle also allows for zero operational signs—that is, zero reduplications, zero apophonies, and zero conversions. These are operations whose output is identical to their input. Such ‘null-modifications’ are introduced in opposition to non-zero operations. Compare, for instance, the noun foot, where the singular is expressed by a zero ΑSG zero apophonies apophony opposed to another apophony – ΑPL – which expresses the plural in feet. (The radical

---

Figure 1: Typology of zero linguistic signs
foot does not itself carry the grammeme 'SINGULAR' – see below, 3.2; only the wordform foot, obtained from this radical by a zero apophony, does mean ‘a foot’. For more on zero morphological operations, see Mel’čuk 1982: 51, 101–102 and 1993–2000, vol. 4: 286, 304, 321.)

The typology of zero linguistic signs is summarized in Figure 1 on p. 475.

3.2. The requirement of non-zero alternants

The ZSI Principle does not require that a zero sign should necessarily have a ‘non-zero alternant’ – that is, a fully synonymous non-zero (= overt) partner; a zero sign can be a unique allomorph of its morpheme or a unique lex of its lexeme. Thus, in the wordform book (as in the absolute majority of English nouns) the singular is expressed by a zero suffix -ØSG, paradigmatically opposed to the plural suffix -s. This can be maintained even without having recourse to foreign overt singular markers as those in alumni+us, phenomenon+on or virtuoso+o, which are non-zero alternants of -ØSG. After all, the singular zero suffix is allowed in Spanish nouns, where no non-zero alternant exists: libro+ØSG ‘book’, árbol+ØSG ‘tree’, etc.

Contrary to this view, a number of linguists require the presence of a non-zero alternant as a condition for the introduction of a zero sign. Among them, Haas 1957: 45–47 rejects ‘unsupported’ zero signs – i.e., ‘zero signs having no overt alternants.’ For him, the only justification for associating a meaning with a zero must be that, in the language, the same meaning is also associated with a non-zero; since the grammeme ‘SINGULAR’ is never expressed by an overt form in English (except of course for the borrowed markers), “we should leave it merged in the total semantic values of forms like cat, boy, etc.” (p. 47). The last statement raises, however, two serious objections:

1) If the meaning of ‘SINGULAR’ is included in the signified of the radical, then the meaning ‘PLURAL’ of the suffix -s must be replacive for all English nouns: when the plural suffix is added to the stem, the meaning ‘PLURAL’ will have to ‘push out’ the meaning ‘SINGULAR’, which (presumably) is already in the radical, and take its place. Although I admit replacive meanings in special situations (Mel’čuk 1991a and 1993–2000, vol. 4: 45, 332, 402), I am not prepared to say that most central grammemes in a language are all replacive. This would change the picture of linguistic morphology in too drastic a manner to be easily digested. However, ‘unsupported’ zeroes are widespread and correspond to basic inflectional categories. Along with nominal number in English, we have, for instance:
3. Comments on the concept of zero sign

-ØMASC in Russian (verb: *spa+I+Ø* [he] slept vs. *spa+I+a* [she] slept, *spa+I+ø* [it] slept; or predicative adjective: *gôtov+Ø* [he is] ready vs. *gôtov+a* [she is] ready, *gôtov+ø* [it is] ready);

-ØPRES.IND in Spanish and French (*canta+Ø+mos* [we] sing vs. *cantá+ba+mos* [we] sang, *canta+r+emos* [we] will sing), etc., just to name a few among the best known cases. As a result, if we agree with Haas, numerous inflectional meanings belonging to basic categories will turn out to be replacive.

2) More importantly, the radicals *cat-*, *boy-*, *book-*, etc., do not carry the meaning ‘singular’. This is clearly seen in compounds: a *mousetrap* is for catching mice, not one mouse; the *tooth-brush* is for teeth, not for one tooth; and a *book-binder* binds many books rather than one book. What expresses the meaning ‘one [book]’ is the complete wordform *book* rather than the (homophonous) radical *book-*. This wordform contains an ‘unsupported’ singular zero suffix. The same consideration is valid for Spanish: the person who is *oj+inegro* ‘black-eyed’ has black eyes (*ojos*), not one black eye (*ojo*); *pat+ituerto* ‘crooked-legged’ has two crooked legs (*patas*), not just one (*pata*); etc.

The meaning ‘singular’ cannot thus be associated directly with the radical in the case of English nouns (and in all similar cases); therefore, unsupported zero signs must be accepted. An immediate corollary of this is the existence of zero “-emes” (sets of signs): a zero morpheme/zero lexeme that contains only a zero element (a zero morph/allolex). For instance, the Spanish morpheme *{SINGULAR}* is a zero morpheme, because it contains only one zero morph *-ØSG*, while the Russian lexeme ØPEOPLE and the Spanish lexeme ØIMPERS are zero lexemes. (See also Ch. Bazell’s remark on the possibility of zero morphemes: Bazell 1949 [1966: 225, fn. 26].) The morpheme *{3SG}* in Sierra Totonac is another good example of a zero morpheme: the third person singular is never indicated overtly—i.e., this combination of grammemes is expressed by a zero suffix, which is the only allomorph of the corresponding morpheme:

<table>
<thead>
<tr>
<th></th>
<th>1sg</th>
<th>2sg</th>
<th>3sg</th>
<th>1pl</th>
<th>2pl</th>
<th>3pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td><strong>ik</strong>-</td>
<td>-?</td>
<td>-Ø</td>
<td>-w</td>
<td>-tÍ</td>
<td>-qo</td>
</tr>
<tr>
<td>2sg</td>
<td>-?</td>
<td>-?</td>
<td>-?</td>
<td>-?</td>
<td>-?</td>
<td>-?</td>
</tr>
<tr>
<td>3sg</td>
<td>-Ø</td>
<td>-Ø</td>
<td>-Ø</td>
<td>-Ø</td>
<td>-Ø</td>
<td>-Ø</td>
</tr>
</tbody>
</table>

3.3. Empty zero signs

Condition 1 of the ZSI Principle allows, among other things, for an empty syntactic, or lexical, zero sign—i.e., a sign both of whose signified and signifier are empty and which exists only thanks to its syntactics. In other words, it carries only some values of syntactic features.
Chapter 9. Zero sign in morphology

Such is the ‘impersonal’ zero pronoun in Spanish or Russian, which is found, for instance, in sentences with meteorological verbs, such as Llueve ‘[It] rains’ or Svetaet ‘[It] dawns’. The empty zero wordforms Sp. Øimpers and Rus. Øimpers require agreement of the Main Verb in the 3rd person singular (and in Russian also the neuter gender in the past tense):5

(5) a. Øimpers llueveø +Ø  ‘It is raining’.
| rain   | PRES.IND | 3SG  |

b. Øimpers sveta+lo +o  ‘It was dawning’.
| dawn   | PAST    | 3SG.NEU |

Such zero wordforms correspond to the Fr. il, Ger. es, and Eng. it, these three being equally empty, but non-zero.

An alternative description avoiding this lexical zero could be as follows: we say that meteorological (and other impersonal) verbs do not agree with anything, but always appear in the 3sg form. Such a description is logically possible; however, it would destroy obvious parallelisms:

– between impersonal verbs and all other verbs (within a given language);
– between impersonal and personal senses of the same verb (Rus. Metët, lit. ‘It is-sweeping’ = ‘The wind is blowing snow around’ vs. Ivan metët ‘Ivan is-sweeping’); and
– between sentences with impersonal empty non-zero pronouns in some languages and semantically/structurally identical sentences without such pronouns in other languages (Fr. Il pleut vs. Sp. Øimpers llueve).

Looking for a more homogeneous treatment, I prefer to stick to zero empty wordforms/lexemes.

Nevertheless, I have to point out that an empty zero subject wordform/lemme is—unlike all other zero signs—non-contrastive; it is imposed by the syntactic context (the necessity of a subject in a clause for the Main Verb to agree with) and has an empty signified, so it cannot contrast semantically with anything. To accommodate it formally, we added to Condition 3 in the ZSI Principle the constraint “If X carries the meaning ‘X’, ...”.

3.4. Zero sign as a last resort

Condition 2 of the ZSI Principle protects us against the proliferation of zeroes in all those cases where the information involved (= the meaning ‘X’ or the value γ of a syntactic feature) is carried by another sign, which is non-zero. Generally speaking, one should not look for a zero marker where one could see an overt difference: a zero sign must be exclusive as a possible carrier of the information
in question—otherwise there is no zero. In other words, “ceteris paribus, accounts that do without zeroes are always to be preferred over ones that include them” (Janda and Manandise 1984: 231). A zero sign should be introduced only if there is no other linguistic means available to take care of the observed chunk of meaning to be expressed. Note that linguistic means include more than segmental signs (i.e., morphs); there are also reduplications, apophonies and conversions, and all these overt operation signs should be preferred over a zero.

Let us consider the following simple example.

(6) German

The wordform Mütter ‘mothers’ has no plural zero suffix -ØPL, because Mütter contains a non-zero signifier to which the meaning ‘PLURAL’ can be ascribed in a natural and systematic way: this is the Umlaut alternation /u/ → /ü/, applicable to the corresponding singular wordform Mutter (without Umlaut). German has many plurals of this type:

\begin{align*}
\text{Vater} & \text{ ‘father’ } \sim \text{ Väter} \text{ ‘fathers’ } \\
\text{Apfel} & \text{ ‘apple’ } \sim \text{ Äpfel} \text{ ‘apples’ } \\
\text{Faden} & \text{ ‘thread’ } \sim \text{ Fäden} \text{ ‘threads’ } \\
\text{Vogel} & \text{ ‘bird’ } \sim \text{ Vögel} \text{ ‘birds’ } \\
\text{Eis} & \text{ ‘ice’ } \sim \text{ Eises} \text{ ‘ices’ } \\
\text{Faden} & \text{ ‘thread’ } \sim \text{ Fäden} \text{ ‘threads’ } \sim \text{ Brüder} \text{ ‘brothers’ } \\
\text{Faden} & \text{ ‘thread’ } \sim \text{ Fäden} \text{ ‘threads’ } \sim \text{ Brüder} \text{ ‘brothers’ }
\end{align*}

All these pairs show an obvious phonemic difference with which the signified ‘PLURAL’ can be naturally associated. Therefore, the plural formation in (6) must be described by the apophonies \( A_{PL}^{u/\rightarrow /ü/} \), \( A_{PL}^{ö/\rightarrow /ö/} \) and \( A_{PL}^{u/\rightarrow /ü/} \). The signified ‘SINGULAR’ is expressed in corresponding nouns by absence of any apophony—in our terms, by the zero apophony \( A_{SG}^\Lambda \).

On the other hand, the wordform Mütter, which represents the nominative, the genitive and the accusative in the plural, contrasts with the dative plural form Mütter+n; therefore, the wordform Mütter contains a zero case suffix: -ØNOM/GEN/ACC, which is opposed to the suffix -n of the dative. As a result, the wordform Mütter has the following morphic representation:

\[
\text{Mütter} = \text{Mutter} \oplus A_{PL}^{u/\rightarrow /ü/} \oplus \text{ØNOM/GEN/ACC}.
\]

Namely, this wordform includes a radical morph, a plural apophony and a zero case suffix. The wordform Mutter has, of course, a different morphic representation:

\[
\text{Mutter} = \text{Mutter} \oplus A_{SG}^{\Lambda \rightarrow \Lambda} \oplus \text{ØNOM/GEN/DAT/ACC}.
\]

As mentioned above, we cannot say that the singular of the wordform Mutter is expressed by the radical Mutter itself (rather than by a zero apophony): in compounds, this radical does not imply ‘SINGULAR’, as, for instance, in Mutter-tag ‘Mothers’ Day’ or Mutterschutz ‘mother protection’ (cf. 3.2).
3.5. **Zero signs and parasitic formations**

Condition 2 helps us make a decision whether there is a zero sign in the cases where one morphological form is built on another complete form—what are known as parasitic formations (Mel’čuk 1991a and 1993–2000, vol. 4: 46–47; see also this volume, Chapter 2, 7, Item 4, p. 144ff). As an example, I will present a well-known parasitic formation—*secondary cases* in Daghestanian languages.

(7) Archi (Kibrik 1997: 27–28; the zero suffixes are my addition: in the left column, the first zero marks the singular, while the last zero in the first line marks the nominative)

The noun GEL ‘mug, tankard’

<table>
<thead>
<tr>
<th>Case</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominative</td>
<td>gel+Ø+Ø</td>
<td>gel+um+Ø</td>
</tr>
<tr>
<td>Ergative</td>
<td>gel+Ø+li</td>
<td>gel+um+čaj</td>
</tr>
<tr>
<td>Genitive</td>
<td>gel+Ø+li+n</td>
<td>gel+um+če+n</td>
</tr>
<tr>
<td>Dative</td>
<td>gel+Ø+li+s</td>
<td>gel+um+če+s</td>
</tr>
<tr>
<td>Comitative</td>
<td>gel+Ø+li+Hu</td>
<td>gel+um+če+Hu</td>
</tr>
<tr>
<td>Comparative</td>
<td>gel+Ø+li+xur</td>
<td>gel+um+če+xur</td>
</tr>
</tbody>
</table>

Beginning with the genitive, all remaining Archi cases (24 of them) are expressed by suffixes added to what seems the complete form of the ergative, marked by -li in the singular and by -čaj/-če in the plural. This situation can be described in three ways:

- We can say that the suffixes of the genitive, the dative, etc. include the element -li in the singular and -če in the plural; then the suffix of the genitive singular is -lin, that of the dative singular is -lis, that of the genitive plural -čen, that of the dative plural -čes, etc. (In other words, -li and -čaj/-če are not considered separate morphs.) This viewpoint is untenable for the following three reasons:
  • It does not allow for the expression of the fact that all 24 oblique case suffixes have a common element.
  • It makes all oblique case suffixes in the singular different from those in the plural, while it is very typical of Daghestanian languages to have 100% agglutinative case suffixes that are the same in both numbers (and Daghestanian languages are structurally very close to each other).
  • The distribution of the -li and -čaj/-če type elements is idiosyncratic: there are different variants of these elements whose choice depends on the stem, they may trigger irregular alternations in stems, or re-
quire a suppletive stem allomorph (gal ‘step’ ~ gál+li, but zul ‘source’ ~ zul+lè; bi ‘blood’ ~ bì+li, but gundári ‘scull’ ~ gundál+li; xonx ‘big rock’ ~ xónx+li, but ans ‘bull’ ~ ans+á; barq ‘sun’ ~ berq+é, but nabq ‘tear’ ~ nibq+i; bae ‘month’ ~ boc+ró, but ábtu ‘father’ ~ ūm+mu). If we include these ‘dubious’ elements in the oblique case suffixes, all these suffixes become idiosyncratic, and the rules for their choice must be repeated again and again, for all of them.

Consequently, we reject this description.

– We can also say that all the oblique cases— the genitive, the dative, etc., including the ergative itself— are formed from the oblique stem of the noun; the elements -li (and its allomorphs) in the singular and -čaj/-če in the plural are suffixes—markers of this oblique stem. This is the viewpoint of Kibrik 1992: 81–82 and 1997: 27–28 (cf. also Comrie 2001).6 If we accept this viewpoint, we have to admit that the ergative is marked by a zero suffix, and this zero suffix would be in contrast with all other overt case suffixes, except, of course, for the nominative: the nominative also has a zero suffix. Then we have two forms—gel sg.NOM and gelli sg.ERG—that are said to differ only by two different zero suffixes, one of the nominative, the other one of the ergative, while the perceptible difference (-li) is considered to be meaningless; it is similar to saying that man vs. men or take vs. took are distinguished by zero suffixes (sg vs. pl; present vs. past), see 3.6 below. However, such an ergative zero suffix would violate Condition 2 of the ZSI Principle: the signified (ERGATIVE) can be associated with the suffixes -li and -čaj/-če, therefore it should; as a result, we cannot stick to the second viewpoint, either.

– Or else we can say that the genitive, the dative, etc. are built on the complete form of the ergative; then we have to admit that the suffix of the genitive -n is added to the wordform after the suffix of the ergative -li. This is my viewpoint; the corresponding representations are given above, under (7).

Remarks

Note that under the description I propose the following two statements hold:

1) The signified (GENITIVE) of the suffix -n (and similarly the signifieds of all the other case suffixes) is not replacive. In ‘parasitic’ case forms in Archi and all similar languages the ergative suffix is selected automatically with any other oblique case suffix and thus does not bring its signified into the wordform:

`GENITIVE` \(\Leftrightarrow\) \{ERG\}, \{GEN\};
`DATIVE` \(\Leftrightarrow\) \{ERG\}, \{DAT\};
`COMITATIVE` \(\Leftrightarrow\) \{ERG\}, \{COMITATIVE\}; etc.
The suffix of the ergative is meaningful only when it is selected for its own signified—that is, when it expresses the ergative: \( \text{\textsc{ergative}} \leftrightarrow \{\text{erg}\} \). Otherwise, its meaning is no more present in the meaning of the wordform \( \text{gel}+\emptyset+l\text{li}+n \) than the meaning of \( \text{bucket} \) is present in the meaning of the idiom \( \text{[to]} \) \textit{kick the bucket} \( \text{[to]} \) \textit{die}.

2) The Archi ergative is quite different from other cases: it has two sets of allomorphs selected as a function of the number (-\( \text{li} \) and the other allomorphs in the singular, -\( \text{čaj} \) in the plural), while the markers of all other cases are the same in the singular and the plural.

3.6. Irrelevant overt distinctions accompanying zeroes

Condition 2 of the ZSI Principle contains two important provisos: 1) the expression of the information in question must be \textit{natural} and \textit{systematic}; 2) a possible candidate for the carrier of this information must be absent at \textit{all} levels of representation, including the deeper ones.

To illustrate the first proviso, let us consider a situation where there is an overt distinction \( \delta \) between two wordforms that shows a semantic distinction \( \alpha \), but where—in spite of this—the researcher has to posit a zero sign which expresses \( \alpha \), ignoring \( \delta \): it is impossible to associate \( \alpha \) with \( \delta \) in a natural and systematic way. Here is an example of a very common type.

(8) Russian

The paradigm of the noun \textit{sestr(-\( \text{č} \))} ‘sister’ includes the following forms:

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>nominative</td>
<td>/s’istrá/</td>
<td>/s’ôstri/</td>
</tr>
<tr>
<td>genitive</td>
<td>/s’istri/</td>
<td>/s’is’t’ôr/</td>
</tr>
<tr>
<td>dative</td>
<td>/s’istr’ê/</td>
<td>/s’ôstram/</td>
</tr>
</tbody>
</table>

Morphologically, these forms contain each two morphs, a radical and a number-case suffix.

The underlying radical has the signifier /s’os’t’ôr/. This signifier never appears as such on the surface; in the process of synthesis, it is modified by the following five morphonological rules, which derive predictable allomorphs:

- substitution \( /\text{o}/ \Rightarrow /\text{u}/ \) (after a palatalized consonant in an unstressed syllable; the symbol ‘ ’ indicates an unstressed vowel);
- truncation \( /\text{o}/ \Rightarrow \Lambda \) (a fleeting /\text{o}/ falls in a radical marked as undergoing this rule, before a suffix that begins with a vowel);
- substitution \( /\text{r}/ \Rightarrow /\text{r’}/ \) (a consonant becomes palatalized before the suffix -\( \text{e} \)).
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- substitution /t/ \(\Rightarrow\) /t/ (a dental consonant loses its palatalization before another consonant, with which it comes in contact as a result of the fall of a fleeting vowel);
- substitution /s/ \(\Rightarrow\) /s/ (a fricative consonant loses its palatalization before a non-palatalized consonant).

The cumulative suffixes of number and case are -á (`NOM.SG`), -i (`GEN.SG`), -é (`DAT.SG`), ..., -i (`NOM.PL`), -Ø (`GEN.PL`), -am (`DAT.PL`), ...

It is the zero suffix of the genitive plural that is problematic: it has to be postulated in spite of the fact that the forms /sístá/ [SG.NOM] and /sístó/ [PL.GEN] – if we ignore the suffix -a – show a phonemic difference: /st/ ~ /s’tó/. This difference, however, is a result of the application of several morphonological rules, which are extremely productive in Russian: they apply to thousands of nouns depending on morphological/phonological context, but without any direct link to the plural or the genitive. It is simply impossible to say that in /sís’tó/ the combination of grammemes (`PLURAL, GENITIVE`) is expressed by the substitution operation /st/ \(\Rightarrow\) /s’tó/. Truncation (or insertion) of a fleeting /o/ is very frequent in Russian: it affects thousands of radicals. However, it is not at all related to the expression of the plural or the genitive: this fleeting /o/ appears in the nominative singular in masculine nouns (úgol ‘angle, SG.NOM ~ ugl+á ‘angle, SG.GEN’) or in denominate adjectives (okn+ň+yj ‘window [pane]’ ~ okn+ó ‘window, SG.NOM’). The presence/absence of a fleeting /o/ in Russian nouns depends only on morphonological conditions (an unstressed fleeting /ó/ is truncated before a vocalic morph). Moreover, Russian does not use morphological operations at all to express any grammemes; therefore, the statement ‘In /sís’tó/ the plural and the genitive are expressed by the substitution /st/ = /s’tó/’ is anti-systematic and anti-natural to the highest degree. Worse, if we try to link the signified (`PLURAL, GENITIVE`) to the /st/ \(\Rightarrow\) /s’tó/ operation, we get an even muddier picture: the string /sís’tó/ belongs to the signifier of the basic allomorph, so that we have to say that (`PLURAL, GENITIVE`) is expressed by a zero substitution, while the string /st/ marks all the other forms different from the genitive plural! This is clearly unacceptable, all the more so because this description is applicable to just one Russian noun: SESTR(–á). We have to postulate here the zero suffix -Ø `PL.GEN` (as practically everybody does).

Now I would like to introduce a less obvious example. In Alutor, for monosyllabic nominal roots, a zero suffix -Ø `SG.NOM` has to be postulated even in the presence of a reduplication of the radical of the noun:

(9) Alutor

<table>
<thead>
<tr>
<th></th>
<th><code>NOM</code>- <code>seagull</code></th>
<th><code>GEN</code>- <code>ax</code></th>
<th><code>DAT</code>- <code>wood, stick</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>nominative</td>
<td>jaqaq+Ø</td>
<td>ąal+Ø</td>
<td>?uto+ut+Ø</td>
</tr>
<tr>
<td>dative</td>
<td>jaq +ωη</td>
<td>ąal +ωη</td>
<td>?ut +ωη</td>
</tr>
<tr>
<td>instrumental</td>
<td>jaq +a</td>
<td>ąal +a</td>
<td>?ut +a</td>
</tr>
</tbody>
</table>
Chapter 9. Zero sign in morphology

Monosyllabic wordforms are forbidden in Alutor. Therefore, the reduplication in the nominative (of some nouns) is used to prevent a monosyllabic wordform which would result otherwise: *jaq+Ø, *jal+Ø, *utt+Ø. Note that:

- Reduplication—or any other morphological operation, for that matter—is never used in Alutor to express any grammatical meanings; the only function of reduplication is to create an additional syllable in order to satisfy a surface-phonological constraint of Alutor (‘No monosyllabic wordforms’).

- Alutor has another technique used to prevent wordform monosyllabicity in the presence of the zero nominative suffix: morphonological alternations of doubling the final consonant and adding /ˈ/, as in *saj ‘tea’ ⇒ sajj, *tonup ‘hill’ ⇒ tonupp, *yal ‘herd’ ⇒ yallo, etc. We have to postulate a zero suffix here as well, in spite of an overt difference.

- For some polysyllabic roots, the presence of the -ØSG.NOM suffix is obvious:
  - ‘worm’ enyam+Ø [SG.NOM] ~ enyam+a [SG.INSTR],...
  - ‘head’ lawot +Ø [SG.NOM] ~ lot +a [SG.INSTR],...
  - ‘knife’ wala +Ø [SG.NOM] ~ wala +a [SG.INSTR],...

- Several types of roots mark the nominative in the singular with an overt suffix: -n, -ŋa or -alŋan.

Taking all these data into account, we have no choice but to admit that the reduplication in (9) cannot be linked to the signified ‘SINGULAR, NOMINATIVE’ in a natural and systematic way. Therefore, here as well, we postulate a zero suffix in the presence of an overt distinction.

The proviso under discussion loosens Condition 2 of the ZSI Principle (‘No zero in the presence of perceptible distinctions’) a bit—in order to ensure a more systematic and natural description in such cases as in (8) and (9).7

The second proviso, concerning deeper levels of representation, foresees different kinds of ellipsis—that is, situations where the information is carried by a non-zero sign present at a given level of representation, but eliminated closer to the surface by special rules. Thus, the Spanish sentence Estoy leyendo ‘I am reading’ does not have a zero subject *Ø1SG.1. In its surface-syntactic structure, this sentence has the overt subject YO 1; rules of Spanish syntax delete it in the transition to the morphological string after it has specified the agreement of the verb. In other words, this proviso requires distinguishing ELLIPSES (= elimination of non-zero signs) from zeroes. It plays a special role in the analysis of the Georgian example (14), considered in Section 4.
3.7. No non-contrastive zeroes

Condition 3 of the ZSI Principle stipulates that a zero sign $\Theta$ contrasts semantically with at least one non-zero sign $X$ capable of occupying the same position and expressing a meaning of the same category as $X$; this requirement applies only to full zero signs—i.e., zero signs that have a non-empty signified. (For empty zero signs such a contrast is, of course, impossible.) Note that this condition does not forbid two zero signs ‘contrasting’ in the same position, provided this position can also contain a non-zero sign, cf. 3.8 below. Thanks to Condition 3, ‘useless’ (i.e., non-distinctive, or ‘stopgap,’ as Haas (1957) called them) zero signs are avoided in two types of situations:

- where the absence of a sign is not significative, because the meaning involved is actually carried by a non-zero (= overt) sign;
- where the absence of a sign is significative, but it is a result of a morphological ellipsis—that is, of the deletion of a non-zero sign introduced on a deeper level of representation.

I will deal only with the first case here and leave the problem ‘zero vs. ellipsis’ for Section 4.

If the presumed zero sign cannot contrast (in the given position) with a non-zero sign, this can happen only because the meaning observed is expressed by a different sign—for instance, by the radical of an invariable form. In such cases, the absence of an affix is not significative and, consequently, a zero sign postulated here would be a linguist’s zero rather than a language zero (see 7, p. 505 for this distinction). Three examples follow.

(10) English

The wordform sheep, as in The sheep were grazing ..., where, as the agreement of the verb shows, it is in the plural, does not include a plural zero suffix *-$\Theta_{PL}$, because this *-$\Theta_{PL}$ does not contrast with a non-zero suffix: the noun SHEEP is invariable. The wordform sheep must be characterized in the lexicon as either singular or plural—that is, we deal here with two different signs:

- sheep' = (‘domestic mammal of the genus Ovis, sg ; /ʃɪp/ ; $\Sigma$ = Noun, ...)
- sheep'' = (‘domestic mammal of the genus Ovis, pl ; /ʃɪp/ ; $\Sigma$ = Noun, ...)

Both signs sheep are megamorphs (Mel’čuk 1982: 61, 105 and 1993–2000, vol. 4: 353–367; see also this volume, Chapter 7, 4.2, p. 400), lexes of the lexeme SHEEP; each of them implements, or manifests, simultaneously two morphemes:

{SHEEP}, {SG} ⇔ sheep' and {SHEEP}, {PL} ⇔ sheep''
Other English nouns of the same type (deer, elk, moose, grouse, trout, ...) are described in the same way. (See also Janda and Manandise 1984: 232, who emphatically reject a zero plural suffix in the plural form sheep.)

(11) French

The same analysis is applicable in written French to nouns such as cas ‘case’, which are invariable:

cas’ = ('case, sg' ; /ka/ ; Σ = Noun, masculine, ...)

and

cas’’ = ('case, pl' ; /ka/ ; Σ = Noun, masculine, ...).

In spoken French, however, the situation is different. Since [un] cas intéressant ‘[an] interesting case’ and [des] cas intéressants ‘interesting cases’ can be pronounced differently – /kærɛntɛʁs/ [without liaison] vs. /kazɛntɛʁs/ [with a possible, although by no means obligatory, liaison in the plural] – the two forms have different morphic representations: cas+ØSG in the singular and cas+z in the plural. The same situation holds with virus ‘virus’: virus+ØSG and virus+z ([un] virus affreux /virüsəfrø/ ‘a horrible virus’ vs. [des] virus affreux /virüsəfrø/ ‘horrible viruses’).

(12) Russian

So-called invariable Russian nouns such as RELE ‘relay’ or PAL’TO ‘coat’ distinguish numbers and cases1.1b, as do all Russian nouns, but here the number/case1.1b combination is not expressed by zero suffixes. Consider the declension of the noun PAL’TO:

a. ot èt +ogo pal’to ‘from this coat’

from this NEUT.SG.GEN coat(NEU)-SG.GEN

vs.

k èt +omu pal’to ‘to this coat’

to this NEUT.SG.DAT coat(NEU)-SG.DAT

vs.

k èt +im pal’to ‘to these coats’

to this PL.DAT coat(NEU)-PL.DAT

Nouns of this type cannot have any non-zero declensional suffix; therefore, Condition 3 of the ZSI Principle does not allow them to have zero suffixes. It is the radical megamorph that carries the grammemes of number and case:

b. ‘coat, SG.NOM’ ⇄ pal’to ‘coat, PL.NOM’ ⇄ pal’to

‘coat, SG.GEN’ ⇄ pal’to ‘coat, PL.GEN’ ⇄ pal’to

‘coat, SG.DAT’ ⇄ pal’to ‘coat, PL.DAT’ ⇄ pal’to

... … …
3. Comments on the concept of zero sign

3.8. Different zero signs in the same position and adjacent zero signs

The ZSI Principle does not bar either two alternating zeroes in the same morphological position (‘contrasting’ zeroes), or simultaneous zeroes in two adjacent positions. The first situation can be illustrated in English, the second, in Hungarian.

Contrasting Zeroes

Consider verbs of the type PUT, CUT and HURT. The wordform put in Alan put his hand on... has the past tense zero suffix -ØPAST, which contrasts with the present tense suffix -s (Alan puts his hand on...) and with the -ing suffixes. Now, what about I put my hand on...? With other English verbs, wordforms such as walk in I (you, we) walk contain a present tense zero suffix -ØPRES (not in the 3rd person singular), opposed to -s in the present and to -ed in the past. By analogy, I say that in I put in the present (I put my book on the table and take my coat), the wordform put has the zero suffix -ØPRES – as in [I] walk; on the other hand, in I put in the past (I put my book on the table and took my coat), put has the zero suffix -ØPAST. Moreover, put in I have put... has the zero suffix -ØPRES, and put in I want to put... has the zero suffix (not in the 3rd person singular), opposed to -s in the present and to -ed in the past. By analogy, I say that in I put in the present (I put my book on the table and take my coat), the wordform put has the zero suffix -ØPRES – as in [I] walk; on the other hand, in I put in the past (I put my book on the table and took my coat), put has the zero suffix -ØPAST. Moreover, put in I have put... has the zero suffix -ØPRES, and put in I want to put... has the zero suffix -ØPRES, as all English verbs do. Thus, we can have a ‘contrast’ between four different zero signs in the same position. This simply means that ‘homophonous’ zero signs (actually all zero signs are ‘homophonous’) can co-exist in the same paradigm. Another example is found in numerous Russian lexemes of the type SOLDAT ‘soldier’: the nominative in the singular and the genitive in the plural have the same forms – soldat, which are, however, different as far as their morphs are concerned – soldat+ØNOM.SG and soldat+ØGEN.PL.

Contiguous Zeroes

At the same time, the ZSI Principle admits several zero signs in one wordform, including adjacent zeroes.

(13) The Hungarian wordform könyv /kœn´v/ ‘book’ contains three successive zero suffixes:

- the zero suffix of ‘non-belonging’ -ØNON-BEL, which contrasts with the non-zero suffix -e of ‘belonging’:
  könyv+Ø ‘book, non-belonging [to anyone]’ vs. könyv+e ‘book, belonging to ...’;
- the zero suffix of ‘singular’ -ØSG, which contrasts with the non-zero suffixes -i and -k of ‘plural’:
  könyv+Ø ‘book, non-belonging ...’ vs. könyv+(e)k ‘books, non-belonging ...’ or
  könyv+e+i ‘books, belonging to ...’;
- the zero suffix of ‘nominative’ -ØNOM, which contrasts with numerous non-zero case suffixes:
Chapter 9. Zero sign in morphology


Thus, the following wordforms can be contrasted:
könyv + Ø + Ø (book)
and
könyv + e + i + ben 'in books belonging to ...'.

Each one of the three morphological positions available in a nominal wordform – belonging, number, and case – and every combination thereof can hold a zero suffix:
könyv + Ø + Ø + ben 'in books'
könyv + e + Ø + ben 'in [the] book belonging to ...'
könyv + e + i + Ø (books belonging to ...)
könyv + Ø + Ø + Ø + ben 'in [the] book'
könyv + Ø + Ø + e + Ø (books)
könyv + e + Ø + Ø + ben '[the] book belonging to ...'

It is easy to see that all these zeroes satisfy the ZSI Principle.10

4. A zero sign or an ellipsis?

In some cases, it is impossible to associate a grammeme (expressed in a wordform) with an overt marker; however, a zero sign cannot be invoked either, because the morphological position under consideration does not allow a contrast between a zero sign and a non-zero sign – and such zeroes are rejected by the ZSI Principle. A possible solution in this situation is MORPHOLOGICAL ELLIPSIS – deletion of a non-zero sign that appears on a deeper level of representation. Let me illustrate this case with a summary description of a fragment of Georgian conjugation.11

In Georgian, the form of a transitive verb in the present indicative expresses the person and the number of both its Subject and its Direct Object [DirO], using the following non-zero markers (for simplicity’s sake, I ignore the fact that some verbs can, in addition, express in their forms the person and the number of their IndirO):

(14) Georgian

<table>
<thead>
<tr>
<th>Subject</th>
<th>Direct Object</th>
<th>Subject</th>
<th>Direct Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>sg 1</td>
<td>v-</td>
<td>pl 1</td>
<td>v- ... -t</td>
</tr>
<tr>
<td>2</td>
<td>g-</td>
<td>2</td>
<td>g- ... -t</td>
</tr>
<tr>
<td>3</td>
<td>-s</td>
<td>3</td>
<td>-en</td>
</tr>
</tbody>
</table>

This set features three ‘agglutinative’ and four cumulative affixes:

- The 1st person subject prefix v- and the 2nd person object prefix g- are ‘agglutinative’: they express only the person of the Subject/the Direct Ob-
ject in both numbers. The suffix -t is of the same nature: it marks only the plural (of the Subject or the DirO).

- The suffixes 3sg -s, 3pl -en and the object prefixes 1sg m- and 1pl gv- are cumulative: they express the person and the number together.

The paradigm of the transitive verb XAV(T-а) ‘[to] draw, paint’ (in the present indicative active) will illustrate the distribution of these markers (prefixes and suffixes).

b.

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1sg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>—</td>
<td>g+s+xalv</td>
</tr>
<tr>
<td>2</td>
<td>m+xalv</td>
<td>—</td>
</tr>
<tr>
<td>3</td>
<td>m+xalv+s</td>
<td>g+s+xalv+s</td>
</tr>
<tr>
<td>1pl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>—</td>
<td>g+s+xalv+t</td>
</tr>
<tr>
<td>2</td>
<td>m+xalv+t</td>
<td>—</td>
</tr>
<tr>
<td>3</td>
<td>m+xalv+en</td>
<td>g+s+xalv+en</td>
</tr>
</tbody>
</table>

[Blanks in the table show the impossibility of forms with the same person of the Subject and the DirO: *I – me?, *I – us?, *you3sg – you3sg, ... For the signifieds of this type, Georgian uses a reflexive construction with the noun TAVI ‘head’ in the role of reflexive pronoun.]

Table (14b) shows multiple discrepancies between the grammemes expressed in surface forms and the corresponding non-zero markers. Thus, in gxatav ‘I draw you3sg’ (the first form of the second column), the prefix g- expresses the 2nd person of the DirO, but we do not find the marker which expresses the singular of this DirO (‘you3sg’), nor the marker for the meaning ‘I’. Similarly, in gxataven ‘they draw you3pl’ (the last form of the fifth column), the same prefix g- again expresses the 2nd person of the DirO, while the suffix -en shows the 3rd person plural of the Subject; but what expresses the plural of the DirO (‘you3pl’) rather than ‘you3sg’? This should be the suffix -t, but it is not there. This type of question can be asked about most forms of table (14b). A logically possible answer could be the introduction of zero affixes in all cases where we lack ‘material’ markers: a zero suffix to mark the singular of the object in gxatav, another one to mark the plural of the object in gxataven, and so forth. But let us have a closer look at these hypothetical zeroes to see whether they will be admissible from the viewpoint of the ZSI Principle. I will begin with the form gxatav ‘I draw you3sg’.

1) ‘1st person’ of the Subject must be expressed by the prefix v-, but we do not see it in the form. Generally speaking, if a Georgian verbal form contains a non-zero object prefix (in this case, the 2nd person g-), no other non-zero pre-
fix can be present in it. Therefore, I cannot postulate here a subject zero prefix *Ø₁\text{pers}*: this *Ø₁\text{pers}* cannot contrast with a non-zero prefix, and Condition 3 of the ZSI Principle disallows such zeroes. The morphic representation of the form in question cannot thus be *Ø₁\text{pers} + g + xafav*.

The correct description is different: the 1st person of the subject is expressed by the prefix \textit{v-}, which, closer to the surface, is evicted by the prefix \textit{g-}; this is a typical morphological ellipsis:

\[
*[[v- + g-] \Rightarrow g-]*
\]

(I use square brackets preceded by an asterisk here and below to indicate an ill-formed surface sequence of linguistic signs.) This rule produces the correct (part of the) morphic representation of the verbal form:

\[
v + g + xafav \Rightarrow g + xafav-.
\]

The substitution \(v- + g- \Rightarrow g-\) cannot be described as phonemic cluster simplification, because the initial phonemic cluster \textit{vg-} is possible in Georgian: \(v+g^{v+i} \text{'[I sweep]', } v+g^{zavn+i} \text{'[I send]', } v+g^{le\#} \text{'[I tear]', etc.}\)

In a general form, the ellipsis rule under discussion may be written as follows:

\[
(15) *[[\text{pref} \in \{\ldots\text{SUB}\}, \text{pref}' \in \{\ldots\text{OBJ}\}] \Rightarrow \text{pref}']
\]

The morphotactic constraints of normative Georgian do not allow more than one non-zero subject/object marking prefix per wordform (and, as we will see in most cases, more than one subject/object suffix). It is this fact that I am trying to capture with ellipsis rules such as (15).

2) The form \textit{gxatav 'I draw youSG} contrasts with the form \textit{gxatavn 'I draw youPL}, where the suffix -\textit{t} expresses the plural of the DirO; this proves the presence, in \textit{gxatav}, of a singular DirO zero suffix. I can then write, for \textit{I draw youSG}, the following (incomplete) morphic representation:

\[
v + g + xafav + Ø_{SG}.
\]

3) The form \textit{gxatav} also contrasts with two other forms realized as \textit{gxatavn}:

- the form \textit{gxatavt 'we draw youSG}, where -\textit{t} expresses the plural of the Subject; and
- the form \textit{gxatavn 'we draw youPL}, where -\textit{t} expresses the plural of both the Subject and the DirO.

From this, two conclusions follow:

- The suffix -\textit{t} is an ‘unselective’ pluralizer: it can express the plural of the Subject, of the DirO, or of both (not to mention the IndirO, which I do not consider here). Its signified is simply ‘\text{PLURAL}', without specifying whether
it pluralizes the Subject or an Object. By analogy, we can decide that in the
singular the zero suffix is equally unselective in the same sense: -ØSG is
for the Subject, the DirO, or both. The wordform meaning 'we draw youPL'
cannot have two plural suffixes -t one for the Subject, and the other for the
DirO. By analogy, the wordform meaning 'I draw youSG' cannot have two
singular zero suffixes one after another, nor can the wordform meaning 'I
draw youPL' have the combination of -t with -ØSG:

\[ [-t + -t] \Rightarrow -t; \quad *[-ØSG + -ØSG] \Rightarrow -ØSG; \quad *[-t + -ØSG] \Rightarrow -t; \quad *[-ØSG + -t] \Rightarrow -t \]

The substitution -t + -t ⇒ -t cannot be described as a phonological alterna-
tion (phonemic cluster simplification) because the final phonemic cluster of
two identical dentals is possible in the Georgian verb: \(v+kvet+t\) 'we cut/cross [a
street]', \(v+cvet+t\) 'we wear out [clothes]'.

4. A zero sign or an ellipsis?

– The morphic representation of the form gxat'av 'I draw youSG' contains
another zero suffix, which marks the singular of the subject ('I' rather than 'we'). As a result, the complete morphic representation of this form
is as follows: \(v + g + xafav + ØSG + ØSG\).

4) The form gxat'av 'I draw youSG' is also opposed to the forms gxat'av's 'he
draws youSG' and gxat'av'en 'they draw youSG'. But this opposition is ex-
pressed – at the level of the morphic representation – by the 1st person subject
prefix v- (in the morphic representation \(v+g+xafav\)), which contrasts with the
3rd person singular subject suffix -s and the 3rd person plural subject suf-
fix -en. (Closer to the surface, as noted above, v- is evicted by the prefix g-.
In item 1, the form gxat'av 'I draw youSG' has no zero prefix *Ø1pers*, since
Condition 2 of the ZSI Principle bars the introduction of such a zero.)

Now let me turn to the second form mentioned above: gxat'av'en 'they draw youPL', where a problem arises in connection with the 'absent' pluralizer of the
DirO -t. The table in (14b) shows that this suffix does not combine with any other
suffix, but it behaves differently with respect to the subject suffixes of the 3rd
person -s [SG] and -en [PL]. Namely, -t evicts -s, but is itself evicted by -en:

'he draws youPL' \(\Rightarrow g + xafav + s + t \) \(\Rightarrow gxatav \)  
'they draw youPL' \(\Rightarrow g + xafav + en + t \) \(\Rightarrow gxataven \)  

To express this fact, I introduce two further morphological ellipsis rules:\(^{14}\)

\[ *[-s + -t] \Rightarrow -t; \quad *[-en + -t] \Rightarrow -en \]

Again, these are morphological, rather than phonological, rules because the
final clusters -st and -nt are possible in Georgian: \(v+sres+t\) 'we rub him/them',
\(a+lxen+t\) 'youPL amuse him', \(v+a+rčen+t\) 'we support him/them'.

Finally, I suppose that the non-zero suffixes -s and -en always evict adjacent
zero suffixes; therefore, two more morphological ellipses are needed:
Chapter 9. Zero sign in morphology

\*[s + -ØSG] \implies -s; \*[-en + -ØSG] \implies -en

(The application of this rule makes of course no difference in the surface appearance of the form; it is needed only to ensure an appropriate generalization: “The suffixes -s and -en are incompatible with autonomous number markers.”)

Given the complex combinatorics of Georgian verbal affixes, many verbal forms in the present indicative active manifest multiple ambiguities; for instance:

<table>
<thead>
<tr>
<th>Verbal form</th>
<th>Signified</th>
<th>Morphic Representation</th>
</tr>
</thead>
<tbody>
<tr>
<td>gxatavt</td>
<td>‘I draw youPL’ \iff v + g + xatav + ØSG + t</td>
<td></td>
</tr>
<tr>
<td></td>
<td>‘we draw youSG’ \iff v + g + xatav + t + ØSG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>‘we draw youPL’ \iff v + g + xatav + t + t</td>
<td></td>
</tr>
<tr>
<td></td>
<td>‘he draws youPL’ \iff g + xatav + s + t</td>
<td></td>
</tr>
<tr>
<td>gxataven</td>
<td>‘they draw youSG’ \iff g + xatav + en + ØSG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>‘they draw youPL’ \iff g + xatav + en + t</td>
<td></td>
</tr>
</tbody>
</table>

To sum up: If we take into account only the form gxatav and its oppositions with other forms of the (partial) paradigm of the Georgian verb, just one verbal zero suffix is found in Georgian: an unselective singularizer -ØSG. Forms of the type gxatav ‘I draw youSG’ or gxatavt ‘we draw youSG’ do not contain a 1st person subject zero prefix: these forms are a result of morphological ellipsis—elimination of the regular 1st person subject prefix v-. There is no 3rd person singular subject zero suffix in gxatavt ‘he draws youPL’, either: this form is also produced by the ellipsis of the subject suffix -s. However, the paradigm in (14b) confirms the presence of another unquestionable zero prefix: the 2 person subject prefix Ø2pers-, seen in the forms Ø+xatav+Ø ‘youSG draw him/them’ and Ø+xatav+t ‘youPL draw him/them’, as opposed to v+xatav+Ø ‘I draw him/them’ and v+xatav+t ‘we draw him/them’.

I will stop my analysis of the Georgian verb here, even if there remain some other interesting zero-related problems: for instance, the existence of the 3rd person direct object zero prefix. What we have just seen is sufficient to illustrate the fact that absence of an affix, even if this absence is significative, is not necessarily a zero affix—it may be the result of a morphological ellipsis. Now, although this is a chapter on linguistic zeroes and ellipses are opposed to zeroes, I think it is necessary to analyze the concept of morphological ellipsis in some detail in order to give the concept of zero sign additional depth.

5. **Morphological ellipsis**

Ellipsis in syntax—that is, at the clause and sentence level—is relatively well studied; it is much less popular in morphology—that is, at the level of the word-form. I think, however, that ellipsis is found in morphology as well and fully deserves the linguist’s attention.
5. Morphological ellipsis and related concepts

In order to put morphological ellipsis into perspective, I will start with a few definitions (X is any segmental linguistic unit; C is the set of contexts, or conditions, for the application of a rule).

Definition 9.2: Deletion

A deletion is an operation described by a rule of the form “X ⇀ A | C”.

Deletion rules fall into two major types as a function of what X is:

– If X is a non-significative unit – that is, a phonemic string or a prosodemic complex – we have a truncation alternation.
– If X is a significative unit – that is, a linguistic sign, a configuration of signs or a set of contextually distributed signs (= a lexeme or a morpheme) – we have an ellipsis.

Definition 9.3: Truncation

A truncation is a deletion in which X is a phonemic string or a prosodemic complex (i.e., a non-sign).

The context C of a truncation can in principle be anything: it can be a phonemic string (then we have a phonologically controlled truncation), or a particular sign or signs (this is a morphologically controlled truncation), or it can be empty.

From the viewpoint of its semantic role, truncation can be either meaningful (being the signifier of a sign – an apophony) or meaningless (being an empty alternation).


<table>
<thead>
<tr>
<th>semelfactive</th>
<th>iterative</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘I lie down’</td>
<td>balā +li</td>
</tr>
<tr>
<td>‘I hit’</td>
<td>batat+lî</td>
</tr>
<tr>
<td>‘I cut’</td>
<td>kolof+lî</td>
</tr>
</tbody>
</table>

The stem in the right-hand side members of these pairs shows a truncation apophony A applied to a verbal stem /ΦV(C)/- (where /Φ/ is any string of phonemes) and expressing the iterative aspect:

\[ A_{ITERAT} = \{\text{repeatedly}\} ; /ΦV(C)/ + \Rightarrow /Φ/ + ; \Sigma = \text{applies to verb stems, ...} \]

Such signs are ‘anti-diagrammatical,’ or ‘anti-iconic’ (Dressler, on many occasions; see, e.g., Dressler 1987): they violate the principle of maximal parallelism between the signified and the signifier, since they express the addition of meaning by subtraction from the form. Therefore, meaningful truncations are rather rare in languages of the world (cf. Mel’čuk 1991a).
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(17) Meaningless truncation: Latin

<table>
<thead>
<tr>
<th>Sign</th>
<th>Genitive</th>
<th>Nominative</th>
</tr>
</thead>
<tbody>
<tr>
<td>bridge'</td>
<td><em>pon</em> +is</td>
<td><em>pon</em> +s</td>
</tr>
<tr>
<td>mountain'</td>
<td><em>mont</em> +is</td>
<td><em>mon</em> +s</td>
</tr>
<tr>
<td>swamp'</td>
<td><em>palud</em> +is</td>
<td><em>palu</em> +s</td>
</tr>
</tbody>
</table>

Meaningless truncation alternations are too well known to need further discussion.

Definition 9.4: Ellipsis

An ellipsis is a context-determined deletion in which:
1) $X$ is a linguistic sign, a configuration of linguistic signs, or a set of contextually distributed signs (an “-eme”);
2) $C$ is a linguistic sign, a configuration of linguistic signs, or a set of contextually distributed signs.

Thus, ellipsis is also, like truncation, a particular case of deletion, but a very special case: deletion of whole signs imposed by a context consisting of other whole signs. Note that:
- In contrast to truncation, an ellipsis is necessarily meaningless, because it is strictly context-imposed: elimination of signs in a given context cannot be meaningful. Ellipsis does not change the meaning of the linguistic unit (clause/sentence or wordform) it is applied to. Thus, for instance, French and German eliminate the sequence of two identical prepositions, as in *les lettres de de Saussure* (the letters of de Saussure) $\Rightarrow$ *les lettres de Saussure* or *Es ist von von Wartburg geschrieben* (This is written by von Wartburg) $\Rightarrow$ *Es ist von Wartburg geschrieben*.
- An ellipsis can be optional or obligatory.
- An ellipsis applies only to a segmental sign—i.e., a sign having as its signifier a string of phonemes.

Definition 9.5: Morphological ellipsis

A morphological ellipsis is an ellipsis which is applicable only within the limits of a wordform.

Put in simple terms, a morphological ellipsis is triggered by the surface incompatibility of two signs within a wordform.

Ellipsis should be carefully distinguished from both truncation and zero signs.17 What unites these three phenomena is that all of them imply some relevant absence in the text; however, they are quite different in their nature:
1) Ellipsis and truncation are operations, while a zero sign is an entity.
2) Ellipsis is always meaningless, zero signs always meaningful, and truncation can be either.
3) In the process of text synthesis, morphological ellipsis is triggered by the context (morph incompatibility); a zero sign is selected, as all normal signs are, for its signified; and truncation is sometimes used to express a meaning and sometimes to satisfy contextual requirements.

5.2. Illustrations of morphological ellipses

Let me give more examples of morphological ellipses (curly brackets «{ }» denote, as everywhere in this book, morphemes.

(18) In Alutor, the following incompatibilities are observed within a verbal wordform at the morphic level:

a. \([\text{suf} \in \{\ldots\text{SUB}\}, \text{suf}^\prime \in \{\ldots\text{OBJ}\}] \Rightarrow \text{suf}^\prime\)

Suffixal person-number markers of the Subject and those of the DirO cannot co-exist in the same verbal wordform: the Object suffix ‘evicts’ the suffixal part of the Subject circumfix, so that only the prefixal part of this circumfix remains. For instance:

\(*\text{m}´\text{t} + \text{uvvat} + \emptyset + \text{mak} + \text{tak} \Rightarrow \text{m}´\text{t} + \text{uvvat} + \text{tak}\)

\(1\text{DU.SUB.IND} \text{ kiss} \quad 1\text{DU.SUB.IND} \quad 2\text{DU.OBJ} \quad (\text{*m}´\text{tvvanmaktok})\)

\(\text{We} \text{DU kissed you} \text{DU}.\)

Rule (18a) can be formulated neither in terms of ‘pure’ grammemes (since Subject and Object markers not only can, but actually must cooccur in an Alutor verbal wordform: see Note 19), nor in terms of phonemes (the sequence \(-\text{m}´\text{ktak}\) and other segments of this type do not violate any phonological constraints of the language): it is a typical morphological ellipsis. The reduction it describes is parallel to what is seen in syntax when the speaker omits one of two consecutive identical prepositions (see above), the verb in constructions of the type \([\text{Alain gave an apple to Helen,}]\) and \(\text{Leo a pear to Marga}\) or the noun in constructions of the type \(\text{Fr.} \text{Je prends la bleue, lit. ‘I take the blue’ (as an answer to the question ‘C’est quelle robe que tu prends?, lit. ‘Which dress do you take?’), etc.}\)

b. \([\text{suf} \in \{\text{PL.SUB}\}, \text{suf}^\prime \in \{\text{PL.OBJ}\}/\{\text{DU.OBJ}\}] \Rightarrow \text{suf}^\prime\)

A (suffixal) Subject pluralizer cannot co-exist in the same verbal wordform with a (suffixal) Object pluralizer or an Object dualizer; the Object pluralizer/dualizer evicts the Subject pluralizer, so that only the Object pluralizer/dualizer remains. (As we see, the Object is again ‘stronger’ than the Subject.) Here is an example:
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(18a) the suffixal part of the subjectal circumfix *mat-…-mak; *mat+uvvat+la+tkoni+mak+na+wwi.

As before, the rule cannot be stated in terms of grammemes (both plural grammemes can be expressed by the resulting wordform *matuvvataltkwannwi) or in terms of phonemes; this is another typical morphic rule, namely a morphological ellipsis.

c. *[-\text{N}D{SEQ(uential)}], -t \in \{\text{PL.SUB(ject)}\} \Rightarrow -\text{N}D

The suffixal part of the circumfix of the sequential (roughly, of the future) ta-…-\text{N} cannot co-exist in a verbal wordform with the suffixal part of the Subject plural circumfix la-…-t; -\text{N}D evicts -t. For instance:

\[
\text{Ø} +\text{ta} +\text{arat} +\text{Ø} +\text{la} +\text{g} +\text{t} \Rightarrow \text{t}+\text{arat}+\text{la}+\text{g} (\text{tarallayt})
\]

(19) In Dyiwarli, the following filter rule is operational at the morphic level:
Two identical dative suffixes cannot follow each other in a nominal wordform; one of them is obligatorily deleted. For instance, consider the wordform purațiyi in sentence (19a):

a. Đuma+tì +Ø diril +ari +a ṭuṭu+wu purațiyi
child PL NOM be.afraid INCHOAT PRES dog DAT1 woman-DAT1.DAT2

‘Children are afraid [lit. ‘became afraid’] of the woman’s dog’.

This wordform is obtained in the following way:

*purați +yi +yi ⇒ purațiyi
woman DAT1 DAT2

Here, the governed DAT1 of the noun ɬuTu ‘dog’ is imposed by the verb ĐIRIL ‘[to] be afraid’, which governs the dative of its object. With the noun PURAȚI ‘woman’, the DAT1 marks possession, just as the genitive in other languages; but the agreeing DAT2 ‘reflects’ the dative of its syntactic governor, ɬUtu.

However, two different dative allomorphs can follow each other:

b. Đuma+tì +Ø diril +ari +a
child PL NOM be.afraid INCHOAT PRES

ṭuṭu+wu ɬana+du+wu yakan+ku +wu
dog DAT1 I wife DAT1 DAT2

‘The children are afraid [lit. ‘become afraid’] of my wife’s dog [lit. ‘of wife of me’]’.

The surface wordform ɬana+du+wu has the underlying morphic structure ɬana+du+wu+wu, which is ‘reduced’ by the above rule. For YAKAN ‘wife’, the DAT1 marks the possession [= ‘of wife’], and the DAT2 reflects the governed DAT1 of its governor [= ɬUtu ‘dog’] (‘dog—synt—of wife’). For ɬANA ‘I’, the DAT1 (-du) also marks the possession [= ‘of me’], while the DAT2a (-wu) and DAT2b (-wu) reflect the two datives of its governor, YAKAN. As we see, from two identical suffixes of the DAT-wu-wu, one is deleted, but two different suffixes of the DAT following each other—that is, the sequences -du-wu and -ku-wu, remain intact.

(The allomorph -du appears on pronouns, -wu on nouns after a back vowel, -yi on nouns after /i/, and -ku on nouns after a consonant.)

Since (19a) involves only identical, or ‘repeated,’ suffixes, the question arises as to whether it is not a case of haplology—a meaningless morphological operation, special case of truncation alternation, dealing with (quasi-)identical phonemic sequences under particular phonological and/or morphological conditions. (Typical examples of haplology include murder+er — *murder+er+ess ⇒ murderess, adulter+er — *adulter+er+ess ⇒ adulteress, opposed to wait+er...
~ wait+r+ess, heir ~ heir+ess, etc.; or else morpho+phonology ⇒ morpho+logy). The answer is negative: if we judge from the information supplied in Dench and Evans 1988, the deletion in question involves only whole signs and is conditioned only by whole signs. If, for instance, the dative suffix -ku could be deleted after the stem-end sequence -ku or after a different suffix having the same signifier /ku/, this phenomenon could be called haplology. Yet, as far as I know, this is not the case.

(20) In Turkic languages, the plural suffix of the noun (-lar and all its phonological variants) is not compatible with the possessive 3pl suffix (-lari ‘their’ and its phonological variants):

\[ *[\text{suf} \in \{\text{PL}\} + \text{suf'} \in \{\text{POSS.3PL}\}] \Rightarrow \text{suf'} \]

Let me illustrate this morphological ellipsis from (Osmanli) Turkish:

\begin{itemize}
  \item a. \[ at +\text{lari} +\varnothing \Rightarrow \text{atlar} \text{‘their horses’} \]
  \[ \text{horse PL POSS.3PL NOM} \]
  \[ ev +\text{leri} +\text{de} \Rightarrow \text{evleride} \text{‘in their houses’} \]
  \[ \text{house PL POSS.3PL INESS} \]

As a result, a nominal form of the type \text{atlar} is inevitably three-way ambiguous, because in addition to the above Deep-Morphological Representation, it can have two more:

\begin{itemize}
  \item b. \[ at +\varnothing +\text{lari} +\varnothing \Rightarrow \text{atlar} \text{‘his/her horses’} \]
  \[ \text{horse PL POSS.3SG NOM} \]
  \[ at +\varnothing +\text{lari} +\varnothing \Rightarrow \text{atlar} \text{‘their horse’} \]
  \[ \text{horse SG POSS.3PL NOM} \]
\end{itemize}

As in the preceding case, we cannot have recourse to haplology here: what are involved in (20) are genuine signs; note that the stem-final sequence -lar or -ler does not trigger deletion: dolar+lar ‘dollars’ ⇒ dolarlar, kiler+ler ‘larders’ ⇒ kilerler, etc.

5.3. An alternative description of the same facts?

Description via ellipsis – by deleting morphs (or morphemes) selected on a deeper level of representation – is, of course, not the only possible way to account for the observed facts. Logically speaking, there is an alternative: we can prevent the respective signs from being used (in case when the corresponding grammemes are present in Deep-Morphological Representation of the wordform being synthesized). This is the blocking approach, and it can be implemented in two ways:
If no ordering of morphological rules is admitted, we can write into our rules more complex conditions that will not allow one of the competing signs to be used if the other one is around. Thus, describing the Georgian Subject/Object verbal prefixes, we should add the following condition for the selection of the prefix \( v \)-: “Only if there is no 2nd person Object.”

If (at least) partial ordering of morphological rules is admitted, we can organize our rules in blocks and order these rules within blocks in a particular way. Thus, in Georgian, in the appropriate block, the \( \text{en} \)-rule must be ordered before the \( \text{t} \)-rule, and the latter, before the \( \text{s} \)-rule. Each previous rule prevents the following rule from applying. The same method can, of course, be used for the \( \text{v} \)- and \( \text{g} \)-prefixes: the \( \text{g} \)-rule is ordered before the \( \text{v} \)-rule and thus—if \( \text{g} \) appears in the wordform under synthesis—prevents \( \text{v} \) from appearing at any level of morphological representation. (This is the ‘disjunctive ordering,’ proposed in Anderson 1986: 12 and 1992: 46, 87 and \textit{passim}, and then developed in Carmack 1997.)

The two techniques are perfectly equivalent. The choice must be made based on systemic considerations: one has to prefer the description which guarantees a simpler and more elegant model. However, I will not try to resolve the issue of competing linguistic descriptions, because I reject the blocking approach to morphic incompatibility altogether—for the two following reasons:

1) Under the blocking approach, some inflectional meanings receive no markers at all. Indeed, this is the gist of this approach—to prevent particular meanings from being expressed in the presence of some other meanings, whose ‘stronger’ markers compete for the same structural position in the wordform. But I do not like the philosophy of morphology that hides behind the technique of preventing some meanings from being expressed by particular markers. I believe that all starting meanings have to be expressed in the wordform to which they give rise by particular markers; if a meaning does not receive an overt marker, this would automatically mean in my parlance that it is expressed by a significant absence—that is, by a zero. But the zero sign which would have to be postulated in the above examples of morphological ellipses is not allowed in our system because it is not contrastive. The ellipsis approach avoids this paradox. Meanings that are first expressed by overt signs and later lose their markers in the transition to the surface realization are well attested in syntax—these are ellipses of wordforms in various constructions. So in morphology I prefer to have an obvious analogy to syntax and postulate morphological ellipses.

2) In contrast to blocking, the ellipsis approach ensures an explicit statement of morphic incompatibilities and the relative strength of incompatible morphs. Such a rule as (15), p. 490, in Georgian:
Chapter 9. Zero sign in morphology

\[\text{*[pref}' \in \{\ldots \text{SUB}\}, \text{pref}'' \in \{\ldots \text{OBJ}\}] \Rightarrow \text{pref}'',\]
says directly which morphs cannot be combined within a wordform and which one must be evicted. Under blocking, this information remains implicit.

These considerations are sufficiently weighty for me to strongly prefer the ellipsis approach over the blocking one.23

5.4. Truncation alternation: a phenomenon similar to morphological ellipsis

Now I will cite five examples of morphological phenomena that could be easily mistaken for morphological ellipses, but are in fact truncation alternations.

Alutor abridged verbal forms

(21) Alutor

Some Alutor suffixes, parts thereof, or suffixal parts of circumfixes can optionally be dropped at the end of a wordform:

<table>
<thead>
<tr>
<th>full form</th>
<th>abridged form</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{sitSG} down!</td>
<td>\text{q+tv\text{\text{y}}!}</td>
</tr>
<tr>
<td>[q\text{-...-yi} is a circumfix of the 2sg subject in the imperative]</td>
<td></td>
</tr>
<tr>
<td>\text{I kissed themPL}</td>
<td>\text{t+uvvan+na+wwi} \sim t+uvvan+na</td>
</tr>
<tr>
<td>[-na is a suffix of the 3 person Object; -wwi is a pluralizer of the Object]</td>
<td></td>
</tr>
<tr>
<td>\text{Let usPL begin!}</td>
<td>\text{m+n+iv+la!} \sim \text{m+n+guy+la!}</td>
</tr>
<tr>
<td>[\text{m+n-...-mak} is a circumfix of the 1du subject in the imperative; -la- is a pluralizer of the Subject]</td>
<td></td>
</tr>
</tbody>
</table>

What is omitted in the abridged forms are significative elements, and yet this omission is not a morphological ellipsis because:

- The main condition for the omission in question is purely phonological: it occurs automatically at the end of the wordform, and the presence of other signs is irrelevant.
- The omission is impossible if some purely phonological conditions are violated:
  - No omission is allowed if the resulting form is not trisyllabic (= does not correspond to the preferred syllabic pattern of Alutor verbal wordforms), cf. \text{q+iv+yi!} ‘Tell me!’ \sim \text{*qoni!}
  - No omission is allowed if the string to be omitted has previously triggered obligatory regressive assimilation: \text{mot+uvvat+mak ‘weDU kiss’} \Rightarrow \text{mot+uvvan+mak} \Rightarrow \text{mot+uvvan} \Rightarrow \text{mot+uvvan+mak} \sim \text{*mot+uvvan}. The abridged form \text{mot+uvvat} – without
5. Morphological ellipsis

assimilation—is correct [mat-...-mak is a circumfix of the 1du Subject in the indicative].

- The omission of the pluralizer -wwi preserves the fleeting -a before it—compare the abridged plural Object form t+uv\text{van}+\text{na} \text{I kissed them}\text{PL}\), with the singular 3p. Object form t+uv\text{vat}+\text{on} \text{I kissed him/her}, where the final -a is impossible. The same situation is observed in the noun. Thus, nouns of the type MILUT \text{‘hare} have a final fleeting -a in the stem, which has to fall before the zero suffix of the nominative, but is retained before the pluralizer -wwi, even if the latter is omitted: SG.NOM milut (\text{"miluta}) and PL.NOM miluta\text{wwi} or (abridged) miluta.

To sum up:

The Alutor abridgment in verbal wordforms is a morphologically-controlled phonemic truncation alternation.

Russian verbal past-tense marker

(22) In Russian, the past tense marker -l is not present in the verb form after a consonant stem before a zero suffix of the masculine gender:

<table>
<thead>
<tr>
<th></th>
<th>SG, MASC</th>
<th>SG, FEM</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘can, PAST\text{3}</td>
<td>mog +Ø</td>
<td>mog +l+a</td>
<td>mog +l+i</td>
</tr>
<tr>
<td>‘freeze, PAST\text{3}</td>
<td>mërz+Ø</td>
<td>mërz+l+a</td>
<td>mërz+l+i</td>
</tr>
<tr>
<td>‘row, PAST\text{3}</td>
<td>gre\text{b}+Ø</td>
<td>gre\text{b}+l+a</td>
<td>gre\text{b}+l+i</td>
</tr>
</tbody>
</table>

In all verbs whose stem does not end in a consonant or ends in a thematic vowel this -l appears without exception:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>‘dance, PAST\text{3}</td>
<td>pljasa+l+Ø</td>
<td>pljasa+l+a</td>
<td>pljasa+l+i</td>
</tr>
<tr>
<td>‘grind, PAST\text{3}</td>
<td>molo +l+Ø</td>
<td>molo +l+a</td>
<td>molo +l+i</td>
</tr>
<tr>
<td>‘love, PAST\text{3}</td>
<td>ljubi +l+Ø</td>
<td>ljubi +l+a</td>
<td>ljubi +l+i</td>
</tr>
</tbody>
</table>

How can we describe the absence of -l in the verb forms of the type mog?

The context in which this omission happens is strictly phonological—after a consonant at the end of the wordform; therefore, the omission of -l is not a morphological ellipsis.

Logically, one can introduce a zero suffix -Ø\text{PAST} here, an allomorph of the same morpheme as -l. This allomorph would satisfy all the requirements imposed on zero signs: it is informative, exclusive, and contrastive. But the conditions of its appearance are ‘too phonological’ for a zero: cf. the additional requirement to the ZSI Principle, at the end of 2, p. 471. Therefore, I prefer the third solution left:

The omission of the past tense suffix -l in the cases of the above-mentioned type is a phonemic truncation alternation that is morphologically controlled (it applies only to /l/ of the past-tense suffix; within radicals, endings like krug\text{f}[it is] round', smy\text{sl} ‘meaning’ or \text{"rod, staff} are possible):

/l/ \rightarrow \Lambda | /C/ + _{-}; /l/ \in \{\text{PAST}\}
English derivation

(23) In English derivation, numerous omissions of phonemic material before the derivational suffix are found:

- Stalinism ~ *Stalinismist ⇒ Stalinist'
- atavism ~ *atavismistic ⇒ atavistic
- ambiguous ~ *ambiguosity ⇒ ambiguity
- nominate ~ *nominat*ee ⇒ nominee
- tolerate ~ *tolerat*able ⇒ tolerable
- translate ~ *translat*ation ⇒ translation

In Aronoff 1976 all such cases are considered to be truncation alternations. Is this correct? I think so. True, in many derivational patterns of the type of (23) we deal with the deletion of signs under the impact of other signs: thus, in highly productive series Stalinism ~ Stalinist [instead of *Stalin+ism+ist], Marxism ~ Marxist [*Marx+ism+ist], Darwinism ~ Darwinist, etc. we see the incompatibility of two genuine signs, the suffixes -ism and -ist; here we could speak of morphological ellipsis. However:

- In numerous cases, the element affected by truncation is not the signifier of a sign: -ate in nominate, translate, etc.
- Moreover, such strings as -ism or -ous, which are signifiers of the corresponding suffixes, can very often be non-significative elements: cf. -ism in atavism and -ous in ambiguous (these are morphoids and submorphs: see Mel’čuk 1993–2000, 4: 245–251).
- Even in cases where the truncated element is the signifier of a sign, this is not relevant for the operation: Aronoff’s truncation does not pay attention to the sign/non-sign character of the material to be deleted.

Therefore, to ensure a homogeneous description, I prefer to treat the phenomenon indicated in (23), along with Aronoff and his followers, as a phonemic truncation alternation.

English possessive marker

(24) In English, the possessive marker -'s (= ‘Saxon Genitive’) is incompatible with an s-marker of the regular plural, so that it seems to be evicted by the latter (in writing, the possessive is indicated by an apostrophe). For instance:

*crook+s/s'/s ⇒ crook+s'; *king+s/z+/z's ⇒ king+s'; *fox+es/iz+/z's ⇒ fox+es'

The traditional description is via a zero allomorph of the morpheme {POSSESSIVE} (see, for instance, Quirk et al. 1991: 320). But I cannot accept this: such a form as crooks’ or kings’ cannot be taken to have a zero suffix -*OPOSS, because this zero would not be contrastive—it cannot be opposed to an overt possessive suffix.
Is this a morphological ellipsis? We could say so for the examples in (24); but then the possessive marker is also deleted
- in proper names in -\textipa{/z}/ (optionally): Jones\textquoteleft Jones\textquoteright s, Grimes\textquoteleft Grimes\textquoteright s, Dickens\textquoteleft Dickens\textquoteright s, etc.;
- in Greek proper names that end in \textipa{/s/} or \textipa{/z/}: Euripides\textquoteleft, Socrates\textquoteleft, ...;
- in some Latinate nouns that end in \textipa{/s/} or \textipa{/z/}: series\textquoteleft, rabies\textquoteleft, ...;
- in phraseological expressions of the type for goodness\textquoteleft conscience\textquoteleft politics\textquoteleft sake.

In all these cases, the possessive suffix is not evicted by another sign, but deleted as a function of the phonemic context. Therefore, in order to have a homogeneous description of the deletion of the possessive suffix in all cases, I prefer the following solution:

The deletion of the possessive -s is a phonemic truncation alternation, which is controlled morphologically (in native English words, a stem-final \textipa{/s/} or \textipa{/z/} which is not the signifier of a plural suffix does not trigger the truncation: niece\textquoteleft s/n\textipa{/iz}/, cheese\textquoteleft s/\textipa{/iz}/ or rose\textquoteleft s/\textipa{/oz}/; on the other hand, non-sibilant plural suffixes do not trigger this truncation, either: virtuosi\textquoteleft s, alumni\textquoteleft s, phenomena\textquoteleft s, children\textquoteleft s, oxen\textquoteleft s). Stemberger 1981: 792–795, who analyzes the deletion of the possessive -s in detail explicitly qualifies it as \textquoteleft morphological haplology.' I have to agree with him.

**Russian shortened vocative forms**

(25) The familiar (= shortened) form of a Russian first name and a few kinship terms (of the 1st declension) in the vocative singular can either be identical to the nominative singular, marked by the suffix -a, or it can lack this -a:

<table>
<thead>
<tr>
<th>feminine</th>
<th>masculine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Svet\textipa{+}a! ~ Svet!</td>
<td>Vas\textipa{+}ja! ~ Vas\textipa{+}!</td>
</tr>
<tr>
<td>Ma\textipa{+}a! ~ Ma\textipa{+}!</td>
<td>Pet\textipa{+}ja! ~ Pet\textipa{+}!</td>
</tr>
<tr>
<td>Ver\textipa{+}a! ~ Ver!</td>
<td>Bor\textipa{+}ja! ~ Bor\textipa{+}!</td>
</tr>
</tbody>
</table>

\textquoteright{mummy}\textquoteright mam\textipa{+}a! ~ mam! \textquoteright{daddy}\textquoteright pap\textipa{+}a! ~ pap!

The deletion of the final -a in Russian familiar first names/kinship terms is meaningful: it expresses a higher degree of intimacy, so that Lida! or Sa\textipa{š}! shows more \textquoteleft closeness\textquoteright between interlocutors than Lida! or Sa\textipa{š}a! Therefore, this deletion is impossible with basic (= unshortened) forms of first names (*Ol\textquoteleft g!, *Svetlan!, *Ljudmil!), which are not intimate enough, while it is readily applicable to ultra-familiar forms of the type Vit\textquoteleft k!, Sa\textipa{š}k!, Val\textipa{š}k!, Genk!, etc.

These shortened forms are interesting in the following respect: in Russian, the final consonant in a wordform cannot be voiced (it undergoes automatic de-voicing); yet these forms retain their final voiced consonant: Ser\textipa{ë} /s\textipa{r`}\textipa{ö}z/, Nad\textipa{+} /n\textipa{d}+/?/, Roz /roz/, Vov /vov/, etc. are normal pronunciations. This is seen especially
clearly in the vocative construction *Nad’*, a *Nad’!*, where the impossibility of devoicing is absolutely obvious (cf. Reformatskij 1979: 50–51). Note as well that:

- The voiced final consonant of an intimate vocative can be retained even before a voiceless consonant that begins the following wordform (otherwise in such a context voicing assimilation is obligatory):

  *Djad’ Fed’!/*d’a d´a d´ed’/ ‘Uncle Theo!’

- The same forms in the genitive plural—with a zero suffix -ØPL.GEN—cannot end in a voiced consonant:

  *iz-za vsex ètix Serëž/*s´ir´óš/, *Nad’*/ná t´/, *Roz*/ró s/, *Vov*/vof/ (because of all these ...).

How can we describe these facts?

We cannot say that in the vocative of the nouns in question we have ellipsis of the nominative suffix: this omission is meaningful, and ellipses are meaningless by definition. We cannot say, either, that the vocative is expressed by a zero suffix: before a zero suffix the devoicing of the word-final consonant is obligatory. (And I do not want to admit two different zero suffixes with different morphological properties: see above, 2, p. 471.)

What happens in these forms is a meaningful phonemic truncation alternation—that is, an apophony, of the following form (Φ is any phonemic string):

\[ \text{voc} = \approx \text{(≈ INTIMATE VOCATIVE)}; /\Phi a/ \Rightarrow /\Phi/ ; \Sigma = \text{human familiar first name/kinship term, ...} \]

To produce an intimate vocative form, this apophony has to apply to a nominative form:

- either after all phonemic alternations, including \(/-C_+[\text{voiced}]/-C_-[\text{voiced}]\) in absolute word-final position, have applied: \(/s’ir’óţa/ \Rightarrow /s’ir’ôţ/\);
- or it has to leave a ‘trace’—that is, to put into the wordform under synthesis a special symbol that blocks the application of the rule of final-devoicing.

(In Uspensky and Zhivov 1977: 19, Note 10, the Russian intimate vocative form is described in a similar way—as being obtained by the truncation of -a; cf. also Yadroff 1996.)

### 6. The impossibility of derivational zero signs

For morphological **grammatical zero signs**, the ZSI Principle offers an important corollary:

If a zero sign X is a morphological grammatical sign, then the meaning \(’X’\) (= the signified of X) is inflectional—i.e., it is a grammeme or a combination of grammemes.

In other words, \(’X’\) (or each of its components) has to belong to an obligatory morphological category: a meaning of this category must be expressed in the given position. ‘\(X’\) cannot be a derivateme: derivational zero signs should not be
allowed to exist. Being non-obligatory, derivatemes are unable to exert enough pressure on the morphological system of the language to give rise to zero affixes because these latter do not enter into paradigmatic oppositions. Consider, for example, the pairs of the following type in English:

(26) [to] cook ~ [a] cook, [to] gossip ~ [a] gossip and [to] cheat ~ [a] cheat

In the nouns in these pairs, an agent zero suffix that would be parallel to -er cannot be postulated because the meaning ‘[person] that X-es’, which such a suffix would express, is not inflectional in English. If we admit here an agent zero suffix \(-\text{OAGENT}\), it would contradict Condition 3 of the ZSI Principle: this presumed zero suffix is not contrastive, since no other derivational suffix appears in this position to mark the underlying radical as ‘non-derived.’ Such is the case of all derivational affixes: a derivational affix is never obligatory (by definition), and an absence in a non-obligatory position cannot be significative. The ‘Overt Analogue Criterion’ (Sanders 1988: 156)—that is, the requirement that a derivational zero affix with the signified ‘S’ be postulated only if the language has an overt derivational affix that expresses ‘S’—is not sufficient (and, as we have seen in 3.2, p. 476, not necessary).

Moreover, the derivational zero suffix \(-\text{OAGENT}\), would also violate Condition 2 of the ZSI Principle: there is an overt linguistic means to which the meaning in question can be ascribed. Namely, the linguistic means used to derive [a] cook, [a] gossip and [a] cheat from, respectively, [to] cook, [to] gossip and [to] cheat is conversion: a regular technique consisting in modification of the syntactics of the initial radical, in this case the substitution Verb \(\Rightarrow\) Noun. (On morphological conversion, see Chapter 5, 3.1, Item B, p. 297, as well as Mel’čuk 1982: 102–104 and 1993–2000, vol. 4: 309–323. 26)

The impossibility of derivational zeroes follows from the fact that derivational oppositions are privative (Plungjan 1994): a derived unit \(X+a\) ‘X+a’ is semantically always more complex than the underlying unit \(X\) ‘X’, which does not include any meaning opposed to ‘a’ (thus, Russian diminutives of the type šar+ik ‘[a] small ball’ express the meaning ‘small’, but the underlying radicals do not express the meaning ‘big’ or ‘not small’: šar can denote either a very big or a very small ball (thus, one can say ogromnyj/krošotnyj šar ‘[a] huge/tiny ball’). On the other hand, inflectional oppositions are necessarily equipollent: as a rule, one inflectional form \(X+b\) ‘X+b’ contrasts with another inflectional form \(X+c\) ‘X+c’, so that both forms are of equal semantic complexity.

7. Language zeroes vs. linguist’s zeroes

One of the greatest merits of Haas 1957 is, I think, having established the two-way distinction between typical uses of ‘zero’ terminology in modern linguistics:
– Zeroes belonging to language, or **LANGUAGE ZEROES**. They are what we can call ‘linguistic elements/units’, and they are significative: a language zero presumably carries some information, it is a sign.

– Zeroes belonging to linguistics, or **LINGUIST’S ZEROES**. They are different devices or *façons de parler* that help linguists to formulate their descriptions. Such zeroes are non-significative: they are not used to convey information.

Let it be emphasized that this distinction is not between a good and a bad use of the term *zero* (the partisans of linguist’s zeroes include, among others, the great Pāṇini): it is rather between two different philosophies. A language zero is postulated as part of a language model, while a linguist’s zero is part of a linguistic meta-model—that is, what a linguist wants to say about the language (more specifically, about such and such model of the language).

**LANGUAGE ZEROES** are thus either linguistic signs or -emic sets of signs. More precisely, they are:

– either morphological zeroes: morphs/morphemes, reduplications/reduplicationemes, apophonies/apophoniemes and conversions/conversionemes;

– or syntactic zeroes: wordforms (= lexes) and lexemes.

**LINGUIST’S ZEROES** can be further subdivided into two types:

– A vague or metaphorical use of the term *zero* such that it does not make any reference to linguistic entities, but designates “any linguistic notion, whenever for one reason or another such notion is found to be inapplicable... ‘Zero,’ as thus used, is merely the negative particle transposed into the category of nouns” (Haas 1957: 34, fnt. 1): *zero-expression, zero word order, zero function, zero contrast, zero style, zero case* (= the nominative or the absolutive), *zero tense* (= the present), *zero degree verb* (= the infinitive), *zero derivation*, ...;

– A use that is justified only by the requirements of a general statement (Haas 1957: 50)—e.g., in cases like *sheep* one could say, by analogy with tens of thousands of English nouns in which the plural is expressed by *-(e)s*, that the plural is expressed by a zero suffix (this use goes back to Bloomfield). To the extent that we are interested in the ‘real’ zeroes of language, all such uses should be carefully avoided in order not to create confusion. (But cf., however, Kibrik’s considerations on ‘system-justified’ zeroes: Kibrik 1997: 55–56.)

There are no other zeroes in language. Among other things, no phonemic zeroes (such as, e.g., zero juncture) are possible. A phoneme is not a sign; and a
7. Language zeroes vs. linguist’s zeroes

Phonemic zero element would not be admitted by the Zero Sign Introduction Principle. Interestingly, even researchers who like to speak of ‘phonemic’ or ‘phonetic’ zeroes do not propose to actually write them in the transcription, while morphological and syntactic zeroes (= zero signs and zero -emic sets of signs) are always written in the corresponding representation.27

Annex: Common examples of zero signs

It seems useful to give here a list of the zero linguistic signs known to me that are most frequently mentioned in the literature.

Morphological zeroes: inflectional zero morphs and morphemes

<table>
<thead>
<tr>
<th>Nouns</th>
<th>Adjectives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SG</strong> Eng. table +(O_{\text{SG}}) vs. table+s</td>
<td><strong>MASC</strong> Sp. ingles+(O_{\text{MASC}}) vs. ingles+a-</td>
</tr>
<tr>
<td>Sp. mesa +(O_{\text{AC}}) ‘table’ vs. mesa+s ‘tables’</td>
<td>‘English, MASC’</td>
</tr>
<tr>
<td>Hung. asztal+(O_{\text{AC}}) ‘table’ vs. asztal+ak- ‘tables’</td>
<td>vs. ingles+(O_{\text{MASC}}) vs. English, MASC, -pl</td>
</tr>
<tr>
<td><strong>NOM</strong> Hung. asztal+(O_{\text{SG}})+(O_{\text{NOM}}) ‘table, nom’ vs. asztal+(O_{\text{SG}})+(O_{\text{AT}}) ‘table, acc’, asztal+(O_{\text{SG}})+(O_{\text{BN}}) ‘table, nom’</td>
<td><strong>MASC</strong> Rus. xoros+(O_{\text{MASC}}) ‘[is] good, MASC’</td>
</tr>
<tr>
<td>vs. xoros+(O_{\text{SG}})+(O_{\text{NOM}}) ‘[is] good, nom’</td>
<td>vs. xoros+a ‘[is] good, nom’</td>
</tr>
<tr>
<td><strong>PL GEN</strong> Rus. ruk+(O_{\text{PL. GEN}}) ‘hand/arm, pl. gen’</td>
<td>xoros+i ‘[are] good, pl’</td>
</tr>
<tr>
<td><strong>DEF</strong> Basque mendi+(O_{\text{SG}}) ‘the mountain, Ar.’ vs. mendi+t ‘the mountain, Ar.’</td>
<td>(Unlike Spanish, in Russian, the adjective does not distinguish genders in the plural; this explains the absence of -(O_{\text{SG}}) in xoros+(O_{\text{MASC}}).)</td>
</tr>
<tr>
<td><strong>INDF</strong> Basque mendi+(O_{\text{INDEF}}) ‘the mountain, nom’ vs. mendi+a ‘the mountain, nom’</td>
<td></td>
</tr>
</tbody>
</table>

(The distribution of the markers of definiteness on a Basque noun depends on its case.)

<table>
<thead>
<tr>
<th>Verbs</th>
<th>Pres. Ind</th>
<th>Imper</th>
<th>Aorist</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pres. Ind</strong></td>
<td>Sp. hablar+(O_{\text{PREP. IND}}) ‘[to] speak’, PREP. IND vs. hablarse+ba- [IMPF], hablarse+r [FUT], hablarse+se- [IMPF, SUBJ]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Imper</strong></td>
<td>Sp. hablar+(O_{\text{IMPER}}) ‘[to] speak’, IMPER</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aorist</strong></td>
<td>Alutor t+uvvat+(O_{\text{AOR}}) ‘[to] kiss’, AOR, 1sg.sub—3sg.obj [⇒ tvnevvanin] ‘I kissed him/her’ vs. t+uvvat+efs[PREP]+ nin ‘[I kiss him/her’</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3SG</strong> Sp. hablar+ba+(O_{\text{SG}}) ‘I spoke’ ~ hablarse+se+(O_{\text{SG}}) ‘[that] I spoke’ [IMPF, SUBJ] ~ hablar+(O_{\text{PREP}})+(O_{\text{SG}}) ‘[that] I speak’ [PREP, SUBJ] vs. hablar+ba+s ‘you spoke’, hablarse+se+s ‘[that] you spoke’, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 9. Zero sign in morphology

Notes

1 (2, ZSI Principle, p. 470) An example of a zero sign carrying only values of syntactic features but having an empty signified—i.e., an empty zero sign—is given in 3.3, p. 477ff.

2 (2, ZSI Principle, p. 470) This condition (“Don’t introduce a zero sign if there is an explicit formal difference”) was formulated, in a very clear manner, in Nida 1948 (1958: 256). It was later vigorously elaborated in Haas 1957: 35: “Two obvious carriers of a semantic distinction ... [should not be] ... ousted by the introduction of two ghosts—presence of zero and absence of zero”; Haas is speaking here of a viewpoint according to which the English forms go and went are allomorphs of the same morpheme and are distinguished by a zero marker of the past tense in went, ‘contrasting’ with an absence of a tense marker in go. Haas called a fictitious zero used instead of a perceptible distinction a ‘quid pro quo’ zero.

3 (3.1, (1), p. 472) The actual forms of the demonstratives show the following four phonological alternations of Kirundi:
– Tuncation of /a/- before a vowel (cell II.2: \(ba+o \Rightarrow bo \Rightarrow abo\), via syllabic epenthesis).
– Prevocalic consonantization /u/ \(\Rightarrow /w/\) and /i/ \(\Rightarrow /j/\) (/j/ is spelled y; cell V.2: \(ri+o \Rightarrowryo \Rightarrow iryo\), via syllabic epenthesis).
– Intervocalic epenthesis of /w/ and /j/ (cell I.2: \(uo \Rightarrow uwo\); cell IV.2: \(io \Rightarrow iyo\); cell VI.2: \(ao \Rightarrow ayo\)).
– Syllabic epenthesis: if the form obtained is monosyllabic, the class prefix is preceded by an epenthetic vowel identical to its own vowel (cell II.2: \([ba+o \Rightarrow bo \Rightarrow abo]\); cell V.2: \([ri+o \Rightarrow ryo \Rightarrow iryo]\).

4 \((3.1, \text{(2), p. 473})\) The situation is different with the feminine 3rd person pronominal clitics (‘she’) in the singular:

<table>
<thead>
<tr>
<th>singular (feminine)</th>
<th>full form</th>
<th>clitic form</th>
</tr>
</thead>
<tbody>
<tr>
<td>accusative</td>
<td>(nj+u)</td>
<td>(j+u)</td>
</tr>
<tr>
<td>dative</td>
<td>(nj+oj)</td>
<td>(j+oj)</td>
</tr>
</tbody>
</table>

In these feminine clitic forms the radical is expressed overtly: it is \(j- /j/\). There is no zero radical here.

5 \((3.3, \text{before (5), p. 478})\) Unlike the ‘impersonal’ zero \(\emptyset_{\text{impers}}\), the Russian zero wordform \(\emptyset_{\text{elements}}\), as in Kryšu sorval+o (vetrom), lit. ‘[It] tore the roof away with the wind’, is not empty: it means ‘mysterious/natural forces’ and contrasts, in particular, with another zero \(\emptyset_{\text{people}}\) Kryšu sorval+i, lit. ‘[They] = some indefinite people’ tore the roof away’, as well as with non-zero subjects. (Each of these zero wordforms constitutes a one-lex zero lexeme, see above.)

6 \((3.5, \text{p. 481})\) In many Dagestani languages, the existence of a special oblique stem in the declension of the noun cannot be doubted. Thus, in Tsakhur the ergative is expressed by a suffix added to this oblique stem—just like all other case suffixes are. The above reasoning applies only to Archi and other languages having the same structure of case forms (e.g., Lezgian: cf. Chapter 2, 7, (24), p. 144).

7 \((3.6, \text{p. 484})\) Interesting cases where a zero suffix must be postulated in the presence of an overt distinction between two forms (this distinction, however, being a consequence of some contextual conditions) are found in Finnish conjugation. Thus, in the imperfect indicative the verb has the following personal forms (several types of verbs have in the imperfect a stem different from that of the present/infinitive):

<table>
<thead>
<tr>
<th>personal form</th>
<th>singular (feminine)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 sg</td>
<td>puhu+i+n</td>
</tr>
<tr>
<td>2 sg</td>
<td>puhu+i+t</td>
</tr>
<tr>
<td>3 sg</td>
<td>puhi+i+Ø</td>
</tr>
<tr>
<td>1 pl</td>
<td>puhi+i+mme</td>
</tr>
<tr>
<td>2 pl</td>
<td>puhi+i+tte</td>
</tr>
<tr>
<td>3 pl</td>
<td>puhi+i+vat</td>
</tr>
</tbody>
</table>

PUHU+i+a \(\emptyset\) \((\text{[to]} \text{ speak})\)
SYØ+i+dä \(\emptyset\) \((\text{[to]} \text{ eat})\)
HALU+i+t+a \(\emptyset\) \((\text{[to]} \text{ desire})\)
The existence of -Ø seems absolutely warranted. However, if we take the verb LÄHTE+ä [to leave, depart], we see a complication:

<table>
<thead>
<tr>
<th>Person</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 sg</td>
<td>lähd+i+n</td>
</tr>
<tr>
<td>2 sg</td>
<td>lähd+i+t</td>
</tr>
<tr>
<td>3 sg</td>
<td>läht+i+Ø</td>
</tr>
<tr>
<td>1 pl</td>
<td>lähd+i+mme</td>
</tr>
<tr>
<td>2 pl</td>
<td>lähd+i+tte</td>
</tr>
<tr>
<td>3 pl</td>
<td>läht+i+vät</td>
</tr>
</tbody>
</table>

In the 3sg and 3pl forms, the radical has the form läht- rather than lähd-, which appears in all other forms. Without our first proviso (the overt distinctions that compete with zero must not be automatic alternations), we would not be able to postulate a zero in the 3sg form. In point of fact, we see here a morphonological alternation: the lenition /t/‰/d/ at the beginning of a short closed syllable (this alternation is extremely regular and systematic in Finnish). The radical läht- changes its final /-u/ to /-d/ if there are non-zero suffixes that close the final syllable. This situation is current in Finnish; here is another example (with the lenition /k/‰/R/):

NÄH+dä [to see]

<table>
<thead>
<tr>
<th>Person</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 sg</td>
<td>nā+i+n</td>
</tr>
<tr>
<td>2 sg</td>
<td>nā+i+t</td>
</tr>
<tr>
<td>3 sg</td>
<td>nāk+i+i+Ø</td>
</tr>
<tr>
<td>1 pl</td>
<td>nā+i+mme</td>
</tr>
<tr>
<td>2 pl</td>
<td>nā+i+tte</td>
</tr>
<tr>
<td>3 pl</td>
<td>nāk+i+i+vät</td>
</tr>
</tbody>
</table>

Therefore, when deciding on the postulation of a zero suffix in lähti and näki we can safely ignore the distinctions /u/ ~ /d/ and /k/ ~ /A/ as context-induced, or 'accompanying', phenomena.

8 (3.8, p. 487) The existence of all these zeroes needs more substantial discussion, which seems out of place here. Let me just point out that the existence of the grammeme 'INFINITIVE' is proven beyond any doubt by the forms with BE, which are obvious infinitives: be put, be drinking, etc. And if a grammeme is present, it has to be expressed by a sign; in the absence of an overt sign, we have a zero.

9 (3.8, p. 487) An interesting case of contrasting zero radicals – that is, contrasting zero signs in the same position but in different paradigms – is found in Amele (cf. above, 2.1, (4), p. 474): the zero radical ØGIVE is opposed to a different zero radical ØGET; they are distinguished by different conjugation types, ØGIVE having the infinitive in -e/, and ØGET the infinitive in -o/ (Comrie 2003: 279).

10 (3.8, p. 488) To avoid unnecessary complications, I do not show the suffix marking the number-person of the possessor:
könyv+e+i+ือน = book + belonging to ... + PL + 1SG + NOM = 'my books',
könyv+e+i+ین+بِن = book + belonging to ... + PL + 1PL + INESS = 'in our books', etc.

Here, the suffix -e indicates that the referent of the noun is possessed, the suffix -i marks the plural of the noun, and the next suffix (boxed in the examples) expresses the number and the person of the possessor. For more, see Chapter 2, 3, Comment 2, pp. 115–117.


My Georgian data were checked several times by and discussed with Gogi Chikoidze and Lamara Margvelani, so that the final presentation owes a lot to their remarks and suggestions.

12 (4, p. 490) However, Georgian seems to have a 1st person subject zero prefix Ø₁pers( an allomorph of the same morpheme as *v-), which appears in one verb only: mo+Ø+val [I] will come', mo+Ø+vedi [I] came' (vs. mo+x+val [youSG] will come', mo+x+vedi [youSG] came'). The absence of the prefix v- in these forms cannot be explained phonologically, since this v- appears before the stem-initial v- in other verbs without problem: v+varcxni [I] comb someone’s hair, v+vačrob [I] trade, v+vaxšmob [I] eat supper'. (These facts were pointed out to me by L. Margvelani.)

13 (4, p. 490) I presuppose the order of prefixes v- + g- (rather than *g- + v-) because in the forms with the 3rd person IndirO prefix s-, for some speakers the sequence vs- is possible: mi+v+s+cem [I] will give [this] to him; thus, the subject marker precedes the object marker. (In the normative language, s- must be elided, so that the correct form is mivcem.) See also Note 14.

14 (4, p. 491) In these rules, the order of suffixes ‘subject marker + object plural marker’ in the morphic representation is accepted because in forms where such markers cooccur on the surface they are arranged exactly in this order:
G+čfur +i+a₃SG.Subj+ t₃PL.Obj [YouPL are thirsty], lit. 'It is thirsty to youPL'.
G+xedav+d+a₃SG.Subj+ t₃PL.Obj [He saw youPL].
Moreover, in colloquial/dialectal Georgian, the suffix sequence -s + t is actually heard: xatavst, instead of the normative xatavt.

15 (4, p. 492) The 3rd person DirO zero prefix in the Georgian transitive verb
Aronson 1992 argues against the 3rd person DirO zero prefix; in conformity with tradition, he maintains that the verb does not agree with a 3rd person DirO (while obligatorily agreeing with 1st/2nd person DirOs). His main argument is that on some occasions, what is basically a transitive verb has no DirO in the sentence, so that there cannot be 3rd person agreement. Aronson refers to two types of verbs: 1) Verbs having two syntactic modifications, such as [to] hit N' vs. [to] hit on N' or [to] point N' vs. [to] point to N'; when used in the second—‘prepositional’—modification, they do not have a DirO.
2) Verbs having so-called ‘absolute’ use, such as ‘She smokes’, ‘I paint when I have time’, ‘You read better than you write’, etc.

I, however, do not find this argument convincing. Inherently transitive verbs appearing in a prepositional or ‘absolute’ modification are not transitive any more: they function as separate lexical units – intransitive verbs, which cannot have DirOs. When Aronson says (p. 3) that “a Georgian verb form such as čers ‘writes’ gives no more and no less information about the presence or absence of a direct object than does the corresponding Russian verb form pišet ‘writes’”, he is not correct: in Russian, the form pišet can have a DirO of the 1st or 2nd person (pišet menja/tebja [he] writes me/thee) is grammatically perfect, leaving aside the semantic implausibility), while in Georgian, *čers mešen ‘he writes me/youSG’ is ungrammatical (the correct forms being mcčers and gčcers).

Yet even if his central argument is not sufficient, Aronson is right in his main claim: the transitive verb in Georgian does not agree with the 3rd person DirO. This is shown by the impossibility of using the pluralizer -t for a 3rd person DirO. Thus, the form meaning ‘he draws them’ theoretically could be xalavt ⇔ Ū3p+xtav+s+t; but in fact this form does not have the indicated meaning. The meanings ‘he draws him/her’ and ‘he draws them’ cannot be distinguished: both are expressed as xalavs (without the pluralizer). At the same time, -t can pluralize a zero marker: it does exactly that for the zero 2nd person prefix. Therefore, we have to say that a Georgian transitive verb does not agree with its DirO in number. Then, why insist that it agrees with the DirO in person? By all means, this ‘agreement’ would be shown by a zero. Taking everything into account, it is simpler to admit that a transitive verb does not agree with a 3rd person DirO at all. As a result, the Deep-Morphological representation of a transitive verb finite form does not include the grammeme (3RD PERSON-DIRO) (and in the case of the DirO of the 3rd person, no grammemes of the number of the DirO, either). Consequently, Georgian does not have a 3rd person verbal zero prefix: such a prefix would have nothing to signal and thus it would violate Condition 1 of the ZSI Principle.

Still, I have to point out three facts that argue AGAINST the decision ‘no agreement with a 3rd person DirO’:

– The Georgian verb agrees with its IndirO even in the 3rd person, the corresponding agreement prefixes being h-/s-/Ot-; this phenomenon contradicts the typologically important hierarchy DirO > IndirO. In other words, the 3rd person IndirO should not impose agreement on the verb if the 3rd person DirO does not. Note, however, that such agreement can be naturally explained by the IndirO (often) being higher in animacy than the DirO; and typologically, preferred agreement with animate actors is well known. (I thank D. Beck, who pointed out this fact to me.)

– As Aronson 1992: 6 indicates, there are quite numerous cases where the 3rd person IndirO prefix s- is ‘erroneously’ used for agreement with a DirO (the following sentences are taken from literary texts):

(i) Is piesa [= DirO] sami člis Ćinat da+s+čera
   this play-SG.NOM three years ago wrote-3SG
   ‘This play [s/he] wrote three years ago’.
Notes 513

(ii) *Momak* *otaxi* [= DirO] *da*+*šlova*
dying.person-SG.GEN room-SG.NOM left-3SG
'[S/he] left dying person’s room'.

(iii) *Sicilma* *kamara* [= DirO] *še*+*h+kra*
laughter-SG.ERG vault-SG.NOM surrounded-3SG
'The laughter surrounded the vault'.

– In colloquial Georgian, some verbs admit the pluralizer of the DirO:
(iv) *Es mat* [= DirO] *ačxeb+*+t
'This upsets them',
instead of the normative *ačxeb+s*.
(v) *Is mat* [= DirO] *abruneb+*+t
'S/he rotates them',
instead of the normative *abruneb+s*.
(vi) *Is mat* [= DirO] *agoreb+*+t
'S/he rolls them',
instead of the normative *agoreb+s*.

The frequency of non-standard forms such as in (i) - (vi) seems to indicate a strong tendency in Georgian to mark agreement with the 3rd person DirO as well.

16 (5, p. 492) The concept of morphological ellipsis and the term itself were introduced in Mel’čuk 1973b: 53 – 55, 75 – 78, as applied to Alutor.

17 (5.1, p. 494) See a logical analysis of various types of significative absence in natural language at the sentence level in Apresjan *et al.* 1978: 304 – 308 (the triple opposition ‘zero ~ ellipsis ~ non-saturation of an obligatory valence slot’). In this connection, see also Panevová 1998.

18 (5.1, p. 495) With the exception of empty zero lexemes—dummy subjects with the impersonal verbs in languages with obligatory Main Verb ~ Subject agreement.

19 (5.2, (18b), p. 495) **Subject vs. Object Markers in the Verb**

In Georgian, Subject and Object markers are never compatible on the surface in one wordform; the Object marker always evicts the Subject marker.

In Alutor, the situation is different: Subject and Object markers are incompatible in the same verbal wordform only if they are both prefixes or both suffixes; if one of them is a prefix and the other a suffix, they must both be present. More than that, the Subject prefixes are compatible with the 1sg Object prefix:

(i) a. *na* +*ntk’avat*+Ø +*la*+*mak* (They two scolded uspl).

3DU.SUB scold AOR. PL 1DU.OBJ

b. *t* +*u‘alla+tka*ni+yat (I wait for yousg).

1SG.SUB wait PRES 2SG.OBJ

c. *q* +*in* +*u‘alla+tik*! (You-two wait for me!)

2DU.SUB 1SG.OBJ wait 2DU.SUB

Wichita (Rood 1971, 1996) is even more flexible in this respect: here, Subject and Object markers always cooccur—obligatorily, both being prefixes:

(ii) a. *ta* +*s* +*ki* +*ʔ*j +s* (YouSG saw me).

IND 2p.SUB 1p.OBJ see IMPF

b. *ta* +*t* +*ā* +*ʔ*j +s* (I saw youSG).

IND 1p.SUB 2p.OBJ see IMPF

c. *ta* +*t* +*Ω* +*ʔ*j +s* (I saw him).

IND 1p.SUB 3p.OBJ see IMPF
Chapter 9. Zero sign in morphology

Similarly to Georgian and Alutor, Wichita has pluralizers for the Subject and the Object. But, unlike Georgian and Alutor, 1) one of them is ‘selective:’ it is used for the DirO only; 2) the Wichita Subject and Object pluralizers can cooccur, albeit restrictedly—only when the Subject is 1st/2nd person and the Object, 3rd person:

(iii) a. \( \text{ta} + \Theta + \text{kj} + \text{ni} \+)
       \(\text{Hei saw himj}\)
       IND 3p.SUB 3p.OBJ see IMPF
b. \( \text{ta} + \Theta + \text{rak}+\text{ki} + \text{ni} \+)
       \(\text{Hei saw me}\)
       IND 3p.SUB 1p.OBJ see IMPF

If the Subject is 3rd person or the Object 1st/2nd person, only the Object can be explicitly pluralized (Rood 1996: 603); the number of the Subject cannot be expressed at all, so that all forms of the type ‘he/they – ...’ and ‘... – me/you/us’ are ambiguous:

c. \( \text{ta} + \Theta + \text{ki} + \text{rak}+\text{ni} \+)
       \(\text{He/They saw us}\)
       IND 3p.SUB 1p.OBJ see IMPF

It is also worth noting that -rak pluralizes both Subject and Object (depending on the context), while -\(\text{ki}\) is reserved for the Object. Thus, as we see, the Object is somehow privileged in Wichita as well.

To close the topic of the ellipsis of the Subject/Object markers in a verbal wordform, I will present an example from Upper Necaxa Totonac, which I owe to D. Beck (2001: 45, (8)). Here, the pluralizers of the Subject and the Object are selective and in principle compatible (iv-a), but not if the Subject and the Object are both of 3pl (iv-b/c/d):

(iv) Upper Necaxa Totonac

a. \( \text{k\a} + \text{ta} + \text{ci}+\Theta + \text{ni} \text{slakan} \)
   \(\text{They saw you}\)
   PL.OBJ PL.SUB see COMPL 2OBJ they
b. \( \text{ta} + \text{ci}+\Theta + \text{ni} \text{slakan} \)
   \(\text{They saw [the] dogs}\)
   PL.SUB see COMPL dog PL they
c. \( \text{k\a} + \text{ci}+\Theta + \text{ni} \text{slakan} \)
   \(\text{They saw [the] dogs}\)
   PL.OBJ see COMPL dog PL they
d. \( *\text{k\a} + \text{ta} + \text{ci}+\Theta + \text{ni} \text{slakan} \)
   \(\text{They saw [the] dogs}\)
   PL.OBJ PL.SUB see COMPL dog PL they

A rule of morphological ellipsis is clearly at work in (iv-d):

*\(\{\text{pref} \in \{\text{PL.SUB}\}, \text{pref} \in \{\text{PL.OBJ}\}\} \Rightarrow \text{pref or pref} | \text{Subject = 3pl and Object = 3pl}\)
(The choice of the prefix to be retained is based on the relative topicality of the Subject and Object and/or the importance of the plurality of the Object.)

20 (5.2, p. 496) For a different description of the Alutor data, see Kibrik 1997: 43–54. Among other things, Kibrik proposes to avoid rule (18b) by means of more complex syntactic rules of verb agreement—namely, having the finite verb agree in the plural with one actant only (either with the Subject or with the Object). I am not in a position to make a principled choice between these two descriptions.
Against Zero-Affixation. Lieber’s main argument against derivational zero suffixes \(-ovat\) = ‘of weak degree’ following the stem-final segment \(-ov/\), which can, but need not, be a fossilized suffix (i.e., a submorph):

\[
\begin{align*}
\text{‘purple’} & \quad /\text{lilov}/ \Rightarrow \text{‘purplish’} /\text{lilov}/ + /\text{ovat}/ \Rightarrow /\text{lilovovat}/ \quad (-iyj) \\
\text{‘rose’} & \quad /\text{rožov}/ \Rightarrow \text{‘roseish’} /\text{rožov}/ + /\text{ovat}/ \Rightarrow /\text{rožovovat}/ \quad (-iyj) \\
\text{‘bad’} & \quad /\text{figov}/ \Rightarrow \text{‘badish’} /\text{figov}/ + /\text{ovat}/ \Rightarrow /\text{figovovat}/ \quad (-iyj) \\
\text{‘stupid’} & \quad /\text{dubov}/ \Rightarrow \text{‘stupidish’} /\text{dubov}/ + /\text{ovat}/ \Rightarrow /\text{dubovovat}/ (-iyj)
\end{align*}
\]

Compare these to the cases where the stem does not end in \(-ov\), so that haplopy cannot take place:

\[
\begin{align*}
\text{‘grey’} & \quad /\text{šetr}/ \Rightarrow \text{‘greyish’} /\text{šetr}/ + /\text{ovat}/ \Rightarrow /\text{šerovat}/ \quad (-iyj) \\
\text{‘bad’} & \quad /\text{plox}/ \Rightarrow \text{‘badish’} /\text{plox}/ + /\text{ovat}/ \Rightarrow /\text{ploxovat}/ (-iyj) \\
\text{‘stupid’} & \quad /\text{glup}/ \Rightarrow \text{‘stupidish’} /\text{glup}/ + /\text{ovat}/ \Rightarrow /\text{glupovat}/ (-iyj)
\end{align*}
\]

Notes
allowed by the ZSI Principle. The same argument applies to Lieber’s proposal (1992: 66–67) to posit a derivational zero suffix in French compounds like *essuie-glace* ‘windshield wiper’ or *tire-bouchon* ‘corkscrew’: all of them have similar meanings (‘instrument for ...’) and are of the masculine gender. I believe that Lieber’s derivational zeroes are purely linguist’s zeroes, postulated in order to make the description more elegant; they are not contrastive and thus cannot be deemed language zeroes, the only variety I work with. (On the distinction “language zero vs. linguist’s zero,” see immediately below, 7.

(7, p. 507) On the extraordinary role of zero in human knowledge and science, see Kaplan 2000. The author considers the Indian origins of zero, but traces them back to the Ancient Greeks and even further to the Sumerians; he then follows the tumultuous history of zero in European mathematics, philosophy and culture in general.
Chapter 10. The structure of linguistic signs and the semantic-formal relations between them

1. The structure of a linguistic sign

Traditionally, the linguistic sign is understood as a bilateral entity consisting of two components: the signified (= signatum, signifié) and the signifier (= signans, significant); this concept goes back to Ferdinand de Saussure. However, a linguistic sign cannot be completely specified by means of the pair (Signified; Signifier) – for a sign to be employable in discourse, more information about its combinatorial properties is needed, information which cannot be regarded as part of the signified or as part of the signifier. For example, to be able to properly use a linguistic sign corresponding to a word, the speaker also needs the part of speech of this word. For nouns (in some languages), information about gender – which determines, among other things, the form of modifiers – is indispensable; verbs require the specification of government pattern, i.e., the form of their objects and complements; for words such as only, information on their scope is crucial. All such information cannot be included in the signified, no matter how the latter might be interpreted: this information is not part of meaning. Neither can it be included in the signifier.

Therefore, if we wish the term (linguistic) sign to be used as a designation of some fully specified entity – i.e., if we want all information of the type illustrated above to be contained in the sign itself, and, moreover, the term sign to be understood as referring to a bilateral entity – we will have to distinguish:

– the internal side of a linguistic sign, which consists of two components: one semantic (= the signified), and one syntactic (= information about the properties that specify the correct combinations of the given sign with other signs);  
– and the external side of a linguistic sign, which is the signifier.

That is how the term (linguistic) sign is used in this book: see Introduction, 4, No. 3, p. 18, and Chapter 7, 2, Definition 7.1, p. 384.

For the purposes of this chapter, I take the terms meaning and signified (of a linguistic sign) to be synonymous (although, strictly speaking, they are not). The term signified seems to be particularly convenient, being very general and relatively free from additional associations and undesirable connotations. In the following, when talking about semantic relations between linguistic signs, I have in mind exclusively relations between their signifieds. In particular, when analyzing verbs and corresponding deverbal action nouns, such as Rus. PRODA-
VAT’ [to] sell and PRODAŽA [the] sale, I consider these lexemes to be semantically equivalent: their signifieds are identical, because the differences between the lexemes (i.e., verb vs. noun, and all the resulting additional characteristics) clearly do not pertain to the signified, although they belong to the internal side of the corresponding signs—more specifically, to their syntaxics.

It is often tacitly assumed that there exists a relative symmetry in the structure of the signified and that of the signifier of any given sign. In other words, the following general picture is accepted: Suppose that the signifier $A$ of a complex sign is manifestly composed of $a \oplus b \oplus c$, that is, $A = a \oplus b \oplus c$, where $a$, $b$ and $c$ are morphological units—morph signifiers, alternations, etc., and not merely (strings of) phonemes. Then $A$’s signified $A$, too, should be divisible into three parts $a’$, $b’$ and $c’$: $A’ = a’ \oplus b’ \oplus c’$, where the elements $a’$, $b’$ and $c’$ correspond to the elements $a$, $b$, $c$, and vice versa. Thus, it is expected that the divisibility of the signified of a linguistic sign should be echoed by that of its signifier, and vice versa. The present chapter sets out to advocate the opposite thesis:

The signified and the signifier of a linguistic sign are fairly autonomous; there is no logical necessity for their structures to be parallel (although in a large number, perhaps even in the majority, of cases, they are).4

Therefore, the signified and the signifier of a linguistic sign should be examined and described as independently as possible.

2. Seventeen possible types of semantic-formal relations between linguistic signs

The following four types of semantic-formal relations between linguistic signs are well known in linguistics:

1) **Synonymy**: two signs have identical meaning (= signifieds) but different—more precisely, unrelated—forms (= signifiers): the States ~ the US, mountain lion ~ puma ~ cougar; Fr. vélo ~ bicyclette ~ bécane ‘bicycle’; Rus. огромный ~ громадный ‘enormous’; Ger. fegen ~ kehren [to sweep], Ger. schicken ~ senden [to send], Ger. kriegen ~ bekommen ~ erhalten [to get, [to] obtain’; Ger. Lift ~ Aufzug ~ Fahrstuhl ‘elevator’, etc.

2) **Homonymy**: two signs have identical form (= signifiers), but different—more precisely, unrelated—meanings (= signifieds), such as, for example, in lead /led/ [very heavy, relatively soft metal] ~ lead /led/ [to] lead, PAST’ [as in He lead me into the house].

3) **Polysemy**: two signs have identical form (= signifiers), but different—this time, related—meanings (= signifieds), such as, for example, discovery 1 ‘event of discovering’ ~ discovery 2 ‘something discovered’ or inflated 1 ‘blown up with
air — inflated

II.1 ‘too high—as if inflated’ [inflated prices] — inflated

II.2 ‘exaggerated—as if inflated’ [an inflated opinion of herself]. (The relatedness of two signifieds is manifested via the presence of a common semantic component, or semantic bridge, which is underlined in the examples above.)

4) (Synchronic) derivation: one sign is more complex than another, both from the semantic and the formal viewpoint: the signified of the first sign includes the signified of the second, and the signifier of the first includes the signifier of the second; moreover, the formal ‘surplus’ parallels the semantic ‘surplus:’ read [to] read' ~ read+er ‘one who reads’ (‘surpluses’ are underlined).

This chapter aims at enumerating all theoretically possible relations of this kind between the meaning and the form—i.e., the signed and the signifier—of any two linguistic signs. I will limit myself to the word level and take into consideration only relations between signifieds and signifiers, leaving syntax aside.

Let ‘A’ be the signified of the sign /A/, and /A/, the signifier of the same sign. I propose to describe both signifieds and signifiers of linguistic signs as sets: a set of semantic units for a signified, and a set of morphological elements for a signifier. (These sets are, of course structured: a signified is a network built out of semantic units, and a signifier is a string of morphological elements; however, this is immaterial in the present context.) If signifieds and signifiers are sets, then there can be four, and only four, set-theoretical relations between any two signifieds as well as between any two signifiers (Mel’čuk 1967a: 354):

1) Identity (=) : X = Y
2) Inclusion (⊆) : X ⊆ Y, i.e. Y = X+a
3) Intersection (∩: existence of a non-empty common part) : X ∩ Y ≠ ∅, i.e. X = Z+a, Y = Z+b | a ≠ b, a ≠ ∅, b ≠ ∅

[the symbol ∅ stands for the empty set]

NB: As one can see, only intersection in the strict sense is considered here, i.e., intersection without inclusion (X ∩ Y ≠ ∅, and X ⊆ Y, and Y ⊆ X).
4) Absence of a common part : X ∩ Y = ∅, i.e., the intersection of X and Y is empty

No other relations between linguistic signs on the content plane and on the expression plane are possible.

In Meaning-Text theory, the meaning of a linguistic sign (its signified) is represented by a semantic description—in the case of lexical units, by a lexicographic definition, which has to meet several requirements that guarantee its uniqueness. The form (the signifier) of a sign is represented in terms of morph signifiers and/or morphological operations. Therefore, any problem concerning the semantic and formal relations between two signs—for instance, between
words (= lexemes) – must be solved based on the descriptions of these signs on the plane of content and on that of expression. The descriptions themselves have to be developed first, and in quite an autonomous way.

All possible combinations of the above four relations on the two planes yield 17 different types of semantic-formal relations possible between any two linguistic signs. Thus, let there be two linguistic signs \(A\) and \(B\); here are logically possible cases of semantic-formal relations between them, organized in four groups (I-IV):

I. The signifieds of \(A\) and \(B\) are identical (i.e., \(A'\) and \(B'\) are equal):

1) \(A' = B'\), \(/A/ = /B/\)
2) \(A' = B'\), \(/A/ \subseteq /B/\)
3) \(A' = B'\), \(/A/ \cap /B/ \neq \emptyset\)
4) \(A' = B'\), \(/A/ \cap /B/ = \emptyset\)

II. The signified of \(A\) is a part of the signified of \(B\) (i.e., \(A'\) is included in \(B'\)):

5) \(A' \subseteq B'\), \(/A/ = /B/\)
6) \(A' \subseteq B'\), \(/A/ \subseteq /B/\)
7) \(A' \subseteq B'\), \(/A/ \cap /B/ \neq \emptyset\)

**NB:** There is no correspondence to Case 7 in Groups I, II, and IV, because the relations considered in these groups – equality, non-empty intersection and empty intersection – are symmetrical and need not to be examined in both directions.

8) \(A' \subseteq B'\), \(/A/ \cap /B/ \neq \emptyset\)
9) \(A' \subseteq B'\), \(/A/ \cap /B/ = \emptyset\)

III. The signifieds of \(A\) and \(B\) overlap (i.e., they have one part in common, without being identical or included one in the other):

10) \(A' \cap B' \neq \emptyset\), \(/A/ = /B/\)
11) \(A' \cap B' \neq \emptyset\), \(/A/ \subseteq /B/\)
12) \(A' \cap B' \neq \emptyset\), \(/A/ \cap /B/ \neq \emptyset\)
13) \(A' \cap B' \neq \emptyset\), \(/A/ \cap /B/ = \emptyset\)

IV. The signifieds of \(A\) and \(B\) have no part in common (i.e., they are disjoint):

14) \(A' \cap B' = \emptyset\), \(/A/ = /B/\)
15) \(A' \cap B' = \emptyset\), \(/A/ \subseteq /B/\)
16) \(A' \cap B' = \emptyset\), \(/A/ \cap /B/ \neq \emptyset\)
17) \(A' \cap B' = \emptyset\), \(/A/ \cap /B/ = \emptyset\)
3. Greater/lesser complexity in relations between linguistic signs

Before I illustrate various types of possible semantic-formal relations between signs with linguistic examples, it is necessary to explain what I understand by greater or lesser semantic and formal complexity. This problem arises in connection with inclusion and intersection: if \( X \subseteq Y \) in other words, if \( Y = X + a \) – what exactly is \( a \)? Similarly, if \( X \cap Y \neq \emptyset \), then \( X = Z + a \) and \( Y = Z + b \), but what exactly are \( a \) and \( b \)?

On the content plane, as far as semantic complexity is concerned, the situation is simpler: if \( 'X' \subset 'Y' \), then \( 'Y' \) includes not only \( 'X' \), but also some ‘extra portion’ of meaning: \( 'M' \). Among all possible meanings which may differentiate two signifieds in language \( L \), I will single out such \( 'M' \)'s that meet the following two conditions:

(I) In \( L \), \( 'M' \) differentiates the signifieds of many pairs of signs (in any case, in no less than two pairs), so that the following proportion holds:

\[
\frac{'A_1'}{'B_1'} = \frac{'A_2'}{'B_2'} = \ldots = \frac{'A_n'}{'B_n'} = 'M'
\]

(II) In \( L \), \( 'M' \) can be expressed by a linguistic item \( M \) such as an affix, a morphological operation (e.g., reduplication, alternation or conversion) or an auxiliary; \( M \) is what is known as morphological means (see Chapter 5, 1, p. 288). The element \( M \) is applied as a marker of \( 'M' \) at least in two pairs of signs; in other words, the following proportion holds:

\[
\frac{A_1}{B_1} = \frac{A_2}{B_2} = \ldots = \frac{A_n}{B_n} = M
\]

If a meaning \( 'M' \) meets both these conditions, it is called grammatical in \( L \). This means that derivational and inflectional meanings are subsumed under the heading of grammatical meanings. Grammatical meanings in Russian include \( '\text{PLURAL}' \) [in nouns], \( '\text{PAST}' \) [tense], \( '\text{ACTOR}' = '\text{one who }\ldots' \), \( '\text{DIMINUTIVITY}' = '\text{small and pleasant}' \), and the like. Examples of non-grammatical meanings are:

1) The meaning ‘rifled’ is not grammatical in Russian, because it differentiates only one pair of stems, namely \( 'ruļčë' \) (shotgun) \( \sim 'vintovka' \) ‘rifled gun’ = ‘rifle’; there is no other pair of stems with the same difference of meaning; thus, Russian has no stems signifying ‘unrifled handgun’ \( \sim 'rifled handgun' \). Moreover, the meaning ‘rifled’ has in Russian no special marker \( M \) (no affix, no alternation, etc.). This meaning violates both conditions (I) and (II).
2) The meaning ‘typical dwelling’ appears in several Russian stems: 
*jaranga* ‘typical dwelling of Chukchees’, *saklja* ‘typical dwelling of Caucasian mountain dwellers’, *iglu* ‘typical dwelling of Eskimos’, *ēum* ‘typical dwelling of nomads in the Siberian taiga’, *jurtta* ‘typical dwelling of nomads in Central Asia and Mongolia’, *wigwam* ‘typical dwelling of North American Indians’, *fanza* ‘typical dwelling of Chinese peasants’, etc. But this meaning never has a special morphological exponent, and therefore, it is not grammatical. It satisfies condition (I), but fails to satisfy condition (II).

On the *expression* plane, i.e., as far as formal complexity is concerned, the extra element *a* can be, first of all, a morph (an affix); *Y*, then, contains one morph more than *X*, and the greater formal complexity of *Y* is obvious: e.g., Rus. *palec* ‘finger’ ~ *palēčik* ‘little finger’, or Eng. *sing* ~ *sing+er*. However, *a* can be a morphological operation other than the addition of an affix; in this case, it is not so obvious that *Y* is more complex. For instance, compare the Romanian singular and plural forms: /lúp/ ‘wolf’ ~ /lúp’/ ‘wolves’, /kopăk/ ‘tree’ ~ /kopăc’/ ‘trees’, /urs'/ ‘bear’ ~ /ūrš'/ ‘bears’, etc. Which of the two forms is formally more complex? The signifiers of both contain the same number of phonemes (/p’/, /c’/ and /s’/ are single phonemes: palatalized consonants). However, the plural forms are derived from the stems /lúp/, /kopăk/, /ūrš/ by means of an alternation of palatalization, and, hence, they are more complex formally, even if they do not include an additional morph—they include an additional operation. Thus, we have /lúp’/ = /lúp/ ⊕ /C/ ⇒ /C’/],

where ⊕ indicates that a linguistic operation is applied, and ‘/C/ ⇒ /C’/’ designates the operation in question (palatalization /p/ ⇒ /p’/), the meaning of which is ‘plural’. Similarly, German plural forms such as *Väter* ‘fathers’ or *Mütter* ‘mothers’ are more complex formally than the corresponding stems *Vater*, *Mutter*, in spite of the fact that they have the same number of phonemes: the plural forms contain the stems plus the meaningful operation of Umlaut (a ⇒ ā, u ⇒ ū).9

However, meaningless alternations do not increase the formal complexity of a sign. For example, Russian signs *lug* and *luž* in the nouns *LUG* ‘meadow’ and *LUŽOK* ‘little meadow’ are allomorphs of one morpheme {LUG} and no one of them is morphologically more complex than the other. Ger. *Väter*, however, is *not* an allomorph of the morpheme {VATER}, but what is called a *megamorph*, which encodes two morphemes: {VATER} ⊗ {PLURAL}; thus, *Väter* is more complex than *Vater* not only semantically, but from the formal point of view as well. Now, the meaningless operation of Umlaut does not make a sign more complex. Thus, in *Nacht* ‘night’ ~ *Näch+e* ‘nights’ the plural is marked by the suffix -e, so that here, unlike the case of *Vater* ~ *Väter*, the Umlaut is an accompanying alternation; *Nacht* and *Näch* are allomorphs of the same morpheme and are of equal complexity.10
To sum up: The signifier /A/ is more complex than the signifier /B/ if and
only if /A/ can be represented in terms of /B/ and another SIGNIFIER /C/. If the sig-
nifier /A/ possesses a 'surplus' with respect to the signifier /B/, but this 'surplus'
is itself not a signifier, /A/ is not more complex than /B/, as in Rus. lug ~ luž or
Ger. Nacht ~ Nächt.

A paradoxical case of greater formal complexity consisting in an extra dele-
tion operation is provided by the so-called negative derivation, which is charac-
teristic, for instance, of Polish (cf. chapter 5, 3.3.5, (18), p. 303):

piasek 'sand' ~ piach 'sand + AUGMENTATIVITY' (≈ 'much sand')
bećzk(+a) 'barrel' ~ bek(+a) 'barrel + AUGMENTATIVITY' (≈ 'big barrel')
wód(+) 'vodka' ~ wód(+a) 'vodka + AUGMENTATIVITY' (≈ 'plenty of bad vodka')
lapówk(+a) 'bribe' ~ lapów(+a) 'bribe + AUGMENTATIVITY' (≈ 'big bribe')

If, in accordance with the tradition, the left members of these pairs are taken
to be basic at the level of form, then the right members prove to be more com-
plex. They are obtained from the left ones by means of a complex operation:
truncating the final -k of the stem (this -k has no autonomous morphological
status – i.e., it is not an affix, nor is any kind of morph), after which 'reverse'
alternations are applied to the end of the stem.¹¹ This operation is, of course, a
signifier: it expresses the derivateme of augmentativity.

In what follows, when selecting linguistic examples for the 17 abstract for-
mulas suggested above, I consider, in the cases of meaning inclusion and inter-
section (items in Groups II-IV) only GRAMMATICAL semantic differences. This
means, for example, that in Item 8, where /A/ ∩ /B/ ≠ /A/ + /B/, i.e. /B/ =
/A/ + /M/, I deal only with the cases where /M/ is a grammatical meaning.

Moreover, in Group III (= non-empty intersection of signifieds), in order to
avoid cluttering the exposition, I will take into account the presence of a common
root only, and disregard the quite trivial fact of the presence of a common affix of
the type Rus. ėita+tel' 'reader' ~ ljubi+tel' 'amateur', or child+hood ~ widow+hood.
This constraint does not change anything in the essence of my discussion.

4. Illustrations of the 17 types of semantic-formal relations between
linguistic signs

I will now turn to the linguistic interpretation of the proposed universal scheme
for all conceivable semantic-formal relations between linguistic signs. Recall
that what is being compared are the signifieds and the signifiers: syntactics are
excluded.
Identity of the meanings of two signs (1 – 4)

1. \(A' = B', /A/ = /B/\)

   Semantic and formal identity of two linguistic signs can be exemplified by two cases:

   (a) A trivial case of two occurrences of one and the same sign (cf. Item 17), which does not warrant a special discussion.

   (b) Syntactic derivational conversion, as in [to] walk ~ [a] walk (In the afternoon I like a walk), [to] travel ~ [years of] travel, [to] visit ~ [a] visit, Rus. udar(-it') [to] hit ~ udar [a] blow', ston(-at') [to] groan ~ ston [a] groan'.

   We have here the identity of the signifiers of a verb stem and that of a corresponding action noun stem. Such stems have the same meaning and the same form; they differ in their syntactics, which represents a conversion equivalent to a purely SYNTACTIC suffixal derivation, cf. travelV : travelN = distribute : distribution, or

   travelv : travelN = poluč

   as in Item 2b. Semantic derivational conversion equivalent to SEMANTIC derivation will be considered in item 5b.

2. \(A' = B', /A/ \subset /B/\)

   Semantic identity (= the identity of the signifieds) accompanied by formal inclusion (of one signifier within the other) occurs in two different cases, both pertaining to derivation.

   (a) Derivational variants of a lexeme, produced by empty derivational suffixes, such as Rus. -k (in the noun):

   braslet 'bracelet' ~ braslet+k(+a) 'bracelet' taburet 'stool' ~ taburet+k(+a) 'stool',
   žilet 'vest' ~ žilet+k(+a) 'vest' myš 'mouse' ~ myš+k(+a) 'mouse'
   bluz(+a) 'blouse' ~ bluz+k(+a) 'blouse' broš 'brooch' ~ broš+k(+a) 'brooch'

   [There is no semantic difference between the members of each pair; the form with -k is slightly less formal.]

   We can also include here cases where a non-empty suffix with the signified 'A' attaches to a stem that already contains the semantic component 'A', so that the suffix becomes 'emptied.' The examples are Rus. pravdoljub 'truth lover' ~ pravdoljub+ec 'truth lover', where -ec is an agent suffix; or lis(-a) fox ~ lis+ie(-a) 'fox', where -ie is a female suffix, but lisic(-a) denotes the animal as such, without specifying its sex – it cannot mean 'female fox'. (Inversely, lisa can denote specifically a female fox, as opposed to lis 'male fox', but it can also refer to the animal as such.) A more complex case is kur(-a) 'hen' ~ kur+ic(-a) 'hen': the sign kur is basically used in the plural (kury 'hens'), while in the singular it is substandard; the sign kur+ic is basically used in the singular, although the plural usage is also possible, even if restricted.
4. Illustrations of the 17 types of semantic-formal relations between linguistic signs

(b) **Syntactic derivation** (by non-empty affixes), i.e., the formation of:

- deverbal action nouns, such as Rus. *polučĭt´* (‘to receive’) ~ *polučenij* (‘reception’);
- denominal relational adjectives: *škol* (‘school’) ~ *škol´n* (‘school’);
- deadjectival adverbs: *bystr´* (‘quick’), *političesk´* (‘political’);
- deverbal adjectives (≈ participles), etc.

Syntactic derivatives have exactly the same signified (i.e., the same lexicographic definition) as their bases: thus, *polučenie* = *polučicit´*, although the typical syntactic functions and distribution of the noun *POLUČENIE* and of the verb *POLUČIT´* are quite different.

3. *A* = *B*, /A/ ⊄ /B/ ≠ /A/

Semantic identity accompanied by formal intersection (overlapping of the signifiers) corresponds to two cases, one in derivation, and the other in inflection.

(a) Derivation

That is what is known as **parallel derivation**: two derivatives built on the same root with different but synonymous affixes. Here are some Russian examples: *vol´ńix* (‘she-wolf’), *bolt´nuś* (‘female chatterbox’), *pedant´išn* (‘pedantic’), etc. Pure cases of this type are not very frequent, because the members of such pairs tend to become more or less differentiated semantically, cf. Rus. *rog´nast* (‘having big horns’) ~ *rog´at* (‘having horns’). Cf. Item 2a for derivational variants.

(b) Inflection

Different inflectional forms of the same paradigm can have the same signified – if the grammemes that differentiate them are purely syntactic. A good example: different agreement forms of an adjective, like It. *giall´on* (‘yellow’) ~ *giall´a* (‘yellow’), *giall´e* (‘yellow’). All such forms have the same signified, because the number and the gender of an adjective are part of its syntactics.

4. *A* = *B*, /A/ ⊄ /B/ = /A/

Semantic identity of two signs that formally have nothing in common occurs in two different cases.

(a) **Exact lexical synonyms** such as Rus. *gubnog* [zvuk] (‘labial [sound]’) ~ *labial´nyj* [zvuk] (‘labial [sound]’), Eng. *puma* ~ *mountain lion*, or Ger. *Zeitwort* (‘verb’) ~ *Verb* (‘verb’), *bekommen* (‘to get’) ~ *kriegen* (‘to get’), etc. An adequate theory of synonymy is not a simple matter; as I cannot go into this...
problem here, I will mention only two tenets which seem to me basic for the study of synonymy:

- Lexical synonyms should be required only to have identical signifieds (including here the identity of their diatheses), whereas their syntactic and stylistic characteristics can differ widely (but two lexical synonyms must belong to the same part of speech). Their semantic identity, however, should be complete: thus, Rus. огромный ~ огромдный ‘enormous’ or пума ~ кугуар ‘puma’, самолёт ~ авіоплан ‘airplane’ are synonyms. If a difference can be found between two meanings, no matter how slight it may be, then the signs in question are not exact synonyms; thus, e.g., Rus. сгореть ‘[to] catch fire’ and вспыхнуть ‘[to] catch fire sharply and intensively ≈ [to] blaze up’, or помочь ‘[the] help’ and поддержка ‘support’ are not exact synonyms, but near-synonyms. Near-synonyms are exemplified also by other types of semantic-formal relations between signs, such as semantic inclusion or intersection with formal identity, cf. Items 5 and 10.

- Exact lexical synonyms should not be required to meet the condition of interchangeability in actual texts: exact synonyms may be in complementary distribution (such undoubtedly synonymous signs as allomorphs of a morpheme, are, as a rule, in complementary distribution). Therefore, the fact that one says in Rus. пассажирский самолёт ‘passenger plane’, but легковой автобус ‘passenger car’ should not prevent us from recognizing the two adjectives in question as fully synonymous – having the meaning ‘for the transport of people’. Similarly, the following Russian boldfaced expressions are exact synonyms, although they do not have one single environment in common: на все кормы, lit. ‘on all crusts’ (with ругать ‘[to] scold’) = без задних ног, lit. ‘without hind legs’ (with спать ‘[to] sleep’) = на голову, lit. ‘on the head’ (with разгромить ‘[to] defeat’) = как свои пять пальцев, lit. ‘as one’s own five fingers’ (with знать ‘[to] know’) = мертвечки, lit. ‘deadly’ (with пьян ‘drunken’); all these expressions mean ‘very’ ≈ ‘intensely’, ‘to a high degree’.

(b) Suppletion, both in inflection and derivation:

- Suppletive allomorphs of a morpheme

<table>
<thead>
<tr>
<th>Inflection</th>
<th>Derivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rus. ид(-у) [I] go ~ и(-е́л)</td>
<td>‘went’, the morpheme {IDT1} [I] go</td>
</tr>
<tr>
<td>хороший ‘good’ ~ лу́ч(-ше)</td>
<td>‘better’, the morpheme {XРОШ(-ij)} ‘good’</td>
</tr>
<tr>
<td>Sp. и(-р) [I] go ~ и(-а)</td>
<td>‘[he] goes’, the morpheme {IR} [I] go</td>
</tr>
</tbody>
</table>

father
star

~ патерн(-а́л)
~ стел(-а́р)
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4.1 sun ~ sol(-ar)
    Rus. polag(-at') [to] believe ~ mn[+enij(-e)] 'opinion'
    stir(-at') [to] wash laundry ~ pr[+ačk(-a)] 'laundress'
    
    – Suppletive megamorphs or a morph suppletive with respect to a mega-morph

Inflection
    Fr. suis 'am', the morphemes {ÊT(-re)} ⊕ {PRES.IND} ⊕ {1SG} ~
    est 'is', the morphemes {ÊT(-re)} ⊕ {PRES.IND} ⊕ {3SG}
    
    The signs suis and est have the same signifieds: 'be, PRESENT, INDICATIVE';
    they differ in their syntactics (1sg vs. 3 sg).

Derivation
    Fr. tomb(-er) [to] fall', the morpheme {TOMB(-er)} ~
    chute [a] fall', the morphemes {TOMB(-er)} ⊕ {-AGE}
    
    For more examples of suppletive signs, see Chapter 8.

Inclusion of the meaning of one sign within the meaning of another (5 – 9)

5. [A] ⊂ [B], /A/ = /B/

Semantic inclusion accompanied by formal identity of two linguistic signs corresponds to two cases:

(a) A special type of polysemy which might be called 'semantic derivation,' had this term not been used for another purpose already. I have in mind here chain polysemy of the type 'A' ~ 'B', where 'B' = 'A' + 'M'. For instance, Rus. sliva 'plum' ~ sliva 'plum tree', gruša 'pear' ~ gruša 'pear tree', višnja 'sour cherry' ~ višnja 'sour cherry tree', etc., where we have two lexemes of the same vocable, such that the meaning of one of them includes the meaning of the other.12 More generally, this is a widespread phenomenon: two stems have both the same signifier but different signifieds of the type 'X' ~ 'something connected with X in a certain way', as, for instance, a process and its result (Rus. nagnoenie 'festering' and nagnoenie 'festering wound'), an action and its place (mojka 'washing' and mojka 'washing-place'), an action and its object (vyšivanie 'embroidering' and vyšivanie 'embroidery'; trebovanie 'requiring' and trebovanie 'requirement'), an action and its instrument (Eng. intake), etc. This is what is known as regular polysemy (Apresjan 1974: 189).13

(b) Semantic derivation by means of a change in the syntactics of the stem—i.e., by means of a conversion. Typical examples include those cases of conversion where a change of the part of speech, of syntactic combinability, and/or of the inflectional paradigm of a given stem is associated with an additional
meaning, as in [to] cook ~ [a] cook or [a] bed ~ [to] bed. Semantic derivation by conversion covers many interesting cases, such as:

(i) The derivateme expressed is [to] cause to ...:
[to] marry [to] take Z as a spouse ~ [to] marry [to] cause Y to take Z as a spouse
[to] darken [to] become dark ~ [to] darken [to] cause Y to become dark
Fr. mont(-er) [to] raise ~ mont(-er) [to] raise Y
Sp. dorm(-ir) [to] sleep ~ dorm(-ir) [to] cause Y to sleep, etc.
Rus. obessil+e(-i) [to] lose forces ~ obessil+i(-i) [to] cause Y to lose forces
obedn+e(-i) [to] become poor ~ obedn+i(-i) [to] cause Y to become poor

(ii) The derivateme expressed is [to] submit to the action of ...:
[a] bomb ~ [to] bomb salt ~ [to] salt
[a] hammer ~ [to] hammer oil ~ [to] oil

(iii) The derivateme expressed is ‘tree which bears ...’:

Spanish
manzan(-a) ‘apple’ ~ manzan(-o) ‘apple-tree’
naranj(-a) ‘orange’ ~ naranj(-o) ‘orange-tree’
toronj(-a) ‘grapefruit’ ~ toronj(-o) ‘grapefruit-tree’

6. \[ A/ \subset B', /A/ \subset /B/ \]

The inclusion of one sign within another with respect both to meaning and form corresponds to ‘ordinary’ derivation. Three cases have to be distinguished here:

(a) Regular, or free, derivation: \[ B' = A' + M' \] and \[ /B' = /A'/ + /M' \] instantiated, for example, by Rus. platoček ‘little dear kerchief’:

\[
\text{platoček} = \text{platok} + k
\]

‘platoček’ = ‘platok’ + ‘little dear’

\[
\text{platok} 'kerchief', -k 'diminutive' = 'little dear’.
\]

Russian has thousands of such formations: karandaš ‘pencil’ ~ karandašik ‘little dear pencil’, krovat’ ‘bed’ ~ krovatka ‘little dear bed’, ozero ‘lake’ ~ ozerko ‘little dear lake’, etc. Words which are so formed correspond to free phrases such as hot water (bread, metal, ...), or to see a pine (a shadow, a girl, ...).

(b) Nearly free derivation: with respect to meanings, \[ B' = A' + M' + N' \], but from the viewpoint of forms, \[ /B' = /A'/ + /M'/ \] — i.e., the meaning of the derived unit contains, in addition to that of its two components, some extra element \[ N'. \] Cf. Rus. pisatel’ (pisa [to] write = -tel’ ‘who ...’), which does not mean simply ‘one who writes’, but ‘one whose profession is to write literary prose’ (the underlined components correspond to \[ N' \]). Thus, the present writer in a scientific paper can by no means be rendered by pisatel’; one who writes poetry is not a pisatel’, either, but a poèt ‘poet’. Such derived lexemes are ‘slightly phraseologized’; they correspond to partly phraseological phras-
es such as *Geroj Sovetskogo Soyuza* ‘Hero of the Soviet Union’ (which is not simply ‘one who accomplished a heroic deed in or for the Soviet Union’, but ‘one who received the highest reward given in the (former) Soviet Union to those who accomplished a heroic deed’), etc. Another example is *ham and eggs*, which is not simply ‘some ham and some eggs’, but ‘a dish prepared in a particular way from fried eggs and fried ham’.

(c) **Semi-free derivation**: \(B^* = A^* + M\), but \(B = A / + N\), where \(N \neq M\); in other words, the meaning of the derived lexeme contains that of only one of its formal components plus some quite new and rather unpredictable chunk of meaning. This leads to semi-phraseological derived lexemes such as *veter* ‘wind’ \(- \text{vetr}+\text{jak} \) ‘windmill’. In principle, such derived lexemes arise as a result of condensation, or compression, of phrases and semantically they correspond precisely to phrases. (In this case, \(M\) is not a grammatical semantic difference.) Derived lexemes of the last type may be compared to such semi-phraseemes, or collocations of a particular type, as Rus. *xolodnoe oružie*, lit. ‘cold weapons’ = ‘cutting and piercing weapons like sabers, daggers, bayonets, etc.’, or *zelënaja toska*, lit. ‘green spleen’ = ‘terrible spleen’, Fr. *rire jaune*, lit. ‘yellow laugh’ = ‘uncomfortable laugh’, etc. As to fully phraseologized derived lexemes, cf. Item 15 below.

7. \([A] \subseteq B^*, /A/ \supseteq /B\]

When one sign is semantically included in another one which it in turn formally includes, we face an interesting phenomenon: **reverse derivation** (Mel’čuk 1967a). Since this phenomenon is less known than ‘ordinary’ derivation, I will give several examples.

(i) Russian reflexive verbs with the meaning ‘[to] X’ and the corresponding simple (= non-reflexive) verbs with the meaning ‘[to] cause to X’:

- **katit’** \(+sja\) [to] roll [intr.] \(-\) **katit’** [to] roll [trans.] = [to] cause to roll
- **istoščat’** \(+sja\) [to] become depleted \(-\) **istoščat’** [to] deplete = [to] cause to become depleted
- **smešivat’** \(+sja\) [to] mix [intr.] \(-\) **smešivat’** [to] mix = [to] cause to mix

(As in *Milk and water mix* (as in *He mixed milk and water*)

Here, the signifieds of the formally simpler verbs such as **Katit’** ‘to cause to roll’ include the signifieds of the formally more complex reflexive verbs such as **Katit’** \(+sja\) [to] roll.

The same relation between a formally more complex verb and its formally simpler causative is found in many languages outside the Indo-European family as well, for example, in Hungarian:
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kever +ed(-ik) ‘[to] mix [intr.]’ ~ kever ‘[to] mix [trans.]’
old +őd(-ik) ‘[to] dissolve [intr.]’ ~ old ‘[to] dissolve [trans.]’
(as in Sugar dissolves in water) (as in He dissolves sugar in water)

(ii) Deadjectival nouns denoting a physical quantity, or parameter, X ~ formally basic (i.e., simpler) adjectives with the meaning ‘high degree of X’:

Fr. haut +eur ‘[to] roam’ ~ haut ‘[a] man who roams’
poprošaj +nič(-at’) ‘[to] beg [for alms]’ ~ poprošajk(-a) ‘[a] beggar’ = ‘[a] man who begs [for alms]’
figljar +nič(-at’) ‘[to] make merry’ ~ figljar ‘[a] joker’ = ‘[a] man who makes merry’

(iii) Denominal verbs with the meaning ‘[to] X’ ~ (formally) basic nouns with the meaning ‘one who X-es’:

Russian
brodjaž +nič(-at’) ‘[to] roam’ ~ brodjag(-a) ‘[a] tramp’ = ‘[a] man who roams’
poprošaj +nič(-at’) ‘[to] beg [for alms]’ ~ poprošajk(-a) ‘[a] beggar’ = ‘[a] man who begs [for alms]’
figljar +nič(-at’) ‘[to] make merry’ ~ figljar ‘[a] joker’ = ‘[a] man who makes merry’
stoljar +nič(-at’) ‘[to] make wooden articles’ ~ stoljar ‘[a] joiner’ = ‘[a] man who makes wooden articles’

(iv) Formally more complex adjectives with the meaning ‘[X] which is in the state _’ ~ formally simpler verbs with the meaning ‘[to] bring X into the state _’:

Rus. sol+ën(-yj) ‘containing salt’ ~ sol-it’ ‘[to] cause X to contain salt’
Eng. marri+ed ‘[to] marry’ = ‘[to] cause X to be married’
Fr. bless+é ‘wounded’ ~ bless-er = ‘[to] cause X to be wounded’

The semantic complexity of the verb with respect to the adjective in question appears quite clearly when we compare this adjective with the participle of the verb. In such pairs as solënýj ‘salty = containing salt’ ~ posolennyj ‘salted [by someone]’, the right member (= the participle) clearly is semantically richer than the left one (= the adjective); this is precisely the reason why the second one implies the first one, but not the inverse: posolennyj X ~ solënýj X, but solënýj X ~ posolennyj X;14 thus, for example, the water in the sea contains salt and is solênýja ‘salty’, but by no means *posolennýja (= salted by someone). Consider also the English pair openA vs. openedPart.

(v) Denominal nouns meaning ‘system of views’/‘science’/‘religion’ ~ formally simpler nouns meaning ‘adherent of a system of views (or religion)’/‘specialist in the given science’:

liberal+ism ~ liberal, linguist+ics ~ linguist,
Rus. geolog{ij(-a)} ‘geology’ ~ geolog ‘geologist’ (and many other nouns with the endings -log{ij(-a)} ~ -log), geograf{ij(-a)} ‘geography’ ~ geograf ‘geographer’, etc.

Many further examples of the case where a sign \( A \), which is semantically simpler than the sign \( B \), but formally more complex can be found also in inflection. Good examples are supplied by verbal aspects and gradation of adjectives in Russian.

(vi) Some closely related semantically (= near-synonymous) verbs have aspectual pairs that manifest identical semantic relations between the pair members: the meaning of one aspect is more complex than that of the other; however, the formal relationships between the members are not the same—i.e., in one pair the perfective is the (formally) more complex member while in another it is the imperfective (the extra morph is underlined). Thus:

\[
\begin{align*}
\text{demonstrir} &\quad \text{'[to] demonstrate, IMPERF'} \\
\text{pro+demonstrir} &\quad \text{'[to] demonstrate, PERF'} , \text{ but} \\
pokaz &\quad \text{'[to] show, IMPERF'} \\
pokaz &\quad \text{'[to] show, PERF'} \\
\text{analizir} &\quad \text{'[to] analyze, IMPERF'} \\
\text{pro+analizir} &\quad \text{'[to] analyze, PERF'} , \text{ but} \\
rassm &\quad \text{'[to] consider, IMPERF'} \\
rassm &\quad \text{'[to] consider, PERF'} .
\end{align*}
\]

No matter which aspect in the given pair is taken to be semantically simpler, one obtains reverse derivation.15

(vii) In the adjective, a number of comparatives, although formally derived from the positive degree, are nevertheless semantically simpler than their positives.

Let us compare tjažel{ij(-j)} ‘heavy’ ~ tjažel+ee ‘heavier’. tjažel{ij(-j)} means ‘having considerable weight’, and ‘considerable’ itself means ‘more than what the speaker considers as normal for the given class of objects’; tjažel+ee means ‘whose weight is bigger than the weight of’. In other words, the meaning of the adjective tjaželj ‘heavy’ has to be described by means of tjažel+ee normy ‘heavier than the norm (for the given class of objects—from the viewpoint of the speaker)’, and consequently, tjaželj turns out to be semantically more complex than tjažel. Note that if you compare two light objects, one can be described as tjažel+ee than the other: A i B oba očen’ lēgkie, no B tjažel ‘A and B are both very light, but B is heavier’; this means that tjažel+ee does not imply tjaželj,
while *tjaželyj* implies *tjaželeee*. This again indicates that *tjaželeee* is semantically simpler than *tjaželyj*.

8. \[ \{A\} \subseteq \{B\}, \{A\} \cap \{B\} \neq \{A\}\]

Semantic inclusion (of the signified of one sign into the signified of another) accompanied by formal intersection occurs in a number of cases in derivation as well in inflection.

**Derivation**
(a) In particular, this group includes derived antonyms of two types:

- Antonyms found in pairs like *useful* ~ *useless* ‘not useful’, *careful* ~ *careless* ‘not careful’, *doubtful* ~ *doubtless* ‘which can be doubted’ ~ *doubtless* ‘which cannot be doubted’.
- Antonyms derived from so-called *bound stems*, as in Rus. *prij-vyk(-at’)* ‘begin to be in the habit of ...’ ~ *ot+vık(-at’)* ‘begin not to be in the habit of ...’, *za+kry(-t’)* ‘close = [to cause to be closed]’ ~ *ot+kry(-t’)* ‘open = [to cause to be not closed]’.

(b) A similar situation holds also in pairs where the derived member does not include an affix that is attached to the underlying member:

- Rus. *refer+irov(-at’)* ‘abstract’ ~ *refer+ent* ‘one who abstracts’, *redakt+irov(-at’)* ‘edit’ ~ *redakt+or* ‘one who edits’.
- A large and productive class of pairs of the type ‘system of views’ ~ ‘adherent of a system of views’ in many languages: Rus. *marks+izm* ‘Marxism’ ~ *markst+ist* ‘Marxist’, *blumfildian+stvo* ‘Bloomfield’s doctrine’ ~ *blumfildian+ec* ‘adherent of Bloomfield’s doctrine’, *lysenkov+ščin(-a)* ‘Lysenko’s doctrine’ ~ *lysenkov+ec* ‘adherent of Lysenko’s doctrine’, etc.

**Inflection**
(c) Characteristic Sanskrit relations of the type *tig+ma* ‘sharp’ ~ *tej+yas* /teʒjas/ ‘sharper’, *tur+ri* ‘strong’ ~ *tav+iyas* ‘stronger’, *ur+u* ‘broad’ ~ *var-iyas* ‘broadened’, etc. From the semantic viewpoint, the meaning of the comparative is included in that of the positive (the positive of these adjectives being more complex semantically than the comparative, cf. Item 7 above). From the formal viewpoint, the stems of the positive and comparative degree overlap: the signs *tig* ~ *tej*, *tu* ~ *tav*, and *ur* ~ *var*, which are automatic variants (= allomorphs of the same morpheme), constitute their shared component. Exactly the same holds for Polish pairs such as *dal+ek(-i)* ‘far’ ~ *dal+sz(-y)* ‘further’, *szer+ok(-i)* ‘broad’ ~ *szer+sz(-y)* ‘broader’, etc.
4. Illustrations of the 17 types of semantic-formal relations between linguistic signs

9. \[ \mathcal{A} \subseteq \mathcal{B} \cap \mathcal{A} \cap \mathcal{B} = \mathcal{A} \]

If the meaning of one sign is included in that of another but their signifiers have nothing in common, then, provided that the semantic difference \( \mathcal{B} - \mathcal{A} = \mathcal{M} \) is a grammatical meaning, there are two possibilities, both linked to suppletion (the component corresponding to \( \mathcal{M} \) is underlined):

(a) **Suppletive derivation** (\( \mathcal{M} \) is a derivational meaning), for example, Eng. *horse* ~ *mare* ‘female horse’, etc.

(b) **Suppletive inflection** (\( \mathcal{M} \) is an inflectional meaning):

Fr. *av(-oir)* [to] have \( \sim \) *ai* /e/ [to] have + **present indicative, 1sg**

\( \text{av(-oir)} \sim \text{ont} /s/ [to] \text{have} + \text{**present indicative, 3pl**} \)

Eng. *be* ~ *am*, *be* ~ *was*, ...

In both cases we are dealing with suppletive megamorphs; thus:

- *mare* realizes two morphemes: \{HORSE\} \( \oplus \) \{FEMALE\};
- *was* realizes three morphemes: \{BE\} \( \oplus \) \{PAST\} \( \oplus \) \{SG\}

(For more on suppletion, see Chapter 8.)

If, however, the semantic difference \( \mathcal{M} \) is not grammatical in the language, then \( \mathcal{A} \) and \( \mathcal{B} \) are quasi-synonyms: Rus. *idti* [to] walk \( \sim \) *bresti* [to] walk slowly and carelessly, the meaning ‘slowly and carelessly’ being not grammatical in Russian.

Non-empty intersection of the meanings of two signs (10 – 13)

10. \[ \mathcal{A} \cap \mathcal{B} \neq \emptyset, /\mathcal{A}/ = /\mathcal{B}/ \]

Overlapping of the signifieds of two signs accompanied by the identity of their signifiers can be illustrated by cases of polysemy of the type Rus. *ubornaja*1 ‘toilet/bathroom’ – *ubornaja*2 ‘artists’ dressing room’ (common semantic component: ‘a room for . . .’), *odalživat*1 [to] borrow \( \sim \) *odalživat*2 [to] lend, Fr. *louer*1 [to] borrow \( \sim \) *louer*2 [to] lend (common semantic component ‘[to] allow to have for some time’). Another example is Rus. *mina*1 ‘mine’ ([‘land mine/sea mine’] \( \sim \) *mina*2 ‘mortar shell’ (common semantic component ‘explosive device’). In all such cases, the meanings \( \mathcal{M} \) and \( \mathcal{M}’ \)– semantic configurations distinguishing \( \mathcal{A} \) and \( \mathcal{B} \) – are, of course, not grammatical. This is what is known as **radial polysemy**, of the type \( \mathcal{A} \sim \mathcal{B} \), where \( \mathcal{A} = \mathcal{a} + \mathcal{M} \) and \( \mathcal{B} = \mathcal{a}’ + \mathcal{M}’ \).

I disregard here the important question of just how large the common part of two signifieds has to be in order for them to be recognized as two senses of one word – that is, as lexemes having identical signifiers and belonging to the same vocable (= **polysemy**) – and not as two different words – lexemes having identical signifiers and belonging to different vocables (= **homonymy**). See the remarks on this point in Item 14.
11. \( A' \cap B' \neq \Lambda, /A/ \subset /B/ \)

Overlapping of the signifieds of two signs accompanied by formal inclusion corresponds to the type of derivation which M. Panov has called “nA/nĀ,” i.e., “A is indicated ~ not-A is indicated” (Panov 1962: 24), for example, Rus. gruzin 'male Georgian' ~ gruzin+k(-a) 'female Georgian', moskvič 'male Muscovite' ~ moskvič+k(-a) 'female Muscovite'. The signifieds have a part in common, but they also have distinctive components. “Here one word indicates that the person spoken about is a woman, the other that it is a man” (ibidem).

NB: The situation is different with pairs such as prepodavatel’ 'lecturer' ~ prepodavatel’+nic(-a) 'she-lecturer', which has to be presented, in Panov’s notation, as “nA/nĀ”, i.e., “A is indicated ~ A is not indicated”. In Russian one can say Oña prekrasnyj prepodavatel’ 'She is a fine lecturer', because prepodavatel’ means simply 'lecturer', and not 'he-lecturer'. We are dealing here with both formal and semantic inclusion at the same time—that is, with a case of ‘ordinary’ derivation (cf. Item 6 above).

Case 11 also covers some isolated pairs such as Rus. dur(-a) 'she-fool' = ‘stupid female human’ ~ dur+ak 'he-fool' = ‘stupid male human’, or Eng. widow ~ widow+er.

12. \( A' \cap B' \neq \Lambda, /A/ \cap /B/ \neq \Lambda \)

The case of both semantic and formal overlapping covers, among other things, co-derivatives—that is, derived lexemes formed from the same stem, such as Ukr. kač+ur 'drake' ~ kač+k(-a) 'duck', Rus. berlin+ec 'male inhabitant of Berlin' ~ berlin+k(-a) 'female inhabitant of Berlin', pariž+an+in 'male inhabitant of Paris' ~ pariž+an+k(-a) 'female inhabitant of Paris', etc.

Moreover, this relation is particularly characteristic of inflection; an ideal example is furnished by Esperanto:

\[ \text{sid+as} \sim \text{[to] sit, PRESENT}, \text{sid+is} \sim \text{[to] sit, PAST}, \text{sid+os} \sim \text{[to] sit, FUTURE}. \]

These examples make it clear that the components which differentiate the meaning (or the form) of two overlapping signs are usually alternating elements of one and the same category.

13. \( A' \cap B' \neq \Lambda, /A/ \cap /B/ = \Lambda \)

Semantic intersection (overlap) of formally unrelated signs occurs in two cases.

(a) If the differentiating parts of their meanings are grammatical, we have supplementation, both derivational and inflectional:

\[ \text{Derivation} \]

Rus. četyr(-e) 'four' ~ sorok 'four-ty'
\[ \{ \text{dva 'two'} \sim \text{dva+dcat 'twenty'}, \text{tri 'three'} \sim \text{tri+dcat 'thirty'}, \text{pjat 'five'} \sim \text{pjat+desjat 'fifty'}, \text{etc.} \} \]
4. Illustrations of the 17 types of semantic-formal relations between linguistic signs

4.1. Inflection

Eng. am (to be + IND, PRES) [1sg] ~ was (to be + IND, PAST) [sg]
Fr. ai /e/ (to have + IND, PRES) [1sg] ~ eus /ü/ (to have + IND, PAST) [1sg]

(b) If the differentiating parts of the meanings of two signs are not grammatical, we are dealing with different lexemes; in case the shared components of their signifieds satisfy certain conditions (they must occupy a central position in the definition) these lexemes belong to one semantic field, for example, Rus. konservatorija ‘academy of music’ = ‘institution for higher education in the domain of music’ and universitet ‘university’ = ‘institution for higher education in all domains’.

Empty intersection of the meanings of two signs (14–17)

14. \( A \cap B = \emptyset \)

The absence of a common part in meanings of two signs accompanied by their formal identity is homonymy: cf. Rus. lask(-a) ‘weasel’ ~ lask(-a) ‘caress’ or Fr. sang /sã/ ‘blood’ ~ cent /sã/ ‘hundred’ ~ sans /sã/ ‘without’. It is obvious that such statements as ‘The signifieds \( A \) and \( B \) have nothing in common’ are meaningful only with regard to a particular description of those signifieds. Thus, stems which according to one dictionary are homonyms (e.g., Rus. ansambl’1 ‘parts forming an organized whole’ and ansambl’2 ‘group of music or dance performers’ in the dictionary Ožegov 1972), might, under a different description, have a common part: for instance, ansambl’1 (ORGANIZED GROUP of elements in keeping with each other) and ansambl’2 (ORGANIZED GROUP of music or dance performers) (in performing arts). In this case, one should speak of polysemy. Taking this into consideration, I can offer a criterion for distinguishing between homonymy and polysemy (it formalizes a well-known principle):

**Homonymy vs. polysemy**

If in a given dictionary the semantic descriptions (= definitions) of two lexical stems having identical signifiers have no part in common, then these stems are homonyms; otherwise they are polysems.

If for any reason, the lexicographer chooses to describe two stems as polysems, he has to make sure that their semantic descriptions (= signifieds) show explicitly the relatedness of their meanings – that is, they must explicitly contain common components, called semantic bridges.

Psychological associations, no matter how obvious they may be for native speakers, or how closely they may correspond to actual etymological relations, should not be taken into considerations. Facts of this kind pertain to the inner
form of words, to speech-perception, etc., but not to the semantic description. Rus. RUCKA¹ "little hand" and RUCKA² "pen" are homonyms just as much as BRAK¹ "defective product" and BRAK² "marriage".

It should be noted that, if the semantic description is sufficiently precise, the same semantic components of a very abstract and general character may appear in the definitions of lexemes very remote from each other. So, the component '[to] cause' = '[to] make so that …' is contained in the meaning of the nominal lexical unit 'VACUUM CLEANER' = 'device which cleans by removing dust …' = 'device which causes dust not to be there …' as well as in the meaning of the verb '[to] STEAL = '[to] take secretly and against the will of the owner', where '[to] take' = '[to] cause not to have', and be and have, in turn, are also related. It is necessary, therefore, to take the statement of the absence of common semantic components not quite literally, but in the sense of "nothing in common except for certain very abstract components" (the components in question must be given by a special list). When definitions of a great many words have been written, we can hope that it will be possible to formulate the above suggestion in a more precise way. For the time being, I will use it in the sense explained above (cf. Items 15–17).

15. \[ A \cap B = \Lambda, /A/ \subset /B/ \]

The absence of a common part in the meanings of two signs accompanied by formal inclusion is connected with the phenomenon of *derivational idioms*. Typical examples are Rus. bel'j/y(-o) "underwear" ~ bel'j/yj "white", ši+l/-o) "awl" ~ ši+l/-yj "[to] sew". It should be remembered, of course, that we speak here of the absence of a common semantic part in a relative sense indicated above, cf. Item 14.

Items 6(b) and 6(c), on the one hand, and Item 15, on the other, show a deep analogy between idiomatic combinations of words (in phrases) and idiomatic combinations of morphs (in wordforms); to put it differently, it seems plausible to speak of phraseologization of derived words.

The question of *formal divisibility* of phraseologized derived words is far from simple (cf. Mel’čuk 1967a: 354–355) and has to be solved in the framework of a general theory of morphological divisibility (in my opinion, the most promising outline of such a theory has been suggested in Panov 1968). It is clear that Rus. ručka "pen", bel'č "underwear", vetjak "wind-mill" are formally divisible in a different sense than, say, dom+ik "dear little house", rov+ik "dear little trench", samolët+ik "dear little airplane" are. However, I cannot deal with this problem more extensively here.

16. \[ A \cap B = \Lambda, /A/ \cap /B/ \neq \Lambda \]

Two signs (in particular, stems) with overlapping forms may have nothing in common semantically in two cases which are entirely different from each other.
(a) The common part of the two stems is constituted by two homonymous morphs, as, for instance, in Rus. gruz+in ‘Georgian’ ~ gruz+il(-o) ‘sinker [FISHING]’. This case, a variety of homonymy, is of no theoretical interest.
(b) Both stems are phraseologized coderivatives: Rus. vetr+enik ‘reckless man’ ~ vetr+jank(-a) ‘chicken-pox’, where vetr, as an independent sign, means ‘wind’. This case is not of particular interest, either.

Notes

1 (1, p. 517) The following three lexemes—Rus. TOL’KO, Sp. SÓLO, and Eng. ONLY—have the same signified:
\[ P(\text{tol’ko} / \text{sólo} / \text{only} \ X) = P(X) & \neg \exists Y[P(Y) & Y \neq X], \]
where \( P \) is a predicate variable. Thus, Rus. Ona čitaet tol’ko gazety ‘She reads newspapers only’ means ‘She reads newspapers, and it is not true that there exists something different from newspapers which she reads’. However, each of these three lexemes has a different range, or scope, in the clause:
- for Sp. sólo, X is either the phrase that immediately follows it, or –if sólo precedes the verb– the phrase following the verb;
- for Eng. only, X can be either the immediately preceding phrase, or the one immediately following it.

Cf. Rus. čitaet tol’ko gazety = Sp. sólo lee los periódicos (≠ tol’ko čitaet gazety) = Eng. reads newspapers only. Information about the scope of such signs as tol’ko, sólo or only is precisely what I have in mind when speaking of what X can or should be (provided that intonation is normal).

Information about the logical scope of these and similar signs is in fact information about their linear position. One has to specify where such a sign should be placed in the linear sequence of wordforms in order for it to express the necessary scope.

2 (1, p. 517) It is sometimes proposed that we shall consider a further component of the internal side of linguistic signs, namely, pragmatic information. I, however, think that with respect to linguistic signs, a special pragmatic component is not needed. What is
commonly called *pragmatic information* turns out to be some data concerning either the meaning of the sign, or the way it should be used. In the first case, this information belongs to the sign’s signified, in the second, to its syntactics.

3 (1, p. 517) See Introduction, loc. cit.—I abstain from discussing here the important distinction between the terms *sense* (= Ger. *Sinn*, *significatum*) and *reference* (= Ger. *Bedeutung*, *denotatum*) introduced by G. Frege, as it is not relevant to the present discussion. My signified corresponds to Frege’s *Sinn* = *significatum*, while for his *Bedeutung* = *denotatum* I use referent.

4 (1, p. 518) This frequent parallelism is explained by general semiotic considerations: facility of production and perception, etc.

5 (2, p. 519) What I am referring to here is the most ‘normal’ type of synchronic derivation. Less common types, such as reverse derivation (where the addition of an affix is coupled with the subtraction of meaning) will be considered later on (see 4, Item 7, p. 529).

6 (2, p. 519) I consider these requirements in greater detail in Mel’čuk 1969; see also Mel’čuk 1988c. Suffice it to say here that a certain ‘ideal’ definition is chosen among a number of synonymous expressions which in principle might serve as the lexicographic definition of a given lexical unit.

7 (2, p. 520) The existence of these 17 types of relations between linguistic signs was established in Mel’čuk 1968; see also Mel’čuk 1973d.

8 (3, p. 521) In practice, greater complexity of ‘X’ as compared with ‘Y’ means that ‘Y’ has to occur in the (lexicographic) definition of ‘X’, whereas the definition of ‘Y’ cannot contain ‘X’, and an attempt to construct the definitions in the opposite direction would result in a vicious circle.

9 (3, p. 522) In such cases as Rom. /lúp/ ‘SG’ ⇒ /lúp/ ‘PL’ and Ger. Vater ‘SG’ ⇒ Väter ‘PL’ the plural stems are taken to be derived from the singular ones because they are more marked: it is the singular stem that appears in derivations and compounds, where no meaning of number is expressed.

10 (3, p. 523) The traditional interpretation of such cases as instances of negative derivation, symmetrical with respect to ordinary derivation, is therefore self-contradictory. If the left members of such pairs are regarded as formally basic, then the right members are formally more complex, and what we are dealing with is ordinary, i.e. positive, derivation, whereas a signified and a signifier are added, and not subtracted, the only difference being that the added signifier is not a linear segment but a meaningful operation. If, on the other hand, the right members were to be regarded as basic, then negative derivation would not obtain either: *becz*+k(=a) should be regarded as containing the suffix -k, and such pairs as *bek+(=a)* ‘big barrel’ ~ *becz+(-a)* ‘barrel’ would then be instances of reverse derivation of the type exemplified by Rus. *radovat’* [to] make glad’ vs. *radovat’sja* [to] be glad’, see below. On the impossibility of ‘subtraction’ in natural language, see Mel’čuk 1991a.

11 (3, p. 523) The traditional interpretation of such cases as instances of negative derivation, symmetrical with respect to ordinary derivation, is therefore self-contradictory. If the left members of such pairs are regarded as formally basic, then the right members are formally more complex, and what we are dealing with is ordinary, i.e. positive, derivation, whereas a signified and a signifier are added, and not subtracted, the only difference being that the added signifier is not a linear segment but a meaningful operation. If, on the other hand, the right members were to be regarded as basic, then negative derivation would not obtain either: *becz*+k(=a) should be regarded as containing the suffix -k, and such pairs as *bek+(=a)* ‘big barrel’ ~ *becz+(-a)* ‘barrel’ would then be instances of reverse derivation of the type exemplified by Rus. *radovat’* [to] make glad’ vs. *radovat’sja* [to] be glad’, see below. On the impossibility of ‘subtraction’ in natural language, see Mel’čuk 1991a.

12 (4, Item 5, p. 527) *Sliva* as a tree must be defined in terms of *sliva* as a fruit, because as language-users and linguists, we do not have recourse to scientific classifications, which define varieties of trees in botanical terms (by type of fruit, flower, shape of
leaf, etc.); therefore, ‘plum tree’ cannot be defined via its botanic species. Instead, trees are linguistically defined in terms of their perceptually salient and functional characteristics—the most notable characteristic of the plum tree (for which it is prized and cultivated) being its fruit, and it is in terms of this fruit that the tree is defined. In other words, sliva ‘plum tree’ is defined as a ‘plum-bearing tree’ rather than the other way around (that is, sliva ‘plum’ defined as ‘fruit of a plum-tree’). It is entirely plausible and commonplace that a speaker be familiar with plums but never have seen a plum tree, while the reverse situation is highly improbable—at least, in case of edible fruits. Note that in every case that I am familiar with, where a derivational relationship between a tree and its fruit is formally marked, it is the name of the tree that carries the affix: thus, in French we have pomme ‘apple’ ~ pomnier ‘apple tree’, cerise ‘cherry’ ~ ceriser ‘cherry tree’, orange ‘orange’ ~ orangier ‘orange tree’, figue ‘fig’ ~ figier ‘fig tree’, etc.

13 (4, Item 5, p. 527) It is important to analyze regular polysemy together and in parallel with derivational devices (roughly, affixes). Thus, some types of regular polysemy may be productive or non-productive, may have a certain stylistic value, etc., exactly as may be the case with affixes. Consider, for instance, in Russian: ‘location’ ~ ‘everybody in the location’ (Ves’ zal zaapldiroval ‘The whole hall applauded’ = ‘Everybody in the hall applauded’; Montreal veselilsja ‘Montreal was joyful’ = ‘Everybody in Montreal was joyful’, etc). This point is explored in Apresjan 1974: 189–215.

14 (4, Item 7, (iv), p. 520) This conclusion is valid for solënij in the sense of ‘containing salt’, but not for solënij in the sense ‘containing salt in a sufficient quantity’ (cf. Solil ja, solil ètot sup, a on vsë ravno nesolënij = ‘I kept salting this soup, but it is not salted (= not salted enough) all the same’.

15 (4, Item 7, (vi), p. 531) I think that in both pairs the imperfective aspect is semantically simpler. Consider the following data (the extra semantic components are underlined):

(i) On vynul iz ēmodana i prodemonstriroval/pokazal mne svoju novuju rubašku, lit. ‘He took out of the suitcase and showed me his new shirt’ [PERF].

On demonstriroval/pokazyval mne svoju novuju rubašku (dolgo/mnogo raz), lit. ‘He showed me for a long time/many times his new shirt’ [IMPERF].

(ii) On proanaliziroval/rassmotrel tureckoe sklonenie,
it. ‘He completed analyzing/considering the Turkish declension’ [PERF].

On analiziroval/rassmatrival tureckoe sklonenie,
it. ‘He was analyzing/considering the Turkish declension in order to complete analyzing/considering it’ [IMPERF].

On semantic relations between Russian aspects, see Glovinskaja 1982 and 2001.
PART III

The Morphology-Phonology interface
Among many relevant questions having to do with the ties between morphology and phonology Part III takes up only one question: How morphological considerations—or, more precisely, considerations related to constructing morphological models—influence the decisions taken when working out the phonemic systems of particular languages. It is, of course, not the only relevant issue nor even the most important one; however, I will limit myself here to the problem of the phonemic status of so-called semivowels in Spanish.
Chapter 11. The phonemic status of Spanish semivowels

1. Introductory remarks

Standard Castilian Spanish has four fairly frequent sounds (= phones) – [i], [u], [j] and [w] – found, for instance, in such wordforms as [rɛ̃] rey ‘king’, [kwaˈsa] causa ‘a cause’, [pjeɾˈðo] pierdo ‘[I] lose’ and [kweˈnto] cuento ‘[I] tell a story’. Traditionally, these phones are called ‘semivowels,’ a name that I will retain for the time being – although it will be dropped as inappropriate at the end of the day.

The problem related to these phones is that of deciding their phonemic status: To what phonemes of Spanish do the ‘semivowels’ [i], [j], [u] and [w] belong?

Spanish semivowels have sparked off a heated discussion, which has been ongoing for more than 50 years. In the mid-50s, Language opened its pages to an exchange of opinions on the topic. Several papers that appeared there were later included in an important anthology of American linguistics (Joos 1958); numerous leading European linguists (Malmberg, Martinet, Kortlandt, Pottier, ...) also took part in the polemics. (The interested reader will find a quasi-exhaustive list of relevant references in Mel’čuk 1965a, Mel’čuk 1973c and 1976a.)

Roughly speaking, the discussion can be reduced to two opposite viewpoints: that of ‘vocalists’ and that of ‘consonantists.’

- The most common viewpoint attributes the phones in question to vowel phonemes /i/ and /u/: in an unaccented position and in contact with another vowel, /i/ and /u/ each have two allophones [i] ~ [j] and [u] ~ [w], respectively; cf., for instance, Trager 1942, Saporta 1956, Alarcos Llorach 1961 [1976], Kortlandt 1973. This is how Spanish semivowels are treated in most textbooks and manuals.
- The other viewpoint places the problematic phones in the consonant phonemes /ʝ/ and /w/: cf., for instance, Bowen and Stockwell 1955 and 1956, or Martinet 1955: 81–85.

Remark

In this chapter, I recur to the phonetic symbols as they are used in Spanish grammar, although this use does not always correspond to the common IPA use. More specifically, [j] and [w] stand for ‘semivowels,’ not consonants; the corresponding consonants – the voiced palatal fricative and the voiced bilabial fricative – are symbolized as [ʝ] and [w]. The affricated allophones of these consonants appear as [dʝ] and [d̥w]; more phonetic details are supplied immediately below.
It seems useless to expound here all the arguments that have been given for and against each of these two descriptions. One can readily imagine still other phonemic solutions (for instance, include only the phones [i] and [u] with the vowels, putting the phones [j] and [w] with the consonants, etc.). Hara 1973 offers a detailed review of the field, presenting 30 (!) different phonological interpretations of Spanish semivowels (Hara’s own proposal: the semivowels are consonants). However, the very existence of two diametrically opposed viewpoints, not to mention the abundance of arguments one way or another, suggests to me that there must be a fundamental flaw both in the statement of the problem itself and in the proposed methods of reaching a solution. I think that what is lacking is a clear and rigorous principle that is independent of the problem and must underlie our reasoning. I will introduce such a principle, which I hope can ensure a unique and definitive solution for the phonemic status of Spanish semivowels.

2. The phonetic data

Castilian Spanish has two series of sounds that cause the problem of the phonemic status of ‘semivowels:’

<table>
<thead>
<tr>
<th>«i» series</th>
<th>«u» series</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. [i] [píno] pine</td>
<td>[u] [púro] pure</td>
</tr>
<tr>
<td>2. [í] [báile] dance</td>
<td>[ú] [áuto] car</td>
</tr>
<tr>
<td>3. [í] [bien] well</td>
<td>[w] [bwéno] good</td>
</tr>
<tr>
<td>4. [í] [jérrba] grass</td>
<td>[w] [véso] bone</td>
</tr>
<tr>
<td>[plája] beach</td>
<td>[ahekár] ahuecar</td>
</tr>
<tr>
<td>[hierba] grass</td>
<td>[w] [wésos] bone</td>
</tr>
<tr>
<td>[kónjuxe] spouse</td>
<td>[konjwesos] con huesos ‘with bones’</td>
</tr>
</tbody>
</table>

[The phones [j]/[ð] and [w]/[w] are in free variation word-initially.]

Line 1 contains pure vowels, found—stressed or not stressed—in all possible positions: between two consonants, between a consonant and a pause (at the beginning or the end of a wordform) or adjacent to another vowel (a hiatus is allowed in Spanish). Here are some examples:

| [bíno] vino wine  | [dúro] duro hard |
| [fra] ira ire     | [úxa] uva grapes |
| [riketa] riqueza wealth | [pulido] pulido refined |
| [fáar] fiar [to] have confidence | [aktur] actuar [to] act |
| [kaáa] caia [s/he] was falling | [aktúa] actúa [s/he] acts |

Line 2 contains semivowels proper: the degree of opening and the duration of articulation of [i] and [u] are much smaller than those of [i] and [u] (even when the latter are not stressed). In addition, crucially, [i] and [u] never form a sylla-
bic nucleus. These two sounds are found only following a vowel and preceding either a consonant or a word boundary:

- [áire] aire ‘air’
- [austrál] austral ‘austral’
- [rēj] rey ‘king’
- [monlau] Monlau [family name]
- [dōj] doy ‘[I] give’
- [bōj] bou ‘type of fishing boat’

Line 3 contains sounds that are most often called ‘semiconsonants:’ even more closed and shorter than [i] and [u], the phones [j] and [w] have a certain degree of fricativity; generally phoneticians treat them—especially in other languages than Spanish—as consonants. They appear only following a consonant and preceding a vowel:

- [p̠jéra] piedra ‘stone’
- [p̠werta] puerta ‘door’
- [k̠jer] quiero ‘[I] want’
- [k̠w̠era] cuerda ‘rope’

The situation is more complex in lines 4 and 5: traditional descriptions of the Spanish phonetics treat the «i» series and the «u» series differently. In the «i» series everyone recognizes the existence of two genuine consonants: [ĵ], a palatal fricative consonant, and [dĵ], the same palatal consonant, but with an initial plosive element, such that the whole becomes an affricate. (Many authors, including Navarro Tomás, call [dĵ] an affricate without reservation.) The consonant-like character of these sounds manifests itself in the following phenomenon:

Before [ĵ] and [dĵ], the phonemes /s/ and /θ/ are realized by voiced allophones:

- [lazjerfas] las hierbas ‘the grasses’ ([*lajjerfas]),
- [djjerfas] diez hierbas ‘ten grasses’ ([*djjerfas]), etc.,

in the same way as in [lozbaŋkos] los bancos ‘the banks’, [paθduraθra] paz duradera ‘lasting peace’, …

Such voicing never occurs before a vowel— in other words, the Spanish phones [z] and [θ] cannot appear before vowels.

According to the pronunciation norms of Standard Castilian Spanish, the sound [ďj] is obligatory after /n/ and /l/ (which automatically become /ɲ/ and /ʎ/): [ɲɛktar] inyectar ‘to inject’ or [ɛθɛŋθo] el yeso ‘the plaster’; [j] appears in all other positions: [ĵerba] hierba ‘grass’, [apɔjo] apoyo ‘support’, etc. Word-initially and before a stressed vowel, the affricate [dĵ] freely alternates with the fricative [j]— as a function of the rhythm of delivery, the speech situation and the register used. Thus, the pronunciation [ďjerba] is considered more typical of careful style or emphatic speech than the pronunciation [jərba] (Navarro Tomás 1974: 129).

As for the «w» series, Navarro Tomás does not say anything concerning the ‘genuine’ consonants [w] and [ʍ], being different from the semiconsonant [w]. He transcribes [kw̠ra] cuerda ‘rope’ and [w̠r̠ano] huérano ‘orphan’ with the same symbol [w], and he gives only [w] in the list of Spanish consonants (N-
varro Tomás 1974: 82). Since the majority of those who write about Spanish phonetics and phonology follow the work of Navarro Tomás very closely, the opinion that the «i» series and the «u» series are asymmetrical because of the absence of the consonants [w] and [ʔw] that correspond to [j] and [ŋ] is generally accepted. However, Navarro Tomás 1974 contains many indirect data that prove the existence of consonantal phones [w] and [ʔw], different from [w]. These data are at least of two types.

(a) Voicing: before certain [w]s, the voicing of /s/ and /θ/ is obligatory (p. 108: 
[lozvěsos] los huesos ‘the bones’ (*[losvěsos]), cf. also [djeθvěsos] diez huesos ‘ten bones’ (*[djeθvěsos]), while it is impossible before some other [w]s (p. 54: [lazvěrte] la suerte ‘the destiny’ (*[lazvěrte]).

(b) Velarization: before certain [w]s, the phoneme /n/ can have a velarized allophone or even disappear, nasalizing the preceding vowel (p. 142: [unvěrto], [ũvěrto] un huerto ‘a garden’), but this does not happen before some other [w]s (p. 72: [kontĩwo] continuo ‘continued’ (*[kontĩjwo], *[kontĩwo])).

And the [w] sounds that determine voicing are exactly the same that determine velarization.

These facts prove the existence of at least two different [w] sounds: the semi-consonant [w] and the voiced rounded labiovelar fricative consonant [w]. The consonant [w], in contrast to the semi-consonant [w], triggers the voicing of /s/ and /θ/, as well as the velarization (or the fall) of /n/.

Navarro Tomás writes (1974: 64) that word-initially and between two vowels, [w] “acquires a rather consonantal nature: in spoken language, before /w/ there develops a real consonant, appearing in the form of a labialized g or, less frequently, of a velarized b” [translation is mine.—IM.]. This g should not be considered as separate sound but rather as an initial element of a complex sound [ʔw], which is parallel to the element [g] in the familiar affricate [dʒ]. We cannot say that g is a separate sound because the consonantal element appearing before [w] in wordforms of the type hueso ‘bone’ is fricative (Navarro Tomás 1974: 64); but the fricative allophone of the phonemes /g/, /b/ and /d/ is not allowed in the absolute word-initial position, therefore this g-sound must be the initial element of an affricate.

Based on these facts, as well as on considerations of some other researchers (first of all, Alarcos Llorach 1961 [1976]: 144–159), I introduce lines 4 and 5 in the «u» series, i.e., two consonants: a fricative [w] and an affricate [ʔw]. Their distribution is analogous to that of the consonants [j] and [ŋ]: after /n/ and /l/, we have [ʔw], and elsewhere—that is, word-initially and between vowels—[w]; in word-initial position (and, in some pronunciation varieties, between vowels), [w] and [ʔw] alternate freely.

To sum up: In this chapter, the following two series of phonetically related sounds [= phones] of Castilian Spanish are considered:
3. The phonemicization problem in general

As has already been indicated, the problem of including Spanish semivowels in the corresponding phonemes has not been solved uniquely and finally because there have been no PRE-ESTABLISHED CRITERIA that would follow from a general approach to language and should be satisfied for a given phonemic solution to be admissible.

In the framework of the Meaning-Text theory, it is possible to advance such criteria. According to this theory, the primary goal of linguistics is to construct, for particular languages, Meaning-Text linguistic models: systems of rules which accept as their input semantic representations of (families of) sentences and produce as their output phonetic (or graphic) representations of sentences. A Meaning-Text model includes, alongside other modules, a morphological module which takes, as its input, Deep-Morphological Representations [= DMorphRs] of wordforms and produces, as its output, real wordforms in PHONEMIC transcription, or Deep-Phonological Representations [= DPhonRs]. Schematically, the morphological model of Spanish takes the expressions of the type TENER_{subj, pret, 3, pl} (= DMorphR of the wordform tuitleran of the verb [to] have’) and associates with them the expressions of the type /tubj€ran/ (= DPhonR of the same wordform). The model of Spanish conjugation that lies behind the present chapter is described in a series of publications (Mel’čuk 1965c, 1967b, Mel’čuk 1974c, 1976c, 1994a, 1993–2000, vol. 5: 117–172), and I will base my subsequent reasoning on the following postulate:

The phonemic description proposed for a given language must be compatible with a Meaning-Text type morphological model of this language (or a substantial equivalent thereof).

It may be the case that of all the possible phonemic solutions to a particular phonological problem there is one that allows us to construct a satisfactory morphological model while the others do not. In such a situation, the researcher is to prefer the first solution. This is the general principle which is the basis for the phonemic description proposed below.
Fortunately, Spanish features a situation of this type, which allows us to solve the old problem of Spanish semivowels.

4. **Phonemic status of the Spanish semivowels \([i]/[j]\) and \([u]/[w]\)**

I will proceed in the three following steps:

- First, I show that Spanish semivowels are not allophones of vowel phonemes.
- Second, I establish that Spanish semivowels are not allophones of consonant phonemes, either.
- Third, I conclude that Spanish semivowels are glides.

After this, I will touch briefly upon two more points:

- Advantages of the proposed solution.

4.1. **The Spanish semivowels are not allophones of the vowels \(/i/\) and \(/u/\)**

Our discussion is anchored in the following fundamental fact:

In Spanish, verb forms are stressed in a 100% regular way (without any exception), stress being completely determined by morphological factors.

This is where considerations that follow from the construction of a Meaning-Text morphological model of Spanish conjugation are used in a crucial way.

Therefore, in order to make the discussion more understandable, I present here some morphological rules of Spanish that underlie my reasoning—namely, three accentuation rules for verbal wordforms.²

**Notation**

\(/V/\) stands for a vowel and \(/C_/\); for a string of consonants and glides; \(/X/\) is any phonemic string; \(/C_/\) and \(/X/\) can be empty, and the sequence \(/XVC_/\) does not contain a morphological boundary. \(R\) means ‘radical;’ \(#\) designates a wordform boundary, and \(+\), a morph boundary. The expression ‘(strong)’ in subscript marks a radical morph that has the feature ‘strong’ in its syntactics: this is a radical that receives stress in the preterit (‘strong’ radicals belong to the verbs known as irregular). The meaning of the inflectional variables is obvious: \(t(ense)\), \(m(oor)\), \(n(umber)\), \(p(erson)\).
4. Phonemic status of the Spanish semivowels

**Raccent 1. Accentuation of the radical**

\[
\begin{array}{c|c}
R & R \\
\# /XV ĕ+/ & \# /XV ĕ+/
\end{array}
\]

\[
A = \begin{cases}
\text{either} \ [1] \ t = \text{pres or} \ m = \text{imper,} \\
\text{and} \ 2) \ n = \text{sg or} \ p = 3, \\
\text{and} \ 3) \ R \neq \text{ESTAR}; \\
\text{or} \ [1] \ t = \text{pret, m = ind,} \ n = \text{sg,} \ p = 1, 3, \\
\text{and} \ 2) \ R = \text{(strong)}.
\end{cases}
\]

[The capital \( A \) is used here as an abbreviation to refer to this complex set of conditions.]

<table>
<thead>
<tr>
<th>Verb</th>
<th>Th. El</th>
<th>Th. El</th>
<th>A Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTAR imper, 2, sg</td>
<td>/kont/ + /a/ + /θ/ ⇒ /kōnt/+ /a/+ θ</td>
<td>IMPER. 2SG</td>
<td></td>
</tr>
<tr>
<td>TENER ind, pret, 1, sg</td>
<td>/tub/(strong)+ /i/+ /i/ ⇒ /tūb/+ /i/+ /i/</td>
<td>PRET. 1SG</td>
<td></td>
</tr>
</tbody>
</table>

In the forms specified, stress falls on the last vowel of the radical morph in two cases:

- for all verbs except for ESTAR ‘[to] be’ in the singular or in the 3rd person of the present and the imperative;
- for so-called irregular verbs (i.e., for verbs whose preterit radicals are marked ‘strong’), in the 1st and the 3rd persons of the singular in the preterit of the indicative.

**Raccent 2. Accentuation of the Thematic Element**

\[
\begin{array}{c|c}
\text{Th. El} & \text{non A} \\
+/\bar{V}/+ & +/\bar{V}+/ \\
\end{array}
\]

<table>
<thead>
<tr>
<th>Verb</th>
<th>Th. El</th>
<th>A Conditions</th>
</tr>
</thead>
<tbody>
<tr>
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<td>/kont/ + /a/ + /d/ ⇒ /kōnt/+ /a/+ /d/</td>
<td>IMPER. 2SG</td>
</tr>
<tr>
<td>CONTAR ind, pret, 1, sg</td>
<td>/kont/ + /a/ + /e/ ⇒ /kōnt/+ /a/+ /e/</td>
<td>PRET. 1SG</td>
</tr>
<tr>
<td>TENER ind, pres, 1, pl</td>
<td>/ten/ + /e/ + /mos/ ⇒ /ten/+ /e/+ /mos/</td>
<td></td>
</tr>
</tbody>
</table>

In all forms that are not covered by the condition \( A \) (see above Raccent 1), stress falls on the thematic element.

**Raccent 3. Moving the stress from the Thematic Element**

\[
\begin{array}{c|c}
\text{Th. El} & \text{Th. El} \\
+/\bar{V}^1/+ +/\bar{V}^2/+ & +/\bar{V}^1/+ +/\bar{V}^2/+ \\
\end{array}
\]

<table>
<thead>
<tr>
<th>Verb</th>
<th>Th. El</th>
<th>A Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTAR ind, pret, 1, sg</td>
<td>/kont/ + /ā/ + /e/ ⇒ /kōnt/+ /ā/+ /e/</td>
<td></td>
</tr>
<tr>
<td>COMER ind, pret, 3, sg</td>
<td>/kom/ + /ū/ + /o/ ⇒ /kom/+ /ū/+ /o/</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 11. The phonemic status of Spanish semivowels

Stress that falls on a thematic element preceding another vowel—that of the person/number suffix—is transferred on the latter. (At the next stage of the construction of the verbal wordform, the thematic element +a+ or +e+ is truncated, and the thematic element +i+ is devocalized.)

As one immediately sees, in Spanish conjugation, stress is movable: at the level of the morphic representation of verbal wordforms, it falls either on the verb radical (always on the last syllable, if the radical is polysyllabic), or on the Thematic Element [= Thematic Vowel]; the choice is a function of the grammemes expressed by the wordform in question (see Raccent 1 and Raccent 2 above). At the level of phonological representation, stress may appear on a different wordform constituent, since it can be moved by a morphological rule of absolute generality (Raccent 3, p. 549). At the same time, certain verbal morphs are always stressed (as, for instance, the number/person suffixes in the future: -é, -ás, -á, ...), which introduces additional complications: in such cases, rules Raccent 1–3 do not apply. However, this does not change anything in the essential fact:

In Spanish, the position of stress in a verbal wordform w cannot be specified with respect to the radical morph, but it has to be computed, in each w, by rules that have access to the DMorphR of w.

That is how the Spanish verb accentuation is described by the morphological model considered here.3

Now, if the signifiers of verbal radicals are represented in the lexicon in terms of phonemes WITHOUT INDICATION OF STRESS, it is impossible to relegate [i8] and [u8] to vowel phonemes. This is proven by the existence of pairs of verbs as the following ones:

bailar [baiˈlár] (to dance) ~ ahilar [aiˈlár] (to line up).

Phonetically, the 1sg present indicative forms are [baiˈlo] and [aiˈlo]. If [i] and [j] are both reduced to the phoneme /i/, the radicals of the two verbs appear respectively as /bail/ and /ail/. Then it is impossible to formulate a general accentuation rule for the Spanish verb that will produce only the correct forms. The universally accepted rule (‘In the form of 1sg in the present indicative, stress falls on the last vowel of the radical’) produces an incorrect form for bailar:

/bail + o/ ⇒ */baílo/ ⇒ *[baiˈlo], instead of [baiˈlo].

If, however, we try to correct the rule by adding to it a special provision—‘… except if the last vowel is an /i/ following a vowel’—then we obtain a bad form for ahilar:

/ail + o/ ⇒ */aiˈlo/ ⇒ */aiˈlo/, instead of [aiˈlo].

The only way out (other than indicating stress in the lexicon) is to say that the [j] in [baiˈlár] is underlyingly a non-vowel /j/, while the the [j] in [aiˈlár] is underlyingly a vowel /i/ (of course /i/ ≠ /i/). The radical of BAIL(-ar) has to be represented with a non-vocalic phoneme, and that of AHIL(-ar), with a vocalic one:
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This ensures the production of correct forms for the 1sg (in the present of the indicative) as well as for all the other persons of the singular and the 3pl, where stress is always on the last vowel of the radical. As for the infinitive, the /i/ of AIl(-ar), which is not stressed, optionally alternates with /j/ (according to a natural alternation rule: /i/ ⇔ /j/ | /V/), so that we obtain the correct form /ailár/.

Let it be emphasized that ailar can be also pronounced with a hiatus: [ailár], while for bailar such a pronunciation is impossible: *[bailár] (only [bailar]). This fact reinforces my intention to treat the [i] of [ailar] and the [j] of [bailar] differently with respect to their phonemic status.

The same state of affairs holds for [u] and [u]. Spanish has pairs of verbs such as causar (to cause) and rehusar (to refuse), with forms of the 1sg (in the present of the indicative) [kás] and [réuso]. If we transcribe their radicals phonemically without distinguishing [u] and [u], both being represented as /u/, one of these forms will be phonetically incorrect:

according to the present rule, /kás+o/ ⇒ *[kásos];
according to the modified rule, /réus+o/ ⇒ *[réusos].

Therefore, we must posit the phonemic representations /káws/ vs. /réus/.

REHUS(-ar) allows, in the infinitive, a pronunciation with the hiatus, but not CAUS(-ar):

[reusár], but *[kausár].

This shows that the radical /réus/ contains a vowel /u/, but the radical /káws/ does not.

The examples used here are by no means isolated or exceptional. I can list several other verbs where the phonemic description of [i] as /i/ and that of [u] as /u/ inevitably entails the production of incorrect forms.

(1) «i» series

<table>
<thead>
<tr>
<th>Verb</th>
<th>Meaning</th>
<th>Radical</th>
</tr>
</thead>
<tbody>
<tr>
<td>arraigar</td>
<td>[to] strike root</td>
<td>[aři]</td>
</tr>
<tr>
<td>ahiyar</td>
<td>[to] adopt as son or daughter</td>
<td>[ai]</td>
</tr>
<tr>
<td>pairar</td>
<td>[to] drift</td>
<td>[pař]</td>
</tr>
<tr>
<td>ahiyar</td>
<td>[to] urge</td>
<td>[aiŋ]</td>
</tr>
<tr>
<td>reinar</td>
<td>[to] reign</td>
<td>[řeŋ]</td>
</tr>
<tr>
<td>ahiyar</td>
<td>[to] quiver</td>
<td>[fei]</td>
</tr>
<tr>
<td>peinar</td>
<td>[to] comb</td>
<td>[pěŋ]</td>
</tr>
<tr>
<td>ahiyar</td>
<td>[to] prohibit</td>
<td>[proi]</td>
</tr>
</tbody>
</table>

«u» series

<table>
<thead>
<tr>
<th>Verb</th>
<th>Meaning</th>
<th>Radical</th>
</tr>
</thead>
<tbody>
<tr>
<td>pausar</td>
<td>[to] slow down</td>
<td>[páus]</td>
</tr>
<tr>
<td>ahumar</td>
<td>[to] smoke, cure</td>
<td>[áum]</td>
</tr>
<tr>
<td>paular</td>
<td>[to] chat</td>
<td>[pául]</td>
</tr>
<tr>
<td>aullar</td>
<td>[to] howl</td>
<td>[ául]</td>
</tr>
<tr>
<td>defraudar</td>
<td>[to] defraud</td>
<td>[defrău̯]</td>
</tr>
<tr>
<td>acentuar</td>
<td>[to] accentuate</td>
<td>[aʃent]</td>
</tr>
<tr>
<td>incautar(se)</td>
<td>[to] confiscate</td>
<td>[inkáut]</td>
</tr>
<tr>
<td>actuar</td>
<td>[to] act</td>
<td>[aktú]</td>
</tr>
<tr>
<td>restaurar</td>
<td>[to] restore</td>
<td>[řestáu̯]</td>
</tr>
<tr>
<td>aupar</td>
<td>[to] get up</td>
<td>[án]</td>
</tr>
</tbody>
</table>

The sounds [i] and [u] thus cannot be included in the vowel phonemes /i/ and /u/.

Since [i] and [u] have more consonantal characteristics than [j] and [y], they cannot be included in the corresponding vowels either. To corroborate this
conclusion by relevant linguistic facts, I will give a few verbal pairs where the phonemic description of [j] and [w] as /i/ and /u/ would lead to incorrect forms:

(2) «i» series

- anunciar [anúnθjo] ~ rociar  [roθio] 
- cambiar [kámbjo] ~ enviar  [embjo]
- envidiar [embiðjo] ~ confiar  [komfjo]
- agiar [ájjo] ~ aliar  [alio]
- anestesiar [anestésjo] ~ amnistiar  [annístio]

«u» series

- menguar [ménθwo] ~ continuar  [kontinúo]
- fraguar [fráθwo] ~ graduar  [gradúo]
- atestiguvar [atestíθwo] ~ evacuar  [efakúo]
- averiguvar [áθeríθwo] ~ evaluar  [efalúo]

If, for instance, the radicals of ANUNCIAR [anunθj(-ár)] and ROCIAR [röθj(-ár)] are phonemically transcribed in the same way—say, as /anunθi/ and /röθi/—the extant accentuation rules will inevitably produce bad results:

- according to the present rule, /anunθi+o/ ⇒ */anunθio/ ⇒ *[anunθio];
- according to the modified rule, /röθi+o/ ⇒ */röθjo/ ⇒ *[röθjo].

However, transcribing these radicals as /anunθj/ vs. /röθj/ gives the correct results.

I have thus proven my first thesis: [i], [j], [u] and [w] cannot be considered to be allophones of the vowels /i/ and /u/.4

NB: This result was published for the first time in Mel’čuk 1965a, b; Harris 1969: 122–125 independently arrived at the same conclusion, corroborated by examples almost identical to mine. This buttresses my conviction that the non-vocalic character of the Spanish semivowels has been proven.

Before proceeding, I would like to briefly discuss the fundamental distinction between the traditional approach to the phonemic treatment of the Spanish semivowels and the method applied here. The most widespread viewpoint, namely that [i], [j] ∈ /i/ and [u], [w] ∈ /u/, rests on the analysis of ‘ready-made’ wordforms, in statu existendi, where stress is present and can be used as a contextual element that conditions the selection of the appropriate allophone: the semivowels [i], [j], [u], [w] appear only in an unaccented position adjacent to a vowel, while the vowels [i] and [u] appear either in an accented position or not adjacent to a vowel. As a consequence, in Spanish, the semivowels and the vowels turn out to be in complementary distribution with respect to stress and vocalic environment.5

However, in the present chapter, I propose to consider the process of the construction, or synthesis, of wordforms—that is, to observe the wordforms in...
4. Phonemic status of the Spanish semivowels

Therefore, I have to formulate and apply the rules of accentuation to the morphs without stress. Then we discover that the genuine Spanish vowels ([i] and [u]) and the semivowels ([i], [j], [u], [w]) must be distinguished in the phonemic transcription. Otherwise, we face a vicious circle:

The traditional rule that changes a vowel in a semivowel at the phonetic level has to refer to the position of stress, while the rule that specifies the position of stress requires the distinction between the vowels and the semivowels at the phonemic level.

Since the accentuation of Spanish verbal wordforms must be described by simple rules based on the Deep-Morphological Representation of the wordform to be constructed, taking into consideration the phonemic context, we are obliged to distinguish vowels and semivowels in Spanish phonemically.

The important lesson to draw from the above remarks is as follows:

When deciding the phonemic status of a sound, the researcher must proceed from the description of the process of construction (= of synthesis) of the wordforms within a morphological model—rather than from the description of ready-made wordforms, found as such in the text.

In other words, I put forward, in my phonological discussions, the *argumentum ad productionem*.

4.2. The Spanish semivowels are not allophones of the consonants /j/ and /w/

To make this point, I rely on the following three considerations:

1. **Phonemic oppositions.** The sounds [j] vs. [j]/[ʝ] and [w] vs. [w]/[ʎ] can be found in the same phonemic environment—that is, they are not in complementary distribution; this means that they are phonemically opposed. Therefore, [j] and [w] cannot be included in the same phonemes as [j]/[ʝ] and [w]/[ʎ].

   (3) «i» series
   
   [abɔðˈjɛktɔ] aveyɛktɔ ‘abject’ ~ [aβjɛrto] aβiertɔ ‘open’
   [dezɔʃˈjɛlo] deshieلو ‘thaw’ ~ [desʃɛrto] desierート ‘desert’
   [adʃəˈbɛnte] adjaʃɛnte ‘adjacent’ ~ [raβʃaβɔr] radiətor ‘radiator’

   «u» series
   
   [lazɔˈwɛrtas] las huertas ‘the gardens’ ~ [laʃwɛrte] la suerte ‘the destiny’

   **NB:** Recall that [b]/[β], [z]/[s] and [d]/[ð] are allophones of the same phoneme (/b/, /s/ and /d/, respectively), so that it is legitimate to speak here of the same phonemic environment.

   Even some minimal pairs can be found:
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(4) «i» series
[laʃˈjέɾbəs] las hierbas ‘the grasses’ ~ [laʃˈjέɾbəs] las siervas ‘the [female] slaves’
[koɲˈʃεl] con hiel ‘with bile’ ~ [koɲˈʃεl] con niel ‘with niello [type of enamel]’

«u» series
[loʃˈwεkəs] los huecos ‘the hollows’ ~ [loʃˈwεkəs] los suecos ‘the Swedes’
[lazˈwεlə] las huella ‘[that he] smell them’ ~ [laswεlə] la suela ‘the sole’

2. Phonemic cooccurrence. The sounds [j], [i], [w] and [u] appear in sequences where no other Spanish consonant is allowed:

– No Spanish consonant can appear in word-initial clusters with /s/, /r/, /ʝ/; the strings */#sc/, */#rC/ and */#ʎC/ are impossible. However, [j] and [w] are quite common in this position (although the string */#ʎj/ is not permitted):

(5) [ʃjɛnto] siento ‘[I] regret’ [swɛnə] sueno ‘[I] sound’
[rjɛɣyo] riesgo ‘risk’ [swɛɾte] suerte ‘fate’
[ɾwɛða] rueda ‘wheel’ [Âweβə] llueve ‘[it] rains’

– No Spanish consonant can appear word-finally before another consonant: with the exception of a few non-assimilated foreign borrowings (vals, golf, etc.), final consonant clusters are impossible. However, the final string [is] is very current: this is the verbal suffix of the 2nd person plural [traʃlaxiʃ] [ˈyuŋl] work2, [komɛʃ] [ˈyuŋl] eat1, [sɔʃ] [ˈyuŋl] are2. If [i] is taken to be a consonant, this string would be the only exception to the general rule.

What I have said concerning [i] also applies to [u] in the final string [us], which is found in the plural form bous [bɔus] ‘fishing boats of a particular type’ and in proper names such as Reus [ɾεus], Manaus [manaũs], Zeus [θεus], etc.

3. Conditioning of allophonic distribution. The sounds [j] and [w], on the one hand, and [i] and [u], on the other hand, impose different assimilations on the consonants that precede them—that is, they select different allophones of such consonants.

– Like vowels, the sounds [j] and [w] select for the fricative allophones of /b/ and /d/ if these are themselves preceded by a vowel. On the other hand, [j]/[ʃj] and [w]/[ɾw] select, in the same position, for the plosive allophones (as all consonants do). In other words, we have:

\[ \{V\{\beta\}\{j\}\} V \leftrightarrow \{V\{b\}\{j\}\} V \]
4. Phonemic status of the Spanish semivowels

In the same position, [j] and [w] require the voiceless allophone of /s/ and /θ/, while [j]/[ʒ] and [w]/[𝑤] require the voiced allophone:

\[ V \{ s \} \{ j \} V ] \text{ vs. } [V \{ z \} \{ j \} V ]

(6) «i» series

[aβjέrto] abierro ‘open’
[raθjaθor] radiador ‘radiator’
[desjέrto] desierto ‘desert’
[θjeγto] ciego ‘blind’

«u» series

[aβwélo] abuelo ‘grand-father’
[aθwána] aduana ‘customs’
[laswéla] la suela ‘the sole’

We can conclude that the sounds [j], [ʃ], [y] and [w] cannot be classified as allophones of the consonants /ʃ/ and /θ/.

4.3. The Spanish semivowels are allophones of glides

If /ʃ/ and /θ/ are not vowels nor consonants, the only phonemic solution possible is to declare them glides—i.e., phonemes with the features [-vocalic] and [-consonantal]: /ʃ/ and /θ/. Spanish phonemes in the series «i» and «u» appear then as follows:

<table>
<thead>
<tr>
<th>Features</th>
<th>Phonemes</th>
<th>vowels</th>
<th>glides</th>
<th>consonants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>/j/</td>
<td>/w/</td>
<td>/ʃ/</td>
<td>/θ/</td>
</tr>
<tr>
<td>Vocalic</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Consonantal</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>High</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Remarks

1. The term ‘glide’ is maybe not a quite felicitous choice. As D. Beck proposes, approximant would be perhaps better. However, approximants include consonants, while I want here a class consisting of strictly non-vocalic and non-consonantal phonemes.

2. For glides and consonants, the feature ‘high’ represents the opposition “palatal vs. labiovelar.”
3. The distribution of the allophones of the six phonemes involved is specified in (8), p. 557.

4.4. Advantages of the solution proposed

Phonemic description of Spanish semivowels as glides offers certain advantages in the morphological, phonemic and graphemic description of Spanish. I will mention here four such advantages, the first three being related to the verbal suffix -[is]'

– The model of Spanish conjugation includes a morphological rule that deletes the Thematic Element [= Th.El] before a vowel (of the following suffix); if this Th.El is accented, stress is moved to this vowel, see (7) below. The corresponding transformations are carried out by rule \textit{R}_{\text{accent}} 3 (above, p. 549):

\begin{align*}
\text{present indicative} & \quad /k\text{ánt}+\text{a} +o/ \Rightarrow /k\text{ánto}/ \quad \text{sing}' \\
& \quad \text{Th.El} \quad \text{1SG} \\
\text{preterit indicative} & \quad /k\text{ant}+\text{á} +o/ \Rightarrow /k\text{antó}/ \quad \text{canto}' \quad \text{[he] sang}' \\
& \quad \text{Th.El} \quad \text{3SG}
\end{align*}

This rule is of a very general nature: there are no exceptions. However, if we transcribe -[is] as -/is/, \textit{R}_{\text{accent}} 3 would produce incorrect results:

/k\text{ant}+\text{á}+\text{is}/ \Rightarrow */k\text{antis}/, *[kantis], instead of [kantáis].

To avoid this, the rule must be supplied with the following proviso: ‘… but not before /i/,’ which is inexplicable without recourse to the non-syllabic nature of the resulting [j]. But this is equivalent to the analysis of [j] as the glide phoneme /j/

– The vowels /i/ and /u/ cannot appear in a unaccented final syllable: this is an almost absolute regularity. Transcribing -[is] as -/is/ would create a systematic exception to this rule.

– The Spanish spelling system requires a graphic accent to be put on the letter representing the stressed vowel /N/ of the wordform w, if 1) /N/ is the last vowel in w and 2) w ends in a vowel [= /N/], an /s/ or an /n/. With the phonemicization -/js/, this rule is automatically applicable to the verbal forms of 2 pl: /k\text{antájs}/ \Rightarrow \textit{cántais}. Here, the letter a represents the last vowel of the wordform that ends in an /s/ (i represents here a glide). With the phonemicization -/is/, this rule needs a complicated proviso, which would be valid for the suffix -[is] only.

– Finally, without glides, the wordforms of the type náufrago ‘shipwrecked’, cástico ‘caustic’, farmacéutico ‘pharmaceutical’, ventrílocuo ‘ventrilo-
Stress never falls on a syllable which is removed from the end of the wordform further than the antepenultimate one (Harris 1969: 31). If we transcribe /náufrago/ or /bentrílokwo/, the stressed vowel is in the fourth syllable counting from the end of the wordform. With the transcription proposed, however, the general rule is respected: /náufrago/ and /bentrílokwo/. (Note that in cases of the type digame lo ‘Say this to me’ or recomendándonoslo ‘by recommending this to us’ we are dealing not with wordforms but with multiword phrases – verb forms with clitic complements.)

4.5. Review of Spanish phonemes in the «i» and «u» series

To sum up: I propose for the Spanish vowels, glides and consonants of the «i» and «u» series the following phonemic description:

\[(8) /i/ \leftrightarrow [i] \quad /u/ \leftrightarrow [u]\]

\[/j/ \leftrightarrow [j] \quad /N/\{/{C/}/ \# \} \quad /w/ \leftrightarrow [u] \quad /N/\{/{C/}/ \# \}\]

\[/j/ \leftrightarrow [j] \quad /C/\{/{N/}/ \# \} \quad /w/ \leftrightarrow [w] \quad /C/\{/{N/}/ \# \}\]

\[/j/ \leftrightarrow [\tilde{j}] \quad [pv]\{/{N/}/ \# \} \quad /\tilde{\tilde{w}}/ \leftrightarrow [\tilde{w}] \quad [pv]\{/{N/}/ \# \}\]

In the «i» and «u» series, three phonemes are distinguished: vowels /i/ and /u/, glides /j/ and /w/, and consonants /j/ and /w/.10

This phonemic analysis leads to three interesting results:

1. The voiced consonants /j/ and /w/ are parallel to the other voiced consonants of Spanish – /b/, /d/, /g/ – as far as their allophones are concerned. The latter have
   - stop allophones [b], [d], [g] in a strong position – that is, after a pause, /n/ and /l/
   - and fricative allophones [β], [ð], [γ] in a weak position – that is, between vowels.
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In just the same way, the consonants /j/ and /w/ have more consonantal allophones, which are affricates – [dĵ] and [w] – in the same strong position, and fricative allophones – [j] and [w] – in the intervocalic (weak) position.

2. Strings of the type [ai], [ja], [au], [wa], etc. are biphonemic «vowel + glide» combinations, by no means diphthongs, as they are often called. Such strings can contain syllabic and even morphic borders, which is impossible with genuine diphthongs (which are monophonemic units).


3. The phonemes /i/, /u/, /j/, /w/, /ĵ/ and /w/ are related by two alternations:

**Consonantization**

\[
\begin{align*}
/j/ & \Rightarrow /j/ \\
/w/ & \Rightarrow /w/
\end{align*}
\]

**Devocalization**

\[
\begin{align*}
/i/ & \Rightarrow /j/ \quad \text{and} \quad /i/, /u/ \text{ is not stressed;} \\
/u/ & \Rightarrow /w/ \quad \text{or } \{/C/ \Rightarrow /N/\}
\end{align*}
\]

Consonantization is obligatory: it applies whenever the contextual conditions are fulfilled.

Devocalization, on the contrary, is optional except in the case of unstressed /i/ after #: /i+éndo/ \Rightarrow /jéndo/ \Rightarrow /jéndo/ yendo ‘going’ (*yéndo*). Certain factors make it preferable, while some others block it. Fairly often, variation is possible in the same wordform.

To complete this chapter, let me briefly characterize the cooccurrence of the six phonemes /i/, /u/, /j/, /w/, /ĵ/ and /w/.

The glides /j/ and /w/ do not combine with their corresponding vowels or consonants, nor with each other: the strings */j/j/, */i/j/, */j/j/, */j/w/, */w/j/, */w/j/ and */w/j/ are all banned in Spanish, as well as */jw/, */wj/, */wj/ and */wjw/. Where the sequence */ij/ or */ij/ could arise at a morph border, the glide is obligatorily deleted:

\[
\begin{align*}
/dorm+i+js/ & \Rightarrow /dormis/ \quad \text{dormis} \quad \text{‘[youPL] sleep’} \\
/oj+i+js/ & \Rightarrow /ois/ \quad \text{ois} \quad \text{‘[youPL] hear’}.
\end{align*}
\]
The sequences */uj/ (except in /múj/ muy ‘very’) and */iw/ are equally impossible in the normative speech. However, in loose style, one can hear the pronunciation of fluido ‘fluid’ as /flújdo/ instead of /flwído/ or of cuidas ‘[youSG] care’ as /kújdas/ instead of /kwídas/, etc. (see Navarro Tomás 1974: 166–169).

The consonant /ĵ/ can appear before /i/ at a wordform or morph border: /leĵindígna/ ley indigna ‘abject law’, /plaĵíta/ playita ‘small beach’, etc. The sequence */w$/ is not encountered, without being forbidden; one can probably have it in a phrase like /monláw$úrde/ Monlau urde ‘M. plots’.

The consonants /j/ and */w$/ appear only before a vowel; they can follow only a pause #, a vowel or a sonorant (/j/ can follow /a/ and /e/, while */w$/ can follow /n/ and /l/).

Here I can stop my discussion of the phonemic status of Spanish ‘semivowels.’ I believe that:

– I have proven the existence of the glide phonemes /j/ and /w/, opposed to the vowels /i/ and /u/, on the one hand, and to the consonants /ĉ/ and */w$/, on the other hand;
– I have demonstrated the use of morphological considerations in the resolution of a phonemicization problem.

Notes

1 (2, p. 544) All phonetic data come from the two most authoritative reference books on Spanish phonetics: Navarro Tomás 1974 and Alarcos Llorach 1976. These data has been checked by comparison with more recent publications (for instance, Martínez Celdrán 1989) and with native speakers.

2 (4.1, p. 548) Accentuation of Spanish verbal wordforms is described, although in different ways, in Harris 1975: 63–75, Hooper and Terrell 1976 and Nuñez-Cedeño 1985. Harris, in particular, proposes accentuation rules for verbal wordforms based on syllable-phonological considerations: in the unmarked case, stress falls on the penultimate syllable of the verbal form; to this, ‘correcting’ rules for particular—marked—cases are added.

3 (4.1, p. 550) In nominals, the situation with stress is completely different. A noun or an adjective may have stress on the ultimate, penultimate and antepenultimate syllable of the radical; the position of stress must be specified in the signifier of the basic radical morph:

/’rubt/ rubi ‘ruby’, /matʃ/ matiz ‘nuance’, /’papel/ papel ‘paper’ vs.


/’maksi/ máquina ‘machine’, /’cakara/ chácara ‘chatting’,

/’ʃeʃmen/ régimen ‘regime’.
Unlike the verb, in nominal forms stress does not move—except for nouns of the régimen and espé$cimen$ type, which give, in the plural, régimen/especímenes, rather than *régimenes/*espé$címenes* (in Spanish, stress never falls on a syllable further that the antepenultimate from the end of the wordform). There are important correlations between the phonemic composition of a nominal radical and the placement of stress; however, they cannot be considered here.

4 (4.1, p. 552) There are formal techniques that allow one to consider the sounds [i] and [j] as allophones of /i/, and the sounds [u] and [w], as allophones of /u/. For instance, it suffices to mark (in the lexicon) the positions in a radical in which /i/ and /u/ are not syllabic or to mark the syllabic division of radical morphs. In other words, we could write, in the lexicon, something along the following lines (the hyphen "-" marking the syllabic divisions):

/a-nun0i-/ vs. /Ro-0i-/. Then additional rules could be introduced that would determine the correct position of stress in the radicals of the type /a-nun0i-/: something like ‘If stress falls on a syllable with two vowels, it falls on the first one, because the second is not syllabic.’ Not only this description is more complex; it boils down to indicate the non-syllabicity of certain /i/ and /u/. It actually makes recourse to the distinction of syllabic and non-syllabic phonemes, while disguising it as syllabic divisions.

On the other hand, speakers obviously syllabify segmental signifiers by processing the phonemic string that is already present, rather than the other way around: they do not phonemicize a phonetic string based on some pre-established syllabic borders. In other words, I do not want to allow the indication of syllabic borders in the underlying (= lexicographic) forms.

5 (4.1, p. 552) Strictly speaking, the semivowels and the vowels are not in complementary distribution in the contexts under consideration, since the unaccented vowels /i/ and /u/ can appear—in a careful pronunciation or in special environments—before accented vowels: /fiár/ (to trust), /r@ió/ (he laughed), /ruár/ (obsolete) (to stroll), etc., are possible along with /fjår/, /r@jo/ and /r@wár/. I disregard these cases of hiatus here, since they do not interfere with the analysis.

6 (4.2, p. 554) From the logical viewpoint, this opposition can be described in a different way—by introducing the phoneme of «open juncture», symbolized by /+/. Then in (3) and (4), the sounds [j] and [q], as well as [w] and [v], will appear in different environments:

/laz+/d$é$rbas/ vs. /lasjérbas/,

/ab+/jékto/ vs. /abjérto/, etc.

(Bowen and Stockwell 1955, Stockwell et al. 1956). I do not accept this solution because of the unclear status of /+/. If this is not a real morphological juncture, then what is it? Just a convenient means used to indicate the consonantal character of the following /j/ or /w/? If so, it is an ad hoc means which simply camouflages the necessity of distinguishing two /j/ and two /w/, one being a consonant, and the other not. And if this is a real morphological juncture, how can we use it inside radicals which are synchronically monomorphic, as /abjék/ /køjpxu/, /deswes/, etc.? (These radicals are quasimorphs.)
7 (4.2, p. 554) A word of caution is in order here. Since the first publication of Navarro Tomás 1974 in 1918, the Spanish phones [β], [θ] and [γ] have been called fricative allophones of /b/, /d/ and /g/ and transcribed as such in the IPA. However, in actual fact they are not real fricatives—they are ‘debilitated,’ or ‘slack,’ occlusives, for which the IPA has no universally accepted transcription. (Thanks to A. Veiga Rodriguez for his illuminating remarks on the matter.) Nevertheless, I allow myself to continue this bad, but quite general, practice, because, for all its importance, the fact has no bearing on my discussion in Chapter 11.

8 (4.3, p. 555) To avoid cluttering my presentation with unnecessary details, I allow myself to set aside another problem involving Spanish ‘semivowels:’

- Is the phone [ˈw] an allophone of the consonantal phoneme /w/, as I think it is, or is it rather a ‘fused’ realization of the phonemic group /gw/ or /gu/, as says, for instance, Alarcos Llorach (1976: 157–158)?

See, in this connection, Mel’čuk 1973c: 49–53.

9 (4.4, p. 556) Exceptions include:

- certain learned words borrowed from Latin (like análisis);
- adjectives of the type fácil ‘easy’ or débil ‘weak’;
- a few nouns like lápiz ‘pencil’, tribu ‘tribe’ or espíritu ‘spirit’;
- familiar and slang terms like cursi ‘in bad taste’, chati ‘(young) girl’;
- colloquial truncated nouns like mili ‘tar’, bici ‘cleta’, Pili (= Pilar), Loli (= Lola ‘Dolores’).

10 (4.5, p. 557) This proposal, first formulated in Mel’čuk 1965a, b has been accepted in modern Spanish phonology—see, for instance, Martínez Celadrán 1989: 83–84 and 99–100.
The most important conclusion that the reader has—hopefully!—drawn from *ATM* should be that morphology is fun. On the one hand, because it is concentrated essentially on the study of the wordform in isolation, morphology is, in a sense, limited and therefore offers good chances for a relative exhaustiveness of description; on most occasions, it allows for a complete calculus of logical possibilities. It is the domain for the lover of the finished, the perfect, the detailed, the whole. In syntax and, even more so, in semantics you have to be satisfied with the unfinished, the sketchy, the schematic, the partial. At the same time, however, morphology presents many exotic and ‘bizarre’ phenomena, and in such quantity that its study does not frustrate the passionate admirer of the rarity and the paradoxical.

Thanks to these two characteristics, morphology is interesting to any linguist who loves Her Majesty the Language more than the formal constructions called upon to represent her. In the infinite space of syntax and semantics, it is easier to develop vacuous formalisms to satisfy oneself with; the nice little valleys and groves of morphology require more attention to linguistic facts as such. It is not for nothing that linguistics began with morphology and for a couple of centuries was practically nothing more than morphology. And again, it is not for nothing that we have a school of Natural Morphology, while it is more difficult to imagine a movement called Natural Syntax or Natural Semantics. Syntactic and semantic structures and their constituent elements are not directly observable—they have to be inferred and inevitably represent the result of high-level abstractions. In morphology, on the other hand, the researcher is much closer to directly observable facts. True, we know that morphology is not universal (some languages lack it almost completely); we know as well that morphology ‘feeds’ on semantics and syntax. But this does not make morphology less fascinating or less important. It is the proofing ground of linguistics: everything here is more accessible to an in-depth analysis and can be better verified than in any other division of language.

*ATM* tries to show all this. In order to sum up the information presented in *ATM*, I will talk first about the **RESULTS (1)** presented in it and then about the **PERSPECTIVES (2)** the book opens for the researcher in the Meaning-Text approach to morphology.
1. Results

To make the contents of *ATM* more surveyable, I will organize the presentation of the results expounded in *ATM* into three subsections: 1.1. Concepts defined, 1.2. Novel statements about languages, and 1.3. Methodological principles proposed.

1.1. Concepts defined

Since the core of *ATM* is the introduction of morphological concepts, I can limit myself here to a simple list: the definitions and the necessary explanations have already been given. Here are the main concepts introduced in *ATM*:

1. Agreement class; agreement; government; congruence.
2. Case; nominative case.
3. Voice; calculus of voices and particular voices: passives (of different types), suppressives, reflexives.
4. Gender and noun class.
5. Morphological process.
7. Suppletion.
10. Ergative construction.

1.2. Statements about languages

Along with formal concepts, *ATM* presents a few descriptive results—that is, statements about specific phenomena in specific languages. Among those, I would like to mention the following:

1. Nominal case in Nilotic. The case of citation in Nilotic languages—the basic lexicographic form of the noun—is found to be the nominative, rather than the accusative, as is currently held in the Africanist tradition.
2. The ergative construction in Nilotic: its existence in Maasai is established.
3. English Saxon Genitive: its non-inflectional character is demonstrated. It is not a case, but a special quasi-inflectional form of the noun.
4. Russian intimate vocative (of the type *Nad’*, from NADJA, a hypochoristic diminutive of NADEŽDA): it is formed by a significative truncation.
5. Spanish glides: the glides /j/ and /w/ are shown to exist in Spanish as separate phonemes along with the vowels /i/, /u/ and the consonants /ɹ/ and /w/. This
phonemic description follows from the development of a formal model of Spanish verbal morphology.

1.3. Methodological principles

While developing a conceptual system for linguistic morphology and applying the concepts in actual morphological description, one has, of course, to deal with linguistic data. Doing this requires us in turn to follow certain methodological principles in order to ensure the coherence and systematicity of descriptive results. Therefore, ATM proposes a few such principles in an explicit form; I will repeat them here for the reader’s convenience.

Principles 1 through 6 concern the choice of the morphological process the researcher decides to use in a particular analysis.

Principle 1 (“Only one morphological process as expressive means per gram-meme”) says that if there are several morphological phenomena simultaneously related to the expression of a meaning ‘σ’, you have to choose—if this is possible—only one as a marker for ‘σ’, relegating all the others to the status of conditioned accompaniers. (Thus, in *wife* ~ *wives* the plural is expressed by the suffix -s, while the replacement */v/ ⇒ */v/ is a meaningless accompanying alternation.) Of course, in some cases this is impossible, because we deal with genuine multiple exponence (see Chapter 5, 5.3, 310, 6.1, p. 313).

Principles 2 through 6 stipulate that everything else being equal, you should prefer, among competing descriptions, the description couched in terms of:

- a morphological process that is more consistent with other phenomena observed in the language (Principle 2: Intralinguistic consistency; thus, *foot* ~ *feet* is better described as a meaningful alternation, i.e, an apophony, oo ⇒ ee, than as an application of infixes/transfixes to the ‘root’ f-t);
- a morphological process that uses one segmental sign X with a specific meaning rather than in terms of a compositional combination of several signs X₁, X₂, ..., Xₙ—provided they do not appear separately with the corresponding parts of the meaning (Principle 3: Single morphological process);
- the morphological process that is highest in the relevant hierarchy (Principle 4: Highest morphological process);
- the morphological process that is more visible in the relevant form—that is, you should not postulate an abstract process when there is a candidate which is actually observable (Principle 5: More visible morphological process);
- the most general morphological process—that is, the process applicable in most, if not all, cases of the same type (Principle 6: Most general morphological process).
The next two principles control the introduction of zero linguistic signs.

- Principle 7 (Zero as last resort) prescribes avoiding a zero where some observable phenomenon which can carry the information in question is present.
- Principle 8 (Zero sign introduction) requires that any zero sign be expressive (= express a semanteme or a syntactic feature), exclusive (= express something which cannot be ascribed to any other signifier) and contrastive (= be opposed to a non-zero).

And finally, another two principles are applied when establishing the set of nominal cases in a language (see Chapter 2, 5, p. 128, and 8, p. 150):

- Principle 9 (External autonomy of case forms) states that the morphological rules choosing between competing case markers within a wordform must do so solely on the basis of the properties of this wordform itself – that is, independently of its external context.
- Principle 10 (Internal autonomy of cases) allows for a morphologically non-autonomous case (like the Russian partitive in -u, as in süpu ‘[a little] soup’, peskú ‘[a little] sand’, which has a form that is always identical with that of the dative), if and only if otherwise the syntactic rules which state the selection of case in the particular construction would have to mention properties of individual lexemes.

Section 1 has presented, in a compact form, what the reader is supposed to get out of ATM. In Section 2, I will indicate the things he could not find there (although he might be interested in them) – that is, what could be done in the future to improve the coverage of ATM.

2. Perspectives

It is, of course, beyond my abilities to sketch here in a systematic way the open questions of modern linguistics in general or of Meaning-Text theory – as applied in morphology – in particular. I have to limit myself to something much more modest: specifying a few outstanding problems that Meaning-Text morphology has to face in the short term. It seems convenient to do so according to the same divisions that have been made for ATM.

2.1. The Syntax-Morphology interface

Concerning the Syntax-Morphology interface, one can see at least three domains which are not even touched upon in ATM, although they are extremely important in this framework:
1. Parts of speech in syntax and morphology (see Beck 2002 for a clear discussion).


2.2. Morphology proper

The serious lacunae of ATM in morphology proper are more or less the following:

– Among morphological signifieds, the categories of Mood and Aspect require serious and detailed treatment (similar to what has been done with Case and Voice).

– As far as morphological signifiers are concerned, the book lacks a chapter on morphonological alternations.

– Concerning morphological syntactics, one would expect a discussion of inflectional types (cf. Aronoff 1994).

– And, finally, speaking of morphological signs, ATM should have considered in some detail reduplications and conversions as sufficiently specific types of morphological non-segmental signs.

2.3. The Morphology-Phonology interface

In the Morphology-Phonology interface, the main omissions are sandhis of both types—external (that is, alternations that happen across wordform boundaries such as liaisons in French, Celtic mutations, etc.), and internal (that is, alternations that happen inside one wordform). On this topic see, for instance, Carstairs-McCarthy 1992: 52–89 and Stump 2001: 169–211.

In the end, however, the three most serious lacunae in ATM are perhaps the following:

– The absence of a special part dedicated to the Semantic-Morphology interface. What is sorely needed in the Meaning-Text morphology is a fine-grained semantic description of a number of grammemes (SINGULAR ~ PLURAL in nouns, DEFINITE ~ INDEFINITE, PRESENT ~ PAST ~ FUTURE, INDICATIVE ~ IMPERATIVE ~ CONDITIONAL, PERFECTIVE ~ IMPERFECTIVE [aspects], etc.). This is, how-
ever, a separate and extremely difficult task that was impossible to tackle in ATM.

- ATM offers no discussion of the status and form of morphological rules and no sketches of formal morphological models. (See, in this connection, Stump 2001: 138 – 168).

- And what is known as computational morphology is not even mentioned (cf. Sproat 1992), although I believe that the progress in the domain of computer application in morphology has contributed in an essential way to the development of the field over the last two decades.

* * *

My dear reader! Now, that you have been warned of the major deficiencies of ATM, I can finally take leave from you. I hope you have enjoyed your trip.
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AJL : Australian Journal of Linguistics
BSLP : Bulletin de la Société de linguistique de Paris
BSOAS : Bulletin of the School of Oriental and African Studies
CL : Cahiers de lexicologie
CLS-n : Chicago Linguistic Society. Papers from the n-th Annual Regional Meeting
CSLI : Center for the Study of Language and Information
FL : Folia linguistica
IJAL : International Journal of American Linguistics
IJL : International Journal of Lexicography
IRSL : International Review of Slavic Linguistics
IULC : Indiana University Linguistics Club
IVSLAP : Informacionnye voprosy semiotiki, lingvistiki i avtomatičeskogo perevoda
Izv. OLJα : Izvestija AN SSSR/RAN, Serija lit-ry i jazyka
JALL : Journal of African Languages and Linguistics
JP : Journal of Pragmatics
Lg : Language
LI : Linguistic Inquiry
Linv : Linguisticæ Investigationes
MPiPL : Mašinnyj perevod i prikladnaja lingvistika
NLLT : Natural Language and Linguistic Theory
NTI-2 : Naučno-tekničeskaja informacija, seriya 2
RES : Revue des études slaves
RL : Russian Linguistics
Sil : Semiotika i informatika
SL : Studies in Language
SLS : Studies in Linguistic Sciences
VJα : Voprosy jazykoznaniya
WSA : Wiener Slawistischer Almanach
ZPSK : Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung
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