CASE ALTERNATIONS

ON VERB-PHRASE INTERNAL ARGUMENTS

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* * * * *

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To My Parents
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CHAPTER I.

INTRODUCTION

1.1. Introduction

This dissertation is concerned with a well-delimited subpart of morphosyntactic case phenomena that natural languages exhibit. The grammatical framework in which I address the topic, which is characterized in the following sections of this CHAPTER, may be called a static, modular grammar with a syntactic component that contains phrase structure rules. Although I will often find myself narrowing down the range of adequate analyses of the problems I raise, I will try to get myself across to the widest possible range of readers.

Since language is a system that has a great number of grammatical categories, semantic categories, and phonological categories, and since these categories are linked or aligned in many complex ways, singling out one category for discussion does not mean that other linguistic categories can be ignored. Quite the contrary is the case. In the following chapters, questions of verb morphology, meanings of constructions, and discourse organization will be addressed in great length, in order to motivate certain analyses of morphosyntactic case phenomena and to refute
certain other analyses. My overall view of a grammar, a familiarity with which will make the reader follow my exposition and my claims with ease, is presented in the following sections. I present my objectives in this writing in more detail, in Section 1.6.

1.2. Generative Grammar

The single most valuable contribution of the generative grammatical tradition to the history of linguistics must lie in bringing to the forefront of the linguistic community the goal of explicitly specifying all and only the grammatical sentences. This goal is stated by Chomsky (1957:13) in the following words:\footnote{There is room for differences in interpreting "sentence". Zwicky (personal communication) points out that Chomsky in his early days meant 'sequence of phonemes' (with some property) by it. Although whether this understanding would lead to a wrong grammar when the more common understanding of the term, i.e. 'pairing of a sequence of phonemes with meaning' (with some property) would not remains a question, the other understanding prevails now.}

The fundamental aim in the linguistic analysis of a language $L$ is to separate the grammatical sequences which are the sentences of $L$ from the ungrammatical sequences which are not sentences of $L$ and to study the structure of the grammatical sequences. The grammar of $L$ will thus be a device that generates all of the grammatical sequences of $L$ and none of the ungrammatical ones.
Although different linguists nowadays subscribe to different sets of methodological and theoretical principles, the goal of separating grammatical sequences from ungrammatical ones is one of the least controversial points among all working linguists.

The grammar is assumed to associate syntactic structures with semantic interpretations in a rule-to-rule manner. For each grammatical construction, there is a syntactic rule and an accompanying semantic rule. A construction may have its own prosodic, pragmatic, or sociolinguistic requirements that are not shared by syntactico-semantically similar constructions.

A theory of grammar that posits one and only one syntactic structure is called monostratal. I assume that what multistratal theories treat as surface structure is the only object of syntactic description. Systematic relationships between constructions are captured not by virtue of their coming from the same ‘deep structure’ but by virtue of their having the same or interestingly related semantic interpretations. As there need not be any derivations from one stratum to another in this type of grammar, all grammatical rules must be stated in a static and declarative manner. Monostratal grammars stand in contrast to multistratal ones in that the latter, although they can have their rules stated in a declarative manner, are more amenable to procedural rules and hence have consistently been procedural.

Even static monostratal grammars may differ widely. One dimension in which they may differ is whether or not the theories of grammar recognize and utilize null lexemes. A grammatical theory that entertains one or more null lexemes
is open to proliferation of such lexemes ad infinitum. Such a theory cannot support any realistic theory of linguistic performance, in the sense that it would make it mysterious that speakers of a language can recognize acceptable strings and reject unacceptable strings in predictable time. It is not hard to imagine a recognizer continuing to add zeroes of various syntactic categories in the hopes of finding a well-formed structure assignable to the input string. I reject any employment of null lexemes of any category, and recast discussions of zeroes into ones about the minimal constructions that would contain them if they existed. Zeroes as nontheoretical constructs would remain harmless, however.

1.3. Morphology

The morphological component is seen as a separate component of linguistic organization. The major tasks performed by this component include giving the right shape of those lexemes which have more than one shape, in accordance with the phonological properties of an adjacent word, realizing with some phonological material the syntactic features distributed by the syntactic component, and expressing

---

2 Some examples of null lexemes proposed include the four nominal lexemes, PRO, pro, NP-trace, and wh-trace; the null determiner that comes before an English noun that is otherwise not preceded by a determiner; the null noun lexeme which means ‘people’ as in the poor.
generalizations between groups of lexemes in the lexicon. The constructs responsible for these tasks shall be called shape conditions, realization rules, and lexical implication rules, after Zwyck (1985, 1986). An example of a shape condition is provided by the dependence of the choice between the two shapes _a_ and _an_ of the English indefinite article on the immediately following word.

What are called realization rules are in actuality inflectional rules. They are viewed as matching a lexeme and its inflectional features with a certain phonological entity. The bundle consisting of the lexeme RUN, third person, singular, and nonpast is said to be realized as `/ranz/`; the bundle consisting of the lexeme RUN, second person, plural, and past is realized as `/raen/`. The rules can be taken as either declarative or procedural, unlike lexical implication rules. The latter, which are better known as derivational rules, are exemplified by: some lexemes of the category verb (e.g. _fail, depart, and please_) have a semantically related counterpart of the category noun whose form is analyzable as a stem of its verb counterpart followed by the suffix `/yar/` (e.g. _failure, departure, and pleasure_). Rules like this are implication rules, because the existence of certain lexemes implies the existence of other lexemes. I do not regard these rules as generative. In order for them to be procedural, generative rules, each lexeme in the lexicon would have to be specified with respect to the rule features, whose number is exactly the same as that of the derivational affixes in the language. The ordinary English word "derivation" denotes an accomplishment, rather than a state or an activity; it is natural that
adopting a static view of grammar in general makes one prefer an atelic term like “lexical implication” to a telic term like “derivation”.

One important distinction between inflection and derivation is that the latter plays no role in syntax. While not all inflectional features play a role in syntax, they all stand in a paradigmatic relation to some inflectional features that are syntactically relevant. For instance, whereas the distinction between Past and Nonpast is apparently irrelevant in English syntax, the Past and Nonpast forms stand on a par with the base form and the subjunctive form, which are clearly required by some syntactic structures. One can say, at least, that the disjunction Past ∨ Nonpast (i.e. Finite) is required by English syntax. However, there are no structures in which Ment ∨ Ure is required by the syntax (where Ment and Ure are the names of putative syntactic features realized by ment and ure, respectively).[^3] It is quite clear that syntactic discourse should steer clear of derivations, insofar as they can be identified.

Traditional grammar treats compounding as an area of morphology. See Bloomfield (1933), Hockett (1958), Matthews (1974), and Bauer (1983), among

[^3]: The only disjunction which would contain both Ment and Ure that is required by certain syntactic rules would be the one that contains unanalyzable (monomorphemic) nouns as its other disjuncts. I do not know of any syntactic rule that calls for Ment or Ure in exclusion of underived nouns like joy, idea, privilege, peace, and success. This disjunction is nothing but the syntactic category noun.
many others. Surely what strings of words are to be regarded as compounds is
dependent on what the syntactic component is expected to do. If syntax is to provide
structured sequences of terminal nodes, and if the terminal nodes provided by syntax
are feature bundles rather than phonological materials, then compounds are simply
a string of segments that can match a terminal node of syntax which consists of
(forms of) more than one lexeme. In other words, a complex morphological word
that matches a single syntactic word is a compound.

Noting that “generative grammarians have for the most part failed to take the
distinction [between syntactic words and morphological words] seriously, preferring
instead to use references to ‘X0’ units as if the small objects of syntax and the
large objects of morphology have the same status, in fact, as if they coincided
with one another”, Zwicky (1990) brings to our attention the complexities of the
interface between syntax and morphology. More than one syntactic word may
 instantiate a simple morphological word (a simplex moreme, in his terminology); a
single syntactic word may instantiate a complex morphological word (a composite
moreme, as he calls it). The picture of the interface he presents can be summarized
as follows.

(1) Single syntactic word  Multiple syntactic words

Simplex  Moreme  most common  portmanteau morphemes

Composite Moreme  television table  clitic groups

  everywhere  serials (e.g. go-seen)
Although there is certain amount of leverage as to the membership of the single-syntactic-word-instantiating-a-composite-moreene case, the other three cases are straightforward and noncontroversial. The default situation is the one in which a syntactic word instantiates a simplex morphological word. In order to account for the nonstandard instantiation of simplex and composite morphological words by a sequence of syntactic words, i.e. the situations represented by the second column of (1), I assume that the syntactic component interfaces indirectly with the morphological component, via syntax-morphology association conditions. Two or more adjacent terminal nodes provided by the syntactic component may match one

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4 The flexibility in the understanding of syntactic compounds of television table-type has to do with individual researchers' stance towards redundancy. Does one need to include in the lexicon two-headed, three-legged, etc. when the syntax of English provides a rule like "Adj ----> Num N X" and X is the name of the terminal category which only the lexeme d matches? Asked the other way round, this question becomes: Does the syntax of English have to include "Adj ----> Num N X" when the lexicon provides items like two-headed, three-legged, etc. of category Adj? Zwicky (1990: 214) welcomes redundancy, when he adresses the relationship between syntactic rules and superderivational rules (the latter concerning themselves with what he calls "supermoremes"): "The natural assumption, and the one I have been making throughout my discussion, is that of co-satisfaction: an expression must satisfy both all the conditions in relevant syntactic rules and also all the conditions on the moremes (and supermoremes) that are instantiated in it." Though this remark is about supermoremes, such as clitic groups and serials, etc., I do not see why syntactic compounds should be treated any differently.
morphological word thanks to these conditions. Portmanteau morphemes on the one hand, and clitic groups and serials on the other, are assumed to be either listed in the lexicon, with nonstandard category specifications like P-Det (for French du or German zum), or generated by rules of fusion (cliticization, and serialization, respectively) that refer to the items in the lexicon as well as rules of realization in the morphological component. In other words, Zwicky’s (1990) superderivational rules can be regarded either as redundancy rules or as generative rules.

1.4. Filtering by the Semantic Component and the User’s Manual

The syntactic component provides sequences of terminal nodes in some structure and corresponding semantic interpretation templates. The morphological component, the cliticization component, and the lexicon can be viewed as working on these structures and specify, in collaboration with the syntactic component, grammatical sentences. Although the three components clearly act as a filtering device in some sense, I shall view them as an essential part of the generative device that complements syntax.

Grammatical sentences may be acceptable or unacceptable in specific discourse settings. I do not attempt to give a theory of what makes a string acceptable in a particular kind of context. However, one type of unacceptability deserves great attention in the discussion of the architecture of grammar: the property of being unacceptable in every possible discourse context. I see merit in the distinction between
ungrammaticality and absolute unacceptability. A string may be grammatical in the sense that it is specified jointly by syntax, morphology, cliticization component, and the lexicon, and yet fail to be used in any possible discourse context other than a metalinguistic one. Such strings include *He is kind but I don’t believe he is*, where the two *he’s* cospecify an individual. A grammatical but unacceptable string is assumed to be filtered out by the semantic component and the User’s Manual (assemblage of principles governing the interface between language and the real world) that works on the output of the generative device on one hand and the real world on the other, if it does not require the speaker to perform too much or too unfamiliar computation.\(^5\) Contradiction, tautology, and semantic otioseness are some of the semantic factors that contribute to the unacceptability of grammatical strings, according to Ladusaw (1986). The fact that one cannot know what emotional state another person is in, is seen, by No (1989b), as the reason for the unacceptability of the Korean strings that have bare emotion verbs in the Realis Declarative inflection with a non-first person subject. Such an account hinges on the assumption that pragmatic principles (such as Grice’s (1975) conversational maxims) and properties of the real world can make grammatical strings unacceptable.

\(^5\) A string that contains too many delimiters in Korean, such as *eocy to congwu man pap to ncek-esse* ‘Yesterday too, only Chongsoo ate rice as well (in addition to something else)’, is something one seldom encounters because it requires too much computation on the user’s part. Center-embedding exemplifies too unfamiliar computation, according to Chomsky (1965:10–15).
The semantic component is understood to be about truth and reference. It has its own primitives and may have its own syntax, which is not essential according to Montague (1970). Among the semantic operations are function application, function composition, and abstraction. This component gives the meanings of complex expressions like sentences as a function of their syntactic constituents and the constructions they form. One can get an idea of how this component works by reading Montague (1974) and Dowty et al. (1981), among others. The User's Manual is expected to account for aspects of meaning that are not constantly associated with the strings. It also accounts for the variation in acceptability of sentences in differing contexts. A general theory that ties up these two tasks is Grice's theory of conversational maxims. The reader is referred to Grice (1975) and Levinson (1983) for Grice's pragmatic theory. A part of the User's Manual, the discourse organization component, is responsible for cohesion of utterances in a discourse segment and structuring of discourse segments into a discourse. The rules governing local cohesion are often not distinguished from rules of syntax: Chomsky's (1981) binding principle C is replaced (though without explicit mention) with rules of discourse organization in Grosz et al. (1983).6

The rules that govern the ways in which referring expressions can occur in a discourse should be able to make reference to the syntactic structure in which they

6 According to Aravind Joshi (personal communication), Kenneth Wexler noted this independently.
occur. However, the rules themselves need not be syntactic rules. The rules must not be syntactic rules, if the intuitive similarity between the referential possibilities of he in (2) and he in (3) have the same explanation.

(2) He thought John didn’t eat the meat.

(3) He was in the room. John didn’t eat the meat.

Sentence (2) is bad because a referring-expression like John has to be free but is not free, according to Chomsky’s Binding theory. The same account cannot be extended in such a way as to cover the impossibility of the pronoun in (3) to refer to the same entity that John refers to.\(^7\) Note that we are dealing with a discourse segment, i.e. a unit bigger than the biggest unit in syntax. I am sympathetic with a particular model of discourse organization called the ‘centering approach’. In such an approach, the fact that the pronoun in (3) does not co-specify with John arises as the result of the following rules of discourse organization.

(4) a. Topic changes in a discourse segment must be smooth.

b. The primary forward-looking center of utterance \(U_n\) is the backward-looking center of its following utterance, i.e. \(U_{n+1}\).

c. The backward-looking center is preferably realized as a pronoun.

\(^7\) The pronoun in (3) can be understood to co-specify with John if and only if the two sentences belong to different discourse segments.
The reason why the pronoun cannot co-specify with *John* in (2) is that, if an element in the forward-looking center is realized by a pronoun, then the same element must be realized by a pronoun unless it occurs before the pronoun and in a more prominent syntactic position. The reader is referred to Grosz and Sidner (1985), Brennan et al. (1987), and No (1991) for this approach.

1.5. Desiderata of Completeness, Soundness, and Tractability vs. Economy

Grammars of a language can be evaluated with respect to a set of criteria. Three levels of adequacy put forth by Chomsky (1963) illustrate such a set of criteria. What is clear is the difference between observational adequacy and descriptive adequacy. A grammar is observationally adequate if it accounts for the observed data. A grammar is ‘descriptively adequate to the extent that it correctly describes the intrinsic competence of the idealized native speaker’, according to Chomsky (1965:24). In other words, descriptive adequacy is attained only when it gives correct predictions about the unobserved data that can be obtained.

The distinction between descriptive adequacy and what Chomsky (1965:25ff) calls explanatory adequacy has been controversial. Crucial to this distinction is the

---

8 The notion “syntactically more prominent” is needed in any case. Precisely what it is is an empirical question to be resolved by syntactic as well as discourse-organizational investigations.
hypothesis of biological inheritance of the language faculty. If a description of a language draws on principles of universal grammar which are purported to be biologically built into its speakers, then it has some explanatory adequacy. See Gazdar et. al (1985:5), Zwicky and Pullum (1986:65), and Katz (1981), among others, for an alternative view of language as an abstract system which is separate from its users. To the extent that the notion explanatory adequacy is tied to the unfalsifiable and unprovable hypothesis of biological endowment, I do not accord any privileged status to it over and above descriptive adequacy.

I propose to view descriptive adequacy as comprising four independent requirements: completeness, soundness, economy, and tractability. The first desideratum is concerned with the “all” part of the generative dictum: a generative grammar should generate all grammatical sentences. To the extent that grammatical constructions are left undescribed, the grammar is incomplete. The second desideratum is about the “only” aspect of the generative dictum: a grammar should generate only grammatical sentences. To the extent that ungrammatical sentences are generated, the grammar is unsound. The third desideratum concerns itself with the number of rule schemata the overall grammar contains. The fewer the rule

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9 Those who will, may regard economy and tractability as constituting the whole evaluation measure in the sense of Chomsky (1965:37ff). This move would enable one to retain the distinction between descriptive and explanatory adequacy without committing oneself to unsupported biological claims.
schemata, the more economical the grammar is. The last desideratum, namely tractability, is motivated by the need for a fit between linguistic competence and linguistic performance. The more practical a parsing and production model the grammar is compatible with, the better the grammar. In particular, if a grammar can be directly implemented into an automaton that parses and produces grammatical sentences with the right meanings in predictable time, it is to be regarded higher than one that cannot be thus implemented.

It is very important to note that completeness and soundness should supersede the other desiderata. While economy and tractability can be seen as virtues of certain grammatical descriptions, completeness and soundness have to be prerequisites of all descriptions that purport to be grammatical descriptions. In other words, a language as a set of an infinite number of grammatical sentences may exist regardless of its speakers, while a linguistic description which is economical and/or mathematically tractable in predictable time may not exist independent of human beings. Economy and real-time parsability are notions that are directly tied with human beings (as curious observers and as users of a language). Without human beings, there cannot be such a thing as economy or parsing.

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10 This simple an interpretation of an evaluation measure would not offer anything useful unless the architecture of grammar is set in all other respects. To put it more generally, this desideratum amounts to an injunction on generalization.

11 By “predictable time”, I mean deterministic polynomial time in the sense of Barton, Berwick, and Ristad (1987:).
Among these four desiderata, economy has been given the most emphasis in the past few decades of generative grammar. It would be fair to say, though, that completeness requirement has been so clear that emphasis of it would have been even pointless. The so-called "principles and parameters" framework of grammar entertains such notions as $\bar{X}$-schemata, category features such as $N$ and $V$, and a maximally general rule of Move-$\alpha$. Generalized Phrase Structure Grammar recognizes, in addition to category features, Linear Precedence Statements, Control Agreement Principle, and Metarules. All these constructs are invented in the hopes of making "significant" generalizations about the grammar and hence meeting the desideratum of economy. To a certain extent they serve this purpose pretty well.

An emphasis on economy is presumably not a perfect bedfellow of the other desiderata. In fact, there is some tension between the desiderata of completeness and soundness on the one hand, and economy on the other. For example, it is a direct consequence of taking syntactic categories as specifications of values, either $+$ or $-$, on the category features, $N$ and $V$, that categories like adverbs, determiners, conjunctions, and "particles" seem to fall outside the grammar of English. Similarly, sticking with the $\bar{X}$-schemata in which a double-bar category has a specifier and a one-bar daughter which in turn has a zero-bar daughter and its complements, would compel one to recognize optional specifiers. The optionality of a specifier position would have to be made sensitive to the head noun in case of English noun phrases, etc.
Tractability and soundness have not been regarded highly as desiderata for linguistic description by everybody. Chomsky (1982:64ff), for instance, explicitly denounces a pursuit of mathematically tractable syntactic descriptions. However, there has been growing awareness among generative grammarians of the importance of this criterion. Gazdar (1982) claims that natural language syntax does not require more descriptive power than Context Free grammars provide. He conjectures that a grammar can be constructed which can be directly implemented to an automaton that processes any grammatical sentence in the time proportional to the cube of its length. This is an important contribution to the almost annihilated discussion of the generative capacity of grammars, and it ensues hot debates about how much generative capacity is needed to describe natural language. See Savitch et al. (1989), for a collection of papers dealing with this issue.

The common practice of not paying much attention to the accuracy criterion is in part a consequence of concentrating on the comprehension side of linguistic processing, at the expense of production.12 It is typically assumed by a natural language processing scientist that the text to be processed (parsed) does not contain ungrammatical strings. An overgenerating syntax may do a decent job of parsing

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12 As far as I know, no linguist has provided a grammar of English according to which *Did you be there?, *She is both of you's friend, and *I need go. are ungrammatical. Neither do I know of any principle that would make them unacceptable although they are grammatical.
the grammatical sentences. However, when a grammar is to be implemented as a production device, it ought to be sound. All other things being equal, an overgenerating grammar will be regarded less useful than a grammar that does not. An overgenerating grammar must produce sentences that fail to be comprehended by its users. In this sense, a reversible grammar must be sound.

If there is a construction which can be specified by a set of syntactic rules, the syntax–morphology association principles, the lexicon, and the morphological component, and if no string that instantiates this construction is acceptable, then whether the grammar should provide that set of syntactic rules is to be decided by the consideration of economy alone. Absolutely unacceptable strings may or may not be taken as ungrammatical. If the grammar would be simpler taking some such strings as ungrammatical, then it ought to take them as ungrammatical. If, on the contrary, the grammar would get more complex ruling out some absolutely unacceptable sentences, then it ought not; it should count on the filtering components instead, for accounting for their badness. In other words, I recognize strings that would be both ungrammatical and unacceptable. (This is not surprising at all, once we realize that all ungrammatical sentences would be unacceptable in a theory where accommodation of ungrammatical sentences has no place.) I shall call this metatheoretical principle the Principle of Economical Tradeoff between Ungrammaticality and Unacceptability.
1.6. Purpose and Organization of the Dissertation

The purposes of this dissertation are two-fold. Firstly, I intend to provide a rigorous description of patterns of case alternation on the verb-phrase internal arguments that have appeared in the linguistic literature in the past few decades. Alternations of case in a few languages will be classified according to their productivity, relevance to meaning differentiation, and sensitivity to syntactic environment. Strict division of labor between syntax and morphology and between syntax and semantics, whose major aspects have been depicted in the previous sections of this chapter, will be maintained in addressing issues involving case alternation.

My other objective is to demonstrate that the desiderata of soundness and tractability conflict with the economy requirement. I will do so by attempting to give a nearly complete repertoire of phrase structure rules to account for those instances of case alternation which are triggered or allowed by the syntactic environment outside the verb phrase that immediately dominates the locus of case alternation. In order to meet the soundness desideratum, it will be shown that one phrase structure rule in a less sound grammar must be replaced with quite a few rules that are similar in crucial respects. If this move is on the right track, the desideratum of economy has to be considered only relative to the other desiderata.

In CHAPTER II, I introduce the notions, verb phrase, case, and alternation. A very general typology of case alternation phenomena will be put forward, in which
sameness of case, sameness of the VP-meanings, and sameness of the verb lexemes figure as parameters. Subsequent discussions are organized on the basis of this typology: CHAPTER III deals with lexical and semantic alternations; CHAPTER IV, with syntactic alternations. The voice system of Tagalog, the accusative/genitive alternation in Russian, and the alternation between PP[ACC] and NP in Korean, are seen as lexical, semantic, and pragmatic alternations, respectively. They are seen as lacking syntactic consequences. In CHAPTER IV, however, Korean, Japanese, Finnish, and Georgian will be argued to exhibit case alternations on the direct object of transitive verbs that have no semantic consequences. As these alternations involve all transitive verbs in the respective languages, they cannot be dubbed lexical, either. They are genuinely syntactic alternations.

Since syntactic alternations of case defy formalization by such phrase structure rules as are customary in current theories of syntax, I will introduce a new type of grammar I call Depth-n Grammars, in CHAPTER V. Their weak generative capacity will be proved there to be identical to that of conventional context-free grammars. I explore some grammatical constructions from English and Icelandic whose proper description will be argued to demand the strong generative capacity of Depth-n Grammars. A major portion of the alternation facts revolving around Korean emotion verbs will be recast in 5.3 in this formalism. All the facts presented in CHAPTER IV will be restated in a Depth-n Grammar in CHAPTER VI. It will be here that the desideratum of economy will be shown most vividly to be of a different nature than other desiderata on linguistic descriptions.
CHAPTER II.

VERB PHRASE, MORPHOSYNTACTIC CASE,
AND ALTERNATION

2.1. Introduction

The notion 'case' is one of the few entities that are found solely in linguistic structures. Grammatical, or morphosyntactic, cases do not have their analogs in the real world.\(^1\) Therefore, to the extent that they are unique to language, their study is likely to reveal some fundamental principles that govern language and no other systems than language. It is hoped that the specific principles and the division of labor between different components of grammar laid out in Chapter I lead to a discovery of more principles when applied to the phenomena of case alternation.

One might want to construct a very general theory of grammatical case in which every case is assigned by some configurational properties of the locus of case.

\(^1\) Within a reasonably narrow group of languages, and within most basic constructions of such languages, morphosyntactic cases do have their real-world counterparts: the nominative case and the agent of an event; the accusative case and the patient of an event. I am not confining myself to the type of languages that Dixon (1979) calls accusative-nominative type.
There has been no attempt to construct such a theory among those linguists who work within what may be called a monostratal static grammar which does without empty lexemes, i.e. a grammar that embodies the specifications in the preceding Chapter. In the following three sections, namely in 2.2, 2.3, and 2.4, I present more specific assumptions about the substantive side of this dissertation, i.e. case alternations on the direct object position, that are consonant with the theoretical assumptions made in Chapter I.

Adherence to the theoretical and metatheoretical assumptions avails to us a typology of case alternations on the direct object of transitive verbs. I give such a typology in section 2.5, in which the parameters are: (i) whether the verbs are the same, (ii) whether the meanings of the verb phrases are the same, and (iii) whether the cases on the direct objects are the same. Finally in section 2.6, I extrapolate what a general theory of case would look like, given the data we currently have.

2.2. Verb phrase

I assume that a grammatical theory that utilizes the construct verb phrase can meet the four desiderata for descriptive adequacy in the preceding Chapter, whereas one that does away with it might not. In fact, a few grammatical frameworks do without verb phrase: the Dependency Grammar of Martinet (1959) and Covington (1990), the Word Grammar of Hudson (1984), and the Lexicase Grammar of Starosta (1974)
are the only ones I know of. Since it is not at all clear how these grammatical frameworks can meet the four desiderata, I cannot imagine how they can be valued more highly than some other grammatical frameworks that do recognize the notion VP and make reference to it. I take the burden of proof to lie with those linguists who want to do away with the verb phrase: they ought to show that they can meet the four desiderata without using the construct verb phrase.

The benefit of having the verb phrase in a grammatical description is that one does not need to list the same list over and over again. Just about every position that can be filled with *snore*, can be filled with *make three or more kites*, *be proud of his children*, *call me a cab*, *snore and tumble*, or *snore like hell*. The only positions in which one fits but another does not, are those which contain some specification against a feature in the string or those whose denotation is not compatible with elements outside the string. All the above strings and infinitely many others belong to a natural class that has to be referred to in formulations of syntactic rules of English: subject–predicate rule, verb phrase coordination, complementation, ellipsis, fronting. The same does not hold true for nonconstituents like NP$\sim$V or V$\sim$Prep in English.

Though certain syntactic rules that refer to the verb phrase are language-specific, I assume that at least four such rules, namely subject–predicate rule, verb phrase coordination, complementation, and ellipsis, are universally attested.\(^2\) This

\(^2\) Different languages have different conditions on the application of these rules. For instance,
assumption is quite strong. It presupposes that a verb phrase external argument can be identified vis-à-vis verb phrase internal arguments in every relevant construction of every language and that the verb phrase may be separated by constituents outside of the phrase in many constructions of some languages. Keenan (1976) showing that subjects can be defined by a constellation of grammatical and discourse-organizational properties, the first presupposition should not come as a surprise. 3

I do not know of any language in which a verb phrase never occurs uninterrupted by an outside element. In fact, every language besides pidgin languages seems to entertain a relativization strategy by which the subject is relativized on, leaving the verb phrase in the relative clause. If this is the case, then the question is how the verb phrase is to be handled when it is interrupted. It is to be taken for granted that every language has verb phrases, in which case the remaining problem is simply the issue of discontinuous constituency. As for this latter issue, I will

3 This is not to say that I subscribe to Keenan (1976) to the letter. The discussion of Tagalog voice in CHAPTER III will make it clear that agethood, or any thematic role for that matter, need not enter into determining what the subject is.

Unlike in English, where both finite and nonfinite verb phrases may fail to show up, the verb phrase that does not show up when the semantic interpretation of the constituent is just like if there is one, is confined to those verb phrases which are finite in Korean and in Japanese. The point is that every language seems to have processes that can be regarded as each of these four rules.
temporarily content myself with noting that there are a few ways of coping with it. Which particular tactic to choose should not concern us in this dissertation.

2.3. Morphosyntactic case

The concept case is, above all, a formal one. If one takes it as a notional one in the way Sonnenschein did late last century (Jespersen 1924: Ch. XIII), one has to recognize a huge number of cases. Each intransitive verb would have to be viewed as assigning at least one unique case to its subject noun phrase. Each transitive verb would have to be viewed as assigning at least one unique case to its object and another to its subject. Much the same goes for ditransitive verbs. The various adpositions typically account for a few cases. The number of case easily exceeds a few dozens of thousands for each language. Discussion about case is nothing but an informal semantics of lexical items: the noun phrase Mary in loved Mary is in lovee case; the noun phrase peace in loved peace is in abstract lovee case.

Under the assumptions made in CHAPTER I, there is no need to say anything about such notional cases. The semantic rules automatically make sure that the meaning of a complex expression be a function of the meanings of its parts: loved Mary denotes the property of being an entity that stood in love relationship to Mary, which is not different from the property of being an entity to which Mary stood in lovee relationship.
In order to keep the discussion of case out of lexical semantics of this unilluminating sort, and thus to contribute to an advancement of grammatical description as a whole, one has to view syntax as responsible for distributing a fixed number of cases for each language. The best way of keeping the number of case fixed is by sticking with the formal condition on differentiation of case: \( \alpha \) and \( \beta \) are two cases if and only if one or more lexeme in the language shows two different forms depending on whether the lexeme is in case \( \alpha \) or in case \( \beta \).\(^4\) It is entailed that English does not have two distinct nominal cases accusative and dative. Whatever the semantic difference, the two noun phrases in *give him a hug* must be regarded as being in the same morphosyntactic case, accusative. English syntax would suffice to assign the accusative case to these noun phrase positions, as far as nominal cases are concerned.

### 2.4. Alternation

Two categories in a language are said to be in alternation if the language offers two sets of constructions that differ from each other in that constructions in one set require one category whereas constructions in the other require the other category in the corresponding position. Case alternation might, at least as an initial

\(^4\) This condition is applicable only to nonadpositional cases. The number of adpositional cases is limited by the membership of the class adposition.
approximation, be said to obtain when there is a pair of constructions that differ from each other with respect to the case assigned to the respective locus of case in each construction. This definition is too loose because the pair of constructions may differ in many ways: the only conditions both constructions must meet are that they contain a locus of case and that the case in one differ from the case in the other. According to this definition, genitive and accusative alternate in English: *his mother* vs *love him*. The initial definition amounts to saying that every case in a language is in alternation with any other case in the same language, which is obviously not what we mean by alternation.

One arrives at a more useful definition of case alternation, i.e. one that approximates the ordinary use of the term alternation, by adding some other conditions. Firstly, the pair of constructions to be contrasted with each other can be required to be significantly similar: the two must be of the same syntactic category. This requirement alone suffices to exclude the ⟨NP, VP⟩ pair from the pairs of constructions that enable us to talk about the alternation between genitive and accusative in English. That English offers the constructions instantiated by *his mother* and *love him* cannot be any reason to say that it exhibits alternation between genitive and accusative. A very similar consideration necessitates a provision that the contrasting constructions contain some constituent that is not a locus of case. Lack of this condition leads to the same absurdity as above: every case is in alternation with every other case. Thirdly, it may be added that the two constructions must have the same number of locuses of case. This additional condition
disqualifies a pair of constructions such as license the German strings like *geben mir sie* and *betrachten mich* from motivating an alternation between dative and accusative in the language. The same can be said for the following alternation between the accusative and the instrumental in Russian noted by Brecht and Levine (1984: 120).

(1) a. Kramin delil svoj saxar s nim

Kramin NOM share PAST one’s own ACC sugar ACC with him

‘Kramin shared his sugar with him.’

b. Kramin delil sja s nim svoim saxarom

Kramin NOM share PAST REFL with him one’s own INS sugar INS

‘Kramin shared his sugar with him.’

A better definition of case alternation can be given now, thanks to the additional conditions. A language exhibits case alternation if there is a pair of constructions of the same syntactic category in the language that properly contain the same number of locuses of case and they differ with respect only to which case is assigned to the position under contrast. While further narrowing down the concept case alternation is conceivable, I take any such move to be too restrictive to be of general linguists’ interest. Note that I am not restricting the notion alternation in such a way that the meanings of the contrasting constructions necessarily come out the same.
Under this definition, many languages exhibit case alternations. It would be a safe conjecture to make that every language that has morphosyntactic cases exhibits some case alternation. In a dialect of English, for instance, genitive and accusative alternate. There is a construction whose first member must be a cardinal number (or one of number-related nouns such as all, both, some, few, many, etc.), whose second member must be the preposition of, and whose third member must be a noun phrase that denotes a plural individual. The noun phrase, i.e. the last member of this construction, must be in the accusative case: one of us, one of them, *one of we, *one of they. I shall call this construction the Count Partitive construction, for want of a better name. The genitive case is not allowed in the last position of this construction, as is demonstrated by the following ungrammatical strings.

(2) a. *One of our saw him.
    b. *He saw one of our.
    c. *He listened to one of our.

For whatever reason, this construction does not occur with its last constituent in accusative, when it modifies a noun. The meaning (3a) would carry if it were acceptable is carried by (3c).

(3) a. *It is both of us's fault.
    b. *It is both of us fault.
    c. It is both of our faults.
Though there is another reading in (3c), for which of our faults should be a constituent, it is clear that this reading involves number disagreement. The only natural reading of this sentence calls for a constituencohood of both of our. The noun phrases both of us and both of our prove that English exhibits alternation between genitive and accusative.

The accusative case alternates also with the prepositional phrase in English. Give, send, fax, etc. occur either with two NPs in accusative or with one accusative NP and one PP headed by the preposition to: fax them this message and fax this message to them. The first NP in the first construction is in the accusative case and it alternates with the PP in the second construction.

The whole sentence, when viewed as consisting of the subject noun phrase and the verb phrase, presents an environment for case alternation on subject. In German, for instance, while most sentences have their subject noun phrase in the

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5 In an episode from The Cosby Show, Vanessa, Cosby’s eldest daughter, protests to her father’s firing the maid: “How could you? She was all of our friends.” This observation was made by Mark Libucha, who was independently interested in this construction in 1980.

6 The problem of unexpected plural marking on the head noun, i.e. faults, remains. Some speakers of English do not use this construction.

7 Carl Pollard (personal communication) points to the fact that the subject of a gerundive VP can be either in accusative or in genitive: I disapprove of him/his doing that.
nominative case, others may be regarded as having their subject in dative. To the extent that the nominative NP in the latter can be so regarded, it is clear that the language exhibits case alternation between nominative and dative. The same can be said for such other languages like Russian and Icelandic. In all these examples of dative/nominative alternations, the content of the verb phrase seems to specify which case the subject can be in. In other words, in the ordinary sense of alternation, they are not alternation.

2.5. A typology of case alternations on direct object

In this dissertation, I discuss case phenomena within the verb phrase. Hardly any discussion will be occasioned about case phenomena related to subject in the following chapters. There are two reasons for this parsimony. Firstly, there are not many data that point to case alternation on subject. The alternation between

8 The standard examples of sentences with dative subject include Mir ist kalt ‘I am cold’.

I am noncommittal to the subjecthood of mir in this example, because I do not know of any solid test which proves its subjecthood. According to Andras Kathol (personal communication), kalt seierde Kind is unacceptable, which is more compatible with the nonsubjecthood of mir in Mir ist kalt. Kathol (1991) concludes that, unlike in Icelandic, non-nominative NPs are not subjects in German. As David Dowty (personal communication) points out, the sentence in question can be analyzed as subjectless, in which case the dative experiencer NP would be a VP adjunct.
the NP and the nominative PP in Korean and Japanese and the one between the nominative and the genitive in Russian existential sentences are the only interesting types of alternation on subject that I could locate. Secondly, I could not come up with a set of exhaustive typological possibilities of case alternation on subject that would give passives, middles, antipassives, indefinite object deletion constructions, and causatives, etc. a unique place. When the verb phrases of two clause types are different, comparison of their subjects doesn't seem to yield anything interesting. The pair of English sentences *I opened the door* vs. *the door opened* does not have consequences on morphosyntactic case, though it is interesting from the perspective of semantics. I found no language in which case marking in these valency-affecting processes has significant syntactic consequences.

Three independent parameters, (i) whether the two transitive verbs are the same lexeme, (derivationally related, or totally different), (ii) whether the meanings of the VPs are the same, and (iii) whether the cases on the object NP (or PP) are the same, yield the classification of alternations in Table 2.1.

The situation in which the two VPs have the same truth-conditional meaning, the same verb, and the same case on the object NP (or PP), is excluded by Occam's Razor. The situation where two verb phrases have the same meaning and the same case on the object NP (or PP) but the verbs are derivationally related to each other obtains in Tagalog. This language also presents many pairs of derivationally related verbs which, when combining with the same accusative PP, yield different
VP-meanings. Section 3.2 of CHAPTER III is devoted to these types of alternations in the language.
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Table 2.1. A classification of case alternations on do
When the two VPs contain different, and unrelated, verbs, the situation in which the meanings of the VPs are different is the standard one: verbs having the same subcategorization frame, with the NP in the same case or different cases (*love* and *kill* (both with accusative object); *helfen* (with dative object) and *trinken* (with accusative object)). The meanings of two VPs might be the same if the verbs are synonymous.

Russian, Turkish, Finnish, and Abkhaz-Adyghe present examples of case alternation that I shall call semantic. In these languages, pairs of verb phrases differing only in the case on the direct object have systematically different meanings. The alternation between accusative and genitive in Russian has been most heavily studied. I discuss it in Section 3.3 of CHAPTER III, where I argue that the traditional notion of "genitive of negation" must be treated as nondistinct from genitive of quantification, or partitive. According to Moravcsik (1978a: 249), Finnish and Serbo-Croatian exhibit a distribution of partitive case that is similar to that of the Russian genitive. Heinämäki (1984) is generally inclined toward a semantic account of the alternation between accusative and partitive. However, she points out that "the object in a negated sentence is in the partitive even when it is outside the scope of negation" (1984:168). I leave open the issue of Finnish partitive/accusative.

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9 Abkhaz-Adyghe is mentioned by Dixon (1979).
2.6. A general theory of case

A grammar that meets the desiderata given in 1.5 must encode information about the distribution of morphosyntactic cases. This encoding need not be explicit in the strictest sense of Kirsh (1990).\textsuperscript{10} I shall assume that the information about morphosyntactic cases is encoded implicitly in the sense that it is accessible after some finite and predictable amount of computation that is proportional to some order of the size of the grammar.

If there are grammatical descriptions of languages that meet the four desiderata, some generalizations should be able to be drawn. Let me present some candidates of generalizations about case. Firstly, some languages have nominal cases (as opposed to adpositional ones). By implication, there may be languages that lack nominal cases. For example, Mandarin, Vietnamese, and Bukusu do not have noun phrases as the locus of case.\textsuperscript{11} Secondly, some languages have adpositional cases. I do not know any language which totally lack adpositions. Even if we confine our

\textsuperscript{10} A representation explicitly encodes some information, in the strictest sense of Kirsh (1990), if the information can be made available through computation in constant time by the cognitive agent.

\textsuperscript{11} Korean and Japanese are to be added to this short list. There is controversy, however, over the "optional" markers of nominative and accusative cases. See the following chapters for more about their status.
attention to those adpositional cases that play significant syntactic roles in a systematic way, it might be too strong to say that some languages lack adpositional cases. It follows from these two generalizations that there are languages that have both nominal and adpositional cases.

Besides these, everything else is language specific. Many languages that have morphosyntactic cases require one case on the subject of many sentences and another on the object of transitive verb. It is by no means the case that every language requires the subject of every clause to be in the nominative. Even if one attenuates this claim, utilizing the notion default, to something like (4), it is not clear that the generalization holds true in any immediate sense.

(4) In languages that have morphosyntactic case, there is a default relationship between the subject of finite clauses and the nominative case and between the object of transitive verbs

12 The Mandarin preposition bā may disqualify the language as a candidate for such a language, inasmuch as it is an accusative preposition. Li (1990:187–197) and Xiangling John Dai (personal communication) consider it a preposition.

13 In order for this kind of statement to be nongratuitous, the notions subject and object must be defined independently of morphosyntactic phenomena. I assume, throughout this dissertation, that some coherent part of Keenan's (1976) subject properties less the morphosyntactic case phenomena can uniquely identify a subject and one or more object in most constructions of type S or VP. Without this assumption, what follows in this subsection would be circular, as David Dowty (personal communication) rightly points out.
and the accusative case.

For example, in Korean and in Japanese, in which morphosyntactic cases are realized by postpositions but not by noun phrases, the default relationship seems to hold between subjects and NPs (caseless, by definition) and between objects and NPs; there is no evidence that either the nominative or the accusative should be treated as the default case for anything. For one thing, the scoreboard in a soccer stadium reads *hankwuk* ‘Korea’ and *ilpon* ‘Japan’ rather than *hankwuk i–ilpon i* or *hankwuk ul–ilpon ul*.\(^{14}\) Taking this into consideration, I revise (4) to the following.

(5) In the relevant constructions of languages that have morphosyntactic case, there is a default relationship between the subject of finite clauses and the nominative case and between the object of transitive verbs and the accusative case.

By “relevant constructions” is meant those constructions which contain some locus of case. I take (5) to be a valid generalization, as I know of no counterexample to it other than cases of misnomer (or different nomenclature): What Georgian grammarians call nominative, which is better called accusative; what is called absolutive in ergative languages, which is nothing but nominative in my framework. For Georgian, see Section 4.5; for ergative languages, see Section 3.2.5.

\(^{14}\) A self-laudatory imaginary football scoreboard in front of a bar at the campus area of the Ohio State University reads: THEM 0; US 42. Note the accusative. Kerstin Hoge (personal communication) says it would have to be SIE and WIR, which suggests that the default is nominative in German.
Another generalization that bears mentioning is about morphosyntactic cases that are mainly local, i.e. those which have constant meanings and are typically associated with constituents that are not required by other constructions. In Andrews’ (1985) terminology, they mark circumstantial semantic roles, e.g. time, place, frequency, direction, instrument, etc., and they have noncore grammatical functions. Even in languages that lack morphosyntactic case on subjects and objects, local cases seem to abound. Every language presents adpositions with distinct meanings, as far as I know. Thus, (6) concerns every other case besides nominative and accusative.

(6) Morphosyntactic cases other than nominative and accusative are associated with optional constituents and they contribute some constant meaning to the containing constituent.

Though this is a strong tendency that is true of every language, there do exist phenomena that may counterexemplify it. At least two morphosyntactic cases, genitive and dative, in many languages, may be considered lacking in any local meaning.

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15 A construction C is said to require a constituent σ if and only if the language contains C but it does not contain C less σ as another construction of the same syntactic category.

16 Nor is it the case that nominative and accusative cases totally lack local adverbial meaning. An accusative NP in Russian and Irish may behave like an optional adverbial denoting a period of time. The English NP next time and its ilk, be they in nominative or accusative, have analogous properties in He will call next time.
CHAPTER III.

LEXICAL, SEMANTIC, AND

DISCOURSE ORGANIZATIONAL ALTERNATIONS

3.1. Introduction

As we have seen in Chapter 2, different VP-meanings may originate from verbs, their complement NPs, or the case realized on the NPs. Thus, having different verbs alone will often suffice to produce semantically different VPs. It is the standard situation that the only factor in the semantic difference between two VP’s is two different verbs: *please the girl* as opposed to *like the girl*. It might appear that this situation is so common that it seems unnoteworthy. However, if two groups of verbs, each with huge membership, were derivationally related to each other, and if one group of verbs combines with an NP whose thematic role is agent while the other combines with an NP whose thematic role is patient, then it would be of immense interest to a grammarian. This is exactly the situation in Tagalog, to which we will turn in 3.2.

The same verb may combine now with an object noun phrase in case α, now with one in case β. What the object denotes may have a bearing upon its
morphosyntactic case. For example, Spanish transitive verbs in general require the preposition *a* to come with their direct object when it denotes an animate being. If the VP whose daughter is in case α does not differ in meaning from the VP whose daughter is in case β, then it is often the case that the syntactic environment enclosing the combination \( V \sim NP \) (or \( V \sim PP \)) dictates the choice of the case on the object. This is the kind of alternation that is dealt with in Chapters 4 and 6. There are also situations where the case alternations lack both semantic and syntactic consequences. Thus, the verb *nem* 'exceed' in Korean can combine now with a nominative postpositional phrase and now with an accusative postpositional phrase, with no semantic difference or syntactic trigger.

When there is a semantic difference between two verb phrases whose verb slots are occupied by the same verb but whose object NPs are in different cases, we are dealing with a semantic alternation of case. Homophonous transitive verbs in a language with quirky case governments on the direct object may offer examples of semantic alternation.\(^1\)\(^2\) However, if virtually all transitive verbs can combine now

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1. A transitive verb governs a quirky case α on its direct object, if the majority of transitive verbs in the same language govern case β, which is different from α. Icelandic, German, Russian, and Finnish are examples of languages that display quirky case government.

2. The two verb tokens may be regarded as different verbs unless they share significant portion of meaning or idiosyncratic morphological properties such as irregular paradigm or shape conditions. If regarded as different verbs, there does not arise anything like case alternation.
with an NP in case α and now with one in case β, with systematically different meanings, it would be all the more interesting to a syntactician. The alternation between accusative and genitive in Russian and the one between accusative and partitive in Finnish are examples. I describe the semantic alternation in Russian in 3.3.3

While it is controversial whether an adpositional phrase can be considered an argument of a transitive verb, on a par with ordinary noun phrases, it would be safe to include discussions of alternations one of whose participant is an adpositional phrase. The English verb meet, for instance, contributes to the special component of the sentence meaning, when it combines with a noun phrase. The component of 'first encounter' associated with meet them is missing from the phrase in which what the verb combines with is not the noun phrase, but the prepositional phrase headed

3 A remark is in order here to locate the English verb load in this context. This transitive verb's object NP can be either the stuff whose location changes or the object whose internal configuration, but not its relative location, changes: load hay vs. load a truck. Since containers can always be themselves contained in a bigger object with the right shape, many VPs with this transitive verb are ambiguous. For instance, load a truck may have a reading in which a truck is loaded onto something like a ship, in addition to the more usual reading. However, since this does not involve any morphological case alternation, and since the pattern does not extend to many other verbs (fill, rent, and hit seem to be the only other vocabulary items with this property), I shall suffice to have said this much.
by *with*.\(^4\) There are many instances of alternation between adpositional phrases and noun phrases in all languages. However, it is when there is a systematic and massive correlation between two different types of verb phrases in a language, that it deserves most attention. I discuss one such correlation, i.e. the alternation between the accusative PP and the NP in Korean, in 3.4. Much the same could be said of Japanese as will be said of Korean, though I do not pursue it in this dissertation. (I will simply assume it in the discussions of Japanese in CHAPTER IV.)

### 3.2. Voice in Tagalog

#### 3.2.1. Case markers

Tagalog has three case markers: *ang*, *nang*, and *sa*.\(^5\) The first of these is variously called “topic” marker, the nominative case marker, the absolutive case marker, or

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\(^4\) More examples from English include *admit* and *admit of*, *attend* and *attend to*, *read* and *read from*.

\(^5\) The three lexemes have two forms each. One series, i.e. *ang*, *nang*, or *sa*, occurs when the prepositional object is neither a proper noun nor a pronoun. The other series, *si*, *ni*, or *kay*, occurs with a proper noun. Neither series combine with a pronoun. The case forms of pronouns are not further analyzable: *ako* ‘I NOM’, *ko* ‘I ACC’, and *akin* ‘I LOC’.
the ergative case marker. Its syntactic category is determiner, according to De Guzman (1978). I shall call it the nominative preposition. Most sentence types are required to have one and only one noun phrase marked with this preposition. The only exceptions are the existential sentence type introduced by the verb may ‘exist’, an example of which is (1), and the “Recent Perfective” sentence to be explicated in 3.2.3.

(1) May libro sa mesa.
exist book LOC table

‘There’s a book on the table.’

The second case marker, nang, shall also be identified as a preposition. For lack of a better name, I choose to call it the accusative preposition. Sentences are not required to contain a noun phrase with this marker. Neither is the number of accusative prepositional phrases confined to one per sentence. This is possible because of the preposition’s capability of being very vague with respect to the thematic roles it can correspond to. In the same vein, I shall call the third case marker, sa, the locative preposition. These are the only simple prepositions in the language. Complex prepositions, such as na sa ‘in’, para sa ‘for’, tungkol sa ‘about’, contain the locative preposition.

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6 If its meaning is not to be considered responsible for its distribution, one would have to say that its occurrence in more than one position has to do with its vagueness.
A simple intransitive sentence like (2) contains one nominative prepositional phrase after the sentence-initial verb.\(^7\)

(2) gumalaw ang bata?.

\textit{move}_{af} \textit{PERF NOM child}

'The child moved.'

Substituting another preposition for \textit{ang} results in an ungrammatical sentence. A simple transitive sentence contains one or more accusative PP, in addition to one nominative PP. The sentences in (3) exemplify this point.

(3) a. Binili nang maestro sa tindahan ang libro.

\textit{buy}_{af} \textit{PERF ACC teacher LOC store NOM book}

'The teacher bought the book from the store.'

b. Binilhan nang maestro nang libro ang tindahan. [\textit{binilhan 'buy}_{df} \textit{PERF'}]

'The teacher bought a book from the store.'

Both the agent and the theme in (3b) are denoted by accusative phrases, when the place in which the buying event took place is denoted by the nominative phrase.

\(^7\) The subscript \textit{af} that appears in the glosses of Tagalog verbs in this section indicates that the subject of the verb is to denote an actor. It corresponds to what Schachter and Otanes (1972) call “Actor Focus”. Other subscripts, \textit{af}, \textit{df}, etc. similarly correspond to their “Object Focus”, and “Directional Focus”, etc.
3.2.2. Verb aspects

One would normally not expect that case alternations may have anything to do with verb aspect. In fact, as it will turn out, there is no direct relation between them. However, since verbs in Tagalog invariably embody not only voice but also aspect, and since the two features are fused in a complex way when they are realized, I think a reasonably clear understanding of voice, and hence of case alternation, can hardly be arrived at without taking aspects into consideration.

Tagalog verbs do not inflect for tense. They inflect for aspect, instead. Aspect marking is done through reduplication and affixation. Finite verbs come in three aspects: Perfective, Imperfective, and Contemplated. These category names are used by Ramos and Bautista (1986) and correspond to De Guzman’s (1978) [+completed], [+begun; −completed], and [−begun], respectively. The following table, drawn from De Guzman (1978: 142), illustrates which aspect is marked by what formal operation(s).
Table 3.1. Tagalog Verb Aspects

<table>
<thead>
<tr>
<th>Infinitive</th>
<th>Perfective</th>
<th>Imperfective</th>
<th>Contemplated</th>
</tr>
</thead>
<tbody>
<tr>
<td>[-fin]</td>
<td>[+comp]</td>
<td>[-comp]</td>
<td>[-beg]</td>
</tr>
<tr>
<td>kumuha</td>
<td>kumuha</td>
<td>kumukuha</td>
<td>kukuha</td>
</tr>
<tr>
<td>‘to take’</td>
<td>‘took’</td>
<td>‘take’</td>
<td>‘will take’</td>
</tr>
<tr>
<td>pulutin</td>
<td>pinulot</td>
<td>pinupulot</td>
<td>pupulutin</td>
</tr>
<tr>
<td>‘to pick up’</td>
<td>‘picked up’</td>
<td>‘pick up’</td>
<td>‘will pick up’</td>
</tr>
<tr>
<td>punasan</td>
<td>pinunasan</td>
<td>pinupunasan</td>
<td>pupunasan</td>
</tr>
<tr>
<td>‘to mop’</td>
<td>‘mopped’</td>
<td>‘mop’</td>
<td>‘will mop’</td>
</tr>
<tr>
<td>itapon</td>
<td>itinapao</td>
<td>itinatapon</td>
<td>itatapon</td>
</tr>
<tr>
<td>‘to throw’</td>
<td>‘threw’</td>
<td>‘throw’</td>
<td>‘will throw’</td>
</tr>
<tr>
<td>iabot</td>
<td>inisbot</td>
<td>iniaabot</td>
<td>iaabot</td>
</tr>
<tr>
<td>‘to hand over’</td>
<td>‘handed over’</td>
<td>‘hand over’</td>
<td>‘will hand over’</td>
</tr>
<tr>
<td>magbigay</td>
<td>nagbigay</td>
<td>nagbibigay</td>
<td>magbibigay</td>
</tr>
<tr>
<td>‘to give’</td>
<td>‘gave’</td>
<td>‘give’</td>
<td>‘will give’</td>
</tr>
</tbody>
</table>

Virtually every verb in the language inflects for the three aspects. The only verb I know of that is defective is may ‘exist’. It is invariant and yet can be used as the only verb of a simple sentence. Even the counterparts of English stative predicates, such as magsaya ‘be happy’, and matakot ‘be afraid’, inflect for any of the aspects. Given this regularity, there is no reason to doubt that aspect-marking in Tagalog is inflectional.

There is an aspectual category whose distribution differs from the three
above. This is what is often referred to as "Recent Perfective". It is realized as the prefix *ka-* with the partially reduplicated root. It occurs only in a subjectless sentence, i.e., a sentence without a nominative PP. Many verbs lack this form: inchoative and non-perception verbs, according to De Guzman (1978: 143). She takes this process of forming "Recent Perfectives" as a derivational process. I will return to this at the end of the next subsection.

Four kinds of morphological operations have to be employed by the realization rules for the aspectual categories and the nonfinite form of the verb. Of these, the most pervasively used is the operation of reduplication: the imperfective and contemplated forms are all formed via partial reduplication. The next prominent one is the affixation of *um* and that of *in*. This affixation is generally known as infixation, but I follow Carrier (1979) in regarding it as prefixation (followed by a process similar to metathesis). The remaining ones are consonant mutation between */m/* and */n/* and morpheme-internal alternation between */pulot/* (in Perfective and Imperfective forms) and */pulutin/* (in Nonfinite and Contemplated forms) in Table 3.1. The last two alternations can be viewed as stem selection: */magbigay/* is stem 1 of the lexeme MAGBIGAY and */nagbigay/* is its stem 2; */pulutin/* is stem 1 of the lexeme PULUTIN and */pulot/* is its stem 2.

Insofar as there is a sequence of segments shared by all the four forms, one can take it as the stem of the lexeme. I take */punasang/, */itapinga/, and */iabot/* in Table 3.1 as the stems of the respective verbs. The Contemplated form is formed by
reduplicating the first syllable of the stem, if it is a syllable of type CV. It is formed by reduplicating the second syllable of the stem, otherwise. (The stem selected for this rule is stem 1 when there is more than one stem.) This accounts for all the Contemplated forms in Table 3.1, except for kukuha. If the Infinitive form is to be identical to the stem of a verb, and if reduplication is the only operation that has to apply to give a Contemplated form, kamukuha, not kukuha is what is expected.\(^8\) Therefore, unlike all other verbs in Table 3.1, the Infinitive form of the Tagalog lexeme that means ‘take’ is not identical to its stem, which ought to be /kuha/. This is not limited to the root /kuha/. In fact, all verbs (or verb forms, since we haven’t decided on its status) with the affix um follow this pattern: um is missing in the Contemplated forms.

The scenario about the nonexistence of infixation is not without factual support. One important generalization about “infixes” is that they occur near the edges of words. There are no known examples of infixes that occur invariably after the second syllable from the beginning or before the penultimate syllable. Another generalization is that if the morph that is infixed were prefixed or suffixed, the result would not follow the phonotactic constraints of the language. These generalizations

\(^8\) As the first syllable of the putative stem /umkuha/, to be realized as [kumuha] by phonetic implementation rules, when there is no morphophonological process applying to it, is not of type CV, the reduplication process applies to its second syllable and yields /umkukuha/. This sequence of segments turns into [kumukuha].
fall out naturally under the prefixation followed by rotation approach to um and in. The only aspects of pronunciation that have to be accounted for are why [umkuha], [inpunasan], etc. are all bad and how /umkuha/, /inpunasan/, etc. are pronounced [kumuha], [pinunasan], etc. One of the phonotactic constraints of Tagalog is that word-initial VCC's are bad. Among the logical possibilities of resolving this conflict is that of rotating initial segments after all the operations of automatic phonology are done. Part of the reason /umkuha/ ends up as [kumuha] is that [mukuha] and [ukmuha] both contain otherwise unused word-initial phonotactic structures. Why Tagalog opts for this particular resolution of phonotactic incongruency is a question I do not have an answer to.

3.2.3. Voice Marking

A finite verb in Tagalog is invested with a value of voice. Most previous grammarians who have written on this part are not particularly interested in the question

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9 The burden of getting the right pronunciations as well as precluding wrong pronunciations is spread over two components, i.e., morphophonology and phonetic implementation component. Exactly the same kind of division of labor is called for with regard to the pronunciation of English plural suffix. Morphophonology would have only to differentiate /lz/ and /z/, the latter later undergoing voicing assimilation in phonetic implementation component.
of whether the various voice markings are derivational or inflectional. Thus, De Guzman (1978: 129–130) notes:

As can be noted in the preceding section, the previous works on Tagalog, generally, have not made a clear-cut distinction between inflectional and derivational categories or processes.

De Guzman pays abundant attention to this distinction and she is to be commended on that. However, her conclusion that “voice is a syntactic feature marked on a verb which pertains to the case relation of the verb’s subject” (135) does not seem to be founded so much on the formal tests as on her decision early on to employ “case relations” in the description of Tagalog syntax. Although she does not state it explicitly, what she means by “case relations” is thematic roles. In Section 4, Chapter 2 of her dissertation, she presents eight thematic roles: Objective, Agentive, Locative, Dative, Instrumental, Benefactive, Reason, and Comitative. She takes a finite verb to instantiate one or another of the voice features: $[-+[NM, -OBJ]]$, $[-+[NM, -AGT]]$, $[-+[NM, -DAT]]$, etc.\(^{10}\) Thus, a verb that happens to instantiate $[-+[NM, -OBJ]]$ must be realized with the objective voice affix in. $[-+[NM, -AGT]]$ must be realized with an agentive voice affix, \textit{um} or \textit{m}.

\(^{10}\) $[-+[NM, -\alpha]]$, where $\alpha$ is a value of voice, is interpreted as: this inflection cannot occur with a nominative marked actant that denotes any case relation other than $\alpha$. In other words, $[-+[NM, -\alpha]]$ can occur exclusively with a nominative PP that has the thematic role $\alpha$. 
She depends on three Voice Redundancy Rules and seven Voice Subcategorization Rules to make sure that any of the eight voice features be instantiated by some verb or other, and that only one voice feature be associated with a verb on any instantiation. All these rules are stated negatively. Her VSR 5, to pick a random example, goes: If a verb is specified as not cooccurring with an agentive nominative actant, then it does not cooccur with a benefactive nominative actant or it cooccurs only with a benefactive nominative actant.\(^{11}\)

Linguists nowadays disagree on what role thematic roles should play in the grammar. For the simple reason that there is no manageably small number of disjoint thematic roles that can be used in describing cooccurrence restrictions within any language, I follow Ladusaw and Dowty (1988), Jackendoff (1989), and Sag and Pollard (1991), among others, in rejecting appeals to thematic roles in syntactic descriptions.

De Guzman’s (1978) eight “Case Relations” are nothing but thematic roles that are deliberately set up in order to account for the relationships among verb lexemes in Tagalog. I take the purported voice inflection to be derivation, for it is impossible to predict which purported verb would be able to instantiate which of

\(^{11}\) As Robert Levine (personal communication) notes, De Guzman’s Voice Redundancy Rules can be dispensed with, if one takes Agentive, Benefactive, etc. as values of the feature Voice. What she is doing is, instead of utilizing the feature Voice that range over eight values, trying to establish eight features, each with two values, + or −.
the eight putative voice features. The only generalizations that I can draw about the possibility of having a particular “voice inflection” are:

(4) a. The overwhelming majority of verbs have an Objective voice form.

b. The overwhelming majority of verbs have an Agentive voice form.

c. Many verbs have a Dative voice form.

d. Several verbs have one or other voice forms: Locative, Instrumental, Benefactive, Reason, or Comitative.

Ramos and Bautista (1986), a dictionary of “approximately 200 verbs”, give "kumilos", etc. as the only voice forms found commonly associated with the root kilos ‘move, do something.’ This means that kilos is massively defective in that it lacks every voice inflection except the Agentive. On my cursory count, about twenty “verbs” out of the two hundred are defective in the same way as kilos is. The Objective voice can be instantiated by roughly half of the two hundred “verbs”. Thus, the most productive process is the Objective voice marking. A close second is the Agentive marking, with Dative in the remote third place. Every other voice marking seems to be idiosyncratically confined to a handful of “verbs”. There is absolutely no way of predicting whether a given “verb” would inflect for a voice category other than the first three.

Nor is it possible to predict which form the “verb” will take when it is in a given “voice inflection”. Agentive voice is marked by several affixes: most often by magpa, mag and am, but rather often by mang and ma, and occasionally by maka.
Objective voice is marked by several prefixes also: most often by *ma, pag, ipag* and occasionally by *pa, pang, ipa, and ipang*. Worse yet, there are verbs in agentive voice which are not marked by any of the seven.

No decision can be safe about the distinction between a productive derivational process and a defective inflectional process, if a substantial part of morphology of the language is left undescribed. I take a complete and economical description of the realization rules to be the ultimate criterion in determining whether voice marking in Tagalog is derivational. A description that relies on listing all the four stems for the four aspectual forms Perfective, Imperfective, Contemplated, and Infinitive, is the most unilluminating description possible. By assuming voice marking is a derivational process and by positing fifteen conjugational classes, I can successfully spell out the realization rules. I do not see how one can predict the right forms of verbs under the assumptions such as are made by De Guzman. Inasmuch as an inflectional treatment of voice falls short of predicting the right forms, my derivational treatment is to be preferred.

(5) In the context of [CONJCLASS: 1], [VFORM: PERFECTIVE] is realized by Operation 8,
[VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 8, [VFORM: CONTEMPLATED], by Operation 7, and, [VFORM: INF], by Operation 6.

Operation 6: Get the stem.

Operation 7: Reduplicate the CV sequence of the first syllable of the stem

if it has an onset; otherwise, reduplicate the second syllable.
Operation 8: Prefix /in/ to the operand (the stem or its reduplicated form).

The realization rule (5), in conjunction with Operations 6 through 8, accounts for all the inflected forms of verbs like punasan 'to mop', itapon 'to throw', and iabot 'to hand over' in Table 3.1. They are just three of a huge number of Conjugation Class 1 verbs in the language. To complete the description of realization rules, I provide the following rules and operations.

(6) a. In the context of [CONJCLASS: 2], [VFORM: PERFECTIVE] is realized by Operation 9 followed by Operation 8, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 9, which in turn is followed by Operation 8, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 9, and [VFORM: INF], by Operation 9.

b. In the context of [CONJCLASS: 3], [VFORM: PERFECTIVE] is realized by Operation 10 followed by Operation 23, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 10, which in turn is followed by Operation 23, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 10, and [VFORM: INF], by Operation 10.

c. In the context of [CONJCLASS: 4], [VFORM: PERFECTIVE] is realized by Operation 11 followed by Operation 23, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 11, which in turn is followed by Operation 23, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 11, and [VFORM: INF], by Operation 11.

d. In the context of [CONJCLASS: 5], [VFORM: PERFECTIVE] and [VFORM: INF] are realized by Operation 12, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 12, and [VFORM: CONTEMPLATED], by Operation 7.
e. In the context of [CONJCLASS: 6], [VFORM: PERFECTIVE] is realized by Operation 13 followed by Operation 8, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 13, which in turn is followed by Operation 8, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 13, and [VFORM: INF], by Operation 13.

f. In the context of [CONJCLASS: 7], [VFORM: PERFECTIVE] is realized by Operation 14 followed by Operation 8, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 14, which in turn is followed by Operation 8, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 14, and [VFORM: INF], by Operation 14.

g. In the context of [CONJCLASS: 8], [VFORM: PERFECTIVE] is realized by Operation 24 followed by Operation 8, [VFORM: IMPERFECTIVE], by Operation 24 followed by Operation 7, which in turn is followed by Operation 8, [VFORM: CONTEMPLATED], by Operation 6 followed by Operation 7, and [VFORM: INF], by Operation 6.

h. In the context of [CONJCLASS: 9], [VFORM: PERFECTIVE] is realized by Operation 15 followed by Operation 19, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 15, which in turn is followed by Operation 19, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 15, and [VFORM: INF], by Operation 15.

i. In the context of [CONJCLASS: 10], [VFORM: PERFECTIVE] is realized by Operation 16 followed by Operation 19, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 16, which in turn is followed by Operation 19, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 16, and [VFORM: INF], by Operation 16.

j. In the context of [CONJCLASS: 11], [VFORM: PERFECTIVE] is realized by Operation 17 followed by Operation 8, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 17, which in turn is followed by Operation 8, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 17, and [VFORM: INF], by Operation 17.

k. In the context of [CONJCLASS: 12], [VFORM: PERFECTIVE] is realized by Operation 18 followed by Operation 8, [VFORM: IMPERFECTIVE], by Operation 7 followed by
Operation 18, which in turn is followed by Operation 8, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 18, and [VFORM: INF], by Operation 18.

1. In the context of [CONJCLASS: 13], [VFORM: PERFECTIVE] is realized by Operation 19 followed by Operation 8, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 19, which in turn is followed by Operation 8, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 19, and [VFORM: INF], by Operation 19.

m. In the context of [CONJCLASS: 14], [VFORM: PERFECTIVE] is realized by Operation 20 followed by Operation 8, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 20, which in turn is followed by Operation 8, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 20, and [VFORM: INF], by Operation 20.

n. In the context of [CONJCLASS: 15], [VFORM: PERFECTIVE] is realized by Operation 21 followed by Operation 8, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 21, which in turn is followed by Operation 8, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 21, and [VFORM: INF], by Operation 21.

Operation 9: Prefix /pa/.

Operation 10: Prefix /ma/.

Operation 11: Prefix /maka/.

Operation 12: Prefix /um/.

Operation 13: Prefix /ika/.

Operation 14: Prefix /ipa/.

Operation 15: Prefix /mag/.

Operation 16: Prefix /mang/.

Operation 17: Prefix /ipag/.
Operation 18: Prefix /ipang/.

Operation 19: Prefix /pag/.

Operation 20: Prefix /pang/.

Operation 21: Prefix /magpa/.

Operation 23: Mutate the initial /m/ to /n/.

Operation 24: Get stem 2.

The verbs that belong to Conjugation Class 2 include *kialaman* ‘meddle with’, and Conjugation Class 3 consists of such verbs as *ramdam* ‘feel’, and *kilala* ‘recognize’. Verbs of ability and involuntary action, such as *hanap* ‘look for’, *gulo* ‘be disorderly’, and *tingin* ‘look at’, all belong to Conjugation Class 4. Numerous other verbs, such as *hawak* ‘hold’, *lapit* ‘approach’, and *ligaw* ‘court, woo’, are Class 5. Class 6 verbs are relatively few. They include *gutom* ‘be hungry’, *pagod* ‘get rid’, and *matay* ‘die’. Class 7 includes *ligo* ‘bathe with’. Conjugation Class 8, is characterized by a lexeme having two stems. Although there is phonological similarity between two stems of each lexeme, one cannot in general predict one stem from the other: *pulot, pulutin* ‘pick up’, *kalaban, kalabanin* ‘be opposed’, and *hintay, hintin* ‘wait for’.

Conjugation classes 9 through 15 form the aspectual and infinitive forms with the same operations. The inflected forms of these classes and Conjugation classes 2, 3, and 7 are totally parallel except for the prefix. Many verbs belong to Conjugation class 9: *magbigay* ‘give’, *magbili* ‘sell’, and *magtagalog* ‘speak Tagalog’. Conjugation class 10 include *manganak* ‘give birth to’, *mangaykay* ‘tremble’, and
mamili ‘go shopping’. Conjugation classes 11 (ipagbili ‘be sold by’, ipagkatiwala ‘be entrusted with by’, and ipagtapat ‘be confessed by’) and 12 (ipanganak ‘be given birth to’ and ipangako ‘be promised by’) have few members. Conjugation class 13 has faralan ‘study’, pagtiisan ‘endure’, and pagbilhan ‘sell’. Conjugation class 14 has pangakuan ‘be given a promise to by’ and panghinaan ‘have a tremor’ as its members. The last class, 15, has huge membership. The verbs are all causative in meaning and they have corresponding noncausative members in Conjugation classes 5, 9, and 10.

De Guzman (1978) cannot be right when she takes “Recent Perfective” aspect, exhibited in (7), as derivatives.

(7) a. Kakakain ko lamang.
   eat RPERF ACC I just

   ‘I have just eaten.’

b. Kaaalis pa lamang ni Pedro (nang dumating ako).
   leave RPERF just ACC

   ‘Pedro had just left (when I arrived).’

If they were derived verb stems, then what inflectional forms do they have? Do they lack all the aspeuclal forms? In what inflectional form is the verb in (7a) or the one in (7b)? I cannot but conclude that “Recent Perfective” is an inflectional form.
Six conjugational classes offer forms of this aspect. They are Conjugational Classes 3, 4, 5, 9, 10, and 15. Schachter and Otanes (1972: 372) characterize them as actor-focus verbs: "only actor-focus verbs are inflectable for the recent-perfective aspect, and then only if the verbal affix is one of the following: -um-, ma-, maka-, mag-, magpa-, mang-." The realization rules in (6) are not complete, as they do not license recent-perfective forms. A change has to be introduced, in order to account for recent-perfective: the realization rules (6) b–d, h, and i need to be revised.\(^{12}\)

3.2.4. Sortal Incorrectness Rather Than Ungrammaticality

Now that I have proposed a quite precise set of realization rules for the inflectional category of aspect in this language, where voice marking does not figure as syntactic features at all, I am obliged to account for the ungrammaticality of the strings like the following.

\(^{12}\) The revised rule (6) b reads: In the context of [CONJCLASS: 3], [VFORM: PERFECTIVE] is realized by Operation 10 followed by Operation 23, [VFORM: IMPERFECTIVE], by Operation 7 followed by Operation 10, which in turn is followed by Operation 23, [VFORM: CONTEMPLATED], by Operation 7 followed by Operation 10, [VFORM: RPERFECTIVE], by Operation 7 followed by Operation 22, and [VFORM: INF], by Operation 10. (Here, Operation 22 is prefixation of /ka/.) Revision of rules c, d, h, i, and n of (6) are analogous to this. I omit them.
(8) a. *Binilhan nang libro nang tindahan ang maestro.
   buy_{df} PERF ACC book ACC store NOM teacher

b. *Bumili nang maestro ang libro.
   buy_{af} PERF ACC teacher NOM book

c. *Binili nang libro ang maestro.
   buy_{af} PERF ACC book NOM teacher

These strings are all bad just because their meanings are bad: (8a) denotes 'the teacher is the place where a book bought a store'; (8b) denotes 'the book bought the store' and (8c), 'the teacher was bought by the book'. Unlike all the authors who take the three verb tokens above to be different forms of the same verb, I regard them as distinct. It is natural that distinct verbs have distinct meanings as well as distinct syntactic properties. The verb in (8a), binilhan, is now given a new gloss, 'be-the-place-where-x-buy-y PERF'; the verb in (8b), bumili, is now given the gloss 'buy PERF'; the verb in (8c) is glossed now 'be-bought PERF'. Recall from CHAPTER I that the badness of a string may arise from semantic considerations independent of syntactic well-formedness. Taking the unacceptability of strings in (8) as due to a violation of selectional restrictions, in the sense of Chomsky (1965), lessens the burden of syntax in a desirable way.\textsuperscript{13} The strings above do have interpretations; they are simply odd because of the way transactions take place in this particular

\textsuperscript{13} Chomsky (1969, 110-111) does not distinguish violations of selectional restrictions from
world. A person cannot be a place where a transaction involving a book occurs; the book cannot be the buyer of anything; the teacher cannot be the object of a purchase.

There might be conversational settings in which a sortally incorrect predication of an entity sounds O.K. For instance, a performance given by a very poor pianist may be described appropriately by a sentence like (9).

(9) She didn’t play the piano.) The piano played her.

By regarding the strings in (8) as sortally incorrect, rather than as ungrammatical, I commit myself to the prediction that they would be acceptable in certain situations.

The syntactic treatment of sortally incorrect sentences such as De Guzman’s, and in fact any syntactic account of them for that matter, do not explain why, when predicated by a VP, a phrase like what I am thinking of now, which lacks indications of what entity is concerned, leads to an unacceptable string just in case its reference ungrammaticality. He suggests to treat them as conditions on lexical insertion. Jackendoff (1987: 385-386) disagrees with this syntactic treatment and proposes to “treat a selectional restriction simply as ordinary semantic structure that happens to occur within an indexed conceptual constituent”. Dowty (1991: Section 6) assumes that “it is now uncontroversial that [selectional restrictions] are correctly analyzed as semantic properties, not syntactic properties, of words”. Earlier works in this direction include McCawley (1969) and Thomason (1972), although there is some significant difference between these authors as to what they mean by semantics.
is not the right sort. Reference is a semantic notion. Another drawback of syntactic accounts of sortal incorrectness becomes evident when we notice that intuitively similar facts cannot be given a similar account. A pair of verbs that bear the same voice feature may have different sortal properties. For instance, *mangawit* 'be tired' and *mangyari* 'happen', according to De Guzman (1978), bear the same inflectional feature [−[−Agentive]]. A nominative prepositional phrase combining with either verb is to be interpreted as agent. If the PP is accusative, the sentence is ungrammatical. With even this much of syntax, some strings would still sound bad if the PP in the right case denotes an entity that cannot have the property denoted by the syntactically licit VP. A human subject is bad for the agentive focus verb *mangyari*. Such group-internal mismatch is intuitively analogous to group-external mismatch exemplified by (8). And yet, a syntactic approach like De Guzman’s has to assume that one and the same type of mismatch has to be accounted for in two distinct ways.

3.2.5. The Tagalog verb phrase—What is remarkable?

The decision that *ang* is a nominative marker and that voice marking in Tagalog is not inflectional does not leave us with many options as to how the structure of verb phrases should be analyzed. The noun phrase preceded by the nominative preposition ought to be seen as the subject of the sentence. The noun phrases pre-

14 I am assuming that subject is universal in that most clause-type constructions of every
ceded by the accusative preposition ought to be taken as objects. (I do not explore the possibility that every verb in the language is intransitive.) These decisions are justified by the fact that the ang-phrase has properties which Keenan (1976) and Keenan and Comrie (1977) put forward as subject properties. That only the ang phrase can be relativized on, as in (10), drawn from Schachter (1977: 286), is one such property. In addition, it can launch floating quantifiers, it does not occur in the existential sentence type, as in (11), and a $V_T \sim PP[ACC]$ sequence can conjoin with another such sequence.¹⁵

(10) a. Lyon ang babaeng bumili nang baro.
that NOM woman LINKER buy PERF ACC dress

'That's the woman who bought a dress.'
b. Lyon ang barong binili nang babae.
that NOM dress LINKER be-bought PERF ACC woman

'That's the dress that a/the woman bought.'
that NOM dress LINKER buy PERF NOM woman

language have a subject. A subject denotes the last argument of a proposition. My assumption that subject is a universal grammatical relation is closely tied with my belief that it is conducive to descriptive adequacy when its denial is likely to miss such adequacy.

¹⁵ Carl Pollard (personal communication) adds to this list of evidence for the subjecthood of the ang-phrase wh-fronting, clefting, topicalization, and raising. The values of these processes as evidence for its subjecthood need not be the same.
d. *Iyon ang babaeng binili ang bare.
that NOM woman LINKER be-bought PERF NOM dress

(11) May libro sa mesa.
exist book LOC table

'There is a book on the table.'

There are quite a few points to be noted about the grammar of Tagalog as has been presented in the preceding subsections. I shall defend my analyses of aspects of Tagalog grammar, which are novel, from possible criticisms by highlighting remarkable points in the remainder of this subsection.

Firstly, a huge number of verb stems are homophonous. In other words, there are a lot of stems that are shared by more than one conjugation class. For example, the stem /bili/ is shared by five lexemes, which are to be related by lexical implication rules in my analysis but are simply different voice forms in De Guzman's, serve to illustrate this point. It is the stem of a lexeme in Conjugation class 5, whose infinitive form is bumili ‘buy’ and other forms are bumili (perfective), bumibi (imperfective), and bibili (contemplated). It is also the stem of a lexeme in Conjugation class 9: its forms are magbili ‘sell’, nagbili, vagbili, and magbibili, in the same order as above. It is the stem of a lexeme in Conjugation class 10, with the forms mamili ‘go shopping’, namili, namibili, and mamibili. It is the stem of
a lexeme in Conjugation class 11, whose forms are *ipagbili*, *ipinagbili*, *ipinagbibili*, and *ipagbibili*. Finally it is the stem of a Conjugation class 15 verb: *magpabili*, *nagpabili*, *nagpabibili*, *magpabibili*.

This, however, does not lead to massive ambiguity at all, since every inflected form of a verb differs from its stem: all inflections of all conjugation classes involve a prefixation except for the Contemplated form of conjugation class 5. Therefore, the massive stem-level homophony does not lead to massive lexical ambiguity.

Two verb phrases that have sharply distinct meanings may have their object in the same case, i.e. accusative. Pairs of derivationally related transitive verbs abound in the language, giving rise to semantic difference unaccompanied by any syntactic difference. For example, *bunili nang maestro* ‘bought the teacher’ is syntactically identical to *binilhin nang maestro* ‘be bought by the teacher’. There are numerous examples of such semantically disparate but syntactically parallel verb phrases in the language, which however are not as systematic as one would expect of a syntactic process.\(^\text{16}\)

Secondly, the direct object of some transitive verbs may denote the agent of an event as is demonstrated by (3a) of 3.2.1. This is quite unusual, since, in many

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\(^{16}\) Kwakwala is the only non-Malayo Polynesian language I know of that exhibits similar derivational processes. One of the verb suffixes of this language which Levine (1980) calls “focus elements”, i.e. *-ayu* is an indicator of the Kwakwala counterpart of Tagalog Object Focus verbs: *n\(\partial\)pid-ida za guk* ‘hit the house (with)’ vs *n\(\partial\)pid-ayu-ida za guk* ‘be thrown to the house (by)’. 
other languages, the direct object of a transitive verb cannot denote the agent. For example, the DO of an English transitive verb may denote such entities as the patient, the stimulus, the object of comparison, etc., as is illustrated by (12).

(12) a. They dumped the garbage.
    b. They abhorred the garbage.
    c. They survived the garbage.

However, there is no verb like the imaginary *thromp in (13a) such that the truth of this sentence would entail the truth of (13b).

(13) a. The garbage thromped them.
    b. They performed a thromping action.

The only remote analogs of *thromp in English are brown, erect, empty, humble, etc. They are not quite the right examples, because they are not intransitive verbs. Thus, a sentence like Her bread is brown would be true if We browned her bread is true. Even if brown, etc. had a usage as an intransitive verb, they would not be exactly like the Tagalog verbs which require an agent-denoting object NP, since the imaginary action would still lack voluntariness.

Couched in more technical terminology, e.g. that of Dowty (1991), Tagalog is a language in which the “Argument Selection Principle” in (14) does not hold.
(14) Argument Selection Principle (à la Dowty 1991)

In predicates with grammatical subject and object, the argument for which the predicate entails the greatest number of Proto-Agent properties will be lexicalized as the subject of the predicate; the argument having the greatest number of Proto-Patient entailments will be lexicalized as the direct object.

Here, the Proto-Agent properties are (i) volitional involvement in the event or state, (ii) sentience, (iii) causation of an event or change of state in another participant, and (iv) movement; the Proto-Patient properties are (i) undergoing change of state, (ii) incremental theme, (iii) being causally affected by another participant, and (iv) the stationary nature. Dowty himself notices that syntactically ergative languages such as Dyirbal and Quiche had better be regarded as languages that observe his Argument Selection Principle in its inverse form: the argument having the greatest number of Proto-Agent properties will be lexicalized as the object of the predicate. Note, however, Tagalog does not respect this Inverse Principle either. Many verbs of Conjugation classes 3, 4, 5, 9, 10, and 15, those which Schachter and Otanes (1972) call “Actor Focus” verbs, are exceptions to it. If my understanding of Tagalog is on the right track, the language is a counterexample to the thesis that there is some law that governs the alignment of semantic arguments with syntactic arguments in all languages. One way out of this conclusion is abandoning a static view of grammar such as I am taking in this writing, in favor of a dynamic view, in which certain syntactic structures are derived from basic structures.¹⁷

¹⁷ Belletti and Rizzi (1989) discuss the problem of the ambivalent alignment of experiencer
Thirdly, a full sentence whose subject NP is not a second person may be an imperative sentence. Thus, on a par with the unremarkable (15a), one encounters an imperative sentence like (15b), whose subject is a third person, and one like (15c), whose subject is similarly in the third person. The examples are from Schachter (1977: 291).

(15) a. Magbigay ka sa kaniya nang kape.

   give you NOM LOC he ACC coffee

   ‘Give him some coffee.’

b. Bigyan mo siya nang kape.

   be-given you ACC he NOM ACC coffee

   ‘(Lit. He be given the coffee by you) Give him the coffee.’

c. Ibigay mo sa kaniya ang kape.

   be-given-to you ACC LOC he NOM coffee

   ‘(Lit. Some coffee be given to him by you) Give him some coffee.’

Whether this is surprising depends on whether there are separate hortative and optative constructions in the language. If Tagalog imperative sentences have to serve as these other sentence types, having first or third person subject in them would hardly be remarkable. In fact, there is an indication that the language may

in a dynamic grammar which arguably fails on all the desiderata of descriptive adequacy discussed in Section 1.5, except for economy.
not have separate hortative or optative sentence types. The accusative phrases in (15) may be suppressed, according to Kroeger (personal communication). If mo ‘you ACC’ does not appear in (15b) and (15c), then the missing agent ought to be supplied by the discourse context. If the understood agent is the first person, then the sentence is not very different from a hortative sentence in other languages. If the understood agent is the second person, then the sentence is not distinct from an imperative sentence in other languages. If the understood agent is the third person, then the sentence is not very different from an optative sentence in other languages.

Fourthly, the object may trigger reflexivization on the subject. Presenting the sentences in (16) and (17), Schachter (1977: 292) says:

[...] it is the actor in Philippine languages that possesses the subject properties with regard to reflexivization.

(16) a. Nag-aalala ang lolo sa kaniyang sarili

worry-about NOM grandfather LOC his self

‘Grandfather worries about himself.’

b. Inaalala nang lolo ang kaniyang sarili.

be-worried-about ACC grandfather NOM his self

‘(Lit. Himself is worried about by Grandfather) Grandfather worries about himself.’

(17) a. *Nag-aalala sa lolo ang kaniyang sarili

worry-about LOC grandfather NOM his self
This struck Schachter as suggesting that the agent phrase is the grammatical subject, not the *ang*-phrase. However, Schachter’s argument is not airtight. If the unacceptability of (17) were to be attributable to the constituent order in this particular construction, then the reflexivization facts do not jeopardize my assumption that the *ang*-phrase is the grammatical subject. In other words, Schachter should have said that both strings in (18), or their analogs, are acceptable and that they have the same meaning, if he wanted to completely eliminate the possibility of an alternative analysis.

(18) a. Inaalala nang lolo ang tatay.

be-worried-about ACC Grandfather NOM father

‘Grandfather worries about father.’

b. Inaalala ang tatay nang lolo

be-worried-about NOM father ACC Grandfather

Despite the language’s general freedom in the positioning of constituents other than the verb, I am inclined to expect specific restrictions to obtain. Especially because the crucial verbs look like emotion verbs, my hunch gets stronger. If (18b) is in fact unacceptable, the remaining task is explaining away the acceptability of (16b).
That (16b) is acceptable does not pose any difficulty for a grammatical framework in which references can be made to order of constituents. Since Schachter does not give us a more detailed description about the referential property of *kaniyang sarili*, and since reflexives in many languages exhibit wide range of syntactic idiosyncrasies and referential properties, I do not feel I have to say anything about why (16b) is acceptable. Let me suffice to say that it does not violate the weakest valid generalization on non-referring expressions, i.e. (19).

(19) A non-referring expression must not simultaneously precede and command a referring expression which cosemifies with it.

Schachter's argument for the grammatical relevance of agenthood in Tagalog that is based on facts about reflexivization has been subjected to another line of criticism. According to Andrews (1985:143-144), there is no requirement that the antecedent of a reflexive be an actor. He provides the sentences in (20) in support of his claim: In (20a) either the actor or the (directional) Recipient can be understood as the antecedent of the reflexive, which is the possessor of the Theme (object); in (20b) either the actor or the Beneficiary can be understood as the antecedent of the Source (directional) reflexive:

(20) a. Iniabot niya sa bata ang kaniyang sariling
    hand_of PERF he ACC LOC child NOM he GEN self GEN
larawan

picture

‘He handed the child a picture of himself.’

b. Tumangap ang Rosa nang sulat para sa bata
receive$_{a}$ PERF NOM ACC letter for LOC child

sa kaniyang sarili

LOC she GEN self

‘Rosa received a letter for the child from herself/himself/herself.’

In conclusion, I do not see how the thematic role agent plays any significant grammatical role in Tagalog. The notion subject can be independently motivated without reference to thematic roles.

3.3. The Accusative/Genitive Alternation in Russian

The direct object of most Russian transitive verb tokens are in the accusative case. There are some verbs that govern a case other than the accusative, which shall be disregarded in this section. The majority of transitive verbs combine with a genitive noun phrase in case there is a negative word нё in the sentence. Consider (21).
(21) a. Brat est mjaso.
   brother NOM eat meat ACC
   'My brother eats/is eating the meat.'

b. Brat ne est mjasa.
   brother NOM not eat meat GEN
   'My brother doesn't eat meat.'

What is more, the object noun phrase is in the genitive case if it occurs in a sentence in the scope of the negative word, according to Ross (1967: 175–177).\(^{18}\)

Babby (1980) accounts for this phenomenon, called "genitive of negation", with a transformation that marks a noun phrase genitive in case it is in the scope of negation. He regards the accusative case (and the nominative case, which does not concern us here) as being assigned after all other rules apply.

What is wrong with Babby's (1980) analysis is that he fails to relate the accusative object NP in a negative sentence to that in its corresponding affirmative

\(^{18}\) Ross does not use the term 'scope' in characterizing the dependence of Russian genitive on the negative word. Instead, he utilizes Langacker's (1966) notion of command: "Except for rules of pronominalization, in all feature-changing rules, elements to which features are added must be commanded by any non-variable terms appearing in the structural indices of the rule in question." (185) According to Langacker (1969:167), Node A of a phrase marker commands node B if neither node dominates the other, and if node B is dominated by the first node S above A. Langacker (1966) is the same paper as Langacker (1969).
sentence on the one hand and the genitive object NP in a negative sentence to
that in a corresponding affirmative sentence on the other. In fact, one might easily
conclude that the object NP of an affirmative sentence may not be in the genitive
and that the object NP of a negative sentence may not be in the accusative, if one
bases oneself only on Babby (1980). This turns out not to be true. First, most
ordinary transitive verbs can combine with the accusative object NP when they are
negated. Thus, side by side with (21), we have (22).

(22) Brat ne est mjaso.
brother NOM not eat ACC

'My brother isn't eating the meat.'

Timberlake (1986) regards the choice between the accusative and the genitive in the
context of negation as being governed by his seventeen 'hierarchies of individuation'.
The higher in the individuation hierarchy the event or the participant is, the more
likely the object NP is in the accusative. All of his rules are relative: $\alpha$ takes the
genitive of negation less than $\beta$ or $\alpha$ is more often in the genitive than $\beta$, where
the variables range over pairs like proper nouns/common nouns, concrete nouns/
abstract nouns, /count nouns/mass nouns, infinitive/finite, etc. Not only are his
rules theoretically unattractive, but also many of them are factually incorrect.\footnote{I
know of no grammar that successfully assigns to strings degrees of acceptability. If not...}
one, he says: “The two marked moods of Russian [imperative and conditional, YN] take the genitive of negation less than the indicative. (348)” He gives the following pairs of strings:

(23) a. Smotri ne poterjai očki!
   see not lose glasses ACC

   ‘See to it you don’t lose your glasses!’

b. *Smotri ne poterjai očkov!
   see not lose glasses GEN

(24) a. Esli by ja ne poterjal očki, ja by ne dolžen
   if SUBJ I not lose glasses ACC I SUBJ not need

   byl kupit’ novye.
   PAST buy INF new

   ‘If I hadn’t lost my glasses, I wouldn’t have had to buy new ones.’

b. *Esli by ja ne poterjal očkov, ja by ne dolžen
   if SUBJ I not lose glasses GEN I SUBJ not need

impossible, such a grammar would not be obtained without decades’ work. Timberlake (1986) does not address the fundamental issue of precisely how the acceptability of a complex expression is to be determined by the degrees of acceptability of its constituents. It seems to be a very difficult, and yet essential, question. His interest in how frequently one encounters certain constructions is also something unprecedented by grammarians who share the assumptions I make in CHAPTER I.
byl kupit' novye.

PAST buy INF new

If (23b) were unacceptable, his claim might be right. However, this string is perfectly acceptable, if it is said to a peddler who sells glasses, with the meaning "See to it you lose no glasses."

I take to be grammatical all verb phrases in which the head verb combines with an accusative NP as its object, no matter whether the VP is in the scope of negation. Similarly, all verb phrases whose NP daughter is in the genitive are to be licensed by Russian syntax, again no matter whether they are in the scope of negation. The accusative object, whether in an affirmative or a negative sentence, has its own meaning, distinct from the genitive object. The latter has a constant meaning that is not affected by the polarity of the sentence containing it. In short, Russian syntax is not held responsible for the genitive marking on the object NP in the scope of negation any more than for the genitive marking on the object NP which is not in the scope of negation or for the accusative marking on the object NP in the scope of negation.

My treatment of the alternation between the accusative and the genitive in the language can best be dubbed semantic, and it stands in sharp contrast to other approaches, such as Ross (1967), Babby (1980), and Neidle (1988), which are syntactic. The syntactic approaches are motivated by the putative fact that
a genitive marking on the object NP results in ungrammaticality when the VP containing it is not in the scope of negation. However, if one regards what Neidle (1988) and others call “partitive genitive”, e.g. ogurčov in (25), as one and the same entity as “the genitive of negation”, the syntactic approach can be dispensed with.  

(25) prinesi ogurčov.

       bring  cucumbers GEN

20 Babby (1989) comes very close to this position, in his review of Neidle (1988). Rather than relating the GEN of negation to the scope of negation directly, as I proposed informally in Babby 1980, N claims that an intermediary, the feature [Q] is necessary. The question that naturally arises is: do we really need the presence of the feature [Q] to trigger the positive value of the case feature [Quantifying]? In other words, is N's analysis an artifact of LFG case theory, or does it enable us to capture a theory-independent generalization? N begins Ch. 2 by arguing that the ACC/GEN case alternation on the direct object of certain transitive verbs in AFFIRMATIVE sentences (e.g. On ždet podrugu/otveta 'He is waiting for his friend[ACC]/an answer[GEN]') and the ACC/GEN alternation on direct objects in NEGATED sentences can be treated as a unitary phenomenon in terms of this [Q] feature. My expectation was that N would go on to demonstrate that the other instance of the ACC/GEN alternation on direct objects in affirmative sentences—the partitive GEN—could also be accounted for in terms of the feature [Q]. This would constitute a real generalization: GEN is assigned to object NPs that are in the scope of quantification.
'Bring some cucumbers.'

In fact, the syntactic approach ought to be rejected in favor of the semantic treatment, if a single interpretation principle can account for the meaning of the putatively distinct kinds of genitives. Neidle (1988) puts forward two reasons why a unified account is impossible. The first involves the existence of two genitive forms on certain nouns. What is called the second genitive, e.g. čaju as opposed to čaja ‘tea’, occurs freely in the object position with the meaning ‘part of x’, where the denotation of the noun lexeme is predicated of x. However, according to Rugaleva (personal communication), there is no environment (other than idioms and other set expressions) where the second genitive occurs in the exclusion of the first genitive. Neidle (1988: 43) herself acknowledges this: "When it [the second genitive] occurs, the first Genitive is normally also possible.” I see no reason to posit two genitive categories for Russian. Very much like the alternative past tense forms such as dived/dove and dreamed/dreamt in English, čaja/čaju, etc. are alternative forms of a single genitive category.

Neidle (1988: 44) gives the sentence (26), which she views as ungrammatical, to illustrate her second reason for not identifying the partitive genitive with the genitive of negation: "One characteristic of the partitive Genitive is that it can occur with mass nouns or plural count nouns, but not with singular count nouns.”
(26) *prinesi ključa.
    bring  key GEN SG

The unacceptability of this string is to be attributed to whatever mechanism accounts for the awkwardness of (27).

(27) ??Bring some portion of a key.

This mechanism cannot be syntactic. In fact, both the Russian sentence and the English one are acceptable in a situation in which keys have been melt or ground individually and the speaker intends to get some sample of an unspecific (melt or ground) key. One would be surprised if Russian count nouns are not subject to what Bach (1984) calls the Universal Grinder, when their English counterparts are.

All in all, the accusative/genitive alternation in Russian is a semantic alternation without any syntactic consequences. The only provision the Russian grammar need to make is that the transitive verbs are allowed to take either of the two cases, with their respective semantic composition.21

21 Informally speaking, the bare genitive NP denotes 'part of an entity that has not been introduced in the previous discourse or is not otherwise salient in the context', whereas the bare accusative NP denotes 'entity as an unanalyzable whole'. Depending on whether the case of the object is genitive or accusative, the VP with a transitive verb denotes an atelic or telic process. For more on this topic, see Krifka (1986).
3.4. The Alternation between NP and accusative PP in Korean

Most noun phrases that are not a sister of a postposition in Korean can be replaced with one of the three kinds of postpositional phrases: the nominative, the accusative, or the genitive.\(^ {22}\) Despite their syntactic category being postpositional phrase, PP[NOM] and PP[ACC] do not have any local meaning.\(^ {23}\) The genitive postposition \(uy\) is largely confined to written style. In spoken Korean, a noun phrase can qualify the head noun, very much as the possessive NP in English can qualify the head noun. I do not have anything else to offer about the relationship between a genitive PP and an NP in Korean. Nor am I going to discuss the alternation between an NP and a nominative PP here.

The position that precedes a delimiter is one which can be filled with an NP but not with an accusative PP. A particular instance of this general restriction on the distribution of the accusative postposition \(lul/ul\) has been attended to in the literature, namely the one that involves the delimiter \(num/un\), which is better known as the "topic marker". See Kang (1986) and Kuh (1988) for treatments of this in different grammatical frameworks. They propose "filters" to cope with the remarkable unacceptability of (28c).

\(^{22}\) This is something of a dynamic wording. Speaking statically, for most constructions in which there is an NP, there is a corresponding construction which has PP[NOM], PP[ACC], or PP[GEN] instead of the NP.

\(^{23}\) For the reasons why they should be PP’s rather than NP’s to begin with, see Section 4.1.
(28) a. congswu lul pull -e.
    Chongsoo ACC call IMPERATIVE

    'Call Chongsoo.'

b. congswu nun pull -e.
    Chongsoo DLM call IMPERATIVE

    'Call Chongsoo (if not someone else).'

c. *congswu lul un pull -e.
    Chongsoo ACC DLM call IMPERATIVE

In No (1991), I bring more data to the fore and maintain that the restriction is not confined to the so-called "topic marker" following the nominative/accusative postpositions, but it rather holds for delimiters in general: nun/un, man, to, ya/iya, lato/ilato, and cocha. I propose to treat the badness of combinations like PP[NOM] DLM and PP[ACC] DLM as due to the conflict between the respective postpositions and a delimiter in terms of their discourse organizational properties. For details, see No (1991).

Now that it has been made clear that not all NPs in the object position can be replaced with an accusative PP, we are in a position to ask whether the converse is the case. Can all accusative PPs be replaced with an NP, preserving the acceptability of the whole sentence? This, in fact, is the case. I cannot find any licit accusative PPs that cannot be replaced with an NP. The least acceptable string I could get by substituting an NP involves a Gapping construction. Even in
the Gapping construction, a special coordination construction whose conjuncts are nonconstituents, the object may occur in an NP. The acceptability of (29b) is lower than the acceptability of (29a), which is perfect, but it is only slightly lower.

(29) a. nwuna nun sikyey lul tongsayng un ehang ul ponay -sse
   sister DLM clock ACC brother DLM aquarium ACC send PAST DECL

   'My elder sister sent a clock, and my younger brother, an aquarium.'

b. ?nwuna nun sikyey tongsayng un ehang ponay -sse
   sister DLM clock brother DLM aquarium send PAST DECL

Leaving open the question of whether there is an accusative PP which cannot be replaced with an NP, I temporarily conclude that this particular choice is void of syntactic consequences.

The lesson from this section is that there might be a wide-ranging, massive alternation between the adpositional phrase and the NP in the object position which lacks syntactic and semantic consequences. This alternation still contributes to the expressive capacity of the language: it relates the referents in the sentence to the previous and upcoming discourse entities in distinct ways.
CHAPTER IV.

SYNTACTIC ALTERNATIONS

4.1. Introduction

Case is said to be syntactically alternating, when one and the same transitive verb may take more than one case without any concomitant semantic difference and the choice is dependent on or limited by the syntactic environment outside the verb phrase. In this chapter, I describe syntactically conditioned case alternations in four languages: Korean, Japanese, Finnish, and Georgian. The first two languages are strikingly similar in that case alternations in them involve verbs of the same semantic field, namely emotion. Two verbs that are subcategorized for a VP, one of which I shall call the "emotionizer" (Korean siph and Japanese ta) and the other of which I shall call the "deemotionizer" (Korean ha and Japanese garu), and a few dozen ordinary verbs, labeled "emotion verbs", are responsible for the alternation between two postpositions that mark the object noun phrase: the nominative (Korean i/ka and Japanese ga) and the accusative (Korean ul/lul and Japanese o). The alternation in Finnish is triggered by the various finite and nonfinite inflections on the verb. The fourth person form and the imperative form of the transitive
verb require their object NP to be in a special accusative form, i.e. accusative 2. The object NP in an infinitival subject VP also is required to be in accusative 2. Any object NP whose mother VP is embedded by a VP-taking verb in the right inflection, namely imperative or fourth person, has to be in accusative 2, too.

Since VP-taking verbs play a crucial role in the case alternations on object NPs in Korean and Japanese, and since they are a proper part of morphological words, I shall discuss the distinction between independent words and clitics on one hand and the one between clitics and inflectional or derivational affixes on the other, at considerable length. Also, I will be concerned with the questions of what inflectional categories there are in Finnish verbal morphology and what names are more appropriate and less misleading. These questions, addressed in appendices for the sake of better cohesion, must be answered properly before a solid description can be given of the case alternation facts.

4.2. Korean Emotion Expressions

4.2.1. A fragment of Korean

As a basis for the discussion of case alternation facts of Korean, I provide here a fragment of the language. This fragment is merely expository and thus does not
accommodate quite a few important constructions: noun complements, adverbial subordination, echoed verb constructions, and numeral-classifier constructions are some of those which are missing. One noteworthy property of this fragment is the lack of null productions, i.e., those productions whose right-hand side is a null string. Thus, a verb phrase alone may form a sentence; A transitive verb, indicated here as V[12], may well form a verb phrase. In other words, what I call zero pronoun in No (1991) has no place in this fragment. The properties it would have if it existed are now seen as being correlated with the interpretation of the minimal constituent that would properly contain it. In other words, the dominating category preserves the information borne by the putative pronoun, which plays a role in determining its contribution to the truth conditions of the sentence containing it. How the missing argument is supplied for the purposes of interpretation is given in the right column in terms of Grosz et al. (1983), whenever an argument is missing. $C_f(U_{n-1})$ stands for the forward-looking center of the immediately preceding utterance. It is the set of entities that may be referred to in the current utterance, $U_n$.

The numbers that appear with such lexical categories as verb and conjunction in the following fragment indicate lexeme classes. They differ from Gazdar et al.'s (1985) SUBCAT values. Different lexeme classes may have the same subcategorization properties. One lexeme class may enter into alternative subcategorization frames. The feature-value pair of [LEXEMECLASS: n] shall be simplified to [n], when there is no room for confusion.
S → NP VP
S → PP[NOM] VP
S → NP DLM VP
S → PP[NOM] DLM VP
S → VP
VP → V[11]
VP → NP V[12]
VP → PP[ACC] V[12]
VP → NP DLM V[12]
VP → V[12]
VP → NP V[13]
VP → NP V[14]
VP → PP[NOM] V[14]
VP → PP[ACC] V[14]
VP → NP DLM V[14]
VP → V[14]
VP → NP V[15]
VP → NP DLM V[15]
VP → V[15]
VP → S[VFORM:2] V[1]
VP → VP[VFORM: BSE] umyense, taka

CNJ[1] VP
PP → NP P
NP → Pron
NP → N

nun, to, man, cocha, kkaci, (i)ya, (i)lato
pappu ‘be busy’, nwup ‘lie’, na ‘arise’,...
cek ‘write down’, nay ‘submit’, tonci ‘throw’,...
i ‘COPULA’, kath ‘look like’
nem ‘exceed’
toy ‘become’, ani ‘be not’
ha ‘say’
po ‘(do) in order to see what would happen’...

i/ka, ul/lul, ey, ulo/lo, eyse, hanthey, ...
na, ce, wuli, cchi, ne, tangsin, caki, selo, nam
ay ‘child’, pyengak ‘chick’, hwa ‘anger’,
My belief that, in Korean, case is realized by lexical items, namely postpositions, and not by nominal inflection is reflected in this analysis. The locus of [NOM] and [ACC] is a postposition.¹ What has to be recognized as an optional realization of the nominative or accusative case as a zero, under the assumption made by Kang (1986), Maling (1989), and Kuh (1990:chapter V, 4.3) that the cases are nominal inflections, is seen as an alternation between an NP and a PP, whose syntactic functions are the same. Most positions which call for a PP can also be filled with an NP, without affecting the referential semantics of the whole construct. However, the converse is not true: the VP-internal complement of the verbs i ‘COPULA’ and kath ‘look like’ must not be a PP. This fact alone causes the other kind of analysis to be very complex. The putative “optional” realization of the nominative case is no longer optional when designated verbs follow the putative NP. This blockage has nothing to do with the phonological shape of the putative NP.² Its absence cannot be taken to be due to what Zwicky (1985) calls ‘shape conditions’.

¹ Taking the other view about the locus of these cases does not make the alternation facts to be discussed in this section disappear. Although the issue of the locus of case is orthogonal to the issue of alternation, I see fit to defend the postposition-as-the-locus view here.

² No matter whether the final sound of the noun is a consonant or a vowel, a case-marking morpheme cannot follow the noun when it comes before one of the two verbs.
In order to maintain that the nominative and accusative markers are inflections in Korean, a third value of morphological case has to be recognized. Thus, side by side with Nominative and Accusative, there would have to be something like Zcase.\(^3\) A drawback of this inflectional analysis lies in the fact that two cases (in fact, three cases including Zcase) can be realized by the same operation throughout the whole lexicon, without a single exception.\(^4\) Note that the identity mapping is to be used optionally for Nominative and Accusative, and obligatorily for Zcase, on all nominal lexemes. Furthermore, the occurrence of the purported nominative and accusative cases on a finite verb, as after *cek-nunci* ‘whether x writes down y’, would be difficult to explain.\(^5\) I do not try to salvage this inflectional analysis in this dissertation, since the postpositional analysis seems more economical and does not pose difficult problems.

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\(^3\) The lexeme class 13 in the above fragment would combine neither with Nominative nor with Accusative; it would only combine with Zcase.

\(^4\) Robert Levine (personal communication) brought this overwhelming regularity to my attention and takes it to support a syntactic treatment like mine.

\(^5\) Under the assumption that the two case markers are postpositions, *nunci* would be an interrogative verbal suffix which will make the whole clause that contains the interrogative verb a nominal, to which a postposition attaches.
4.2.2. Emotion verbs and the pragmatic properties of emotion-expressing sentences

The class of verbs I call "emotion verbs" in this dissertation and in one of my previous works, namely No (1989b), displays the following characteristics:

(1) a. They do not occur in a Realis Declarative inflection when the expressed experiencer is any entity other than the speaker.
   b. They do not occur in a Realis INTERROGATIVE inflection when the expressed experiencer is any entity other than the hearer(s).
   c. The restrictions above can be lifted in presumptive registers.⁶
d. They denote the property of being in an emotional or sensory state.

The person constraints on these verbs were first addressed by Lee (1970). He took the difference in acceptability between (2a) and (2b) as a matter of syntax and offered an analysis of them relying heavily on the Performative Hypothesis.

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⁶ The "presumptive" register is so called since, in this register, "the speaker should sound most presumptive when he sounds like having the deepest emotions of other people within his purview." (No 1989b:505)
(2) a. na chwup -ta.
   I be cold DECL

   'I am cold.'

b. #hongbay ka chwup -ta.
   Hongbae NOM be cold DECL

   'Hongbae is cold.'

c. hongbay ka chwuw-e ha-nta.
   Hongbae NOM be cold act like

   'Hongbae acts like he is cold.'

He proposes a transformation, ha-Deletion, which may apply when the subject is first person.\footnote{The Performative Hypothesis itself has been subjected to serious attack. Boër and Lycan (1980) conclude that a semantic interpretation cannot be assigned to sentences in a consistent manner in a grammar incorporating this hypothesis. Levinson (1983:5.4.) sides with them. If they are right, my argument in the following paragraphs against Lee’s (1970) analysis is not necessary. In such a case, it should be seen as an independent argument intended to convince those who are still sympathetic with the Performative Hypothesis and Lee’s analysis of person constraints revolving around Korean emotion expressions couched in it.} The ungrammaticality of (2b) follows, as it is not a kernel sentence and the only transformation that would yield it cannot apply. This is because the NP in the performativе clause is not identical with the third person subject in (2c), which is the only imaginable source of (2b). As he takes (3) as ungrammatical,
he makes the transformation obligatory when there is no other NP than the first person subject.

(3) nay ka chwuw-e ha-nta.
I NOM be cold act like

'I act like I am cold.'

This approach seems to be quite reasonable. The fact that (3) is acceptable would be captured by abandoning the obligatoriness thesis of ha-Deletion. This abandonment is all to the good, for it would simplify his grammar.

However, Lee's (1970) analysis of the clause-types containing an emotion verb is seriously flawed. Firstly, he wrongly predicts that (4a) would be perfect, analogously to (2a). Worse yet, the perfectly acceptable string (4b) cannot be generated by his grammar, for the ha-Deletion transformation can apply only when the subject of the sentence is the same as the subject of the performative clause, i.e. the first person singular.

(4) a. #nay ka chwup-ni?
   I NOM be cold INTERROG
   'Am I cold?'

b. rey ka chwup-ni?
   you NOM be cold INTERROG
   'Are you cold?'
These wrong predictions result from his failure to take into account the interrogative sentence type. But even for declarative sentences, his account is not totally correct. The third person subject can happily cooccur with a bare emotion verb in an Irrealis inflection and this holds even for declarative sentences.

(5) a. hongbay ka ceyil chwup-keynney.
   Hongbae NOM most be cold Irrealis DECL
   'I guess Hongbae would be the coldest.'

b. hongbay ekwulha-keyssumnita.
   Hongbae feel wrongly accused Irrealis UPWARD DECL
   'I guess Hongbae would feel wrongly accused.'

Unlike (2b) and (4a), which are unacceptable in registers other than the presumptive register, sentences in (5) are perfect in all registers. These observations make one doubt that syntax is at stake.

The 1970s saw descriptions of emotion expressions, such as D. Yang (1973), I. Yang (1974), and Lee (1976), in a framework encouraged by Fillmore's (1968) Case Grammar and/or Generative Semantics. In retrospect, they all suffer from theoretical drawbacks: they do not distinguish between the components of syntax, semantics, and morphology. Neither do they worry about the expressive power of their framework. It is commonplace for them to treat bound morphemes totally on a par with free morphemes on the basis of semantic similarity. They do not specify the
ways in which the meaning of a complex expression is obtained from the meanings of its constituents and the syntactic operations employed in combining them. They do not explicitly relate the meanings of sentences to the real world, either. In the remainder of this section, I will try to present a clearer picture of the grammar of Korean emotion expressions that results when theoretical and methodological assumptions made in CHAPTER I are applied to this particular subject, although the authors above provide excellent data, problems, and intuitions.

I list in Appendix A the verbs that satisfy my heuristic definition: Any verb which, in its e-form, can be followed immediately by ha is an emotion verb. This list is intended to be exhaustive.

4.2.3. Case alternations involving emotion expressions

The accusative postposition is the unmarked marker of the VP-internal argument NP. Thus, an ordinary Korean transitive verb may have an accusative-marked direct object, but not a nominative-marked one. When embedded as a sister of siph, which makes an ordinary VP an emotion VP, a VP may contain a nominative-marked direct object. This is illustrated by the following sentences. (DWN stands

8 The set of verbs that pass this syntactic test is a proper subset of the verbs which have the semantic/pragmatic characteristics in (1). The lexemes which resist combining with ha that still reveal characteristics in (1) include tulli ‘be heard’, poi ‘be seen’, and caphi ‘be touched’.
for 'downward' and it indicates that the speaker treats his or her addressee as being lower than he or she is.)

(6) ney ka congswu \{a. ka / b. lul\} manna -ela.
    you NOM Chongsoo NOM ACC meet IMP DWN

'You meet with Chongsoo!'

(7) congswu \{a. ka / b. lul\} manna-ko siph -keytta.
    want Irrealis DECL DWN

'x might want to meet with Chongsoo.'

While the accusative postposition *lul* is not bad at all in (7), the nominative *ka* after *chongswu* is more colloquial.

The case marking in sentence (7a) might strike a casual reader as if some kind of Object-to-Subject Raising is at work. It is evident, however, that it should be taken to lack the subject NP. As is implied by the fragment in 4.2.1, argument expressions in Korean remain unexpressed when their denotation is a member of the forward-looking center of the preceding utterance. Otherwise, the subject NP may be expressed, as in (8a) and (8b).\(^9\)

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\(^9\) In those registers other than what I call “presumptive” in No (1989b:505), the only NP that can occupy the subject NP position is the first person singular pronoun, if the verb *siph* is inflected Realis Declarative.
(8) a. nay ka congswu ka manna-ko siph -tá.
   I NOM Chongsoo NOM meet want DECL

    'I want to meet with Chongsoo.'

b. ne congswu ka manna-ko siph -keykkwuna.
   you Chongsoo NOM meet want Irrealis EXCLAM EQL

    'You must want to meet with Chongsoo.'

The auxiliary verb *siph* is only responsible for half of the case alternation phenomena in the language that are dubbed syntactic. The other half involves another auxiliary verb, *ha*. Being a de-emotionizer, this verb forms an ordinary, non-emotive, verb phrase when added to an emotive verb phrase. All the verbs listed in Appendix A can combine with *ha*, and only those can. Unlike an emotion-denoting verb phrase, the VP with *ha* as its head does not exhibit the person constraints even when it is in Realis inflection and occurs in an ordinary register. Thus, whereas (9a) would be bad unless the speaker is the caretaker of Chongsoo or the storyteller in whose story Chongsoo is a character, (9b) is perfectly fine even if the speaker is not.

(9) a. #congswu chwup -sumnita.
   Chongsoo be cold DECL HON

    'Chongsoo is cold.'

b. congswu chwuw-e ha -mnita.
   Chongsoo be cold act as if DECL HON
'Chongsoo acts like he is cold.'

The gloss 'act like' for *ha* is the best approximation.¹⁰

When the emotion verb is a transitive verb and its direct object is expressed as a postpositional phrase, the postposition must be the nominative, as is shown by the unacceptability of (10b) as opposed to the acceptable (10a).

(10) na congswu { a. ka / b. *lul} silh -e.

I Chongsoo NOM ACC dislike DECL EQL

'I dislike Chongsoo.'

The same goes for all the transitive emotion verbs listed in APPENDIX A.¹¹

Many transitive verbs require their object NP to denote an emotion-eliciting event rather than a concrete entity such as a person or an object. The word *ciluha* in (11) and (12) is an example.

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¹⁰ Early drafts of this dissertation had 'act as if' as the gloss and a paragraph's worth of discussion about the meaning was necessary because of the disparity in meaning. David Dowty suggested that what I was looking for was 'act like': it does not implicate the falsehood of the proposition denoted by the subordinate clause of *like*, whereas 'act as if' does.

¹¹ While most verbs in APPENDIX A are transitive, not all emotion verbs are transitive. Such verbs as *conacomaha* 'be worried over some imminent outcome', *chocoha* 'be nervous', and *ppututha* 'feel rewarded' are intransitive.
(11) na [[ congswu hako yayki ha-nun₅] [ ke₇ N₇ NP]
    I Chongsco with talk do VFORM4 thing

cyil cilwuhay.
most be bored at DECL EQL

'I feel most bored at talking with Chongsco.'

(12) *na congswu ka cyil cilwuhay
    I Chongsso NOM most be bored at

'I feel most bored by Chongsso'

The abstract entity, emotion-eliciting event is expressed with a special noun ke and its sentential complement. The verb in the sentential complement must have one of these six endings: nun, un, ten, etten, ul, and essul. When it is followed by a postposition, the complement-taking noun ke may be fused with it: key, kel, and kello, are forms of ke fused with the nominative postposition, the accusative postposition, and the instrumental postposition, respectively. As expected, the same restriction as in (10) holds in a situation like (13).

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12 The semantic differences among the six involve the aspect of the verb, the speech-time and the event-time, and realis and irrealis modalities.
(13) na [[ congswu hako yayki ha-nun n [ a. key / b. *kel ] N-P] PP]
    I Chongsoo with talk do thing NOM thing ACC

cyil cilwuhay.

most be bored at DECL

'I feel most bored at talking with Chongsoo.'

where the object PP contains such a complex noun phrase.

The deemotionizer ha reverses the case requirement pattern of transitive emotion verbs that have been exemplified by (10) and (13). The object PP must be headed by the accusative postposition, if the emotion VP is sister to it, as is shown by the unacceptability of (14a) as opposed to the perfect (14b).

(14) wuli suphakeythi {a. *ka / b. lul} silh-e hay.
    we spaghetti NOM ACC dislike DECL EQL

'We act like we dislike spaghetti.'

We will come back to these alternation facts in Section 5.3 and CHAPTER VI.
4.3. The "Potential" Verb and Emotion Expressions in Japanese

4.3.1. A fragment of Japanese

This section is intended to present a set of phrase structure rules for Japanese, with which I came to grips. This fragment will strike the reader as a replica of 4.2.1. Indeed, the Japanese language has a syntactic component strikingly similar to that of Korean. The presence of the minor category of delimiters, postposition as the locus of syntactic cases, and the preponderance of NP-ellipsis governed by discourse organizational principles are among the more prominent aspects of the grammar of Japanese that are found in Korean as well. In fact, I know of few syntactic generalizations which are not tied to particular lexemes that hold in one language but not in the other.\(^\text{13}\)

\(^{13}\) Even the conditions on the distribution of question-words (which occur in the same position as an ordinary word of the same syntactic category) and question-phrases (which occur in the same position as an ordinary phrase of the same syntactic category) are the same in both languages. For example, a relative clause in Japanese may contain a question-word, making the whole sentence an information-seeking question, as Choe (1987), \textit{inter alia}, notes; certain Japanese adverbial subordinate clauses may contain a question-word, again making the whole sentence an information-seeking question; a clause without a question-word may conjoin with a clause that has one, once again making the conjoined sentence
S $\rightarrow$ NP  VP
S $\rightarrow$ PP[NOM]  VP
S $\rightarrow$ NP  DLM  VP
S $\rightarrow$ PP[NOM]  DLM  VP
S $\rightarrow$ VP
VP $\rightarrow$ V[11]
VP $\rightarrow$ V[12]
VP $\rightarrow$ NP  V[12]
VP $\rightarrow$ PP[ACC]  V[12]
VP $\rightarrow$ V[12]
VP $\rightarrow$ PP[DAT]  V[13]
VP $\rightarrow$ V[13]
VP $\rightarrow$ VP[VFORM:BSE]  V[1]
VP $\rightarrow$ VP[VFORM:2]  V[3]
VP $\rightarrow$ AP  V[5]
VP $\rightarrow$ NP  V[9]

wa, mo, dake, sika, sae

$\text{VP'(x), where } x \in C_f(U_{n-1})$

$\text{tiru 'die', kuru 'come', dekiri 'be possible',...}$

$\text{taberu 'eat', kariru 'borrow',...}$

$\text{V'(x), where } x \in C_f(U_{n-1})$

$\text{naru 'become', au 'meet'}$

$\text{V'(x), where } x \in C_f(U_{n-1})$

$\text{rareru/areru/eru 'be possible'}$

$\text{anai/nai 'not', azu/su 'not', naru 'become',}$

$\text{arimasen 'not', iru '??'}$

$\text{masu, masen, hazimeru}$

$\text{iru 'be in the process/state of', kureru 'condescend',}$

$\text{aru 'be in the state of', oku 'in advance',}$

$\text{miru 'to see what would happen'}$

$\text{i/katta/ku 'be', garu 'act like'}$

$\text{rasi 'seem like', da/de/no 'be', desu 'be (POLITE)'}$

an information-seeking question. In other words, many of Ross’s constraints that hold for such $wh$-movement languages as English and Italian are as much too strong in Japanese as they are in Korean. David Dowty (personal communication) suggests that nonextracted $wh$-phrases in general do not obey Ross’s constraints and that this potential universal is consistent with echo questions in English.
The category Adjective is, unlike in Korean, an open class in Japanese.

4.3.2. Case alternation involving the "POTENTIAL" verb

The "potential" verb *rareru-areru-eru* is subcategorized for a verb phrase and governs the base form on it. The subject NP must denote an entity which is capable of volitional action. Its complement verb phrase may contain a transitive verb. The postpositional phrase can be either accusative or nominative, when it is in the complement of *rareru-areru-eru*. This is illustrated by (15).

(15) kono kotomo eigo \{a. ga / b. o\} hanas eru
that child English NOM ACC speak can

'That child can speak English.'
Being a stative verb, it does not head the complement of tai ‘want to’ or te iru ‘be in the process of’. It has to be taken as an enclitic verb rather than as a derivational suffix, because of its productivity and regularity with regards to case alternation.

4.3.3. Emotion adjectives and the pragmatic properties of emotion-expressing sentences

Japanese emotion adjectives exhibit exactly the same array of semantic and pragmatic properties as the Korean emotion verbs discussed in Section 4.2.2. They do not cooccur with non-first-person subject NPs in a “reportive style” (in the sense of Kuroda 1973) when the copula following them is inflected in the Realis Declarative mode. They do not cooccur with non-second-person subject NPs in a “reportive style” when the copula following them is inflected in the Realis Interrogative mode. They combine with the de-emotionizer gara ‘act like’. Gara is thus an expression that turns a state-denoting expression to an action-denoting expression, just like its Korean counterpart ka.

The list of Japanese emotion expressions in Appendix D includes the sequence ADJ emo ~ Copula in Japanese that has these properties. I gathered about fifteen examples from Kuno (1973), Kuroda (1973, 1979), Sugioka (1986), and Hinds (1988). I then elicited a dozen more from a bilingual speaker of Japanese, doubling
the original list. Two native speakers helped me identify items that shouldn’t have been included in this group, on the one hand, and expand the size of the list significantly, on the other. Yet, I believe this list is not exhaustive.

4.3.4. Case alternations involving emotion expressions

A transitive adjective in APPENDIX D combines with a nominative postpositional phrase as in (16).

\[
(16) \text{kono sasimi} \ ga \ oisi \ i \\
\text{that sashimi NOM find-delicious COPULA}
\]

‘x finds that sashimi delicious.’

When the adjectival phrase is the complement of the “de-emotionizer” garu, the noun phrase that denotes the stimulus gets marked by the accusative postposition, not by the nominative.

\[
(17) \text{Taro} \ wa \ kono sasimi \ \{ \text{a. *ga / b. o} \} \ oisi \ \text{garu} \\
\text{Taro DLM that sashimi NOM ACC find-delicious act like}
\]

‘Taro acts like he finds the sashimi delicious.’
This alternation between the nominative and accusative holds for all the transitive verbs in APPENDIX D.

Ordinary transitive verbs take the accusative postpositional phrase as their complement. When embedded as the sister of the desiderative adjective *ta*, the object may be marked nominative.

(18) **kono sasimi** \{a. *ga / b. o\} tabeta

that sashimi NOM ACC ate

‘x ate that sashimi.’

(19) **kono sasimi** \{a. ga / b. o\} tabe ta

that sashimi NOM ACC eat DESIDERATIVE COPULA

‘x wants to eat that sashimi.’

The desiderative morpheme takes an action VP to make an emotion expression. It stands in sharp contrast to *garu*, which takes an emotion expression to make an action VP. Thus, the desiderative morpheme can best be called an “emotionizer”.

It should come as no surprise that the emotionizer and the de-emotionizer can embed each other. Not only X¬-ta *garu* and X¬-gari *ta* but also X¬-gari *ta garu* is possible. When the two alternation triggers occur one after another, the requirements with regard to the case marking of a preceding NP compete. It is the case requirements imposed by the de-emotionizer *garu* that override those imposed by the emotionizer *ta*, no matter which order they occur in.
(20) kono sasimi {a. *ga / b. o} tabe ta garu.
that sashimi NOM ACC eat DESIDERATIVE act like

'x acts like x wants to eat that sashimi.'

(21) kono kodomo {a. *ga / b. o} kawai gari ta i.
that child NOM ACC hold-dear act like DESIDERATIVE COP

'I feel like acting like I hold that child dear.'

The nominative marking is not allowed on the object of the transitive verb *tabe* in (20), despite the fact that the VP is the complement of the desiderative adjective. Similarly, the desiderative adjective *ta* in (21) falls short of admitting the nominative postposition after the stimulus-denoting NP object of an emotion verb two levels down; there is a contrast between its behaviors in (19) and in (21).

4.4. Fourth person, imperatives, and infinitives in Finnish

4.4.1. A fragment of Finnish

Finnish differs in many respects from the two languages we have considered in this chapter. Its verbs are inflected for the person and number feature of their subject; its nouns are the locus of a dozen or so structural and local cases; its constituent order is more free than in the other languages.
I present here a brief fragment of the Finnish grammar to give the reader a feel for what syntactic features are to be employed in the following discussions. This fragment is not to be taken as anything like a complete list of Finnish syntactic patterns. Most notably, I do not seek here to provide phrase structure rules that would admit "scrambled" strings. The various values of some syntactic features used in this fragment, e.g., BSE, INF, PTCP1, PTCP2, and ACC1, shall be motivated in APPENDIX E.

\[
\begin{align*}
S & \longrightarrow NP[\text{CASE: NOM}] \ VP \\
VP & \longrightarrow V[5] \ VP[\text{VFORM: BSE}] \quad \text{ei 'not', ūlä 'not'} \\
VP & \longrightarrow V[6] \ VP[\text{VFORM: INF}] \quad \text{yrittää 'try', haluta 'want', tahda 'want',} \\
& \quad \text{alka 'begin', aikoa 'be about to',...} \\
VP & \longrightarrow V[11] \quad \text{laiskotella 'laze around', juokse 'run',...} \\
VP & \longrightarrow V[12] \ NP[\text{CASE: ACC1}] \quad \text{syö 'eat', myy 'sell', pyy 'demand',...} \\
VP & \longrightarrow V[12] \ NP[\text{CASE: PART}] \\
VP & \longrightarrow V[13] \ NP[\text{CASE: PART}] \quad \text{kunnioittaa 'honor', rakastaa 'love'...} \\
VP & \longrightarrow V[14] \ NP[\text{CASE: ACC1}] \quad \text{käskeä 'order', anta 'let',} \\
& \quad \text{salli 'permit',...} \\
VP[\text{VFORM: INF}] & \longrightarrow V[7] \quad \text{ei 'not', on 'have'} \\
VP[\text{NUM: } \alpha] & \longrightarrow V[7] \\
& \quad \text{luule 'think', uskoa 'believe',} \\
VP[\text{NUM: } \alpha; \text{PER: } \beta] & \longrightarrow V[8] \\
& \quad \text{sanoa 'say', tietää 'know'}
\end{align*}
\]

---

14 See Karttunen (1989) for a proposal about scrambling.
4.4.2. Accusative 2 in the scope of the Fourth Person

Although no Finnish noun or pronoun has four different forms for the cases, Nominative, Genitive, Accusative 1, and Accusative 2, one ought to recognize the existence of these inflectional categories. This is the only way of keeping syntax free from morphology, since at least one class of lexemes provide distinct forms (e.g. *talon* and *talo*) for a position where the unique accusative form (e.g. *kenet* of another class of lexemes occurs.\(^\text{15}\) The realization component of morphology is assumed to

\(^{15}\) One may imagine a description of Finnish in which my two accusative cases are dispensed with in favor of one Accusative, by having syntax assign case Nominative to impersonal pronouns and singular nouns only in those constructions to which I would assign Acc-
provide each nominal lexeme with appropriate forms in accordance with one of the three syncretism patterns in Table 4.1. The Finnish lexicon ought to specify those lexemes which are associated with Pattern A.\textsuperscript{16} The remaining nominal lexemes would be associated with either Pattern B or C, contingent upon the absence or presence of the plural inflection.

cusative 2. Such an analysis is proposed by Jacobson (1984) for English, where the distinction between nominative and accusative is motivated only by pronouns. Such analyses compel syntax to take a peek into morphological details, thus going against the spirit of Morphology-Free Syntax advocated by Zwicky and Pullum (1986) and Zwicky (1988, 1989). An analysis of case in English in which syntax assigns Nominative or Accusative to first and third person pronouns, but not to second person pronouns would be a violation of Zwicky and Pullum's principle.

\textsuperscript{16} This is a proper subset of pronouns, which Nevis (1981) labels "personal pronouns." The members of this group are minä 'I', sinä 'you', hän 'he/she', me 'we', te 'you guys', he 'they', and kuka 'who'. 
Table 4.1. Case syncretism patterns of Finnish nominals

<table>
<thead>
<tr>
<th></th>
<th>Nominative</th>
<th>Genitive</th>
<th>Accusative 1</th>
<th>Accusative 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern A</td>
<td>I</td>
<td>minä</td>
<td>minun</td>
<td>minut</td>
</tr>
<tr>
<td>who</td>
<td>kuka</td>
<td>kenen</td>
<td>kenen</td>
<td>kenen</td>
</tr>
<tr>
<td>Pattern B</td>
<td>it</td>
<td>se</td>
<td>sen</td>
<td>sen</td>
</tr>
<tr>
<td>house</td>
<td>talo</td>
<td>talon</td>
<td>talon</td>
<td>talo</td>
</tr>
<tr>
<td>Pattern C</td>
<td>houses</td>
<td>talot</td>
<td>taloje</td>
<td>talot</td>
</tr>
<tr>
<td>boys</td>
<td>pojat</td>
<td>poja</td>
<td>pojat</td>
<td>pojat</td>
</tr>
</tbody>
</table>

The direct object of a transitive verb in the fourth person takes the accusative 2. Nevis (1981) calls this Objective Nominative; Whitney (1977: 241) calls it the short accusative. This is illustrated by (22).

(22) Poika viedään kouluun

boy ACC 2 take FERS 4 school ILLATIVE

'The boy is being taken to school.'

The accusative 2 is not allowed when the verb is ordinarily inflected, as is shown by (23); it is not the nominative case, although the accusative 2 form is identical with the nominative on the singular common nouns like *poika*. This latter point is shown by the inappropriateness of the personal pronoun in its nominative form, replacing *poika* in (22).
(23) Minä viedin {a. pojan / b. *poika} kouluun
I NOM took boy ACC 1 boy ACC 2 school ILLATIVE

'I took the boy to school.'

4.4.3. Accusative 2 in imperative sentences

The imperative sentence in Finnish has the verb in the base form, with or without the subject NP expressed. The verb is followed by *aa/*āa if the (understood) subject is first or second person plural; it is followed by oo/*ōō if the subject is third person. This sequence is then followed by the personal endings: mme First Person Plural, tte Second Person Plural, n Third Person Singular, and t Third Person Plural. The first person singular cannot be the subject of any imperative sentence, whether understood or expressed. In case the subject is second person singular, the imperative sentence has the simplest form: it does not have the long vowel; nor does it have the personal ending.

The imperative sentences whose subject is first or second person are another environment in which the direct object is required to take Accusative 2. (24) illustrates this.
(24) a. Tuo kirja taloon
   bring book ACC 2 house illative
   ‘Bring the book into the house.’

b. Lähettäämme poika koulun
   send aa 1 PL boy ACC 2 school illative
   ‘Let us send the boy to school.’

c. Hän tuokoon kirjan taloon
   she bring oo 3 SG book ACC 1 house illative
   ‘She is to bring the book into the house.’

Note that replacing kirjan, the ACC 1 form, for kirja in (24a) results in an unac-
ceptable string; so does replacing pojan.

It is not just the NP dominated immediately by the imperative VP node
that is marked ACC 2. Any object NP occurring in an imperative VP must be so
marked, if it is not the direct object of a verb that governs a quirky case. Thus,
when there is an embedded VP in an imperative sentence, the noun phrase within
the embedded VP is also required to be in ACC 2. Consider the following from
Ross (1967: 180).

(25) koeta pyytää {a. *pojan / b. poikaa} tuomaan {a. *kirjan / b. kirja}
   try IMP ask boy ACC1 PARTITIVE bring book ACC1 ACC2
   ‘Try to ask the boy to bring the book.’
4.4.4. Accusative 2 in infinitive subjects

The verb phrase whose verb is inflected ta/tâ can be used as the subject of a sentence. In this case, the object NP of the infinitive is required to be marked ACC 2. An example of a verb that combines with an infinitive subject is tâytyy 'be obligatory' in (26).

(26) Minaun tâytyy lukea kirja

i GENITIVE be obligatory read INF book ACC 2

'To read the book is obligatory of me.'

Having kirjan instead results in an unacceptable string.

4.5. Georgian Verb Series

Georgian is a language which is most exotic in my view. Its exotic appearance is due more to the lack of diverse grammatical descriptions of it than to the lack of its study to begin with: Aronson (1990) is a faithful recapitulation of Tschénkeli (1958) and features highly parochial terms such as series, screeves, stem formants, preverbs, and prevowels. Circumfixes abound in their grammar. I approach this language from a very different angle, in the hopes of demystifying it; some fundamental facts of its verbal morphology are recast in APPENDICES F and G. This section is
as much an extension of those APPENDICES as a juxtaposition to the preceding sections of this chapter.

We are now in a position to introduce the alternating patterns of case government in the two series of Georgian finite verbs: the Present-Future series (Present, Imperfect, Conjunctive Present, Future, Conditional, and Conjunctive Future) and the Aorist series (Aorist and Optative). In a transitive clause whose verb is in the Present-Future series, the subject NP must be nominative and the object, accusative.

(27) ƙac-i kal-s ƙl-av-s.

man NOM woman ACC kill PRES 3S/3S

'The man kills the woman.'

When the verb from Conjugation class 1 is in the Aorist series, its subject NP must be ergative, and its object, nominative. Any case marking other than the ones in (28) yields an ungrammatical sentence.

(28) ƙac-ma kal-i mo ƙl-a.

man ERG woman NOM PREVERB kill AORIST 3S/3S

'The man killed the woman.'

An intransitive verb from Conjugation class 3 requires its subject to be nominative in the Present-Future series, and ergative in the Aorist series.
(29) a. ქარ-ი ძე-რი-ს.
    man NOM cry PRES 3S

    'The man cries.'

b. ქარ-ნა ძე-რი.
    man ERG cry AOR 3S

    'The man cried.'

Similarly, no other case marking is allowed in the sentences in (29).

A remark is in order here to clarify the notion subject in the language. I take the person/number markers on the verb as the only criterion with which to tell the subject from a nonsubject argument in Georgian.\(^{17}\) If one array of person/number markers occurs both in a transitive clause and in an intransitive clause, then that array is taken to mark agreement with the subject. Any other argument should be taken as an object.\(^{18}\) This array of agreement markers is given below.

\(^{17}\) This is an unfortunate but natural consequence of the limited nature of my access to the language. A substantial amount of field work is obviously called for, in order to see whether the subject according to the agreement pattern criterion is the subject according to other criteria as well.

\(^{18}\) Although a distinction is often made between the direct object and the indirect object, there does not seem to exist any formal evidence that justifies such a distinction. Thus, those "relative intransitive" verbs, which have an IO-agreement marker, could be taken as transitive verbs. I do not know of any syntactic difference between the benefactive object and the patient object in this language.
Table 4.2. Subject Agreement Marking on Georgian Verbs

<table>
<thead>
<tr>
<th>SINGULAR</th>
<th>PLURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>v-</td>
</tr>
<tr>
<td>2</td>
<td>. . . t</td>
</tr>
<tr>
<td>3</td>
<td>. . . s</td>
</tr>
</tbody>
</table>

A verb that belongs to what is traditionally called Conjugation class 2, which I view as a syntactic combination of a Conjugation class 1 verb and the auxiliary verb *eb*, cooccurs with the nominative subject in all tense/aspect inflections. This would be accounted for by taking *eb* to govern the nominative case on its subject.\(^\text{19}\)

This alternative analysis of Conjugation class 2 “verbs” as syntactic combinations sheds new light on the formatives Aronson (1990) calls stem formants. The auxiliary verb *eb* is nothing but a member of his stem formants, which occupy Slot 7 of the following sub-template of Georgian verb affixes.

---

\(^\text{19}\) This is parallel to the quirky case government phenomena in Icelandic to be discussed briefly in Chapter V. The nominative case is not to be seen as the default case of the subject noun phrase in Georgian, unlike in Icelandic. If anything, the ergative (a.k.a. narrative) is to be taken as the default.
Table 4.3. Aronson’s Template for Verbal Affixes in Georgian

<table>
<thead>
<tr>
<th></th>
<th>PV</th>
<th>II</th>
<th>P/FSF</th>
<th>Causative</th>
<th>Imperf,</th>
<th>Screeve</th>
<th>Markers</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7</td>
<td></td>
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<td>8</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-a-</td>
<td>R</td>
<td>-d-</td>
<td>-am</td>
<td>-ev</td>
<td>-d-</td>
<td>I conj., present,</td>
<td>-i II conj.</td>
</tr>
<tr>
<td>-i-</td>
<td>O</td>
<td>-av</td>
<td>-in</td>
<td></td>
<td>III conj.</td>
<td>future, imperf.,</td>
<td></td>
</tr>
<tr>
<td>-u-</td>
<td>O</td>
<td>-eb</td>
<td>(-eb-)</td>
<td></td>
<td>-od-</td>
<td>II conj.</td>
<td>cond.</td>
</tr>
<tr>
<td>-e-</td>
<td>T</td>
<td>-ob</td>
<td></td>
<td></td>
<td>III conj.</td>
<td>-e conj.; aorist</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-i</td>
<td>with PSF</td>
<td>(weak); opt.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(-op)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-i-</td>
<td>(II. conj. in -d-)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-o opt. (weak)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-a opt. (strong)</td>
<td></td>
</tr>
</tbody>
</table>

One remarkable property of stem formants is that they systematically fail to occur in the aorist and optative inflections. Thus, according to Aronson (1990: 113), “regular verbs of the I. conjugation form the aorist from the future stem by: a. dropping the future stem formant, if any, and b. adding the aorist endings: -e (first and second persons), -a (third person singular), and -es (third person plural).” Of the other inflection, he simply states that “the optative of regular verbs is formed from the same stem as the aorist.” (1990: 142) Most verbs occur with a stem formant in the three other finite inflections. Those verbs which are not accompanied by a stem formant even in the Nonpast, Past, or Conjunctive inflection are called root verbs and they include čer ‘write’, grez ‘twist’, arčev ‘choose’, and qep ‘bark’.
The regularity in the distribution of stem formants suggests that they are syntactic words. The fact that they do not occur in the aorist and optative inflections can be accounted for (i) if they are taken as verbs whose inflectional paradigms have gaps in those two inflections or (ii) if the aorist and the optative are nondistinct from the past and the conjunctive, respectively. I will show that the first move does not simplify the grammar of Georgian in a way the second does.

If the stem formants are regarded, to some Georgian grammarians’ surprise, as enclitic verbs which take a VP as their complement, then one can blame their absence from an aorist or optative form of a “verb” on their defective paradigm. These auxiliary verbs, which lack aorist and optative forms, do have their Nonpast, Past, and Conjunctive forms. Most of ordinary verbs would be defective in that they do not have Nonpast, Past, and Conjunctive forms: these forms would have to be periphrastic. For example, in *ašenelbdne* ‘build CONJUNCTIVE’, the base form of the operand verb *ašen* is followed by the appropriate inflected form of the clitic auxiliary verb. It is not just the massive defection of virtually all verbs’ inflectional paradigm, but also the complementary nature of the pattern of defection that suggests that this may be a wrong analysis. The only verbs of Georgian that have all the possible finite forms are root verbs. But then, they lack the base form, governed by the auxiliary verb. One would have to say, under this assumption, that every verb is defective in Georgian, which is not an attractive conclusion.

If one regards the aorist and the optative as being nondistinct from the past
and the conjunctive, then the observation that "stem formants" do not occur in the former inflections can be accounted for by the following move:

(30) a. Each Georgian verb inflects in accordance with one of the six paradigms, A, B, C, D, E, and F.

b. Four paradigms, i.e., C, D, E, and F, are defective in that they provide only past and conjunctive forms, lacking the nonpast form.

c. The first and second paradigms are not defective in this way.

d. Root verbs, i.e. those which never combine with a "stem formant", are systematically ambiguous: for every root verb that belongs to paradigm A, there is a homophonic verb with predictable meaning difference in paradigm F.

e. Paradigm B has only one member in it, namely əba.

The membership of Paradigm A is greater than that of Paradigm E by the number of "stem formants." The majority of Georgian verbs employ either paradigm C or paradigm D, the former being employed by more verbs than the latter is. Table 4.4 is a compact summary of the exponence of Georgian verb inflections. The finite forms are those of third person singular/third person plural.
Table 4.4. Georgian Verbal Inflections

<table>
<thead>
<tr>
<th>Paradigms</th>
<th>Stems</th>
<th>Base</th>
<th>Nonpast</th>
<th>Past</th>
<th>Conjunctive</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ob</td>
<td>—</td>
<td>ebs/eben</td>
<td>ebda/ebdnen</td>
<td>ebdes/ebdnen</td>
</tr>
<tr>
<td>A</td>
<td>av</td>
<td>—</td>
<td>ars/aven</td>
<td>arda/avdnen</td>
<td>ardes/avdnen</td>
</tr>
<tr>
<td>cer1</td>
<td>'write'</td>
<td>—</td>
<td>çera/çeren</td>
<td>çerda/çerdnen</td>
<td>çerdes/çerdnen</td>
</tr>
<tr>
<td>grex1</td>
<td>'twist'</td>
<td>—</td>
<td>grexs/grexen</td>
<td>grexda/grexdnen</td>
<td>grexdes/grexdnen</td>
</tr>
<tr>
<td>B</td>
<td>ebo</td>
<td>'become'</td>
<td>—</td>
<td>eba/ebian</td>
<td>eboda/ebodnen</td>
</tr>
<tr>
<td>C</td>
<td>ašen</td>
<td>'build'</td>
<td>ašen</td>
<td>—</td>
<td>ašena/ašenes</td>
</tr>
<tr>
<td>imeor</td>
<td>'repeat'</td>
<td>imeor</td>
<td>—</td>
<td>imeora/imeores</td>
<td>imeoros/imeoron</td>
</tr>
<tr>
<td>scav1</td>
<td>'study'</td>
<td>scav1</td>
<td>—</td>
<td>scavls/scavles</td>
<td>scavlos/scavlon</td>
</tr>
<tr>
<td>mal</td>
<td>'hide'</td>
<td>mal</td>
<td>—</td>
<td>mala/males</td>
<td>malos/malon</td>
</tr>
<tr>
<td>igor</td>
<td>'roll'</td>
<td>igor</td>
<td>—</td>
<td>igora/igores</td>
<td>igoros/igoron</td>
</tr>
<tr>
<td>isçav1</td>
<td>'be studied'</td>
<td>isçav1</td>
<td>—</td>
<td>isçavela/isçavlen</td>
<td>isçavlos/isçavlon</td>
</tr>
<tr>
<td>D</td>
<td>içer</td>
<td>'be written'</td>
<td>içer</td>
<td>—</td>
<td>içera/içemen</td>
</tr>
<tr>
<td>imal</td>
<td>'hide self'</td>
<td>imal</td>
<td>—</td>
<td>imala/imalnen</td>
<td>imalos/imalon</td>
</tr>
<tr>
<td>E</td>
<td>şend</td>
<td>'be built'</td>
<td>şend</td>
<td>—</td>
<td>şenda/şendnen</td>
</tr>
<tr>
<td>meord</td>
<td>'be repeated'</td>
<td>meord</td>
<td>—</td>
<td>meorda/meordnen</td>
<td>meordes/meordnen</td>
</tr>
<tr>
<td>F</td>
<td>grex2</td>
<td>'twist'</td>
<td>—</td>
<td>—</td>
<td>grexa/grexes</td>
</tr>
</tbody>
</table>

Those verbs that have their base form may combine with the auxiliaries *eb* or *ebo*. There is a syntactic restriction on this combination, which is otherwise very productive: *ebo* combines with an intransitive verb, whereas *eb* may combine with either transitive or intransitive verb whose meanings are compatible with it. It happens that members of two of the above conjugation classes, i.e. D and E, combine
with *ebo*, whereas none of them combine with the auxiliary verbs in conjugation class A. Thus, *isçavl* ‘be studied’, *šend* ‘be built’, and *čild* ‘be made to blush’ can have the enclitic auxiliary verb *ebo* following them. They, however, cannot have the other enclitic auxiliary, i.e. *eb*, following them.

Both analyses lead to massive defection. No matter which analysis is adopted, every Georgian verb lacks one or other inflected form. They come out even in this respect. It is the smaller number of inflections that declare the second analysis the winner. Only three finite inflections need to be posited if Aorist is identified with Past, and Optative, with Conjonctive.

A remark is in order here to locate the language in the accusative–absolutive axis. In the analysis I put forward in this section, Georgian is mainly an accusative/nominative language. In other words, the patient-denoting NP is the direct object of transitive verbs and the agent denoting NPs are not the grammatical object. However, the language is not thoroughly on the accusative/nominative basis. As is shown in APPENDIX F, the periphrastic construction involving the auxiliary verb *gopna* features an absolutive/ergative alignment. The direct object of a transitive verb whose mother node (VP) is sister to the auxiliary denotes the agent of the event. Therefore, Georgian is a predominantly accusative/nominative language.

Case alternations on the subject NP of the language are now reanalyzed as follows. What I have called "verbs that employ Paradigm x" in order to not confuse the reader between Aronson’s (1990) conjugation classes and my new verb
groups, I will call conjugation class x from now on, hoping that Aronson’s have been completely forgotten by now.

(31) a. All verbs in Conjugation classes A, B, and D require their subject NP to be in the nominative case.

b. All verbs in Conjugation class E require their subject NP to be in the ergative case.

c. All transitive verbs in Conjugation classes C and F require their subject NP to be in the ergative case.

d. All intransitive verbs in conjugation class C require their subject NP to be in the nominative case.

Similarly, the alternation on the object NP of the transitive verbs can be viewed as case government. This is summarized in (32).

(32) a. The transitive verbs of Conjugation class A govern the accusative case on their object NP.

b. The transitive verbs of Conjugation classes C and F govern the nominative case on their object NP.

This reanalysis accounts for the whole range of alternations except one, without appealing to different tense/aspect inflections.

Left unaccounted for is the fact about the case of the object NP of transitive verbs in “Present/Future series.” In other words, the VP that is the sister of the auxiliary verb eb has to have its daughter NP marked accusative, although the
transitive verb in the VP would otherwise require the NP to be in the nominative case. And this is not what the statements above predict. We will return to this problem in Section 6.2.

4.6. Taking Stock

In this chapter, I have surveyed case alternations on the direct object in four languages, i.e., Korean, Japanese, Finnish, and Georgian, that have no semantic consequences and involve all transitive verbs in the language. These alternations are far more interesting than the alternations that are triggered by a proper subset of transitive verbs, e.g. the alternation between NP[ACC] and PP[DAT] in English (*give him a penny* vs *give a penny to him*) and the similar alternation, as in *kyay lul so lul cwu* ‘give the child a cow’ vs *kyay hanthey so lul cwu*, between PP[ACC] and PP[DAT] in Korean.²⁰

The alternations described in this chapter are different from the ones in CHAPTER III. Unlike the alternations in Tagalog, Russian, and Korean (PP[ACC] vs NP), those in this chapter are triggered or conditioned by some element(s) outside of the verb phrase. This is why they are called syntactic alternations. Note

²⁰ The double accusative string in Korean does not sound perfect to me in a simple sentence. For those idiolects in which such a string is acceptable, i.e. those with which Maling (forthcoming) and the works she cite are concerned, PP[ACC] and PP[DAT] alternate and this alternation is lexical alternation.
that a pair of phrase structure rules with accompanying semantic rules would be sufficient for the description of all nonsyntactic alternations in CHAPTER III: the lexical alternations as in Tagalog, the semantic alternation between the genitive and accusative in languages like Russian, and the discourse-organizational alternation between PP[ACC] and NP in Korean. The same analytical move won't do the job for the syntactic alternations described in CHAPTER IV. It leads to massive overgeneration of unacceptable sentences, thus making the description fail on the desideratum of soundness.
CHAPTER V.

DEPTH-\(n\) GRAMMARS

5.1. Introduction

The case alternations on direct object which are dubbed “syntactic” and presented in CHAPTER IV present difficulties for grammatical formalisms that are currently available. In order to account for them in a principled manner, some thought must be given to formal language theory. The reader is to recall that soundness and tractability are among the desiderata for descriptive adequacy I put forth in CHAPTER I. It is all too natural for a working linguist to worry about the expressive power of his or her framework.

A context free grammar \(G\) is a quadruple \((N, T, P, S)\), where \(N\) is the set of nonterminal symbols, \(T\) is the set of terminal symbols, \(P\) is the set of production rules of the form (1), and \(S\) is the designated start symbol in \(N\).

\[
(1) \ A \rightarrow \alpha
\]

\(A\) in (1) ranges over \(N\) and \(\alpha\) ranges over \((N \cup T)^*\).
Both Government and Binding framework and its precursor Classical Transformational Grammar recognize "base rules" that are CF; Generalized Phrase Structure Grammar relies on basic rules and derived rules (via metarules), both of which are CF, as the only rules. In work in this tradition, the syntactic dependency between a node and its granddaughter, e.g. between A and D in the tree (2), can only be encoded through the mediation of another node, e.g. C, which is in the path from the node and its granddaughter.

(2)

In other words, the dependency between nodes A and D can only be captured by the application of the following two rules:

(3) \( A[F_a] \rightarrow B \quad C[F_a] \)

(4) \( C[F_a] \rightarrow D[F_a] \quad E \)

It is not only the dependency between a node and its granddaughter but also that between a node and its niece that cannot be encoded in a direct way, in this tradition of linguistic descriptions.
This chapter shows how a change can be made to the definition of CF grammars, particularly to the rule format, in such a way that a rule can describe dependencies between any pair of nodes in a finite tree. Section 2 introduces Depth-$n$ Grammars and proves that their weak generative capacity is the same as that of Type 2 Grammars in the Chomsky hierarchy. In Section 3, examples from natural languages are analyzed in a Depth-$n$ Grammar. Metarules are formulated for manner-adverbs and a subject-to-subject raising verb in Icelandic. Semiproductive constructions from English and case alternations on the object NP of Korean emotion verbs are shown to be amenable only to a Depth-$n$ Grammar. I suggest topics for future research in the extension of this chapter, in the last section.

5.2. The Proof

A Depth-$n$ Grammar $G$ is a quadruple $(N, T, \bigcup_{i=1}^{n} P_i, S)$, where $N$ is the set of nonterminal symbols, $T$ is the set of terminal symbols, $S$ is the designated symbol in $N$, and $\bigcup_{i=1}^{n} P_i$, the union of $P_1$ through $P_n$. For any number $n(\geq 1)$, $P_n$ is of the form (5).

(5) A $[\rightarrow \alpha_{n-1}]$, where A ranges over $N$, and $\alpha_{n-1} \in (N \cup T)^*$, if $n = 1$,
$
\alpha_{n-1} \in (N \cup T \cup \bigcup_{i=1}^{n-1} P_i)^*$, otherwise.

The first case above makes sure that $P_1$ be of the form (6),
(6) $A \rightarrow \alpha$

where $\alpha$ is in $(N \cup T)^*$. Conventional context free phrase structure grammars are strongly equivalent to Depth-1 grammars.

It seems appropriate to give an example here. A Depth-$n$ Grammar ($n \geq 3$) can include production rule (7).

(7) $A \rightarrow B \rightarrow D \quad E \rightarrow F \quad G] \quad C$

This rule serves to describe a structure which is represented arboreally in (8).

(8)

I hope it is by now evident why there need to be a pair of brackets enclosing everything in (5) but the symbol at the leftmost edge. Without the brackets, a production rule would be ambiguous as to whether a symbol is a sister, an aunt, or a grandaunt (and so on) of a symbol to its immediate left.¹ Thus, (9), which is

¹ The term “grandaunt” is to be understood as referring to a sister of the grandmother. An ordinary English expression for this relative is either aunt or great-aunt. A $(\text{great})^n$ grandaunt in this paper is a sister of the $(\text{great})^n$ grandmother.
exactly the same as (7) except that it does not have any

(9) A → B → D E → F G C

brackets, would not only correspond to the tree (8) but also to (10), for one.

(10)

```
   A
  /|
 / |\
B   G
   /|
  / |\
D   E
   /|
  / |\
   F
```

There are as many as four trees besides (8) and (10) that would correspond to (9), as the reader is invited to confirm.

For every Depth-\(n\) Grammar, a Depth-(\(n-1\)) Grammar can be systematically obtained. It is done by converting every \(P_n\) into its corresponding \(P_{n-1}\). The correspondence is many-to-one and total. The procedure is:

(11) Locate every pair of brackets which does not contain any brackets and, for each such pair, erase the symbol which immediately precedes the opening bracket, the arrow which immediately follows the opening bracket, and the pair of brackets themselves.

By applying this procedure once to the production (7), repeated here as (12a), one obtains a Depth-2 rule (12b). (12c) is obtained by applying it once to (12b).
There is no $P_n$ that cannot be converted to a $P_{n-1}$, for any $n(>1)$. The fact that more than one $P_n$ can be converted to one and the same $P_{n-1}$ does not affect this proof in any way. It would, however, directly show that the strong generative capacity, in the sense of Chomsky and Miller (1963:297) and Chomsky (1963:325-326), of Depth-$n$ Grammars differs from that of conventional context free phrase structure grammars.

It is by applying the conversion procedure (11) recursively (and iteratively) to every production rule in $G$ that a Depth-1 Grammar $G'$ is arrived at from a Depth-$n$ Grammar $G$. Since a Depth-1 Grammar is, by definition, strongly (and, of course, weakly) equivalent to a CF grammar, we have shown that Depth-$n$ Grammars generate the same string sets as CF grammars. In other words, the two grammar formalisms have exactly the same weak generative capacity.

5.3. Applications
5.3.1. An easy example: "VP-external" adverbs

Widespread though the kinds of syntactic patterns that are amenable only to the extended strong generativity of a Depth-n Grammar are, not every complex pattern requires this power. Before turning to the former kind of patterns, let us consider a case where Depth-1 rules with a feature-sharing principle would suffice.

Adverbs in English come in three varieties, according to McConnell-Ginet (1982): Ad-Verbs, Ad-Sentences, and VP-external adverbs. They occur in various positions in a sentence. Certain of the positions resist some adverbs. For instance, what Brodie (1983) calls VP-adverbs do not occur in front of an auxiliary verb, although they do occur in front of an ordinary verb and at the end of a verb phrase. The meaning of the whole sentence often does not vary with the position of an adverb. This is presumably why Brodie (1983:66) employs Linear Precedence statements to capture, on one hand, the flexibility in the positioning of her VP-adverbs, and, on the other hand, the restrictions on it. However, some adverbs do make different contributions to the sentence meaning as they occur in different places. Consider the sentences in (13) and (14), taken from McConnell-Ginet (1982:159).

(13) a. Minnie carelessly forgot her mother's birthday.

b. # Minnie forgot her mother's birthday carelessly.

(14) a. Louisa rudely answered Patricia.

b. Louisa answered Patricia rudely.
While (13a) does not say anything about the manner in which Minnie forgot her mother’s birthday, it says that it was careless of her to forget her mother’s birthday. (13b) is odd presumably because forgetting is not the kind of activity that can be done in a careless manner. Similarly, (14a) says that Louisa answered Patricia and it was rude of her to do so. (14b) does not suggest that Louisa’s answering Patricia per se comprises rudeness.

These adverbs intervene between the subject noun phrase and the verb phrase of a sentence. Yet, no grammatical relations between the two, except for one concerning morphological words, are affected by the intervening adverb. For example, number agreement between the subject NP and the verb works the same way no matter whether there is an adverb in front of the VP. Note (15).

(15) a. Some people walk their dogs without a leash.
   b. *Some people walks their dogs without a leash.
   c. Some people carelessly walk their dogs without a leash.
   d. *Some people carelessly walks their dogs without a leash.

In order to describe the syntactic behavior of these “VP-external” adverbs, including their nonobligatory nature, there must be phrase structure rules of the form (16) as well as of the form (17) in any grammar of English which purports to do away with anything other than phrase structure rules as regards its syntactic component.
(16) VP [→ V ω]

(17) VP [→ ADV[LCLASS:123] V ω]

The generalization over the two sets of phrase structure rules, (16) and (17), can be captured by the following statement:

(18) For every rule that forms a VP whose initial constituent is a verb, there is a corresponding rule that adds ADV[LCLASS:123] at the beginning (where careless, rudely, ... are in ADV[LCLASS:123]).

The qualification "whose initial constituent is a verb" is meant to capture the limit on the number of these VP-initial adverbs: no more than one adverb of the class in question can occur in front of the head verb. The badness of (19), where two "VP-external" adverbs occur before the verb, falls out naturally.

(19) *They rudely carelessly ate all of the cookies.

Another way of encoding the generalization expressed in (18) would be by substituting the following phrase structure rule (ps rule, henceforth) in (20) for the set of ps rules (17).

(20) VP [→ ADV[LCLASS:123] VP]
A difference between an approach with (20) and one with (16) together with (18) lies in the constituent structure assigned. (20) assigns the structure VP to what follows the adverb; (18) and (17) assign sisterhood to the three elements, namely, the adverb, the verb, and its complement. Another difference is that (20) does not in itself put any restriction on the number of adverbs that can come before the verb, while (17) cum (16) does.

Deciding between these two analyses is a taller order than I am ready to fill. Intuitions are fleeting about the acceptability of VP-Ellipsis examples involving VPs extended with an initial adverb. The precise membership of LCLASS 123 has to be known before any decision can be made.

Given the generalization that a VP with an initial adverb must have all syntactic properties of an adverbless VP, the approach with (17) would have to make sure that all the relevant syntactic features on the mother VP be the same as the features on the distinguished daughter node, V. The notion head and the syntactic principle known as the Head Feature Convention do just that. The ps rule (20), in the same vein, should be interpreted in such a way that every feature specified on the VP node to the left of \( \rightarrow \) is also specified on the VP daughter. This task can be achieved, as in Gazdar et al. (1985), by taking VP to be the head daughter and by taking all the replicated syntactic features to be head features. (The reader should note that Gazdar et al. (1985) do not require the head daughter to be of bar level lower than its mother node. The bar levels can be the same and,
in fact, they are taken to be the same by default.) In any case, the phenomenon of “VP-external” adverbs does not appear to pose any problems for current linguistic theories.

5.3.2. Icelandic quirky cases

A solution as easy as this is not always available. If the material which intervenes between the two interdependent constituents, i.e. the subject NP and the VP, is a verb, then it is not clear why VP, rather than V, should be treated as the head. In fact, finiteness features and subject agreement features typically occur on the V, not on the VP. The difficult case comes from phenomena like Icelandic quirky-case subjects. The verb virðast ‘seem’ in this language is a Subject Raising verb and it agrees with the subject noun phrase in person and number, when the subject NP is in the nominative case.

(21) a. Ég elska stúlkuna.
   I love girl
   ‘I love the girl.’

b. Við elskum stúlkuna.
   we love girl
   ‘We love the girl.’
c. Drengurinn elskar stúlkuna.

boy      love       girl

'The boy loves the girl.'

(22) a. Æg virðist elska stúlkuna.

I    seem      love      girl

'I seem to love the girl.'

b. Við virðumst elska stúlkuna.

we   seem      love      girl

'We seem to love the girl.'

c. Drengurinn virðist elska stúlkuna.

boy    seem      love      girl

'The boy seems to love the girl.'

Examples (23) and (24) from Yip et al. (1987:240) illustrate how the case of the subject NP is conditioned by the verb batna 'recover from'. (The subject NP cannot be in any other case than the dative.)

(23) Barninu batnabi veikin.

child DAT recovered from disease NOM

'The child recovered from the disease.'
(24) Barninu virtist batnaði veikin.

child DAT seemed recovered from disease NOM

'The child seemed to recover from the disease.'

The intervening verb *virðast* 'seem' does not affect the case government properties of the verb in the embedded VP. While the subject NP in the dative case calls for an appropriate verb and this requirement is passed on to the VP, the finiteness (and the tense) is marked on the higher verb. The finite verb does not agree with oblique subjects, as Andrews (1981:468) notes.

This phenomenon would best be described with a depth-2 ps rule like (25). The verbs in LCLASS:98 include *batna* 'recover from' and *synast* 'think-see' (Andrews 1982:462). Some intransitive verbs also take the dative subject: *mælæst* 'speak', *linir* 'abate', and *hvolfu* 'capsize'.


It is, however, not just verbs that govern the dative case on the subject: "There are also predicate adjectivals and nominals taking genitive and dative subjects (Andrews 1982:463)." A drawback, pointed out by Zwicky (personal communication), of (25) is the fact that it does not reveal the generalization that only words of certain syntactic categories impose this restriction on the case of the subject. I take the prominence of the role of a verb in quirky-subject government to be a consequence
of the obligatoriness of the presence of a verb in the minimal constituent which properly includes a subject. Thus, adverbs and prepositions in a VP do not figure as a governor of the quirky case on the subject of the sentence. If (25) is on the right track, the ordinary subject-predicate rule would play no role in the admission of sentences that involve a quirky subject. The distribution of virðast as in such sentences as (22) a–c evidently calls for (26).

(26) VP [→ V[LCLASS:11] VP[BSE]]

What is needed in the Icelandic grammar in addition to (25) and (26) is (27), and it could be added either directly or via a metarule.

    VP[BSE][→ V[98] NP[CASE:NOM]]]]

In case (27) is added via a metarule, the metarule would be: “If both (25) and (26) are in the grammar, then so is (27). This sort of metarule predicts a ps rule based on two ps rules, and it is most specific among such rules in that it does not involve

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2 Whether this fact is to be precluded by the very architecture of the grammar is not immediately evident. The question whether it is just rare or it is impossible cannot be adequately answered, given the sparseness of crosslinguistic data as regards case government. I am inclined to take whatever a grammar as weak as a CF grammar can describe to be possible in one or another natural language, insofar as the grammar is fully restricted by a feasible performance theory or a theory of component interface.
any variable over strings. In order to determine to what extent a metarule can be
generalized, one might consider a metarule of the following form:

(28) If the grammar contains $p_1, p_2, \ldots, p_n$, and if it contains $q$, then it also contains
$\tau_1, \tau_2, \ldots, \tau_n$.

Whether this sort of metarule is necessary is an empirical question. Is there any
other place in the grammar where the quirky case is imposed on the subject NP by
the verb? Yes, of course. First, there are declarative sentences which consist of a
topicalized NP and the remainder of the sentence. Secondly, there are interrogative
sentences. Thirdly, there are other words than batna that require the subject NP to
be in the dative case. Fourthly, there are verbs that require some other quirky case
besides dative on their subject NP. If, in all these instances, the Raising property
of the verb virōst is retained, then the metarule should be at least as general as
(29).

(29) If the grammar contains

$$X \rightarrow ω \ NP[\text{CASE}:κ] \ ψ \ VP[\rightarrow V[\rightarrow x] ϕ]$$

and if it contains

$$VP \rightarrow V[\text{LCLASS}:11] \ VP[\text{BSE}]$$,

then it also contains

$$X \rightarrow ω \ NP[\text{CASE}:κ] \ ψ \ VP[\rightarrow V[\text{LCLASS}:11] \ VP[\rightarrow V[\rightarrow x] ϕ]].$$
Whether (29) is at the right level of generality and whether metarules of this flavor would force the grammar beyond the power of context sensitive (Type 1) grammars, are some of the important questions I do not attempt to answer in this dissertation. Incidentally, the format of this metarule is quite similar to the adjunction operation in Tree Adjoining Grammars developed by Joshi and his colleagues. (See Joshi, Levy, and Takahashi (1975), Joshi (1987) and Harbusch (1990) for Tree Adjoining Grammars.)

The metarule above does not say anything about Subject-to-object Raising verbs like tekur ‘believe’. The dependence of the case of the direct object NP of a Subject-to-object raising verb on the verb of its VP-complement is to be expressed by the phrase structure rule that introduces the construction whose head verb is a Subject-to-object Raising verb. The following rule and its analogs do the job.

\[
(30) \text{VP} \rightarrow \text{V[LCCLASS:14] NP[CASE:DAT]} \text{VP} \rightarrow \text{V[LCCLASS:98] NP[CASE:NOM]}
\]

Although a metarule analogous to (29) can express the dependence at issue in a more general fashion, it is impossible to encode explicitly the generalization that the case of a controller NP must be the one governed by the quirky-case governing verb of the VP-complement regardless of whether the construction involves Subject-to-subject Raising or Subject-to-object Raising. It is not characteristic of this grammar to “miss” this generalization. I do not know of any grammar that can explicitly encodes
it. As far as we content ourselves with the requirement that every significant generalization be at least implicit, there is nothing objectionable to the approach presented in this subsection.

5.3.3. The X-er..., the X-er... and other semi-productive constructions

The kind of phenomena which demands the strong generative capacity of a Depth-n Grammar is widespread. Particularly pervasive among them is what I will call semiproductive constructions. A semiproductive construction corresponds to Fillmore and others' (1988) "formal idioms". I assume, with Zwicky (1989a), that there is a theoretically important boundary between idioms and constructions. Although a construction may well be difficult to tell from an idiom, there is one interesting way of distinguishing between them. According to Zwicky (1989a:445), "[An idiom's

3 In Head Driven Phrase Structure Grammar, the quirky-case government phenomena are captured by SUBCAT features of two groups of verbs. Sag, Karttunen, and Goldberg (1991) appeal to SUBCAT \( \{[1][\text{CAT NP}], \begin{bmatrix} \text{CATVP} \\ \text{FORMINF} \\ \text{SUBCAT}([1]) \end{bmatrix} \} \) for Subject Raising Verbs and to SUBCAT \( \{\text{CAT NP}, [1][\text{CAT NP}], \begin{bmatrix} \text{CATVP} \\ \text{FORMINF} \\ \text{SUBCAT}([1]) \end{bmatrix} \} \) for Object Raising verbs. These lexical entries go proxy for my metarule (29) and its unwritten companion for Object Raising verbs. Note that phrase structure rules that introduce one zero-bar node and zero or more phrasal node can be eliminated in favor of the SUBCAT list of lexical items in HPSG.
pattern] instantiates certain specific syntactic constructions”, while a syntactic construction does not instantiate an idiom. In other words, syntactic constructions are not parasitic on idioms, whereas idioms are parasitic on constructions. This point is illustrated by (31a) from Fillmore et al. (1988), which uses a construction of Proportional Dependence, and the dismissive idiom (31b) from Zwicky (1989a).

(31) a. The bigger they get, the harder they fall.
    b. Go jump in the lake.

The Proportional Dependence construction contains two sentences, each of which is preceded by the definite article the. However, a depth-1 ps rule like (32) won’t do the job: it would not generate any sentence one of whose constituent sentences involves an extraction; it would generate such sentences as (33) which are not acceptable.

(32) S [→ the S the S]

(33) *The John loves Mary, the Mary gets happy.

The overgeneration problem can be solved with a depth-2 ps rule like the following.

(34) S [→ the S [→ XP[CMPR] S||XP] the S [→ YP[CMPR] S||YP]]
The feature CMPR is a FOOT feature associated not only with the comparative form of adjectives and adverbs but also with certain determiners, namely more and less, and with an adjectival or adverbial phrase that contains more or less. This feature would have to be a sort of FOOT feature much like [WH] in Gazdar et al. (1985). The feature VSLASH, indicated by || in (34), is exactly like SLASH except that it can have an adverbial phrase as its value. While a better analysis of this construction would have to unify SLASH and VSLASH, (34) is a more precise rule than (32).

Another semiproductive construction that exemplifies the strong generative capacity of a Depth-n Grammar nicely is what I shall call the construction of Insufficient Causal Relation. (35) illustrates this.

(35) Just because you are well informed does not mean that you are always right.

The subject of this sentence is a clause headed by the adverbial subordinator because. No other adverbial subordinators can introduce a clausal subject. The fact that just is required immediately before because is quite idiosyncratic; so is the requirement that the verb be mean, show, prove, entail, or imply and it be negated. The complement of the transitive verb mean has to be sentential, as is evident with the badness of *Just because you are rich does not mean anything. This construction has two positions of sentences wide open. No syntactic restriction is imposed on either of the two positions, as far as I know.
A ps rule like (36), which is maximally flat, would not do on at least two counts.

(36) \[ S \rightarrow \textit{just because} \ S \textit{does not} \ V[\text{I.C;ASS:71}] \textit{that} \ S \]

First, it does not assign the right constituent structure. The fact that this construction instantiates the subject-predicate construction is not suggested at all by (36). Presumably related to this drawback is the other that \textit{does not} \( V \) \textit{that} figures as a totally set expression. There is no clue as to how the omissibility of the complementizer \textit{that} and the possibility of such adverbs as \textit{automatically, necessarily, or always} to intervene between \textit{not} and \( V[71] \) is to be implemented in a grammar that contains this rule. Adding these expressions with parentheses and curly brackets would necessarily fail to relate these facts to the other part of the grammar of English. It is clear now that (37) offers a better analysis.\(^4\)\(^5\)

\(^4\) Some words are introduced syncategorematically here, which runs against the "No words without a category" spirit voiced by Zwicky (1989b). I do not intend anything theoretical by this failure to assign every word to some category. It is only for convenience's sake. \( S_{adv} \) stands for adverbial clause, and, \( C_{np} \), for conjunction phrase.

\(^5\) The omissibility of the complementizer doesn't need to be stipulated, since for every VP that consists of a verb and an SB, there is a corresponding VP that consists of the verb and an S. Similarly, the intervening adverbs do not need to be mentioned specifically, because for every VP consisting of \textit{not} and VP there is a corresponding VP consisting of \textit{not}, \( ADV[9] \), and the VP. (\( ADV[9] \) is the class of adverbs mentioned above.)
(37) \[ S[\rightarrow S_{adv} \[\rightarrow C_{nj}P[\rightarrow just \ because] S]\]

\[ VP[\rightarrow V[LCLASS:2] VP[BSE][\rightarrow not]\]

\[ VP[\rightarrow V[LCLASS:71] SB[\rightarrow that \ S]]]]\]

English offers still another set of structures that is conducive to a Depth-n Grammar approach as opposed to the conventional CF grammar approach. As noted by Zwicky (1989b), these structures involve use of prepositions which idiosyncratically mark the object arguments of particular verbs. \textit{Insist on}, \textit{puzzle over}, \textit{adhere to}, \textit{rebel against}, etc. all combine with a noun phrase. Although the prepositions do not contribute to the semantics of the whole string in any predictable way, the combination \textit{"P NP"} differs from ordinary object NPs of transitive verbs in that it can be separated from its verb by other constituents of VP. The sentences in (38), drawn from Zwicky (1989b), illustrate this point.

(38) a. The entire populace rebelled yesterday in the capitol against the government.

b. *The rebels overturned yesterday in the capitol the government.

Yet, the combination \textit{"P NP"} functions as a syntactic constituent, as is shown by the sentences below, drawn again from Zwicky (1989b).

(39) a. Against all such ideas we must rebel.

b. Against what did they rebel?
These structures would best be described by a depth-2 rule, though there is room for a depth-1 analysis which entertains the possibility of having as a Head feature the problematic feature PFORM. The feature PFORM of Gazdar et al. takes lexemes as its values. It serves the same purpose as our LCLASS, which is not a head feature. I assume that PFORM (and NFORM as well, as is discussed in APPENDIX E) is not available.

5.3.4. Emotion expressions in Korean

If my treatment of the semantics of Korean emotion verbs in Section 4.2 is on the right track and if Pullum and Wilson’s (1977) view on English auxiliary verbs can be profitably adopted in the analysis of the Korean “de-emotionizer” e ha ‘act like’ and “emotionizer” ko siph ‘want’, it is evident that Korean emotion verbs are subcategorized for a nominative PP (see (40a) and (40b)), that the nominative case has to be overridden by accusative when the emotive VP is a sister to e ha (the unacceptable (41a) vs. the acceptable (41b)), that ko siph allows its sister VP to contain a nominative PP as the argument of its transitive verb ((42a) is perfect).

(40) [ ] congswu {a. ka / b. *lul} pulep –sumnita

Chongsoo NOM ACC envy NONPAST DECL

‘I envy Chongsoo’
Most emotion verbs combine with a stimulus-denoting NP via the nominative postposition and this combination must be viewed as a verb phrase. The NP cannot be the subject of the sentence, because it fails to trigger subject honorification on the verb. The combination “stimulus NP P[NOM] V_{emotion}” works as a VP with respect to VP anaphora with a zero pro-VP.\(^6\) The utterance b1 in (43) is perfect, whereas b2 is awkward when uttered by an interlocutor of the speaker of a.\(^7\)

\[(43)\text{ a. congswu ka pulep -sumnita.} \]

\[\text{Chongsoo NOM envy NONPAST DECL} \]

‘I envy Chongsoo.’

b1. na to.

I also

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\(^6\) Note that none of the six derived deictic verbs, \textit{id}, \textit{idle}, \textit{kule}, \textit{kuleh}, \textit{cele}, \textit{celeh} comfortably go proxy for a wide variety of VPs. The six verbs are derived from demonstratives, \textit{\textit{id}} ‘this’, \textit{k}u ‘that (near you)’, and \textit{ce} ‘that (away from both of us)’. Those which have \textit{-leh} are statives (\textit{idleh} ‘be like this’, etc.); those which have \textit{-le} are nonstatics.

\(^7\) In fact, (43) b2 is unacceptable no matter what the context is.
'Me, too.'

b2. *na nun congswu emma ka.

  i  DLM Chongsoo mother NOM

'I (do) Chongsoo's mother.'

Under the assumption that the zero propredicate cospecifies with the denotation of a verb phrase, but not with that of a substring thereof, the awkwardness of (43b2) falls out in a straightforward manner.

The following rule is thus motivated, which forms a VP headed by an emotion verb. LCLASS:9 includes all and only transitive emotion verbs.

(44) VP [→ PP[NOM] V[LCLASS:9]]

Providing this rule alone does not account for the acceptability contrast made by the two sentences in (41). What is called for is a ps rule that imposes the accusative case on the stimulus PP of the emotion verb when this VP is a sister of the distinguished verb ha. Rule (45) does just that, with LCLASS:88 indicating the singleton set {ha}.


It follows from the absence of a ps rule which would combine an unspecified VP with the verb ha that (41) is ungrammatical. That the object NP of an ordinary
transitive verb can be marked with the nominative postposition when, as in (42a), the VP is embedded within a VP headed by siph is best captured by a depth-3 rule like (46).

(46) \( \text{VP} \rightarrow \text{VP[VFORM:ko]} \rightarrow \text{PP} \rightarrow \text{NP P[NOM]} \text{ V[LCLASS:3]} \text{ V[LCLASS:89]} \)

This rule is available as an option on a par with two other rules, both of which are of depth 1: the PP[ACC] \( V_{tr} \) rule and the VP[VFORM:ko] \( \text{V[LCLASS:89]} \) rule. Thus, when the verb siph combines with a VP in accordance with the latter rule, it results in an object NP marked with the unsurprising accusative postposition.

As the two VP-taking verbs, ha and siph, can embed each other, both VP-\( e \) ha-\( \text{ko} \) siph and VP-\( \text{ko} \) siph-\( e \) ha are admitted. In these situations the alternations in case compete. The accusative imposed by the de-emotionizer \( e \) ha is the winner, as is shown by (47) and (48).

(47) [ ] congswu \{a. *ka / b. lul\} kwiyew-e ha-\( \text{ko} \) siph-\( \text{SUMNITA} \)

'i feel like acting like I hold Chongsoo dear'

(48) mila ka pay \{a. *ka / b. lul\} mek-\( \text{ko} \) siph-\( e \) ha -\( \text{MNITA} \)

Meera NOM pear NOM ACC eat feel like act NONPAST DECL

'Meera acts like she feels like eating a pear'

The rules presented above correctly predict the contrast in the acceptability of (47a) and (47b). However, this set of rules fails to account for the acceptable (48b), because there is no rule that combines a VP headed by siph with the de-emotionizer...
ha. It is important to note that I have not provided any ps rule which would combine an unspecified VP with ha. Had one been provided, (48b) would be accounted for. A bad consequence of such a rule would be a wrong prediction with respect to the string (48a). In conjunction with (46), the putative “VP ha” rule would admit it as being grammatical. What is needed instead is a rule that combines an unspecified VP with siph and then combines this constituent with ha.

(49) VP[→ VP [VFORM:e] [→ VP [VFORM:to] V[LCLASS:89]] V[LCLASS:88]]

All the daunting complexities exhibited by the sentences and nonsentences in this subsection are captured, without any unpleasant side effects.

5.4. For Future Research

I would like to suggest some research topics that lie on the horizon set by this chapter, especially with reference to computational linguistics. First, an adequate parsing algorithm for Depth-n Grammars has to be constructed. As far as I can see, all that is needed is a slight generalization of existing parsing algorithms for CF grammar. The maximum depth of rules might have to be decided before such an algorithm is attained. Related to this topic is the discovery of more syntactic phenomena that are not as amenable to depth-1 grammars as to Depth-n Grammars. Still another line of research could aim at integrating the virtues of existing grammatical frameworks into a Depth-n Grammar.
CHAPTER VI.

SYNTACTIC ALTERNATIONS IN A Depth-$n$ Grammar

6.1. Introduction

In the previous chapter, a formalism was introduced in which syntactic dependencies between any pair of nodes that are removed from each other by an arbitrary number of intervening nodes can be encoded. This formalism, called Depth-$n$ Grammars, was contrasted to conventional Context Free grammars, which were shown to be strongly equivalent to Depth-1 Grammars. While many syntactic patterns can be described straightforwardly by a Depth-1 grammar, it was noted in 5.3 of Chapter V that other syntactic patterns cannot be appropriately described by a Depth-1 grammar: a Depth-$n$ Grammar, where $n$ is greater than 1, is to be preferred over a Depth-1 grammar.

One of the syntactic patterns that motivate Depth-$n$ Grammars over and above Depth-1 grammars was the case alternation facts revolving around Korean emotion expressions. In this chapter, I will show that all the facts depicted in Chapter IV, under the heading ‘syntactic alternations’, share this property of being amenable only to a Depth-$n$ Grammatical analysis. The alternation between nominative and accusative on the direct object of Georgian verbs is seen as the simplest
of them: it requires a depth of two. It is clear that the other facts, i.e. those of Korean, Japanese, and Finnish, demand a depth of at least three. I will discuss them in 6.2.

A comparison of case alternation facts in terms of the depth of the local trees that have to be accessed in one fell swoop leads to a very interesting observation that the higher \( n \) gets, the rarer the phenomena whose proper description demands an access to structures of depth no less than \( n \). This hierarchy of syntactic complexity offers a common ground on which different syntactic constructions in different languages can be compared to each other. Depth-1 phenomena are the most widespread. Depth-2 phenomena are slightly rarer than Depth-1 phenomena. Depth-3 phenomena are rarer still.

A naturally arising question, when constructions which bear no functional or semantic resemblance are compared with each other, is what the limit of complexity is. What is the value of \( n \) such that there exists a phenomenon whose proper description demands an access to a structure of depth \( n \) but there does not exist any phenomenon in any language whose proper description demands an access to any greater depth? The answer to this question would depend very much on the other necessary assumptions about the architecture of grammar. It also depends on specific decisions on what to do with the so-called unbounded dependencies such as \( wh \)-extractions, topicalizations, and multiple options in constituent order. I do not want to address these issues in this dissertation. I content myself with saying
that there might be an analysis of these phenomena in which it is not necessary to access structures of any greater depth than the other phenomena in the same language would demand. The complexity issue will be taken up in 6.3, where the discussion will be confined to case alternations on the direct object of verbs in Korean.

6.2. Syntactic Alternations Revisited

In Chapter IV, a description was given of the case alternations on the direct object of transitive verbs that are triggered by syntactic environments. The languages involved were Korean, Japanese, Finnish, and Georgian. Of these four, Georgian poses the least difficulty.

Every transitive verb in Georgian governs the nominative case on its direct object. If and only if the object NP occurs in a VP that is a sister of the auxiliary verb eb, it takes the accusative case. The phrase structure rule in (1) is all that is needed for this alternation.

(1) VP [→ VP[→ NP[ACC] V[LCLASS:2]] V[LCLASS:77]]


As nothing can intervene between the auxiliary verb and its VP complement, there is no need to provide any other phrase structure rules, especially one of a
depth greater than 2. The only thing that needs to be added specifically is that
the auxiliary verbs in LCLASS:77 should not be allowed to combine with a VP
whose internal structure is not fixed. This means that the intransitive verbs also
have to be specified within the VP that is a complement of the auxiliary verb.

In Finnish, as we saw in Chapter IV, the transitive verb requires the second
accusative case on its direct object if and only if the verb phrase is the subject of a
sentence (and is in the infinitival form), it is inflected for the fourth person, or it is
inflected for the imperative. The sentences that contain an infinitival VP as their
subject can be admitted by the phrase structure rule (2).

(2) S \[\rightarrow \text{VP} \ \text{VP[VFORM: INF]}[\rightarrow \text{V[LCLASS:12]} \ \text{NP[CASE: ACC2]}]\]

As we have to assume that there is a rule that expands a VP node into an object
NP in its ACC1 and a transitive verb, a rule like (3) must not be provided, in order
to block the unacceptable string (4) and its analogs.

(3) S \[\rightarrow \text{VP} \ \text{VP[VFORM: INF]}\]

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1 It should be assumed that the phrase structure rule \(\text{VP} \rightarrow \text{NP[NOM]} \ \text{V[LCLASS:2]}\) is
in the grammar. Also, for those verbs that govern the accusative case on their object NP,
the rule \(\text{VP} \rightarrow \text{NP[ACC]} \ \text{V[LCLASS:3]}\) has to be provided.
(4) *Minun täytyy lukea kirjan.
I GENITIVE be obligatory read INF book ACC1

'(Intended) To read the book is obligatory of me.'

Other verbs than those of LCLASS 12 are also subcategorized for an NP in ACC1 and the infinitive subject VP headed by such a verb similarly trigger case alternation on the NP it dominates. For instance, such verbs as käskeä ‘order’ and anta ‘let’, etc. are subcategorized for an NP and a VP. The direct object NP of these verbs have to be in ACC2, if the whole VP is an infinitive subject of a sentence.

(5) Minun täytyy käskeä poika juokse.
I GENITIVE be obligatory order INF boy ACC2 run INF

'It is obligatory of me to order the boy to run.'

This string and its analogs cannot be admitted unless the grammar of Finnish contains the rule in (6), which is exactly the same as (2) except for the expansion of the VP that immediately dominates the locus of ACC2.


Nothing I have said so far admits the following string, in which the infinitival VP in the subject position has itself an embedded VP.
(7) Minun täytyy yrittää lukea kirja.

i GENITIVE be obligatory try read INF ACC2

'To try to read the book is obligatory of me.'

A rule like (8) has to be provided so the acceptable sentences like (7) get admitted by the grammar.

(8) S [→ VP VP[VFORM: INF][→ V[LCLASS:6]]

VP[→ V[LCLASS:12] NP[CASE: ACC2]]]

This is a rule of depth 3. The innermost VP may consist of an intransitive verb, an intransitive verb preceded by an adpositional phrase, etc. Other rules of depth 3 have to be added accordingly.

Exactly the same has to be said about another syntactic environment that triggers ACC2 on the direct object of Finnish transitive verbs. Just like the infinitive VP that is sister of VP, the imperative VP is an environment in which the transitive verb must combine with an NP in ACC1. An NP in ACC1 in such an environment leads to ungrammaticality. The details of case requirements remain the same in imperative VPs as in infinitive subject VPs. Therefore, rules that are needed to account for such structures are isomorphic to (2), (5), and (7) in that the relevant VP expansions are the same, with the only difference being whether the environment is S [→ VP —— ] or the features [VFORM:IMPERATIVE; PERS:1V2].

The last environment for ACC2 is, as we recall from Section 4.4, the fourth person on the verb phrase. The rules that are needed to account for ACC2 in the
direct object position of the impersonal sentences, i.e. the sentences with no subject and a VP in the fourth person, are again isomorphic to (2), (5), and (7). The only difference this time lies in the fact that the feature-value \text{[PERS:4]} figures as the trigger.

The basics of the alternation between the accusative and the nominative on the direct object of Japanese transitive verbs was addressed in Section 4.3. The more complex aspects of this alternation, revolving around the interaction between the emotionizing auxiliary \text{ta} 'feel like' and the deemotionizer \text{garu}, has not been depicted, but it is essentially parallel to the facts of Korean presented in 5.3.4. The parallelism between these two languages that obtains in the domain of emotion expressions and case alternation involving them is stated in (9).

(9) a. A few dozen basic vocabulary items are emotion predicates.

b. There is one and only one VP-taking emotion predicate.

c. All emotion predicates are stative.

d. There is one and only one verb that combines with an emotion predicate phrase and gives a nonmotive nonstative VP.

e. A transitive emotion predicate governs the nominative case on its direct object.

f. The direct object of a transitive emotion predicate cannot be in the nominative if the immediately dominating phrase is sister to the deemotionizer.

g. The direct object of an ordinary transitive verb may be in the nominative case, if the immediately dominating VP node is sister to the emotionizer.

h. When a VP is sister to the emotionizer, the direct object of the VP may not be in the nominative if and only if the immediately dominating phrase, i.e. the mother node of \text{VP emotionizer}, is sister to the deemotionizing verb.
i. When an emotion predicate phrase is sister to the deemotionizer, the direct object of the emotion predicate may not be in the nominative even if the VP node immediately dominating $\text{VP}_{\text{emo}}$ (or $\text{AP}_{\text{emo}}$) and $\text{V}_{\text{deemotionizer}}$ is sister to the emotionizer.

It was shown in 5.3.4 that the facts (9) a through i as regards Korean can be captured in a Depth-$n$ Grammar ($n \geq 3$). The crucial part of this descriptive success, aside from the novel formalism, is due to not allowing the deemotionizer, ē ha ‘act like’ to combine with a VP whose content is not specified. Instead, the deemotionizing auxiliary combines with a VP whose content is fixed in one way or another. For each such combination, a rule of depth-$n$ ($n \geq 2$) has to be provided.

A completely analogous analysis can, and must, be given to the facts (9) a–i as regards Japanese. The only difference lies in the category membership of the emotion predicates. It is an adjective in Japanese, while it is a verb in Korean. The AP combines with a verb as its complement. When the verb is the copula, there is no effect on the case requirement pattern within the emotion phrase. The deemotionizer, garu ‘act like’ is subcategorized for an AP. There, however, should not be any ps rule in the Japanese grammar which combines the deemotionizer with an unspecified AP. Instead, a few depth-$n$ ($n \geq 2$) rules have to be provided for structures that contain the deemotionizer. Apart from whether the deemotionizer is subcategorized for AP or for VP, Japanese and Korean are totally analogous.
6.3. Limits to complexity

In the preceding chapter and in 6.2 of this chapter, ps rules of depth greater than 1 were shown to be required for a grammar that purports to meet the desiderata layed out in 1.4 of CHAPTER I. Rules of this nature can now be regarded as the most prominent formal property that unify the facts of case alternation on direct object which I call syntactic.

As the facts get more and more complex, the depth of ps rules required gets greater. It was shown in 5.3.4 and in the preceding subsection that Korean and Japanese require there to be at least one ps rule of depth-3 in their grammar. A naturally arising question is: what is the upper bound of the depth?

I do not have an answer to this question. It is an empirical issue. The only thing that can be said now is that a grammar must be able to have a rule of depth 3. Right now, there is no known fact in any language that requires an access to depth 4 or greater. It is a challenge to working grammarians to come up with such facts. It might well be that that is about where the complexity of human language stops.

Does this mean that there is no recursive structure in human language? No, it does not. There could still be infinite recursion. Note that a single ps rule of depth no greater than 1 can describe a recursive structure. The important thing is that there is no free interaction between recursive structures and what I call
depth-n phenomena. For some reason, the interaction stops quite soon. English VP-external adverbs, discussed in 5.3.1, do not stack up; no auxiliary intervenes between the alternation triggers such as *eb* and *ob* and their complement VP in Georgian; nothing other than *po* ‘to see what would happen’, *twu*, *noh* ‘do in advance’ intervenes between the alternation trigger *siph* ‘feel like’ in Korean and the mother node of the case alternation site; nothing other than *miru* ‘to see what would happen’ intervenes between the alternation trigger *ta* ‘feel like’ and the mother node of the case alternation site in Japanese.

Auxiliary verbs in general enter into free recursion. In so far as there is no semantic conflict between the auxiliary verb and its complement phrase, they can combine. A quite prolonged recursion is in fact possible. Consider the following Korean sentence, (10).

(10) epsay noh-a peli-ko siph-e ha-ci mal -ala.

remove in advance resolutely want act like don’t IMP

‘Don’t act like you want to resolutely remove it in advance.’

As many as five branchings of the VP node into VP and V are involved in this structure. I can not determine what would be the limit of recursion on the VP. However, when any of the rules that expand VP into VP and V has to specify the internal structure of the VP daughter, i.e. when a rule of depth-n \((n \geq 2)\) is involved, the freedom of recursion is significantly reduced. For example, the direct
object of an ordinary transitive verb in the language cannot be in the unusual
nominative any longer, if the auxiliary intervening between it and the alternation
trigger *siph. This point is illustrated by (11).

(11)  *ce  suphakeythi  ka  mek-e  peli-ko  siph  -ta.
      that spaghetti  NOM eat  resolutely want  DECL

All auxiliary verbs besides the three listed in the previous paragraph are subject to
this restriction.

A truly ingenious semantic account might be able to be given to the re-
striction on intervening auxiliaries, in the next few centuries. Such a semantic
account would have to give meanings to those structural cases like nominative and
accusative and somehow bring those meanings to bear upon the unacceptability of
(11) as opposed to its perfect counterpart which has the accusative postposition in
place of the nominative. Until, if ever, such a semantic account becomes available,
one can content oneself with relying on the methodological principle of Tradeoff be-
tween Unacceptability and Ungrammaticality and decide that strings like (11) are
not only unacceptible but are also ungrammatical. The syntactic component gets
simpler by taking them as ungrammatical, since fewer ps rules have to be provided.
CHAPTER VII.

CONCLUSION

A highly restrictive grammatical framework, whose prominent properties I present in CHAPTER I, is successfully applied to the descriptive domain of case alternations on VP-internal arguments. Interesting alternation phenomena fall either under the group of lexical, semantic, or discourse-organizational alternations (i.e. those alternations in meaning not coupled with morphosyntactic difference in case or those morphosyntactic alternations which give rise to constant semantic or discourse-organizational difference) or under the group syntactic alternations. Lexical, semantic, and discourse-organizational alternations do not pose difficulty for syntactic descriptions.

The alternations on the case of direct object in languages like Korean, Japanese, Finnish, and Georgian, which have to be viewed as lacking semantic consequences and as being not triggered by designated verb lexemes, pose great difficulty to existing grammatical frameworks that are context free, in the traditional sense. This leads me to propose a new grammar formalism, i.e. a Depth-$n$ Grammar, a grammar in which ps rules can describe local trees of depth-$n$ ($n \geq 1$). It is shown that a Depth-$n$ Grammar can successfully describe all the observed
case alternation facts discussed in CHAPTER IV. An important point of difference between a Depth-\(n\) Grammar and conventional CF treatments is that a crucial ps rule of depth-1 in a less sound grammar has to be replaced with a set of ps rules of depth-\(n\) in the more sound Depth-\(n\) Grammar. The number of the substituting ps rules has a very low bound, due to our methodological principle of Tradeoff between Unacceptability and Ungrammaticality.
APPENDIX A. A LIST OF KOREAN EMOTION VERBS

comacomaha ‘be worried over some imminent outcome’
maynglangha ‘be displeased at’
isangha ‘be puzzled at’
pulssangha ‘pity’
mot-mattangha ‘be discontented with’
chelyangha ‘be melancholy at’
chayngphiha ‘be ashamed at’
sinkiha ‘be intrigued at’
cekcekhha ‘be lonely at’
ekwulha ‘feel bad at (a wrong accusation)’
ssulssulha ‘be melancholy at’
ssupssulha ‘feel bitter at’
simsimha ‘be bored of’
hansimha ‘be in the emotional state of dismissing’
koayssimha ‘feel unappreciated by’
kwungkumha ‘wonder’
mianha ‘be sorry for’
pulanha ‘be uncomfortable about’
manmanha ‘be comfortable dealing with’
muanha ‘be embarrassed at’
siwenha ‘feel relieved at having no longer to be concerned with’
taykyenha ‘be proud of’
hulyenha ‘feel relieved at having no longer to be bothered by’
sewunha ‘feel unappreciated because of’
phikonha ‘feel tired at’
punha ‘be angry at’
holkapunha ‘feel relieved at being unassociated with’
ttapunha ‘be bored at’
chocoha ‘be nervous’
kosoha ‘be glad at X, which is a misfortune’
klapkapha ‘feel confined at’
taptapha ‘be sorry for not being understood/be sorry because of’
sepsepha ‘be sorry for’
ppututha ‘feel rewarded’
cilwuha ‘be bored at’

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sangkhoałyha ‘be pleasant at’
pulkhoałyha ‘be unpleasant at’
coh ‘like’
silh ‘dislike’
kwichanha ‘feel bothered by’
kyemyençek ‘be shy about’
pankap ‘be glad to see’
ttakap ‘feel stung by’
chakap ‘feel cold or chilly from’
akkap
‘feel reluctant to spend/want to conserve’
anthakkap ‘feel sympathetic with and
be unable to help’
komap ‘be grateful to’
musep ‘be afraid of’
twulyep ‘be afraid of and awed by’
malyep ‘feel a need for defecating’
tep ‘be warm or hot’
wenmangúslep ‘resent’
ttupek ‘be hot’
elyp ‘not feel at home with’
songkwusúlep ‘be apologetic for’
yekkep ‘be disgusted by’
ansúlep ‘be concerned with’
kekçengsúlep ‘be worried about’
calangsúlep ‘be proud of’
cikye ‘be bored at’
pulphyenha ‘feel uncomfortable at’
hansúlep ‘be bitterly sorry for’
hwuhoysúlep ‘regret’
taykyensúlep ‘be proud of’
pulep ‘envy’
pukkulep ‘be ashamed of’
ttelp ‘feel challenged by’
kancilep ‘feel tickled’
kalyep ‘feel itchy’
culkep ‘be pleased at’
ecilep ‘feel dizzy at’
kulip ‘long for’
mip ‘loathe’
yalmip ‘hate’
anikkop ‘be pissed off by’
kasołop ‘cannot help laughing at’
øylop ‘feel lonely at’
koylop ‘find distressful’
chwup ‘be cold’
kyepe ‘feel pity for’
aphu ‘feel pain’
sulphu ‘grieve over’
kippu ‘be delighted at’
APPENDIX B. THE VERB PHRASE

AS A COMPLEMENT OF VERBS

There are a few verbs in Korean which are best taken to subcategorize for a verb phrase. ¹ All these verbs resist combining with a clause, no matter how the verb of the clause is inflected. The word po ‘(do) in order to see what would happen’, included in the fragment in 4.2.1, is one such verb and its use is illustrated by (1).

(1) ku pyengali nun [ kele VP ] po

that chick DLM walk to see what would happen PAST DECL

‘That chick walked in order to see what would happen.’

(2) *ku pyengali nun chelswu ka kele po

that chick DLM Chulsoo NOM walk to see what would happen PAST DECL

¹ For a defense of the thesis that Equi- and Raising-verbs in Classical Transformational Grammar are to be treated as verbs subcategorized for a VP, rather than a clause, see Brame (1978) and Dowty (1982), among others.
It cannot be taken as a forgone conclusion that the "auxiliaries" are VP-taking verbs. In actuality, Cho (1988) and Song (1988: Ch X), among others, view all strings of V^Aux as a compound.\(^2\) An argument is called for against the common view that such a string is not a syntactic combination, but instead a word. Let me first list the morphemes over which this controversy arises. Each Aux is listed with the extension which is required right after the base form of the verb that precedes the verb, where by "extension" I mean inflectional affix.

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\(^2\) Jo (1989:22) specifically appeals to a process that "derives" an "adjectival compound verb" in dealing with the case alternation involving siph.
Table B1. Korean Auxiliary Verbs

Extension Auxiliary

ulako/lako ha 'request'

cako ha 'propose', kkosi 'talk into _____ ING'

key ha 'cause', mantul 'make', toy 'be led to'

ci anh 'not', mal 'not'

ko siph 'want', mal 'at last', na 'finish', iss 'be in the state/process of'

e/a po 'to see what would happen', pke 'have the courage to',

chiwu 'resolutely', noh 'in advance', ssah 'repeatedly', ha 'act like',

iss 'be in the state of', cuwu 'condescend to'

The evidence that ulako, cako, key etc. are inflectional suffixes comes from the fact that they are both phonologically dependent on the preceding verb and syntactically dependent on (i.e., required by) the following auxiliary. As is expected of any ordinary inflectional affix in contradistinction to a typical derivational affix, they are not selective as to the verb to which they attach.³ Absolutely nothing besides another inflectional suffix can interrupt the verb and its extension.⁴

³ The only verbs I know of that are inflectionally defective, analogously to the English verb beware, are tal 'give' and teyli 'take (bring; carry, keep).

⁴ Only one inflectional suffix can intervene between the verb stem and the extension: it
Although none of the auxiliaries that require one of -key, -ci, -ko, and -e/a can stand alone to form a verb phrase, as is demonstrated by the unacceptability of (3b) and its unlisted analogs, the sequence V~Suffix~Aux cannot be considered a syntactic word.

(3) a. kulayse, cwuk -key toy -nni?
    so die come to PAST INTERROG DWN

    'So, did x come to die?

b. *ung toy -sse
    yes come to PAST DECL EQL

There is a word-class whose members can intervene between the suffix and the auxiliary. This class is called “delimiters” (DLM), and includes nun/un, to, man, cocha, kkaci, iya/ya, and ilato/lato.5 Delimiters have to be viewed as a syntactic category, since their distribution is not confined in the way affixes are. They occur not only after an inflected verb but also after a noun or a postposition.

Another reason that the sequence V~Aux cannot be a syntactic word is that the combination is wholly productive and semantically compositional. In general, 

is the subject honorification suffix usi/si. Unlike all the other suffixes in Table B1, e/a resists combining with usi/si; it is not clear to me why the two inflectional suffixes do not comfortably cooccur.

5 The plural word tul is the only other word that intervene between the inflected verb and the auxiliary.
any verb and any auxiliary can combine with predictable meaning. Even when there is an intervening delimiter, the productivity and compositionality do not suffer. Taking the $V \sim Aux$ sequence to be immediately dominated by a single terminal node provided by syntax would make Korean morphology responsible for the tasks for which syntax is supposed to be responsible. On the other hand, taking the $V \sim Aux$ sequence to be a composite morphological word that is immediately governed by two terminal strings of syntax would be in keeping with the co-satisfaction thesis presented in Section 1.3.\footnote{Similarly, the $V \sim DLM \sim Aux$ sequence is a composite morphological word that is immediately dominated by three terminal nodes, i.e. $V$, $DLM$, and $Aux$, of syntax.}

Now that the sequence $V \sim Suffix \sim Aux$ has been shown to be a part of a syntactic combination, which happens to be a morphological word, I need to take upon myself the task of accounting for the badness of (3b). It is due to the clitic status of the auxiliary verbs that they cannot stand alone to form a verb phrase. That they do not trigger VP-Ellipsis can be ascribed to the host condition: the host must include a phonologically nonempty verb.\footnote{Given the sequence $V \sim Suffix \sim DLM \sim Aux$, and that a $DLM$ is also a clitic, the host must INCLUDE, rather than BE, a phonologically nonempty verb.} Under the assumption, made in Section 1.2, that there is no lexeme whose phonological content is empty, this host condition is equivalent to (4)
(4) The host of a clitic auxiliary verb must include a verb.

Since clitic groups are morphological words that are associated with more than one terminal node of syntax, they have to satisfy syntactic requirements as well as morphological requirements. A prominent morphological requirement on this subtype of supermoremes is that clitics combine with a host.

Following the now standard analysis of English auxiliary verbs as a subclass of verbs, defended by Pullum and Wilson (1977), I take the Korean auxiliary verbs as a subclass of verbs that take a verb phrase.\(^8\)

This VP-taking-verb analysis of auxiliary verbs is far more straightforward in Korean than in English, since the auxiliary verb is inflected in exactly the same way as the ordinary verb is.\(^9\)

\(^8\) Outside monostratal static grammars, there is a wide variety of syntactic treatments of auxiliaries: the NP \(\overline{\text{Aux}}\) VP analysis of Akmajian and Henny (1975) and the Spec of CP analysis of Government and Binding Theory, among others.

\(^9\) These enclitic verbs do not seem to have been attended to in the literature. According to Nevis (1986:103), several previous studies emphasize the fact that clitics are located either at the edges of a constituent or to the head of that constituent. The Korean VP-taking enclitic verbs, together with the Turkish copula which I discuss in No (1989a) and the various Japanese VP-taking verbs to be discussed in APPENDIX C, embody a new type of clitics, i.e. the clitics that are themselves the head of a phrase attaching to (an element of) their complement. Note that the enclitic auxiliaries like 's, 'll, and 'd in English attach not to their complement, but to (an element of) their aunt node.
APPENDIX C. SOME ENCLITIC VERBS IN JAPANESE

The difficulty of separating between syntax and morphology is aggravated when it comes to such sequences of morphemes as are not interrupted yet reveal maximum productivity and semantic regularity. Given the widespread restrictions on the order of syntactic constituents in various languages, one would do well to consider such productive-yet-unsplit sequences of morphemes a syntactic combination if a compatible syntactic analysis exists and if that syntactic analysis achieves a descriptive adequacy which would otherwise be missed. The fact that nothing intervenes between the two syntactic constituents can be stated in syntax as well. It could arise from an interaction of several statements about linear precedence relations between sisters. Another notable way in which the intervention constraint can fall out, which I utilize in this subsection, is through the syntax–morphology association principles.¹

The morphemes rasui ‘look like’ and desu ‘be’ in 4.3.1 lack some of the properties of typical independent words. They, for instance, do not stand alone to form a

¹ This type of intervention constraint is classified as Type III Intervention Constraint by Zwicky (1990).
verb phrase. The b-sentences below are unacceptable as a response to the question asked with the corresponding a-sentences.

(1) a. ano hito ga taroo rasii ka

that person NOM Taroo seem like INTERROG

'Does that person look like Taroo?'

b. *un, rasii

yes seem like

'Yes, he does.'

(2) a. ano hito ga taroo desu ka

that person NOM Taroo be INTERROG

'Is that person Taroo?'

b. *un, desu

yes be

'Yes, he is.'

If, impressed by this dependent nature, one views rasii and desu as denominal verb-forming derivational suffixes, one must recognize the possibility of a verb being modified by a clause, given the pattern in the following sentences.

(3) taroo wa anata ga atta kodomo desu

Taroo DLM you NOM met child be POLITE

'Taroo is the child you met.'
(4) kono kodomo watakusi o butta kodomo rasii
    that child I ACC hit child seem like

'That child looks like the child who hit me.'

The only reasonable analysis would be the one in which desu and rasii are verbs subcategorized for a noun phrase. The string anata ga atta in (3) and watakusi o butta in (4) would be relative clauses that modify the following noun, kodomo. This simplification of syntactic component presupposes a syntax-morphology association principle in accordance to which more than one syntactic word map onto a single morphological word. The unacceptability of (1b) and (2b) should be attributed to the clitichood of rasii and desu. The lexicon is to supply such complex morphological words as heitai-rasii, heitai-desu, kodomo-rasii, kodomo-desu, etc., but not rasii and desu per se. The complex words the lexicon makes available would be seen as filling (or “being inserted”, to use the dynamic metaphor) the equally complex terminal node [N-V].

Traditional Japanese grammar, such as Bloch (1969), recognizes adjectives as well as verbs as predicates. It is the heavy overlap between the inflectional paradigms of adjectives and verbs that led me to consider an alternative conception. Let us take a look at the “ endings of consonant verbs for the ten inflectional categories” (Bloch 1969: 10).²

² Bloch (1969:4) says “Colloquial Japanese verbs are inflected for ten categories.”
Table C1. Japanese verb inflection à la Bloch

<table>
<thead>
<tr>
<th>Case</th>
<th>Ind</th>
<th>PInd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>-u</td>
<td>-ta, -da</td>
</tr>
<tr>
<td>Passive</td>
<td>-oo</td>
<td>-taro, -daro</td>
</tr>
<tr>
<td>Imperative</td>
<td>-e</td>
<td>-tara, -dara</td>
</tr>
<tr>
<td>Appositional</td>
<td>-eba</td>
<td>-tari, -dari</td>
</tr>
<tr>
<td>Infinitive</td>
<td>-i</td>
<td>-te, -de</td>
</tr>
</tbody>
</table>

At least as far as the inflectional features are concerned, this paradigm is exactly the same as the inflectional paradigm of adjectives. Consider the following.

Table C2. Japanese adjectival inflection à la Bloch

<table>
<thead>
<tr>
<th>Case</th>
<th>Ind</th>
<th>PInd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>-i</td>
<td>-kaqta</td>
</tr>
<tr>
<td>Passive</td>
<td>-karoo</td>
<td>-kaqtaroo</td>
</tr>
<tr>
<td>Imperative</td>
<td>-karoo</td>
<td>-kaqtara</td>
</tr>
<tr>
<td>Appositional</td>
<td>-kereba</td>
<td>-kaqtari</td>
</tr>
<tr>
<td>Infinitive</td>
<td>-ku</td>
<td>-kute</td>
</tr>
</tbody>
</table>

The only inflectional feature that is missing from the “adjectival” paradigm but is present in the verbal paradigm is that of imperative. All the other features can be instantiated on an “adjective” as well as on a verb.

When one considers the phonological contents of the respective inflectional suffixes, one is again impressed by the striking overlap between the two paradigms:
all but two out of the nine end with the same segments as in their verbal counterpar
t. The Presumptive form ends with \(-oo\), the Provisional with \(-eba\), the Past
Presumptive with \(-ta\), the Past Indicative with \(-taro\), the Conditional with \(-tara\),
the Alternative with \(-tari\), and finally the Gerund with \(-te\). The overlapping seg-
ments are presented in the following paradigm.

<table>
<thead>
<tr>
<th>Ind</th>
<th>no overlap</th>
<th>PInd</th>
<th>-ta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pve</td>
<td>-oo</td>
<td>PPve</td>
<td>-taro</td>
</tr>
<tr>
<td>Imp</td>
<td>-e</td>
<td>Cnd</td>
<td>-tara</td>
</tr>
<tr>
<td>Pro</td>
<td>-eba</td>
<td>Alt</td>
<td>-tari</td>
</tr>
<tr>
<td>Inf</td>
<td>no overlap</td>
<td>Ger</td>
<td>-te</td>
</tr>
</tbody>
</table>

Table C3. Japanese verb inflection – Revised

What Bloch calls adjectives can be analyzed as Adj\(\sim\)V sequences. The overlap in
the two paradigms above follows naturally from the verbhood of the element in the
putative adjective. This alternative analysis, which I adopt in this dissertation, is
the one considered briefly by Bloch (1969). He says:

Five of these endings (Pve, PInd, PPve, Cnd, Alt) can be described
as containing a morpheme \(-kar-\), with alternant \(-kaq-\), morphophone-
mically similar to a consonant verb with base final \(-r-\); another ending
(Pro) can be described as containing a morpheme \(-ker-\), which may
also be regarded as an alternant of -kar-. The actual endings of these six forms are then identical with the corresponding endings of consonant verbs. Such an analysis reduces the total number of different endings we have to deal with; but it separates the endings of the Ind, the Inf, and the Ger from the others, and therefore fails to produce a simpler formulation than the one here adopted. (18)

He chooses the overlapping paradigms over a suppletive verb. I recognize a verb that is realized by one of the four stems: i/kar/ker/ku. Which stem is appropriate would be specified by the morphological realization rules. This verb combines with an inflectionless morpheme, which I assume to be an adjective. The syntax–morphology association principles associate the supermoreme Adj V with two terminal nodes of syntax.

Taking the i in samui ‘be cold’ and kuroi ‘be black’, etc. as a verb has important consequences. Firstly, the negative formative nai has to be seen as consisting of two morphemes, one of which is nothing but the AP-taking copula i. That the i in samui ‘be cold’ and kuroi ‘be black’ is the same word as that in samukunai ‘be not cold’ and kurokunai ‘be not black’ is evident given the commutability of these expressions. A comparison between samukunai, tabenai ‘not eat’, and tabenakunai ‘not not eat’ yields ku, which is Bloch’s infinitive suffix for the adjective, and na as morphemes. The last string directly suggests that na is not an inflectional suffix, since the same inflectional affix would not occur twice in a word. One of the
following two situations must obtain: (i) \textit{naku} and \textit{nai} are syntactic words; (ii) \textit{na}, \textit{ku}, and \textit{i} are all syntactic words. Since \textit{ku} occurs only in the position where the adjective copula occurs, it must be a suppletive form of the adjective copula. If this is the case, i.e., if \textit{ku} is a syntactic word, then \textit{na} is either a prefix or an independent syntactic word.

Since \textit{nai} cannot be replaced with \textit{i} (note \textit{tabenai} vs. \textit{*tabei} and \textit{samukunai} vs. \textit{*samukui}), and since \textit{na} does not attach to anything besides the adjective copula, \textit{na} cannot be an inflectional prefix. This leaves us with two possibilities: \textit{na} is either a derivational prefix attaching only to the adjective copula or it is an independent syntactic word. I find it highly unusual for a derivational morpheme to attach to only one word. Just as vexingly, the suppletion on the base is replicated completely when the putative derivational prefix has attached: \textit{nai}, \textit{naku}, \textit{nakatta}, \textit{nakereba}, etc. Although there do exist instances of this preservation of suppletion such as \textit{redo}, \textit{redoes}, \textit{redid}, and \textit{redone}, I take it as marked. The only natural conclusion seems to be that \textit{na} is a syntactic word.

The combination \(X\overline{\textit{na}}\) has to be of the same syntactic category as that of \textit{samu} and \textit{kuro}, for they combine with the adjective copula. The latter pair are adjectives (by declaration); as it is evident that \textit{i} combines with a phrase, the words that come before \textit{i} in \textit{samui} and \textit{kuroi} will undoubtedly be adjectives that are exhaustively dominated by the phrasal node \textit{AP}. It follows then that \textit{na} is an
adjective, namely the head of AP.³

The adjective ana/na does not combine with a noun or an adjective: *samunai, *samunakatta, *heitainai, *heitainakatta. It is subcategorized for a verb phrase. The form of the verb in the complement of ana/na must be the designated form of VFORM:1. This is what Bloch calls the Infinitive. I present below the constituent structures of konai ‘not come’ and samukunakatta ‘was not cold’.

(5)

```
(5) VP
   |   V
   |   AP
   |   i
   |   A
   |   na
   |   ko
   |   V[VFORM:2]
   |   VP[VFORM:2]
```

³ If we chose to call samu and kuro abstract nouns, then na must also be called an abstract noun. I consider it inconsequential whether they are adjectives or abstract nouns. What matters is that they are not verbs.
(6)

```
(6) VP
    |--- AP
    |     |--- V[FORM:2]
    |     |     |--- AP
    |     |     |       |--- V[FORM:2]
    |     |     |       |       |--- A
    |     |     |       |       |       |--- ku
    |     |     |       |       |--- samu
    |     |--- A
    |     |--- na
    |--- katta
```
APPENDIX D. A LIST OF EMOTION VERBS IN JAPANESE

tanosii ‘be pleased’
muzukasii ‘take to be difficult’
yasasii ‘take to be easy’
kuitai ‘take to be bothersome’
kowai ‘fear’
kanasii ‘be sad’
sabissi ‘be lonely’
atui ‘be hot’
arigatai ‘be grateful for’
hazukasii ‘be ashamed of’
hosii ‘want’
itosii ‘think tenderly of’
kawai ‘hold dear’
kutiosii ‘be regretful of’
natukasii ‘miss’
netamasii ‘be jealous of’
nikurasii ‘be hateful of’
omosiroi ‘be interested in’
osorosii ‘be fearful of’
tumaranai ‘be disinterested in’

urayamasii ‘be envious of’
iyai ‘be loathsome’
samui ‘be cold’
suzusi ‘be chilly’
osii ‘feel sorry for no longer owning’
omosii ‘be interesting’
uresii ‘be pleased’
itai ‘be painful’
ziretai ‘be bored’
isogasi ‘be busy’
kuyasii ‘be regretful of’
nasakenai ‘feel pity for’
uresii ‘be happy’
tuyoi ‘be strong’
nigai ‘feel bitter at’
okasii ‘be funny’
oisii ‘find delicious’
kayui ‘feel itchy at’
kusugutai ‘feel tickled’
<table>
<thead>
<tr>
<th>Japanese</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>turai 'feel hurt'</td>
<td>imaimasii 'feel bothered by'</td>
</tr>
<tr>
<td>tumetai 'be cold'</td>
<td>uramesii 'have a grudge against'</td>
</tr>
<tr>
<td>kusai 'find smelly'</td>
<td>darui 'feel languid'</td>
</tr>
<tr>
<td>kurusii 'feel hurt'</td>
<td>sugasugasii 'feel refreshed'</td>
</tr>
<tr>
<td>koisii 'miss'</td>
<td>setunai 'be distressed at'</td>
</tr>
<tr>
<td>kemutai 'want to avoid'</td>
<td>mazui 'find unpalatable'</td>
</tr>
<tr>
<td>omohayuui 'feel irritated by'</td>
<td>sewasii 'be restless ___ING'</td>
</tr>
</tbody>
</table>
APPENDIX E. THE VERB INFLECTION IN FINNISH

There are many inflectional categories in Finnish which are realized as distinct forms. Following the tradition of setting up a few features each with two or more values, I will slightly modify Karlsson’s (1982) analysis of Finnish verbal inflection that is characterizable as in (1).

(1) a. Every form of a verb is either a Finite form or a Nonfinite form.
    b. A Finite form is either an Indicative, a Conditional, an Imperative, or a Potential form.
    c. A Nonfinite form is either an Infinitive or a Participle.
    d. An Indicative form is either a Present, Imperfect, Perfect, or Pluperfect form; a Conditional or Potential form is either a Present or a Perfect form; an Imperative form is a Present form.
    e. A Present, Imperfect, Perfect, or Pluperfect form is either in the Active or in the Passive inflection.
    f. An Active form is inflected in Person (First, Second, or Third) and Number (Singular or Plural); a Passive form lacks a specification of Person and Number.
    g. A Finite form is either Positive or Negative.

My first worry is with (1d). Exactly the same problem arises in a heavily studied language such as English. It is only when one disregards formal criteria that one would come up with more than two values of Tense in English. I follow Jespersen
(1924:282) and Gazdar et al. (1985), among numerous others, in recognizing only two values of Tense in English. When applied to Finnish, the formal criteria reduce Perfect and Pluperfect to Nonpast and Past, respectively. (Imperfect, which in fact is a value of Tense, shall be called Past in this dissertation.) The following table summarizes my reinterpretation of Karlsson’s (1982) categories Perfect and Pluperfect. Note that sanoi ‘he said’ and oli in oli sanonut ‘he had said’ have the same suffix, namely -i, which marks past tense.

Table E1. Finnish Periphrastic Tenses

<table>
<thead>
<tr>
<th>sanoa</th>
<th>‘to say’</th>
<th>Karlsson’s</th>
<th>Revised As</th>
</tr>
</thead>
<tbody>
<tr>
<td>sanoaa</td>
<td>(he) says’</td>
<td>Present</td>
<td>Nonpast</td>
</tr>
<tr>
<td>sanoi</td>
<td>(he) said’</td>
<td>Imperfect</td>
<td>Past</td>
</tr>
<tr>
<td>on sanonut</td>
<td>(he) has said’</td>
<td>Perfect</td>
<td>Nonpast</td>
</tr>
<tr>
<td>oli sanonut</td>
<td>(he) had said’</td>
<td>Pluperfect</td>
<td>Past</td>
</tr>
</tbody>
</table>

Thus, if morphology is separated from syntax and only Past and Nonpast are considered the values of Tense, the correlation between Karlsson’s (1982) Pluperfect and Imperfect on the one hand, and the one between Perfect and Present on the other, is no longer unexpected. Now the morphological difference between Indicative on the one hand and Conditional and Potential on the other is that the latter two lack a Past inflection; the verb that is inflected for Indicative can also be inflected for Past, but the verb that is inflected for Conditional or Potential cannot. The
only oddball is Imperative, to which we will come back. Karlsson's treatment of
negation, i.e., (1g), also concerns me for a similar reason. The "negative forms",
such as ei sano 'he does not say', ei sanonut '(he) did not say', etc., are syntactic
combinations rather than morphological inflection: it inflects for person and number
and it triggers VP ellipsis. What is somewhat unusual is that the verb of negation
is highly defective in its inflectional paradigm. It does not have distinct Nonfinite
forms; nor does it have a distinct Past form (Table E2 lists three verbs in the
Nonpast and Past forms, but ei is only in its Nonpast form); it lacks Conditional and
Potential forms, too. Presumably more unnerving is the fact that it requires what
looks like the Past, Conditional, or Potential form on its sister VP, to indicate the
tense- or mood-marked negative VP. This is remarkable in that, no matter whether
it is through government or through agreement that the requirement comes about,
it is not attested to in any other language. I do not know of a verb in any other
language that governs some semantically relevant feature on its complement VP.
Neither do I know of a verb in any language that agrees with its VP complement
in terms of any feature other than number and conjugational class membership.
Table E2. Person and number inflection of the Finnish finite verb in Indicative Mood

<table>
<thead>
<tr>
<th>PERSON</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER</td>
<td>SG</td>
<td>PL</td>
<td>SG</td>
</tr>
<tr>
<td>'run'</td>
<td>laula</td>
<td>laulan</td>
<td>laulamme</td>
</tr>
<tr>
<td>'ran'</td>
<td>lauloi</td>
<td>lauloin</td>
<td>lauloimme</td>
</tr>
<tr>
<td>'open'</td>
<td>otta</td>
<td>otan</td>
<td>otamme</td>
</tr>
<tr>
<td>'opened'</td>
<td>otti</td>
<td>ottin</td>
<td>ottimme</td>
</tr>
<tr>
<td>'am/are/is'olla</td>
<td>olen</td>
<td>olemme</td>
<td>olet</td>
</tr>
<tr>
<td>'was/were'</td>
<td>oli</td>
<td>olin</td>
<td>olimme</td>
</tr>
<tr>
<td>'not'</td>
<td>ei</td>
<td>en</td>
<td>emme</td>
</tr>
</tbody>
</table>

Were it not for the Person and Number inflection on the verb of negation (see Table E2), it would be pretty safe to view the negative morpheme as a particle not very different from not in English or nye in Russian. However, the “past” meaning arising from ei~VP, where the VP is inflected in a special way, is formally unrelated to the Past inflection on the verb in Positive Indicative inflection. Coupled with the Person and Number inflection, this warrants the following analysis of ei as a VP-taking verb. The four values of VFORM in (2) are mutually exclusive. Therefore, (2) b – e have to be interpreted as providing alternative subcategorization frames of the verb.

(2) a. Ei is the main verb.

b. It requires [VFORM: BSE] on its VP complement.
c. It requires [VFORM: PTCP2] on its VP complement.

d. It requires [VFORM: CND] on its VP complement.

e. It requires [VFORM: POTEN] on its VP complement.

The Finnish negative verb occurs in as many as five subcategorization frames, including its usage as a propredicate.\(^1\) Among the Nonfinite VFORMs it governs on its complement, the Conditional and Potential are realized the same as the stem of their respective Finite forms. This is a peculiar case where a Nonfinite form is Nonfinite just because it is not inflected for Person or Number. I present these Nonfinite forms governed by *ei* and others in Table E3. Note that this revision of Karlsson's inflectional system features six Nonfinite inflections, whereas his system presented in clause c of (1) features only two.

---

\(^1\) One verb entering into this many distinct constructions may be unusual but it is not surprising at all. For one, the English verb *get* occurs in seven sharply distinct subcategorization frames: [\text{[-]} \text{VP[PAS]}], [\text{[-]} \text{AP}], [\text{[-]} \text{NP}], [\text{[-]} \text{NP} \text{NP}], [\text{[-]} \text{NP} \text{VP[INF]}], [\text{[-]} \text{VP[GER]}], [\text{[-]} \text{NP} \text{VP[PAS]}].
Table E3. The Nonfinite Verb Forms of Finnish

<table>
<thead>
<tr>
<th></th>
<th>BSE</th>
<th>PTCP1</th>
<th>PTCP2</th>
<th>COND</th>
<th>POTEN</th>
<th>INF</th>
</tr>
</thead>
<tbody>
<tr>
<td>'say'</td>
<td>sano</td>
<td>sanova</td>
<td>sanonut</td>
<td>sanoisi</td>
<td>sanone</td>
<td>sanoa</td>
</tr>
<tr>
<td>'jump'</td>
<td>hyppää</td>
<td>hyppäävää</td>
<td>hyppänyt</td>
<td>hyppäisi</td>
<td>hyppänne</td>
<td>hypätä</td>
</tr>
<tr>
<td>'get'</td>
<td>saa</td>
<td>saava</td>
<td>saanut</td>
<td>saisi</td>
<td>saane</td>
<td>saada</td>
</tr>
<tr>
<td>'need'</td>
<td>tarvitse</td>
<td>tarvitseva</td>
<td>tarvinnut</td>
<td>tarvitsisi</td>
<td>tarvinne</td>
<td>tarvita</td>
</tr>
<tr>
<td>'be'</td>
<td>ole</td>
<td>oleva</td>
<td>ollut</td>
<td>olisi</td>
<td>liene</td>
<td>—</td>
</tr>
<tr>
<td>'don’t'</td>
<td>älä</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Of the six Nonfinite forms in this Table, PTCP1 and INF are combined with certain values of case. One might take these VFORMs as requiring a nominal case and treat the instances where no particular Case seems involved, as involving the default case, i.e., the Nominative. (I am not concerned with the other INF forms, called Infinitive 2, 3, and 4, as they are clearly adverbial and thus play only predictable roles in Finnish grammar. Those VFORMs do not appear to combine with the Nominative.)

Thirdly, what Karlsson calls Passive in (1) e and f differs from the Passive in the better-known languages. Passive sentences in Finnish do not have the nominative subject NP expressed. The Passive inflection does not affect the complements of the verb on which it occurs. Thus, we encounter the following b-sentences side by side with the a-counterparts.
(3) a. minä ajelin.
    I drove 1SG

    'I drove.'

b. Englannissa ajetaan tien vasenta laitaa.
    in England drive PAS road GEN left PART side PART

    'In England one drives on the left hand side of the road.'

(4) a. minä söin sen.
    I ate 1SG it ACC1

    'I ate it.'

b. söidään se.
    eat PAS it ACC2

    'It is eaten.'

(5) a. minä sanoin, että hän kutsuu miehen.
    I said 1SG COMP she NOM invite 3SG man ACC1

    'I said that she will invite the man.'

b. sanottiin että hän kutsuu miehen.
    say PAS PAST COMP she NOM invite 3SG man ACC1

    'It was said that she would invite the man.'

For these reasons, I sympathize with those Finnish grammarians who are concerned with these differences, most notably Östman (1979), and I shall not use the term
Passive at all to refer to the *daan/daän* forms.\(^2\) I shall call them the Fourth Person forms, instead. The parallelism between First, Second, and Third Person on the one hand, and Fourth Person on the other is now quite unsurprising: all finite verbs are in one or another Person; the verbs in one of the two participial forms are in one or another Person (since they agree in Person and Number, and occasionally in Case as well, with their logical subject). Recognizing the Fourth Person in Finnish might strike one as being odd, as there is no lexical item of a nominal category or phonologically nonempty noun phrase that is inherently in Fourth Person. This is exactly the opposite situation from the treatment of English "dummies" in which *it* and *there* are in a special Person. Recall that Gazdar et al. (1985) appeal to the distinction in NFORM values, which leaves no unique morphological mark on the agreeing verb in any tense or mood. As far as the morphological realization goes, *it* is Third Person Singular and *there* comes in two varieties, both of which are Third Person: Singular and Plural. Their NFORM feature could just as well have been eliminated in favor of a Fourth (and Fifth) Person.\(^3\) Of these two analyses, I find the lack of association of the Fourth Person with NPs less problematic than the lack

\(^2\) Still another difference between the Finnish construction under consideration and the Passive construction in better-known languages lies in the fact that the verb form may be Finite in the former but is Nonfinite in the latter.

\(^3\) My intention here is not to propose a new, and better, analysis of the grammar of *there* and *it*. This is only to cast some doubt on Gazdar et al.'s (1985) employment of NFORM as a feature of NP which occurs as a value of AGR.
of distinct mark on the agreeing verb.
APPENDIX F. A COMPACT GRAMMAR OF GEORGIAN

Georgian has six nominal cases: Nominative, Ergative, Accusative, Genitive, Instrumental, and Adverbial.\(^1\) Table F1 illustrates these inflectional forms.

<table>
<thead>
<tr>
<th></th>
<th>ქაცი</th>
<th>პერუ</th>
<th>მღვდელი</th>
<th>მუშა</th>
<th>მუშები</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nom</td>
<td>ქაცი</td>
<td>პერუ</td>
<td>მღვდელი</td>
<td>მუშა</td>
<td>მუშები</td>
</tr>
<tr>
<td>Erg</td>
<td>ქაჭმა</td>
<td>პერუმ</td>
<td>მღვდელმა</td>
<td>მუშამ</td>
<td>მუშებიმ</td>
</tr>
<tr>
<td>Acc</td>
<td>ქაჭს</td>
<td>პერუს</td>
<td>მღვდელს</td>
<td>მუშას</td>
<td>მუშებს</td>
</tr>
<tr>
<td>Gen</td>
<td>ქაჭს</td>
<td>პერუს</td>
<td>მღვდლის</td>
<td>მუშ</td>
<td>მუშები</td>
</tr>
<tr>
<td>Ins</td>
<td>ქაჭით</td>
<td>პერუთი</td>
<td>მღვდლით</td>
<td>მუშ</td>
<td>მუშები</td>
</tr>
<tr>
<td>Adv</td>
<td>ქაჭად</td>
<td>პერუდ</td>
<td>მღვდლად</td>
<td>მუშ</td>
<td>მუშებად</td>
</tr>
</tbody>
</table>

The adverbial case is a marker of the second complement of a verb like ქვთული 'consider' and the complement of a verb like გაძლი 'be transformed into'. The genitive case marks the possessor NP; it marks the direct object of a transitive verb

---

\(^1\) The Accusative case is called Dative by Tschenkéli (1958) and Aronson (1990).
and the subject of an intransitive verb when the verb is in the gerundial form.\textsuperscript{2}

The verb-token in this language is seen as having one value from each of the following subgroups (Aronson (1990: Ch 3)):

G1: Conjugation Classes 1, 2, 3, and 4
G2: Series 1 (Present), 2 (Future), 3 (Aorist), and 4 (Perfect)
G3: Screeves 1 (Nonpast), 2 (Past), and 3 (Modal)

The nature of what are called "screeves" is not so clear. I am left with an impression that this category is motivated solely by ease of the description of allomorphy on verbs. There does not seem to exist any clear correlation between the screeves and the functions they serve (or the meanings they denote). Neither do I see a good fit between the four Series and distinct semantic or discourse-organizational characteristics. The only purpose of setting up the category of Series is, as far as I can see, to facilitate the description of case requirements on the argument NPs. There is no independent motivation to do so. One might do well to collapse Series and Screeves and talk about ten different morphological categories as if they are all on a par.\textsuperscript{3} Since I address the very phenomena of case alternation which is

\textsuperscript{2} Aronson (1990: 69) takes the verb form as a separate lexeme and calls it "a verbal noun". Given the fact that most dictionaries of the language list verbs under "verbal noun" (Aronson (1990: 476-477)), this must be an inflected form of the verb.

\textsuperscript{3} The number of verb forms we are dealing with is not twelve, or 4X3, since there is no Nonpast screeve form for the Aorist and Perfect series. See Aronson (1990: 462).
the sole motivation for setting up the Series, and since I pursue to work with the assumptions of Morphology-Free Syntax, I shall indeed abandon G2 and G3 above in favor of the following categories.

(1) Present, Future, Imperfect, Conditional, Aorist, Present Perfect, Conjunctive Present, Conjunctive Future, Optative, and Pluperfect

The purpose the scribes served can now be served by the conditions on the selection of the appropriate stem in realization rules in the case of inflectional affixes and in lexical implication rules in the case of derivational affixes.

Not all verbs have all ten forms above. In order to state gaps of the paradigm, it would be helpful to introduce the four conjugation classes of the language. Different verb classes have different semantic, syntactic, and morphological properties, though exceptions abound. Class 1 verbs are transitive; Class 2 verbs are intransitive and denote inception of a state; Class 3 verbs are intransitive and denote ongoing activities; Class 4 verbs denote feelings, emotions, or states of being. Whether Class 4 verbs are transitive or not is an open question, because it depends on how the distribution of argument-like NPs and their relation to verbal agreement are interpreted.

Aronson (1990: 338) notes:

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“Many IV. conjugation verbs are defective, i.e., they lack one or more series of screeves. [...] the following lack the aorist series of screeves: *mjags, mjuls, minda*

In such verbs, the missing aorist and optative are replaced by the imperfect and conjunctive respectively.

The following verbs lack both the aorist and perfect series of screeves: *maxsous, mshia*

Some IV. conjugation verbs lack in addition the future series. These verbs have only present series screeves. Examples are *mcia* ‘be cold’, *mcquria* ‘be thirsty’, *m-čiria* ‘need’.

He also notes (343):

There is a special category of II. conjugation verbs, usually derived from III. and IV. conjugation verbs, which take the preradical vowel e- with h-series object markers. These verbs (which usually occur only in the present series) have objective conjugation and are modal in meaning.

Examples of such modal verbs are *ejineba* ‘feel like sleeping / be tired’, *emğereba* ‘feel like singing’, *etamaieba* ‘feel like playing’, *ecineba* ‘feel like laughing’, and *ecekveba* ‘feel like dancing’.

Before turning to the description of case government patterns of the conjugation classes in the ten different tense/aspect/modality categories, I would like to
discuss issues pertaining to the division of labor between morphology and syntax. Are the ten categories in (1) all inflectional? If they are inflectional categories, are there ten different finite verb forms in the language, excluding agreement markers?

It does not take very long to learn that the contrast between Present, Imperfect, and Conjunctive Present on the one hand, and Future, Conditional, and Conjunctive Future on the other might not be inflectional at all. The two groups, traditionally called the Present subseries and the Future subseries, differ only in terms of the presence or absence of what is called a preverb. The present form and the Future form of a verb are exactly the same except that the latter has a preverb, which the former lacks. The imperfect form and the conditional form of a verb are similarly the same modulo a preverb. The same goes for the pair Conjunctive Present and Conjunctive Future. The six forms of the verb çer ‘write’ are presented below. They have agreement affixes for two third person singular participants: he writes it, etc. The equal sign, =, indicates the boundary between the preverb and the rest of the inflected form of the verb.

\[
\begin{array}{llll}
(2) & \text{Present} & \text{çers} & \text{Future} & \text{da=çers} \\
& \text{Imperfect} & \text{çerda} & \text{Conditional} & \text{da=çerda} \\
& \text{Conjunctive Present} & \text{çerdes} & \text{Conjunctive Future} & \text{da=çerdes}
\end{array}
\]

There are eight preverbs in the language: a, ga, gada, da, mi, że, ća, and ća. All but da have a directional meaning, e.g. ‘up’, ‘out’, ‘away’, etc.⁵ All but da can

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⁵ Verbs do not seem to combine freely with all of the preverbs. Rather, certain verbs seem
be followed by *mo*. The forms with *mo* generally indicate that the action is performed in the direction of the speaker or his addressee; forms without *mo* denote the direction of the action away from the speaker or his addressee, according to Aronson (1990:42). One and the same preverb has to occur in the seven forms of a verb that require a preverb: the three in (2) and Aorist, Optative, Present Perfect, and Pluperfect. If a verb happens to not have a unique Present form due to its inherent perfective meaning, like *aŋ-čers* ‘describe’ or *carmo-tkvams* ‘pronounce’, then it lacks Imperfect and Conjunctive Present forms as well. There is no phonological alternation on the inflectional affixes triggered by the presence of a preverb. According to Holisky (1981: 141–142), preverbs mark punctual aspect: “[They] punctualize toward the end point.” Thus, verbs of Conjugation class 3, which inherently denote ongoing activities, systematically resist combining with a preverb in the inflectional paradigms in which verbs from other classes do combine with one.6 In other words, preverbs in the language are semantically regular, syntactically productive, and phonologically inconsequential. I conclude that they are proclitic elements whose distribution pertains to syntax rather than inflectional

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6 These verbs, traditionally called medial verbs, form the Future/Conditional/Conjunctive Future/Aorist/Optative/Present Perfect/Pluperfect forms by prefixing -i and replacing the part of the stem which is called the “Present Stem Formant” with -eb. See Aronson (1990: 204).
morphology.

This reinterpretation of the status of preverbs falls short of making available to us a simplification of tense/modality categories in (1). Whereas most verbs lack a formal distinction between the Present subseries and the Future subseries, all verbs belonging to Conjugation class 3 have different forms in the two subseries, and this difference is not due to the presence or absence of a preverb. A class 3 verb forms its Future subseries form from its corresponding Present subseries form by prefixing \(i\)- and replacing the Present Stem Formant with \(eb\). The following table, drawn from Holisky (1981: 8), illustrates this.
Table F2. Georgian medial verbs in the present series

<table>
<thead>
<tr>
<th>PRESENT SUBSERIES</th>
<th>FUTURE SUBSERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>Future</td>
</tr>
<tr>
<td><strong>duğs</strong></td>
<td><strong>i-duğ-eb-s</strong></td>
</tr>
<tr>
<td><strong>goraus</strong></td>
<td><strong>i-gor-eb-s</strong></td>
</tr>
<tr>
<td><strong>tìris</strong></td>
<td><strong>i-tìr-eb-s</strong></td>
</tr>
<tr>
<td>Imperfect</td>
<td>Conditional</td>
</tr>
<tr>
<td><strong>duğ-d-a</strong></td>
<td><strong>i-duğ-eb-d-a</strong></td>
</tr>
<tr>
<td><strong>gorau-d-a</strong></td>
<td><strong>i-gor-eb-d-a</strong></td>
</tr>
<tr>
<td><strong>tìr-od-a</strong></td>
<td><strong>i-tìr-eb-d-a</strong></td>
</tr>
<tr>
<td>Present Conjunctive</td>
<td>Future Conjunctive</td>
</tr>
<tr>
<td><strong>duğ-d-es</strong></td>
<td><strong>i-duğ-eb-d-es</strong></td>
</tr>
<tr>
<td><strong>gorau-d-es</strong></td>
<td><strong>i-gor-eb-d-es</strong></td>
</tr>
<tr>
<td><strong>tìr-od-es</strong></td>
<td><strong>i-tìr-eb-d-es</strong></td>
</tr>
</tbody>
</table>

If forms like **i-duğ-eb-s** and **i-duğ-eb-d-a**, etc. were syntactic combinations of two lexemes and *eb* were to be singled out as an auxiliary verb, the tense/modality categories in Table F2 would be analyzed as involving only three finite inflections. In fact, there is some evidence that this analysis is feasible.

As we saw, the purported future subseries forms differ from their present subseries counterparts in that they have the prefix *i-* and the "stem formant" *eb*. Exactly the same operations, namely, *i-* Prefixation and *eb-* Substitution, are found in another area of Georgian verb morphology: the formation of Conjugation class 2 verbs from their corresponding Conjugation class 1 verbs. (See Aronson (1990: ...
for more about the derivations.) The status of Conjugation class 2 is not a very solid one. There are reasons to doubt that the so-called Conjugation class 2 verbs are separate lexemes from the verbs in Conjugation class 1. Firstly, no pair of “derivationally-related verbs” one of which belongs to Conjugation class 1 and the other of which belongs to Conjugation class 2 have two distinct Nominal forms. There is a single nominal form for each such pair. Secondly, no pair of derivationally-related verbs, one from Conjugation class 1 and the other from Conjugation class 2, have separate Perfect Particpial forms. Thirdly, exactly the same preverb collocates with a Conjugation class 2 verb as the one that collocates with its Conjugation class 1 analog.

Virtually all verbs that belong to Conjugation class 2 have a counterpart in Conjugation class 1. A majority of verbs in the former group are said to “derive from a Conjugation class 1 verb” by i- Prefixation and e6- Substitution. However, I shall view the traditional “Conjugation class 2 verbs” as part of a syntactic combination: a verb followed by the auxiliary verb e6, which is enclitic. This move, in conjunction with the syntactic independence of preverbs, enables one to have the inflectional categories in (1) simplified as follows.

(3) Nonpast, Past, Aorist, Present Perfect, Conjunctive, Optative, and Pluperfect

Nonpast is the morphological feature shared by Present and Future in (1); Past is that which both Imperfect and Conditional have; Conjunctive is formerly Conjunctive Present or Conjunctive Future.
APPENDIX G. THE PERFECT SERIES OF GEORGIAN VERBS

The most dubious of (3) of APPENDIX F are the two Perfect categories: Present Perfect and Pluperfect. When the patient is first or second person, it is clear that the Present Perfect form is periphrastic rather than morphologically simple. The appropriate form of the operand verb, e.g. _miki/giki/ukigviki_, is followed by a form of the verb _gopna 'be'.^1^ Examine the following.

---

^1^ Aronson (1990:272) lists _vukivar 'he has praised me/they have praised me'_ and _vukivart 'he has praised us/they have praised us'_ instead of _ukivar_ and _ukivart_. However, as he himself notes in pages 17 and 27, _v_ deletes before a nonlow back vowel. This in turn means that his _vukivar_ and _vukivart_ may reflect his mistaken analysis of agreement vis-à-vis the word/syntactic combination status of Present Perfect.
mikivar ‘I have praised you’
mikixart ‘I have praised you all’
gikivar ‘You have praised me’
gikivart ‘You have praised us’
‘You all have praised me’
‘You all have praised us’

ukivar ‘He has praised me’
ukivart ‘He has praised us’
‘They have praised me’
‘They have praised us’

ukixar ‘He has praised you’
ukixart ‘He has praised you all’
‘They have praised you’
‘They have praised you all’
gvikivar ‘We have praised you’
gvikixart ‘We have praised you all’

All the expressions in (1) have zar ‘be (second person singular)’, zart ‘be (second person plural)’, var ‘be (first person singular)’, or vart ‘be (first person plural)’. This suggests rather strongly that the Present Perfect inflection is nonfinite and is governed by the auxiliary verb qopna on its complement VP, much like the way such periphrastic tenses as future, perfect, and progressive in English are formed. The patient rather than the agent is the grammatical subject in these expressions, since they invariably trigger the agreement (in person and number) on the matrix verb.

When the patient is in third person or missing, the auxiliary verb invariably takes the form a. The present tense third person forms of the copula qopna are aris (singular) and arian (plural). Alongside these independent forms, there is an enclitic counterpart, namely aa, which is shortened right after a vowel. (See Aronson (1990: 66).) Since the operand verb must be in the appropriate nonfinite form in the periphrastic Present Perfect construction, and since this form ends in
i, the auxiliary verb a is nothing but the enclitic copula aa having been subjected to the phonological operation of vowel shortening. Now, I can safely conclude that the Present Perfect in Georgian is not a morphological construct but a syntactic combination of two verb lexemes, one of which is the copula qopna. This yields the following syntactic analysis of an expression like mikizart 'I have praised you all'.

A significant difference between the Georgian Present Perfect construction and the English Passive construction lies in the fact that the passivized verb is obligatorily inflected for the person and number of the agent in the former whereas it is not in the latter.

The operand verb may be intransitive, in which case the Present Perfect construction is analogous to the impersonal passive constructions in such languages as German, Icelandic, and Italian. The best rendering in English of mtiiria is:
Something has been affected by my crying. The subject, which triggers the third person form of the auxiliary, denotes an "ugly object" in a way similar to how *there* denotes an ugly object in English in a Montague grammatical account such as Dowty's (1982). In this way, the interpretation of the Georgian Present Perfect can be unified so the valence of the operand verb does not matter. The string *mikizart* can now be glossed 'You all have been affected by my praising.' The contention that this would be a better rendering than 'I have praised you' is corroborated by observations like the following, made by Tschenkéli (1958: 491) and recapitulated by Aronson (1990:274).

Das georgische Perfekt, Plusquamperfekt und der Konjunktiv Präteriti decken sich nur zum Teil mit den entsprechenden Zeitformen des Deutschen, denn bei all diesen Zeitformen kommt im Georgischen in bezug auf den inneren Gehalt eine besondere Nuance hinzu, die den entsprechenden Formen des Deutschen unbekannt ist und die einer eingehenden Erläuterung bedarf.

[…]

Die ungeschene oder nicht wahrgenommene Vergangenheit, zu der die Zeitformen der 3. Zeitgruppe gehören, bringt dagegen zum Ausdruck, dass der Sprechende die Handlung oder das Ereignis nicht selbst gesehen bzw. erlebt hat. Er kennt vielmehr die Tatsache nur vom Hörensagen bzw. vergegenwärtigt sich das Ereignis auf Grund
der entstandenen Folgen und beurteilt es danach; oder er vermochte, 
falls er zugegen war, das Ereignis nicht wahrzunehmen, sei es nun, dass 
er gedanklich abwesend war oder aus irgendeinem anderen Grunde.

Wenn nun das oben angeführte Beispiel in das georgische Per-
fekt gesetzt wird:

students dauçeria çerili

‘Der Student hat den Brief geschrieben’,

so bedeut dieser Satz etwa: “Es stellt sich heraus, dass der Student den 
Brief geschrieben hat”, oder “Der Student soll den Brief geschrieben 
haben”. Der Sprechende kann eben nur das sagen, was man ihm 
berichtet hat, ohne selbst diese Tatsache gesehen oder wahrgenommen 
zu haben.

A remarkable difference between the Georgian Present Perfect with an in-
transitive verb and the impersonal passive constructions in the other languages 
mentioned above is that the agent is obligatorily marked in the Georgian construc-
tion while it is not in the impersonal passives. (*Es wurde gestern von drei Männern 
getanzt.)

Pushing this line of reasoning to its limits, one can analyze the Pluperfect as 
a two-lexeme combination, the second of which is an auxiliary verb. Examine the 
following expressions.
<table>
<thead>
<tr>
<th>(3)</th>
<th>momekali</th>
<th>‘I had killed you’</th>
<th>momekalit</th>
<th>‘I had killed you all’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mogekali</td>
<td>‘You had killed me’</td>
<td>mogekalit</td>
<td>‘You had killed us’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‘You all had killed me’</td>
<td></td>
<td>‘You all had killed us’</td>
</tr>
<tr>
<td></td>
<td>movekali</td>
<td>‘He had killed me’</td>
<td>movekalit</td>
<td>‘He had killed us’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‘They had killed me’</td>
<td></td>
<td>‘They had killed us’</td>
</tr>
<tr>
<td></td>
<td>moekali</td>
<td>‘He had killed you’</td>
<td>moekalit</td>
<td>‘He had killed you all’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‘They had killed you’</td>
<td></td>
<td>‘They had killed you all’</td>
</tr>
<tr>
<td></td>
<td>mogvekali</td>
<td>‘We had killed you’</td>
<td>mogvekalit</td>
<td>‘We had killed you all’</td>
</tr>
<tr>
<td></td>
<td>momekla</td>
<td>‘I had killed him/them’</td>
<td>mogvekla</td>
<td>‘We had killed him/them’</td>
</tr>
<tr>
<td></td>
<td>mogekla</td>
<td>‘You had killed him/them’</td>
<td>mogeklat</td>
<td>‘You all had killed him/them’</td>
</tr>
<tr>
<td></td>
<td>moekla</td>
<td>‘He had killed him/them’</td>
<td>moeklat</td>
<td>‘They had killed him/them’</td>
</tr>
</tbody>
</table>

Disregarding the preverb mo, the phonological words above contain an inflected form of the operand verb, namely, one of mekal, gvekal, etc., followed by an inflected form of the auxiliary verb, i.e. one of i, it, a, and at. The stem of the auxiliary verb is i for the first or second person; it is a for the third person.

This analysis is, however, not consistent with the data on at least one count. The distribution of the first person marker v in (3) cannot be accounted for. Unlike the presence of v before the rounded vowel, which is attributed to a wrong morphological analysis, the v before the unrounded vowel e in movekali ‘he had killed me’ is not expected at all in the present analysis. I am inclined again to say that the putative difference between movekali ‘he had killed me’ and moekali ‘he had killed
you’ is not really there.\footnote{If the actual pronunciation of the two strings is \textit{[mowekali]}, which is my best conjecture based on the allophony description Aronson (1990: 17) gives, then the glide can be seen as the result of glide-formation rather than an allophone of /v/.}

The verbs from Conjugation class 4 usually do not enter into the Present Perfect or Pluperfect constructions. I do not know what rules govern the usage of each verb in these constructions. The only conclusion I can draw without actually checking out native intuitions about those verbs in the two constructions is that there are many defective verbs, namely those which lack a Past Participle inflection.\footnote{Verbs from Conjugation classes 1 and 2 have a unique form called “Perfect Participle”; it is realized as -\textit{i}, -\textit{ul}, \textit{m}-\ldots-\textit{ar}, or \textit{m}-\ldots-\textit{al}. Although Aronson (1990:301–303) suggests that these verbs in the Perfect Participial form occur in the Present Perfect and Pluperfect, it is not clear whether we are dealing with the same constructions.}

The reanalyses of Present Perfect and Pluperfect presented in this subsection allow the inflectional categories of the Georgian finite verb to be further simplified from (0) to (4).

(4) Nonpast, Past, Conjunctive, Aorist, and Optative

In summary, the ten inflectional categories in (0) of APPENDIX F, all of which are taken to be finite inflections, are now seen as five. Two nonfinite inflections have to be posited in these new analyses: the one governed by the auxiliary verb \textit{eb} and the one governed by the auxiliary verb \textit{qopna}.
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