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WACKERNAGEL'S REVENGE: CLITICS, MORPHOLOGY, AND THE SYNTAX OF SECOND POSITION

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Jakob Wackernagel is well known for the observation that clitic elements generally appeared in second position in their clause in early Indo-European languages. It is less well known that he also proposed this as the basis of the 'Verb Second' phenomenon. Finite Verbs in main clauses were apparently accentless in Indo-European, and he suggested that they were therefore treated as clitics and located in second position. This paper examines the possibility that there is indeed a fundamental relationship between Verb Second and clitic placement.

I first argue that accounts of Verb Second do not extend correctly to the placement of clitics: if there is something common to these phenomena, it must involve generalizing clitic behavior to inflected Verbs, rather than vice versa. The range of clitics in the languages of the world is examined, and a set of parameters for the rules that locate them is formulated. I argue that these rules form a class with the rules of morphology that introduce affixes (and other phonological changes) into words. A unitary generalization is suggested: rules that provide formal markers of what Sapir called 'relational' or 'derivational' concepts realize these categories at a prominent anchor point (the beginning, the end, or the structural head of the material being marked). This class of rules also includes processes that transfer morphosyntactic features to an anchor position in the phrase, where they are reflected formally. I then suggest that existing accounts of why Verbs should move to their surface position in Verb Second languages lack independent justification; furthermore, they incorrectly miss the generalization that the Verb in such cases is always in second position. Icelandic constructions are discussed that suggest this position is not structurally uniform. Treating Verb Second as the result of a rule which says 'realize the inflectional features of a clause immediately after its initial element' unifies several cases and also expresses the connection between Verb Second and other second-position phenomena. I conclude that Wackernagel was right in proposing a unification of Verb Second and cliticization, though the generalization involved is not based on properties of word accent.*

1. INTRODUCTION. Actually, there is no reason to believe that the great Swiss Indo-Europeanist Jacob Wackernagel would have enough animus toward any of today's linguists to want revenge. The present title is intended merely to suggest the return (in another form) of a set of ideas which were striking and important when they originally appeared, and which it may be profitable to reexamine in a new light.

An additional motivation for this paper is my concern over a resurgent ten-

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dency to describe as ‘syntax’ aspects of linguistic structure that have traditionally been treated as morphological. As morphology has attracted more interest in recent years, more and more syntacticians have been paying attention to the fact that words have structure. This has led to attempts to treat that structure as constructed and manipulated by the syntax. Such a trend was characteristic of the movement known as ‘Generative Semantics’, though in that case it was primarily derivational morphology that was at issue, while today we find inflectional morphology described syntactically through the increasing importance and proliferation of ‘functional categories’. In its origins, this move can undoubtedly be seen as a rational response to the fact that syntax is the domain for which we have had the most extensive and explicit theories. When what you have in your hand is a hammer, everything tends to look like a nail; and the attention of syntacticians has tended to take the form of describing word structure syntactically. Syntacticians are sure that word structure is like syntax, full of hierarchical organization, empty categories, instances of movement and adjunction, etc., since that is what they have theories of.

To a morphologist, this often seems to yield a rather strange picture, but one to which there have been few seriously articulated alternatives. The past decade, however, has seen the development of serious theories of morphology\(^1\) that can now be regarded as posing genuine, explicit alternatives to purely syntactic theories of word formation. On the basis of such work, in fact, a morphologist may well be tempted to see much of the world—including a lot of what syntacticians think of as their own turf—in quite a different way. Regularities of a ‘morphological’ sort may indeed turn out to be relevant to an understanding of ‘syntactic’ phenomena. The possible utility of such a perspective is the subject of the present paper.

But how does Wackernagel come into this? In his day, there were not many syntacticians to worry about who might have been inclined to offer syntactically-based accounts of word structure. Wackernagel, though, was a pioneer in the opposite direction: an Indo-Europeanist whose familiarity was primarily with what we would think of today as phonology and morphology, and who proposed an account of what others would call a syntactic phenomenon that linked it closely with nonsyntactic considerations. Putting aside his monumental descriptive work on Sanskrit and many contributions to the detailed study of Greek, Wackernagel is mostly noted today among general linguists for the observation that clitics often appear in the second position in a sentence; but this is not at all the end of his interest for today’s linguistics. He also suggested an account of the Germanic word-order phenomenon we know today as ‘Verb Second’, and I should like to begin by retelling that story here.

2. Wackernagel’s View of Clitics. Wackernagel’s central observation (in his classic 1892 paper) was that in Greek, ‘enclitic’ elements appear as a group right after the initial word of the sentence. Taken together with more limited data from a number of other older Indo-European languages, Wackernagel

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concluded that this was not just a fact about Greek, but rather represented a principle of Proto-Indo-European word order: (en)clitics appear in second position in the sentence. In assessing this observation, it is crucial to realize that, in contrast with the usage of the term 'clitic' by some contemporary syntacticians, the elements in question were not primarily a class of pronouns; although many of the enclitics subject to Wackernagel’s ordering principle were indeed pronominal, a number of others were not. The class also includes a number of adverbial and auxiliary elements, ‘particles’ with somewhat obscure discourse senses, etc., and has no unitary definition in terms of the functions of its members.

In (Homeric) Greek, for example, the class of enclitic elements includes not only personal pronouns but also indefinite pronouns (tis, ti ‘someone, something, anyone, anything’), indefinite adverbs (e.g. pou ‘somewhere, anywhere’; pote ‘ever, sometime’; pós ‘somehow’; etc.), the present indicative forms of ‘be’ and ‘say’ and a collection of particles including ge ‘indeed’, te ‘and, also’, per ‘very, even’, nu(n) ‘now, indeed’, etc. Elements of these various sorts appear in a cluster following one another after the first (nonenclitic) word of a phrase.2

(1) polees = te = min èrêsanto hippês phoreein.
many = and = it prayed riders carry
‘And many riders prayed to carry it.’ (Iliad 4.143)

For Wackernagel, indeed, the category of clitics3 was not to be defined in terms of syntactic function but rather phonologically. Preeminently, he identified the class of clitics with that of accentless elements.

Interestingly, there are other words in the ancient Indo-European languages besides those normally thought of as clitics that did not bear accent. A hint of this is provided by the fact that, in Greek, finite Verbs take the so-called ‘recessive’ (or default) accentuation, suggesting that at some point they may not have had any autonomous accent at all. This proposal is a bit more plausible than it might seem at first, because in Sanskrit we can see directly that a specific set of Verb forms do not indeed have any accent: noninitial finite Verbs in main (but not subordinate) clauses. From these facts, it became traditional to reconstruct early Indo-European as having unaccented finite Verbs in main clauses, like Sanskrit—a view that is still generally accepted among Indo-Europeanists.

The apparent accentual asymmetry between Verbs in main and subordinate clauses that we see in Sanskrit is of course reminiscent of the facts in a number of Germanic languages (such as German). Here it is not phonology but word order that reflects the difference: the finite Verb appears in second position in main clauses, but elsewhere (e.g. finally) in subordinate clauses. Consider the German sentences in 2, for example.

2 See Taylor 1992 for a recent, more extended discussion of the facts concerning clitics in Greek.

3 Wackernagel speaks of ‘enclitics’ and ‘proclitics’. and indeed it is only enclitics that are attracted to ‘Wackernagel’s Position’ in Greek. The generalization to a unitary category of ‘clitics’ is a modern one. Nonetheless, it does not seem anachronism to refer to Wackernagel’s account of ‘clitics’, and I will use this terminology below.
(2) a. *Ich habe gestern einige Getreidespeicher gesehen.*
    I have yesterday some grain-silos seen
    ‘Yesterday I saw some silos.’

    b. *Heute habe ich noch mehrere Getreidespeicher gesehen.*
    today have I yet more grain-silos seen
    ‘Today I saw some more silos.’

    c. *Jetzt bin ich sicher, dass ich im Getreidegürtel bin,*
    now am I certain that I in grain.belt am
    weil ich so viele Getreidespeicher gesehen habe.
    because I so many grain-silos seen have
    ‘Now I’m sure I’m in the Middle West, because I’ve seen so
    many silos.’

A common account of this asymmetry in the recent literature is the assumption that the basic position of the Verb in, e.g., German is that exemplified by subordinate clauses. The inflected Verb subsequently moves to some identifiable structural position toward the front of main clauses, but remains in place in subordinate clauses. It is generally presumed that the relevant position (perhaps that of C[omp]) is structurally unique, and that its properties can trigger movement of the Verb to second position under the appropriate conditions—for instance, exactly when it is not filled by an overt complementizer element (as will be the case in main clauses, as opposed to subordinate clauses). Advocates of this view would presumably reject any claim that there is a connection between it and the complementarity which appears in Sanskrit (and possibly early Greek) verbal accentuation: not everyone would want to say that the accent of a clause’s main Verb can be ‘swallowed up’ by an empty C position. A more serious problem of detail is presented by the fact that in some languages (e.g. Icelandic, as we will see below) the Verb is apparently attracted to second position in all cases, regardless of whether a complementizer occurs or not. The mechanical specifics of the analysis are not essential at this point, however. We return to these issues below.

What is of interest to us here is Wackernagel’s proposed account—to wit, that there was a connection between the phenomenon we now call ‘Verb Second’ in Germanic and the principle of word order that determined the placement of clitics. His suggestion was that Verb Second arose precisely as a case of moving unaccented words, including finite Verbs in main clauses, to second (clitic) position. In other words, Verb Second was originally just another instance of the placement of clitics. On this account, it is not the syntactic properties of some position in main clauses that result in the movement of the Verb, but rather the role of that position in attracting clitics, a class to which the Verbs affected (originally) belonged on purely phonological grounds.

3. **Reconstructing Wackernagel’s Insight.** Without necessarily taking this story completely literally, the parallelism between the two asymmetries does seem rather striking. Assuming the two sets of facts are not completely

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4 See the papers in Haider & Prinzhorn 1986 and references cited there for much of the history of this analysis.
arbitrary and unrelated, how might we go about developing an account on which clitic placement and Verb Second are (or were) due to essentially similar mechanisms? There would seem to be two lines we could follow. On the one hand, we might develop a syntactic account of Verb Second and then attempt to extend that to deal with clitics. Alternatively, we could proceed in the opposite direction by working out principles for the placement of clitics and then extending them to determine the position of main Verbs.

3.1. Do clitics act like verbs? Pursuing the first of these approaches, let us assume with much of the recent literature of Government/Binding theory that the Verb Second phenomenon is due to a combination of syntactic structural conditions. In particular, something (perhaps the Empty Category Principle, or Case theory, or a requirement that the C position bear a feature [+Verb], or whatever) forces the Verb to move to some designated position (e.g. C), which happens to be preceded by exactly one other position (e.g. the specifier of C[omp] P[hrase]) in the structure of clauses. This is taken to have the effect of locating the Verb in second position. If we were then to try to do clitic placement in the same way, that would seem to involve forcing clitic elements to move to the same (or at least a comparably defined) structural position.

Whatever the plausibility of this analytic approach as it applies to the movement of Verbs to second position, any attempt to extend it to deal with clitics is afflicted by a major problem: ‘second position’ for clitics does not (in the general case) have the right kind of interesting or coherent structural definition. This is because second position, when applied to clitics, may (and in many cases, must) be ‘after the first word’, not after a constituent. When we look at what ‘Wackernagel’s Position’ actually meant to Wackernagel, we see that it was clearly ‘after the first word’, and most of his Greek and other early Indo-European evidence was for that. Indeed, he gives many examples of constituents being broken up by sentential clitics. It is therefore somewhat mysterious that recent discussion by syntacticians has simply assumed (often even citing Wackernagel 1892!) that the relevant second position is ‘after the first constituent’.

Research on clitics over the past couple of decades suggests that individual languages may vary with respect to their definition of second position. Greek, as Wackernagel’s examples show, defines this as the position following the first word, regardless of constituent structure. Kaisse (1981) observes that, while this principle is valid for many other languages with second-position clitics (e.g. Tagalog), there are other languages (e.g. Pashto) that locate second-position clitics after an initial (possibly phrasal) constituent. Furthermore, some languages (e.g. Luiseno and Bulgarian) allow either the first word or the first constituent of the clause to define ‘second position’ (subject to the condition that, in any given sentence, all of the clitics must be located on the basis of the same notion of what the first element is). An example of this situation is

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5 Halpern 1992 discusses the differences among languages that take the first word to define ‘second position’, those for which the first element is the first constituent, and those that allow
furnished by Serbo-Croatian as described in a classic paper by Wayles Browne (1974). In this language both of the sentences in 3 are grammatical, where the sequence of underlined clitics may occur either following the first word (thus breaking up the subject NP) or after the first full phrase.

(3) a. *Taj mi je pesnik napisao knjigu.*
   that me past poet wrote book
   ‘That poet wrote me a book.’

b. *Taj pesnik mi je napisao knjigu.*
   that poet me past wrote book
   ‘That poet wrote me a book.’

The Verb Second phenomenon, in contrast, always locates the finite Verb after an initial constituent (not just a word). As a result, any language which defines second position for clitics in a way that (either systematically or optionally) disregards significant syntactic constituent structure suggests that an account based on movement to some structurally designated position (such as C) is unlikely to be adequate in general as the mechanism of clitic placement.

A further argument against assimilating second-position clitic placement to the kind of Verb movement widely taken to underlie the Verb Second phenomenon is presented by Freeze (1992). He points out that Mayo (a Uto-Aztecan language) consistently locates its (subject) clitics in second position, despite the fact that phrasal heads in this language are just as consistently final within their phrase. If the Verb movement involved in Verb Second is movement to a head position (as generally presumed in the relevant literature, e.g. Chomsky 1986), we have no reason to believe that such a position could be found in this language to serve as the destination of clitics, since all head positions appear to be phrase-final rather than phrase-initial or phrase-medial. A syntactic account of clitics based on current theories of Verb second, then, does not look promising.

3.2. Do verbs act like clitics? Let us then take the opposite tack, and see what sort of account is appropriate to clitics in their own right—and whether this can be extended in an interesting way to deal with the facts of Verb Second. We can begin by examining the nature of clitics, taking this term in the kind of general sense used by Wackernagel, according to which a clitic is a weak, prosodically dependent form (typically, though not necessarily, accentless). We follow a substantial body of recent literature, especially Zwicky 1977, Klabans 1980, and Kaisse 1985, as summarized and developed in Anderson 1992, Ch. 8.

3.2.1. The nature of clitics. Zwicky, in particular, is responsible for pointing out a fundamental distinction between two types of clitic: simple clitics as opposed to special clitics. A simple clitic is an element of some basic word class, which appears in a position relative to the rest of the structure in which

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both options. His account has some similarities to the account proposed below, but differs in essential respects as regards the provenance of clitics. Many other authors have studied this question as well, and the sources cited here could be greatly extended.
the normal rules of the syntax would (or at least could) put it. An example of a simple clitic is the English reduced auxiliary *’s (= is or has) in sentences like 4.

(4) a. A great big banana slug’s crawling across the podium.
   b. The banana slug on the podium’s gotten slime all over my notes.

Limitations of space preclude a complete account of such items here, but it can be argued that what is unusual about them in comparison with nonclitics is purely phonological in nature. The context for this account involves two assumptions. (a) The phonological form of lexical representations involves not only a collection of phonetic features, but also the assignment of these features to prosodically structured positions. Structural segments are organized into syllables, which in turn are grouped into feet and phonological words. (b) Phonological content is subject to a requirement of ‘Full Interpretation’: that is, in order to be pronounced, such material must be associated with (at least one) segmental position that is part of a syllable which is (possibly part of a foot that is) part of a phonological word. On this basis, simple clitics can be analyzed as (forms of) ordinary lexical elements, belonging to independently occurring syntactic classes, whose peculiarity is a specific deficiency of prosodic structure—lack of a word-tree. Ordinary words are prosodically organized into elements that ultimately are assigned to prosodic words. Simple clitics simply aren’t ‘words’ in this sense. This causes them to undergo language-particular phonological rules of Stray Adjunction, which incorporate prosodic elements into a larger structure (either to the left or to the right), in order to satisfy the requirement of Full Interpretation.

I will ignore simple clitics from here on: the more dramatic case, which most people have in mind when they talk about clitics, is that of special clitics. These are items whose position within some phrasal unit is determined by principles other than those of the nonclitic syntax. It is for these elements that some special principles must be invoked to get the correct order with respect to the rest of their clause. The most notable location of clitics is in second position, but other less exotic possibilities exist as well—which leads naturally to the first question we want to ask about special clitics: what kinds of special positioning can they display? Collecting the opinions of a number of writers (Klavs 1985, Kaisse 1985, Nevis 1985, and Steele 1975, among others), we arrive at the survey in 5, as presented in Anderson 1992, Ch. 8.

(5) a. Initial clitics (e.g. the principal component of Kwakwala determiners; see Anderson 1984, for example = gada in 7a below).
   b. Final clitics (e.g. English -’s ‘genitive’6).
   c. Second-position clitics (e.g. Warlpiri auxiliaries, within S, and the second element of Kwakwala determiners, within NP—cf. the second instance of = ak in 7a below).

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6 The analysis of this element in English is remarkably problematic. Halpern 1992 reviews a number of problems, and proposes an analysis which is related to the notion of ‘feature transfer’ rules developed below. In any event, it is clear that (a) this ’s represents a property of an entire NP; and (b) it appears at the right edge of that NP. These properties identify it as a phrase final clitic in terms of this classification.
d. Penultimate-position clitics (e.g. Nganhcara [Australia] pronominals within S, and Modern Greek possessives within NP, according to Sadock 1991:71).

e. Pre-Head clitics (e.g. Romance pronominal clitics, which typically attach at the front of the finite verb, or of the infinitive if this is the only verb).

f. Post-Head clitics (e.g. Finnish =kin ‘unexpected’, which attaches to the finite Verb of S, and Romance clitics in some special constructions such as imperatives or infinitives).7

Given this descriptive characterization, what sort of theory might we offer to account for it? In Anderson 1992 it is proposed that, rather than being treated as lexical elements that occupy normal structural positions in a Phrase Marker, special clitics should be seen as material introduced into Phonological Form by rules of phrasal affixation entirely parallel to the introduction of affixes within words by Word Formation rules. Let us assume that the possibilities in 5 are to be described by a class of rules that locate clitic material in an appropriate place. We can then suggest that such rules are specifiable in terms of the parameters in 6. Any such rule can be characterized in terms of:

(6) a. Its **SCOPE**: the clitic is located in the scope of some syntactic constituent (S, VP, NP, etc.—probably only X max) which constitutes its domain.

b. Its **ANCHOR**: the clitic is located by reference to the {FIRST VS. LAST VS. HEAD} element of the constituent in which it appears.

c. Its **ORIENTATION**: the clitic {PRECEDES VS. FOLLOWS} its anchor.

The very similar picture presented in Klavans 1985 included an additional parameter of **DIRECTION OF ATTACHMENT**, a choice of whether the clitic is to form part of a phonological word with material on its {RIGHT VS. LEFT}. I suggest that this is not properly speaking a fact about the rule(s) locating clitics, but rather a question of the directionality of language-particular phonological rules of **STRAY ADJUNCTION**. Different choices here can lead to such exotica as the Kwakwala determiners that attach to the word immediately to the left of the NP they qualify, and the closely similar Yagua clitics (Payne & Payne 1990), which also attach to a word on their left that is not part of the NP they determine.

(7) a. Kwakwala: la?mis = øk  
       lat = gada  
       AUX = 3[near, visible] will.go = these  
       yudaxv = øk  
       q’ultaxyuy.  
       three = [near, visible] cut.off  
       ‘And so now these three pieces cut off will go.’

7 An important issue in the description of Romance clitics, and possibly of clitics in general, is posed by the conditions under which these elements occur in post-verbal rather than pre-verbal position in some constructions in some languages. Other theories of clitics, such as that of Kayne 1991, have devoted considerable attention to such phenomena. It remains to be seen whether the account proposed here can achieve comparable coverage, though there do not appear to be insuperable problems that would prevent this.
b. Yagua:  
\[ sa-s\dddot{q}y \]
\[ Alchiko = n\dddot{i} \]
3sg.\text{SUBJ}-give Alchiko = 3sg.\text{OBJ} 
\[ sa-dee-\text{tu} = r\dddot{a} \]
3sg.\text{POS}-child-FEM = \text{INAN.}\text{OBJ} bread 
\[ = p\dddot{a}. \]
\text{3sg.}\text{POS}-child-FEM = \text{INAN.}\text{OBJ} bread 

‘Alchiko gave his daughter the bread.’

As noted above, what counts as the first element in the case of postinitial (second-position) clitics is subject to some variation. The choices apparently are either the first word or the first maximal projection. We could express this by allowing the domain within which the clitic is placed to be parsed either as a \{\text{PHONOLITICAL or SYNTACTIC}\} structure. Some languages allow only the one or only the other, while others accept either alternative. This also constitutes a parameter of clitic placement. It appears that this parameter does not take a value on a rule-by-rule basis: if that were the case, we might find in a language like Serbo-Croatian that some second-position clitics appear after the first word, and others after the first constituent. As Halpern 1992 emphasizes, this does not happen; if some second-position clitics appear after the first word, then all of them do. This implies that a given sentence must be parsed uniformly with respect to this parameter for the purpose of all clitic-placement rules applying to it.

3.2.2. \text{SIMILARITIES BETWEEN CLITICS AND AFFIXES.} The above remarks constitute an outline of a theory of clitic-placement rules, a theory that is developed further in Anderson 1992. In fact, though, the class of rules involved is somewhat more general. To see clitics in a broader context, let us recall a claim that is sometimes made about them—that they are ‘phrasal affixes’. Part of understanding the substance of such an assertion is to have a clear sense of what kinds of affixes there are. Parallel to 5, these can be summarized as in 8.

\begin{enumerate}
\item \text{Word-prefixes} (e.g. English \textit{re-} in \textit{re-appoint}).
\item \text{Word-suffixes} (e.g. English \textit{-y} in \textit{healthy}).
\item \text{Nuclear (\textit{= head of word}) prefixes} (e.g. Georgian \text{\textit{v\dddot{m}o\text{\textit{v}}\dddot{g}\dddot{-k\dddot{\text{\textit{v}}}}\dddot{l\dddot{a}}}}) (\text{\textit{pre}_\text{verb}-2._\text{obj}-\text{kill}}) ‘I will kill you’; Dutch compounds like \textit{breed-ge-schoender-d} ‘broad shouldered’).
\item \text{Nuclear suffixes} (e.g. Icelandic \text{\textit{v\dddot{k}\dddot{o}\dddot{l}\dddot{l\ddot{u}}\dddot{d}\dddot{-um\text{-st}}}}) ‘we were called (middle voice)’).\textsuperscript{8}
\item \text{Infixed}, of which there are several subtypes (Moravcsik 1977, Ultan 1975).
\end{enumerate}

The several varieties of infix referred to in 8e can be summarized as in 9.

\begin{enumerate}[resume]
\item \text{Following specified initial material} (e.g. the initial consonant(s), as in the case of Kammu [Viet Nam: cf. Svantesson 1983] \textit{\textit{-rn-/}} ‘instrument’—cf. \textit{\textit{p\ddot{a}am}} ‘set a trap’; \textit{\textit{pin\ddot{a}am}} ‘trap’; \textit{\textit{k\ddot{w\ddot{a}a}}\dddot{t}} ‘to rake’; \textit{\textit{kw\ddot{a}a}}\dddot{t} ‘rake’). Similar are infixes following the initial syllable or, in many languages, initial syllable nucleus (e.g. Dakota \textit{\textit{-wa-/}} ‘1st person’ in \textit{\textit{\textit{cawapca}}} ‘I stab’, from the stem \textit{\textit{\textit{\textit{\textit{c\ddot{a}p\ddot{c}}}a}}}).
\end{enumerate}

\textsuperscript{8} See Anderson 1990 for a discussion of the analysis of these forms and their structure.
b. Preceding a final consonant (e.g. the Indo-European nasal infix, as in Latin *relinquo* ‘I leave’ vs. *reliquī* ‘I left’), or preceding a final syllable (e.g. Hua [New Guinea] /-a/- ‘negative’ in *haru*’apo ‘not slip’ vs. *haru*po ‘slip’—cf. Haiman 1980).

c. Following the main stressed syllable (e.g. Shuswap [Salish; cf. Kuipers 1974] diminutive reduplication, as in *sqēxe* ‘dog’ : *sqēqēxe* ‘little dog’, *clēmstēs* ‘he knows it’ : *clēmstētn* ‘I know it’).⁹

d. Preceding the main stressed syllable (e.g. Samoan [cf. Churchward 1951] infixed reduplication, which forms plurals, as in *fa’amalolōsi* ‘encourage, force [pl.]’ : *fa’amosi* ‘idem. [sg.]’).

Next, we need to know something about the provenance of these affixes and their status in the grammar. In a theory such as that of Anderson 1992, affixes (like special clitics) are not a class of lexical items, but rather are introduced into words by the operation of Word Formation rules. Given the facts summarized in 8 and 9, we can suggest a set of parameters for such rules that determine the placement of individual affixes within a word, as in 10.

(10) a. **Scope**: the affix is located in the scope of some constituent which constitutes its domain. This may be either a morphological constituent (the word-structural head vs. the entire word) or a prosodic one (prosodic word).

b. **Anchor**: the affix is located by reference to the {first vs. last vs. head} element of a designated type within the constituent in which it appears. The ‘anchor’ is a prosodic constituent of some type (segment, syllable, or syllable nucleus, possibly also foot or mora).

c. **Orientation**: the affix {precedes vs. follows} its anchor.

If we compare 6 with 10, it should be self-evident that the theory of affixation and that of clitic placement reduce to two subcases of a single unified class of rules. We will discuss below the issue of what sort of common notion underlies the formal expression of linguistic properties by affixes and by clitics, but for the moment we can be content with noting the striking parallels in the two sets of mechanisms. We would like this to be reflected in the way the grammar is organized.

Before we move on to unitary account of clitic placement and affixation, however, a remark is in order about the present account of infixation, which is somewhat similar to that proposed in recent work on ‘Prosodic Morphology’ by John McCarthy & Alan Prince (e.g. McCarthy & Prince 1990), with one important difference. The story above treats infixes by identifying the first (last, head) element of a given type within a domain, and then attaching the affixal material to it. McCarthy & Prince (1990), in contrast, locate infixes by treating the first (or last) constituent of a given type within a domain as extrametrical, and then prefixing or suffixing to what remains. The generalization of McCarthy

⁹ Politeness in Shuswap demands the use of the diminutivized form of the verb when the subject is first person.
& Prince’s account to the case of clitics would be somewhat less attractive than the account presented here, since it would require us to describe, e.g., second-position clitics by treating a domain-initial constituent (such as an entire Noun Phrase) as extrametrical.

The two views are extremely close in their empirical coverage, but there is (at least) one substantive difference. The extrametricality approach predicts that, once declared extrametrical, the peripheral material that lies outside the insertion point of an infix ought to be strictly irrelevant to the process of inserting it. The line taken here, however, does not have this consequence. And in fact there are some cases where the ‘excluded’ material must apparently be visible to the affixation rule. For example, Sundanese has an infix -al/- which is inserted after an initial consonant to form Verb plurals. According to Robins (1959:343), ‘The variants -ar/-al- are contextually determined: -al- is used with forms whose initial consonant is l, and with those containing a following r. except as initial consonant of the second syllable. Words of any other structure regularly infix -ar-.’ Examples are given in 11.

(11) a. ljmpay ‘to run’ : pl. laljmpay
    b. hormat ‘to honour’ : pl. halormat
    c. moa1 ‘not to want’ : pl. maroa1
    d. sare ‘to sleep’ : pl. sarare

There is no reason to believe that this alternation is due to any general phonological rule(s) of the language. The basic alternant of the plural infix is plausibly taken to be /ar/, with /al/ appearing under specific conditions which are partly assimilatory (when the root-initial consonant is /l/) and partly dissimilatory (when there is a following /r/ that is not initial in the second syllable). Disregarding the dissimilation cases (which are not relevant to our problem), the assimilation would have to be described by a rule whose effect is to change /r/ to /l/ after stem-initial /lV/-/. A recent discussion of these facts by Cohn (1991) assumes that they are to be accounted for by phonological rule(s), but it is noteworthy that there are absolutely no other alternations in the language which would be accounted for by such a rule.

Furthermore, there are at least some instances of stem-initial /lVr/- sequences which would have to be prevented in some way from undergoing the assimilation. In a check of ca. 990 Sundanese lexical entries beginning with /l/, Cohn found 25 with initial /lVr/- . Of these, four are recent borrowings (e.g. lori ‘truck’), while twelve have an alternate form with /rVr/- (e.g. loris alternating with roris ‘check’); but none have /lVl/- as an alternative of /lVr/- as we would expect if assimilation were a rule of Sundanese phonology. There are evidently tendencies in the Sundanese lexicon that favor certain sequences of liquids and disfavor others, but there is no evidence for a phonological rule of assimilation. It would appear that the alternation -ar/al- is a fact about the plural infix and not about the phonology of Sundanese, and consequently ought to be incorporated into the Word Formation rule that corresponds to this marker. But in that case, the rule inserting the infix must be able to see the initial consonant in order to determine what form the infixed material should take.
A similar example is provided by the Kammu infix /-rn-/ mentioned above. When this infix appears in stems beginning with the palatal stop [c], the palatality of this element ‘wanders’ from the stop to the second consonant of the infix; for instance, from [cāk] ‘to pick’ we derive the instrumental [trnāk] ‘toothpick’. Again, the material at the beginning of the word which must be skipped in locating the infix (namely, the initial consonant) is relevant to determining the form of the infix. Indeed, in this case the ‘skipped’ material must itself undergo change as a concomitant of infixation. As in the Sundanese case, the variation at issue is confined to forms containing the infix in question; as noted by Svantesson (1983:65), it cannot be treated as ‘purely phonological, since there exists at least one (non-derived) word beginning with /crn/: cīnā? “between”.

A related point is made by the infixed reduplication in Kwakwala forms (cf. Boas 1947; my retranscription) like mimx’iqala ‘to feel asleep’, from mixa ‘to sleep’; gëlqaμi? ‘to meet swimming in water’, from gëlqa ‘to swim’; etc. In these forms, a copy of the initial consonant is infixed after the first syllable nucleus, which ought not to be possible if in fact the initial CV is treated as extrametrical with respect to an operation of prefixation to the remainder of the word.

A different kind of argument against the extrametricality-based account of infixation is supplied by Chamorro, as illustrated in 12. In this language, infixes are located immediately before the first vowel of the word, regardless of the number of initial consonants.

(12) a. dumankolo ‘become big’, from dankolo ‘big’
   b. hinasso ‘thought (N.)’, from hasso ‘think’
   c. trumisti ‘becomes sad’, trintisti ‘sadness’, both from tristi ‘sad’
   d. plīmantu ‘sets (the table) [NOM.WH-agreement form]’, from planta
      ‘set the table’

In order to describe this situation in McCarthy & Prince’s terms, it would be necessary to mark more than one word-initial consonant as extrametrical. This would, however, violate one of the (few) constraints on the application of this notion, namely, that exactly one peripheral element within a domain can be treated as extraprosodic. Current theories offer a variety of different views of the prosodic relation between individual segments and higher-level constituents such as syllables, but in general these do not involve any intermediate structural element to which all and only the onset consonants would be attached, and which could accordingly be treated as the extrametrical unit. In the absence of such a unit, though, extrametricality cannot be the source of the placement of Chamorro infixes such as those in 12.

On the basis of these arguments, we conclude that the most appropriate analysis of infixation is one that is rather parallel to the account of clitic location above. Infixes thus constitute analogs of second-position and similar clitics: Tagalog –um- in gumabi ‘get on toward nighttime’ (cf. gabi ‘night’) is located with reference to the initial C-slot of the stem, and follows this reference point. It is thus a sort of ‘second-position’ affix.

Let us summarize the other parallels between word-level affixation and
clitic placement that have been adduced to this point. Prefixes and suffixes are obviously parallel (at least in position) to initial and final clitics. Languages like Georgian and Icelandic have internally complex words, with a nonhead constituent (initial preverbs in Georgian, a final middle marker in Icelandic) and rules that assign affixes to the word’s nucleus or head rather than the whole word. Many clitics are located with respect to the syntactic head. Finally, since the (main) stressed syllable is the head of the word’s prosodic structure, infixes located with respect to this point are also head-oriented (but on phonological, rather than morphosyntactic, grounds).

These formal parallels can be further extended. Just as word-level morphology includes both affixation and nonaffixal changes (vowel changes, consonant mutation, metathesis, deletion, etc.), phrasal morphology is usually affixal (e.g. English ‘-s in I once knew that guy you’re talking about’s brother-in-law), but sometimes nonaffixal. Examples of this situation are alluded to in 13; fuller justification of the analyses proposed for the first two cases below can be found in Anderson 1992, Ch. 8.

(13) a. In Tongan, the normal location of stress is on (the syllable containing) the penultimate mora. A sort of definiteness is marked by a stress shift to the final mora of the entire NP, a phonological change that is not reducible to the addition of an affix, despite the suggestions of Poser 1985.

b. In Welsh, the first word of a NP used as the direct object of a finite verb undergoes the ‘soft mutation’. Despite valiant efforts by many (including e.g. Lieber 1987), it is not possible to say that lenition is an affix with determinate phonological content as opposed to a process of modification.

c. In a number of Algonquian languages, a set of subordinate clause types are marked not with an overt Complementizer element but rather with the ‘changed conjunct’ form. This is made by a process of ablaut applied to the first vowel in the VP; the vowel affected may be part of a Verb stem, a pronominal or other proclitic, or an adverbial or other preverb. Compare, for instance, these two examples from Fox:10 e:shki kano:n-ehka ‘the one who first spoke to you’ (lit. ‘first [< ashki] speak-3sg.to.2sg‘) vs. ke:no:n-ehka ‘the one who spoke to you’ (lit. ‘speak-3sg.to.2sg‘).

In formal terms, then, the operation of Word Formation rules (and of affixation, in particular) seems to be strikingly parallel to the apparatus required to deal with the general class of linguistic elements we have called special clitics.

3.2.3. CLITICS AND THE THEORY OF GRAMMAR. How might we organize the theory of grammar so as to incorporate this generalization? The theory of Anderson 1992 does this by treating special clitics not as items of a specially

10 See Goddard 1988 for examples of such processes that apply to syntactically derived forms in this language.
marked class, introduced by normal lexical insertion and then moved to their surface location, but rather as the overt manifestation of a class of ‘Word Formation Rules’ that operate on phrases. A rule of this type has access to the properties of the phrase involved and to its phonological form, and typically operates to attach an appropriate affix (the clitic). Such a clitic-introduction rule, then, maps the representation of a phrase (which consists of a structured phonological form and the syntactic feature structure of the phrase) onto a new, modified representation. Elements in the range of this mapping differ typically from the corresponding elements in its domain by the addition of some phonological material—a ‘Phrasal Affix’ that corresponds to the traditional special clitic.

We can fit this class of operations into the general theory of morphology by recognizing that, as developed in Anderson 1992, Chs. 3–5, the theory of inflection must include a number of components, including those listed in 14.

(14)  a. A theory of Morphosyntactic Representation (the representation of the inflectional properties of words and phrases, including the way this is constructed and manipulated by the syntax, on the one hand, and accessible to rules that specify the formal realization of such properties, on the other).

b. A theory of the PhonoLOGICAL Realization of morphosyntactic properties.


It is the last of these that is of importance here. Though this fact is often ignored, in a great many cases some formally realized property is assigned by the syntax to a phrasal constituent, not to an individual word. For example, it is NPs (or equivalently, for present purposes, Determiner Phrase)s which constitute the arguments of Verbs and Prepositions and which thus receive case—not Nouns, Determiners, or Adjectives. The realization of NP case, though, is typically in aspects of the form of these individual words.

Phrasal properties are the properties of larger phrasal domains which have their foundation in the way these domains behave syntactically (e.g. the effect of tense, etc., in defining the scope of binding relations), but which are realized on particular words within the structure. Now the relation between properties of phrases and those of words might be as simple as a convention of ‘percolation’, or it might be more complex, as implied by the mechanisms proposed in GPSG (see Gazdar et al. 1985) and similar theories for the distribution of head features, foot features, etc., but any theory must give an explicit account of this relation somewhere. What I want to suggest is that the theory of clitics is integrally related to these issues.

Consider, for example, the class of auxiliary elements which appear in second position in Warlpiri. These include formal markers for tense and agreement, properties which can plausibly be regarded as characterizing the clause as a whole. On this view, we can regard the underlined auxiliary material in 15a as the formal reflection of properties of the clause, a constituent whose featural content is given in 15b.
The way this works is by attributing to Warlpiri a system of rules which operate on phrases, introducing the clitic components of the auxiliary by a sequence of phrasal affixations to the first constituent of the clause. Just as word-level (inflectional) morphology looks at the form of a word’s base and the morphosyntactic properties it is to express, and modifies its form accordingly (typically by adding an affix), so too the phrase-level rules look at the form of a phrase and its properties, and add affixes—which we then call ‘clitics’.

When the base of the auxiliary in Warlpiri is bisyllabic, it may appear in either initial or second position. Following Simpson 1991, I propose to account for this fact by noting that bisyllabic bases are potentially full words in Warlpiri, while monosyllabic ones are not. We could therefore say that the monosyllabic forms are necessarily prosodically deficient in this language, while the bisyllabic ones are not.

Suppose, then, that the rules for introducing Warlpiri auxiliaries locate the initial constituent of the sentence, and then (in a way perhaps related to the general freedom of word order in Warlpiri) introduce the auxiliary elements either preceding or following this. The choice of order must be made uniformly on a sentence by sentence basis, similar to the option of choosing either the phonological or the syntactic parsing of a sentence for the purpose of placing second-position clitics, as in Serbo-Croatian, illustrated above. If the (relevant) rule of Stray Adjunction in Warlpiri always adjoins stray material leftward, a structure in which a monosyllabic (hence, prosodically deficient) base appears sentence-initially will be ill-formed, since it contains prosodically unincorporated material. This suggestion is confirmed by Simpson’s remark (1991:69) that ‘in connected speech, monosyllabic AUX bases are found sentence initially, because the last element of the previous sentence provides a phonological host for the clitics.’ When the base is bisyllabic, its status as prosodically autonomous will allow it to appear in either position.

This example illustrates, among other things, the fact that not all elements that are ‘special clitics’ (hence introduced by a rule of the type under consideration here) are also ‘simple clitics’ (that is, prosodically deficient items which need to undergo Stray Adjunction). This property corresponds at the word level to the fact that, while most affixes are stressless (that is, lack their own metrical structure), some affixes in some languages bear constant stress and are to be analyzed as underlyingly metrified independent of the bases to which they are attached. Other examples of special clitics that bear autonomous stress (and are therefore not also simple clitics) have been cited by various authors (e.g. Klavans 1980: Ch. 5).
The formal apparatus of clitic placement is thus of a piece with that of word-level morphology. But in fact there is a functional parallel as well. Just as we can (and indeed must—see Anderson 1992 and elsewhere) distinguish inflectional from derivational morphology, there appear to be two kinds of phrasal affixes (= special clitics).

Inflectional clitics realize the phrasal properties of their domain. These include auxiliaries, tense markers, and pronominal elements representing the arguments of a clause, and determiners and possessive markers in NP. Like inflectional Word Formation rules, the corresponding rules each operate on a pair consisting of the phonological form of a phrase and the Morphosyntactic Representation constituted by the featural representation at the level of the phrase node. This includes features representing agreement within the phrase, and also features imposed on it by virtue of its position in larger phrases.

Derivational clitics are ones to which we commonly ascribe semantic or discourse functional content, often rather elusive in nature but clearly different from the sort of strictly grammatical material represented by the inflectional clitics. They correspond to the operation of rules which (like rules of derivational morphology at the word level) alter the semantic content of a phrase, including whatever controls discourse function. Just as derivational Word Formation rules map the semantics and syntax of their base onto that of their outputs, so these rules may effect a (nonidentity) mapping from the independently derived semantics of their input form onto a distinct interpretation associated with the form containing the clitic. These elements are often loosely called 'particles' in common usage.

Somewhat remarkably, when languages have extensive systems of both kinds of clitics at the same time, the 'inflectional' ones come outside of (= after, if enclitic; before, if proclitic) the 'derivational' ones. For example, Klavans 1983 argues that in Ngiyambaa (Pama-Nyungan; Australia) 'particle clitics' systematically precede 'pronominal clitics', as in the form 

\[
\text{waray: } = \text{garu } = \text{dhu } = \text{na} \quad \text{I have apparently [made] it bad} \quad (\text{stem waray, clitics garu 'from sensory evidence', dhu '1st person NOM', na '3rd person ABS}).
\]

Furthermore, a sort of cyclic principle is at work, since the same word can bear clitic elements derived from more than one domain (e.g., a sentence-initial Noun can bear clitics both from its NP and from the S in which that NP appears); and when this happens, the clitics associated with the 'inner' domain precede those associated with the 'outer' one.

From all of these considerations, we conclude that (special) clitics are the 'morphology' of phrases, parallel to the morphology of words. Uniformities across the class of affixes and clitics include those listed in 16.

(16) a. Word-level and Phrase-level 'morphology' share the same formal apparatus (cf. 6 vs. 10 above; also 13).

\footnote{For discussion of an apparent counterexample to this generalization in the system of clitics in Tagalog, see Anderson 1992, Ch. 8.}
b. The two share a difference between morphology accompanied by some semantically significant operation on interpretation (derivation) and morphology which marks the grammatical properties of a structure (inflection).

c. The relative orders of affixes and of clitics are typically both rigid, even in languages which otherwise have great freedom of order.

3.2.4. The underlying unity of clitics and morphology. So now we have a class of operations that describe both word-level affixation and the appearance of special clitics within phrases. These rules look at linguistic units (words or phrases), locate an element of a specified type at initial, final, or head position within them, and have some effect either preceding or following this element. There is a clear coherence to the set of structural positions where such effects occur: the beginning, the end, and the structural head of a domain are precisely its most prominent or ‘landmark’ positions, and thus the most natural anchors for a marker that characterizes the entire domain. We might next ask what it is about morphological operations and their phrasal analogs, clitics, that makes them gravitate to these positions.

Some suggestive remarks in this direction are provided by the framework for a morphological typology of language proposed in Sapir 1921, Ch. 5. One important dimension of that framework was a classification of ‘concept types’. Sapir noted that there is a range of concepts which can be formally expressed in language, and suggested that these fall into a small number of categories, as in 17.

(17) a. Basic [radical] concepts
b. Derivational concepts
c. Concrete relational concepts
d. Pure relational concepts

For a fuller discussion of just how these are delineated by Sapir, the reader must of course consult the original text, but the essential content of the categories in 17 is as follows. The ‘basic’ concepts of 17a are those involved in the fundamental semantics of basic lexical roots, which characterize the meanings of a language’s elementary word stock (e.g. the properties representing the basic meaning of cat). The ‘derivational’ concepts of 17b, in contrast, are those introduced by a set of semantic functions which operate on lexical items to yield new lexical stems from existing ones (e.g. the semantic correlate of the diminutive process which maps German Katze ‘cat’ into Kätzchen ‘kitten’). The ‘pure relational’ concepts of 17d are a set of intrinsically asemantic features having purely grammatical significance, but nonetheless formally represented in the shapes of individual words as a reflection of syntactic structure (e.g. the role of nominative case in Latin to mark the subject); and the ‘mixed’ or ‘concrete relational’ concepts of 17c are those which function syntactically, like the pure relational concepts, but which can be projected in some position from the semantics of some part of the structure (e.g. grammatical number in English,
which is grammatically relevant as the basis of the agreement relation between subjects and verbs, but which is a function of the semantics of the subject NP).

Sapir observed that the members of these categories are not all equally necessary to the structure of language in general. In order to say anything at all, of course, the speaker of a language must have at hand some meaningful words, and so every language must express ‘basic’ or ‘radical’ concepts. Furthermore, these words must be capable of being put together syntactically, and the representation of syntactic structure is the business of the ‘relational’ concepts—indicating subjechthood and objecthood, status as modifier vs. modified, etc. Much of the structure indicated by pure relational concepts may be reflected by word order alone, and so is of no particular interest to a theory of word structure. Sapir himself, however, included word order as a ‘grammatical process’ entirely comparable to morphological marking; in consequence, he could claim that every language must of necessity have some formal expression of ‘pure relational’ concepts, since otherwise it would have no syntactic structure. Abstracting away from word order, then, we can see that pure relational concepts will be represented morphologically exactly where information about purely syntactic function is carried by the forms of words.

As opposed to ‘basic’ and ‘pure relational’ notions, which must necessarily be formally represented in some fashion in every language, there is no necessity for a language to have any ‘derivational’ concepts at all. It is always possible to represent a complex meaning as a (syntactically formed) combination of two or more basic meanings, like little tree, instead of as a derivational function modifying a single basic meaning (as in tree-let). Similarly, it is not necessary for a language to make use of any semantically significant property, like number or (natural) gender, as one of the devices that indicate grammatical structure such as the modifier-modified relation or the relation between a predicate and its subject. Mixed relational concepts as a category are thus dispensable to particular languages as well.

This categorization suggests a fundamental dichotomy in the expression system of natural language: lexical entries are the locus of the representation of ‘basic’ concepts, while morphology (at the word level) and clitics (at the phrase level, on the conception being developed here) are the formal markers of functions over these basic concepts. The class of functions involved is broad, including both syntactic organization (corresponding to relational concepts) and semantic modification (marked by derivational concepts), but the basic opposition seems quite intuitive. And what we have discovered is that, in formal terms, all of these functions, insofar as they are marked by overt phonological material (or other effects), are indicated at some structurally prominent anchoring point within the expression of their domain. The unitary class of operations introducing word-level morphology and phrase-level clitics thus provides the formal expression of Sapir’s (‘pure’ and ‘mixed’) relational and derivational concepts, as opposed to the expression of basic concepts by basic lexical items. And naturally enough, the expression of a function that operates on some content is to be found at a structurally prominent place within the expression of that content—its beginning, its end, or its structural head.
3.3. **Verb Second and Clitic Placement.** But has this gotten us any further with the problem of relating clitic placement to Verb Second, as was the original intention? In particular, is there a way to develop Wackernagel's analogy by extending the kind of operation we have been talking about so as to account for Verb Second phenomena? To see how we might accomplish this, let us first formulate the basic descriptive generalization which seems to underlie the Verb Second phenomenon. I will ignore for now the difference between clauses that are subject to this principle and those that are not, and focus on the nature of the principle itself.

(18) The Verb which is marked for the Tense, Mood, and Agreement properties of a clause appears immediately after the first constituent of the clause.

Let us in fact treat Tense, Mood, and Agreement as characterizing the entire clause. In spirit, at least, this is what is meant by calling Inflection the 'head' of clause structure, as for instance in Chomsky 1986 and most subsequent work within the same general framework of assumptions. We can represent this by including features of Tense, Mood, and Agreement as components of the feature structure of S, as we have already done above in dealing with Warlpiri auxiliaries. Now we can reformulate 18 as 19:

(19) The formal markers of a clause's relational properties appear as morphology on a Verb immediately after the first syntactic constituent of the clause.

3.3.1. **Feature Placement Rules.** This is obviously extremely close to the case of second-position clitics, though it is not yet identical. That is because it will not do to introduce the realizations of Tense, Mood, and Agreement simply as 'clitic' affixes in second position: their realization depends intimately on the lexical properties of the Verb that appears there. As anyone knows who has ever learned the conjugational system of Verbs in an inflected language. What is needed is not simply the introduction of phrasal affixes, but actually the transfer of the inflectional features to the appropriately positioned Verb.

But in fact, there are other cases where clitic placement has to relocate features rather than realizing them directly. In addition to the introduction of phonological material (or changes) in the string, some kind of feature transfer must be incorporated into the clitic-placement account of the realization of phrasal properties, in any event. Consider, for example, the system of case marking in the Australian language Pitjantjatjara (cf. Douglas 1964). In this language, only the final word in the Noun Phrase is marked for case:

(20) a. tjitji-lu nani pungu.
    child-ERG rabbit hit
    'The child hit (killed) a rabbit.'

b. ngayu-ku tjitji minali pulka-lu nani pungu.
    me-DAT child boy big-ERG rabbit hit
    'My big boy child hit a rabbit.'
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c. ngayu-ku tjitji minali pułka kutara nyara-1u-ya nani pungu.
me-DAT child boy big two those-ERG-pl rabbit hit
‘Those two big boy children of mine hit a rabbit.’

It might appear that we could simply introduce a clitic /-lu/ (or /-tu/, following a consonant) after the final word of an ergative NP, but this is insufficient. We can already see this in 20c: demonstratives and pronouns, but not other words, take an additional suffix /-ya/ to mark personal plurals, and this suffix comes after the case marker. The introduction of this marker requires reference to the lexical properties of the final word, and the structure of nyarala\textsubscript{i}ya suggests that case is here being treated as part of the inflectional morphology of this word, rather than simply as a phrase-level clitic. The same conclusion is also suggested by the facts that (a) in the Ooldea dialect, the shape of the ergative marker depends on whether the word on which it appears, when this is a Noun, is proper or common; and (b) if the last word of the NP is one of a small set of pronouns (varying somewhat from dialect to dialect), no ergative marker appears.\textsuperscript{12} What we need in Pitjantjatjara, then, is a rule that transfers the inflectional features of NP (including case and number) to the last word, where they are realized by the word-level rules of inflectional morphology that may be sensitive to properties of this word (such as whether it is [+ Plural], a [+ Proper] Noun, a pronoun, etc.).

This kind of feature transfer is by no means isolated. Another example is furnished by a number of the Balkan languages that have postposed definite articles. In Rumanian, Bulgarian, and Macedonian, the definite article appears as a suffix to the initial word (Noun, Adjective, Numeral, possessive Pronoun, etc.) of the Noun Phrase to which it applies. Examples are Rumanian omul ‘the man’, omul bun or bunul om ‘the good man’, and bunul meu părinte ‘my good father’; or Bulgarian mọžat ‘the man’, mladijit mọž ‘the young man’, prijeteljat ‘the friend’, and moja\textsubscript{t} dobar prijetel ‘my good friend’; or Macedonian volot ‘the ox’, beliot vol ‘the white ox’, rekata ‘the river’, and brzata planinska reka ‘the fast-flowing mountain river’; etc. (Krámsky 1972, Aronson 1968, Groen 1977). In some cases (e.g. Rumanian) it might be possible to introduce this element simply as a postinitial clitic within the Noun Phrase, realizing features of definiteness, number, gender, and case. In Bulgarian and Macedonian, however, the marker for definiteness seems to be sensitive to properties of the individual lexical item on which it appears, and to be integrated into the phonology in a way that suggests it is best treated as part of the inflectional morphology of that word. Again, the mechanism involved seems to be a rule transferring the relevant features of the Noun Phrase to its initial element.

There are, of course, many outstanding issues in the theory of phrasal prop-

\textsuperscript{12} As Philip Miller points out to me (personal communication, 1992), the only examples provided by Douglas of this point are cases where the unmarked pronoun is the only word of the NP. It would thus be interesting to establish whether an ergative marker does or does not occur when the last word of a NP accidentally is a pronoun. Since such a pronoun would have to be a complement within a subordinate structure, however, we are not likely to resolve this: in Pitjantjatjara, it seems that complement-taking heads are always phrase-final themselves.
erty realization which we have not yet resolved. From a phonological point of view, for example, we need to consider the interaction of material added (or changed) by a rule of this type with the rest of the lexical (and postlexical) phonology of a language. Strictly internal to the theory itself, we need to develop and motivate explicit criteria for determining when a given phrasal property is represented directly by a rule operating on the form of the phrase, and when it is transferred to some word within the phrase to be expressed morphologically at that point. I have nothing further to say about such problems here, not because I consider them trivial (or insoluble), but because they would take us still further from our central concerns. What is of importance in this discussion is the basic character of the class of ‘generalized affixation rules’ (including clitic placement as one subcase), and the inclusion in that class of rules transferring featural content to a particular word within the phrase for morphological expression.

3.3.2. The Verb Second Rule. But if the class of clitic placement rules includes rules that transfer features to their anchor point (as well as the familiar cases introducing phonological content before or after this point, or modifying its phonological form), we can now describe Verb Second with the rule stated informally in 21.

(21) Realize the inflectional features of a clause by (a) locating its first constituent, and (b) copying the features of Tense, Mood, and Agreement onto a word immediately following this anchor point.

Given that the features in question are inflectional features of Verbs (and not of Nouns, Adjectives, etc.), we probably do not need to complicate this statement by requiring explicitly that their ‘landing site’ be a Verb: if it were a member of any other class, the result would be a morphosyntactic representation to which no inflected word of the language could correspond, plausibly resulting in an ill-formed structure. Thus, if the syntax has not (independently) located the Verb in the appropriate (i.e. second) position, the structure will block.

Notice that this rule does not itself move the Verb to second position. Movement of the Verb (in the presence of 21) results rather from the confluence of the requirements that the inflectional features of a clause be realized, that a Verb be assigned features which will allow it to be inflected in some way, and that only Verbs can realize the features of verbal inflection. Their effect is to require that whatever movement takes place, an otherwise uninflected Verb must appear in second position in the clause. On this view, the Verb has to move to second position in order to serve as the recipient of the clause’s inflectional features by rule 21. This rule says nothing at all about how the movement takes place, or about the structural position occupied by the Verb before or after movement. Depending on your theory, the movement involved might perfectly well be substitution for C, or adjunction to something, or simply some sort of permutation. All that matters is that the Verb appear in second position so as to make it possible for 21 to apply.

So on this story, we have indeed assimilated Verb Second to clitic placement.
The second position of the Verb within the clause is due to the operation of a second-position rule, and is not just an epiphenomenon, an accidental consequence of the fact that exactly one other thing happens—always—to precede the position to which the Verb moves, as it is treated on most other Verb-movement accounts. Importantly, the principle involved is the same as that which I suggested motivates clitic placement: locate the formal reflection of a linguistic unit's relational properties by reference to a prominent position in that unit (here, immediately following the initial constituent). The difference from (most, but not all) other rules of (special) clitic placement is only that rule 21 places features rather than overt phonological material.

4. The 'Morphological' Aspect of Verb Second. If Verb Second is due to a 'morphological' imperative—the operation of a clitic-placement rule—then we might ask why we do not find languages in which Verb Second requires the Verb to come immediately after the first word (not the first constituent), parallel to the cases with clitics. The reason for this is quite straightforward, however: on completely independent grounds, the structural possibilities available to movement rules would not (in the general case) allow the necessary movement of the Verb to such a position. Thus, if a language had a rule like 21, but which located the first word of the clause rather than its first constituent, its applicability would be restricted to sentences with one-word initial constituents (on the assumption that syntactic movement is always structure-sensitive, rather than analyzing individual words). Such a state of affairs is obviously rather unlikely. The class of cliticization rules allows for the possibility that 'first thing' means 'first constituent' (as well as for the possibility that it means 'first word'), and that would appear to be the only functional alternative for a rule which transfers features to a position in which the syntax must manage to locate some element in order to satisfy its Structural Description. The class of possible languages, then, is in the intersection of the morphological and the syntactic possibilities. And that is exactly the kind of result modular accounts of language are supposed to lead to.

This proposal is thus quite orthogonal to the question of whether Verb Second involves Verb movement, and if so, to what (structural) position. It is, rather, directed at why such movement should take place, if it does: the claim is that this is so as to locate the Verb in a structurally anchored position where it can realize the inflectional features of a clause. Of course, in a language which does not display Verb Second, the inflectional features of clauses may have to be realized too, but by a somewhat simpler rule. Simple transfer of these features to the main Verb will accomplish this, and of course this rule also falls within the class which includes clitic placements if this Verb is the head of its clause. We might even want to say that this is the default case (if we had a theory of the markedness of grammatical operations within which the declaration of such defaults would play some role). Yet another possibility is that the inflectional features are not realized in the morphology of any other particular word: recall the case of Warlpiri, where they are realized as a second-position auxiliary (not a Verb, but a separate 'clitic' element).
For those who like to characterize languages by the way they set parameters, then, the ‘Verb Second’ parameter consists of a specific choice, taken from within the class of rules we discussed above, for the particular rule which locates the realization of a clause’s inflectional properties.

4.1. THE SYNTAX OF VERB SECOND. Let us assume that it is possible to derive Verb Second word order, where it appears, by saying that under the appropriate conditions a rule from the class that also includes clitic placements applies. But, to paraphrase a former American president, just because we can find the resources to do that, is it the RIGHT thing to do? In particular, are there other accounts of Verb Second that are more explanatory in nature, and therefore to be preferred?

Within the recent syntactic literature, as I have mentioned at various points above, it has become standard to account for Verb Second in terms like those of a structure something like 22 (‘Yesterday I saw a grain-silo’; cf. 2a above).

Here the main Verb moves first to I (in order to acquire inflectional properties), and subsequently to C. Since this latter position is preceded by exactly one constituent (namely, the maximal projection in Spec-CP position, itself moved from a sentence-internal position), we achieve Verb Second positioning. An interesting and important feature of this analysis is the prediction it makes to the effect that I-to-C movement should be impossible if the C position is already filled. In other words, Verb Second should be impossible in the presence of an overt complementizer—exactly what we want in order to get Verb Second in German main clauses but not in subordinate clauses.

Crucial here is the mechanism involved in forcing the (inflected) V to move from I to C. There are no doubt a number of mechanical ways to force the
inflected Verb to move to C, but it is only if we could show that this movement is required for reasons independent of Verb Second that there would be a strong argument in favor of this account. Does such movement take place because of some property of the C position itself? All attempts (known to me; cf. Vikner 1990 for a recent survey) to force this movement, e.g. by positing some necessary relation between the positions Spec-CP and C, or by requiring C to be lexically filled, etc., amount to camouflaged language-particular stipulations of the requirement ‘move the Verb from I to C’. The movement remains, accordingly, without independent motivation.

The remaining advantage of formulating this parameter as ‘move I to C’ rather than as ‘the inflected Verb must be in second position’ is that the former would capture the complementarity of Verb Second and overt complementizers. Unfortunately, this generalization (while largely true for German, Dutch, and some other well-studied languages) is not correct as a description of Verb Second in general, even within Germanic. At least two languages of the family, Icelandic (cf. Rögnvaldsson & Thráinsson 1990) and Yiddish (cf. Diesing 1990) display Verb Second even in embedded clauses with overt complementizers. Consider the Icelandic examples in (23). The force of the Verb Second constraint here is shown by the fact that a sentence like (23b) shows the insertion of an expletive element pad, which appears in Icelandic in such cases only if necessary to ensure that the Verb is second in its clause.

(23) a. Jón harnar ad þessa bók skuli ég hafa lesið.
   John regrets that this book shall I have read
   ‘John regrets that I have read this book.’
   b. Ég veit ad það hafir enginn lesið bókina.
   I know that there has no one read the book
   ‘I know that no one has read the book.’

There are a variety of ways of accommodating these facts, but none is especially pretty. One path is to treat CP as a recursive category, thus allowing for more than one C position in some cases, such as in Icelandic embedded clauses. Alternatively, one could say (with Diesing’s analysis of Yiddish) that in languages like Yiddish and Icelandic the finite Verb moves to one position (C) in main clauses but another (I) in embeddings. Each of these accounts amounts to an abandonment of the strong structural parallelism between main and subordinate clauses on which the Verb Second phenomenon is supposed to follow as an automatic consequence.

The apparently complementary positioning of Verbs in German clauses with and without an overt complementizer element has been extremely prominent in discussions of the Verb Second phenomenon. When we consider a wider range of languages, though, we see that it is in fact a peculiarity of some particular languages (including German), rather than a general correlate of Verb Second. Nonetheless, it is necessary to suggest how such a language-particular correlation of Verbal position with the presence (vs. absence) of an overt complementizer could be described within the present terms.

I have suggested that Verb Second in German, where it appears, is due to
the operation of a rule from a class that generalizes the category of special clitics. Suppose, in fact, that we take this analogy seriously, and suggest that the Verb Second rule actually is the reflection of properties of the clause—just as an overt subordinating complementizer might be. On this view, declarative main clauses in German are marked by the ‘complementizer’ that consists in forcing movement of the Verb to second position, while other clausal types are marked by overt elements—als, dass, etc. Subordinate clauses with no overt complementizer element would then represent not phonological deletion of dass, but rather substitution of the main-clause complementizer (forcing Verb Second) for a complementizer which involves material in clause-initial position but which does not affect the position of the Verb.

We could then treat the inflectional features of the clause, which are located in main clauses by rule 21, as ‘Head features’ (in the sense of GPSG and related theories). This would result in their transmission to the Verb without further constraints on the Verb’s location in the clause. Assuming (with the literature) that German clauses are underlingly Verb-final, this gives us the result that exactly where the ‘Verb Second’ complementizer (whose only overt reflex is a requirement on the location of realization of the clause’s featural content) appears, the Verb is in second position. Elsewhere, ceteris paribus, the Verb appears finally, since it has no reason to move to any nonbasic position.

I stress once again that the theory of Verb Second espoused here does not per se deny that this involves movement of the Verb into a C position (though other facts, such as those of Icelandic embedded clauses, may make us wonder about the generality of this account). It simply proposes that the reason for such movement is to get the Verb to be in second position, rather than to fill C. The thrust of the proposal concerns the motivation for the movement, not its mechanics.

4.2. THE IMPORTANCE OF ‘SECOND POSITION’. If this view is on the right track, however, we might expect to find cases where Verb Second is enforced even though the structural identity of the position in which the Verb winds up is not uniform (apart from being second in the clause). That seems to be the case in Icelandic. The examples above suggest that the landing site for the Verb in main and subordinate clauses may not be the same, but there is also a third possibility, illustrated by the first sentence in 24.

(24) a. Ég hél áð kysst hêfðu hâna márgir stúdentar.
   I thought that kissed had her many students
   ‘I thought that many students had kissed her.’

b. *Ég hél áð hâna kysst hêfðu márgir stúdentar.
   I thought that her kissed had many students
   ‘I thought that many students had kissed her.’

13 Of course, other things may not always be equal. For instance, interrogative clauses might be identified by a ‘Verb First’ complementizer, as might declaratives under certain discourse conditions. A full study of these factors is certainly warranted, but the (more modest) point here is that the mechanisms which need to be invoked on the view presented here to account for a range of word order possibilities do not involve notably more apparatus or stipulation than is characteristic of others in the literature.
This construction is known as ‘Stylistic Fronting’, and while its properties have been extensively discussed (Maling 1980, Jónsson 1991), its analysis has remained unclear. I will not attempt to recapitulate that discussion, but it is quite evident that the syntactic properties of this structure are quite distinct from those of other ‘fronting’ processes in Icelandic. First of all, it should be noted that the element which appears before the Verb in this construction (kysst ‘kissed’ in 24) cannot be a full maximal projection, but rather is limited to a single word—generally a past participle, as here, but also possibly a one-word Adverb, the negation marker ekki, or one of a few other possibilities. This construction involves no emphasis (as opposed to the kind of fronting usually called topicalization), and (again, unlike topicalization) is quite common and generally acceptable in a full range of embedded clauses.

Most interestingly, Stylistic Fronting is subject to an additional syntactic condition: the clause in which it occurs must have a gap in the structural position of the subject, either underlyingly (as in impersonal constructions) or created by extraction, postposing, etc. Furthermore, Stylistic Fronting does not co-occur with topicalization or other constructions involving a fronted maximal projection.

Since the fronted element is a single word rather than a maximal projection, the position it occupies is evidently not structurally the same as that occupied by topicalized constituents (such as pessa bók in sentence 23a). Because of the requirement that sentences in which Stylistic Fronting applies display a subject gap, it is tempting to suggest that the fronted word actually moves to the subject position, but this alternative presents quite serious obstacles for virtually all theories. Apart from problems of categorial mismatch, for example, there is the difficulty that the stylistically fronted element would cover the trace of the actual subject, which may be necessary to preserve for purposes of 0-role assignment. The question of how to analyze this structure, then, has been seen as puzzling in the existing literature.

Let us consider the general properties of Icelandic (noninterrogative) clauses. I assume, with essentially all analyses, that the basic word order of Icelandic is SVO. The subject may be preceded by a fronted maximal projection, yielding the topicalization construction. In that case, the finite main Verb is positioned following the initial topical element and preceding the position of the subject. In all cases, then, the inflection-bearing Verb is in second position, and I propose that this indicates that noninterrogative clauses (both embedded and matrix) are subject to the Verb Second principle.

On the present analysis, a basic sentence in which nothing is topicalized need undergo no movement in order to achieve this effect, since the Verb is already in second position in basic structure and can be assigned its inflectional features in that position without movement. This is consistent with the fact that fronted nonsubjects have the discourse interpretation of ‘topic’, while a sentence-initial subject may or may not have such an interpretation.

The topicalization construction, however, shows us that the phrase-structure principles of the language must also allow for two other structural positions preceding that of the underlying subject: a clause-initial $X^{\text{max}}$ position that can be filled by a topic, and an immediately following position for a single word,
to which the Verb moves in order to satisfy 21 when the initial $X^{\text{max}}$ position is filled. For analyses such as that represented in 22 above, the first of these is the ‘Specifier of CP’ position and the second is the C of CP, but this particular labeling is not essential to the observation that a well-formed Icelandic clause has the schematic structure of 25, essentially that observed for Verb Second languages generally by Chomsky (1986:6).

(25) \[ (XP) (X) [ (Subject) [\_VP (Verb) ... ]] \]

In terms of this structure, let us see how we might account for the properties of the Stylistic Fronting construction. Recall that since Stylistic Fronting is inconsistent with topicalization, these are sentences in which the initial XP position in 25 is unfilled. Recall also that there must be a subject gap in such sentences, and that the subject position in 25 must therefore also be empty (at least phonologically). In that case, the Verb would not satisfy 21 in its basic position (since it would instead be clause-initial); and moving it to the X position in 25 would not alleviate this, even if we could find some motivation for such movement. But notice that we could satisfy 21 under these circumstances by moving not the Verb, but some other element to the initial X position—which, I propose, is exactly what happens in the Stylistic Fronting construction.

Stylistic Fronting thus consists of the movement of some word¹⁴ other than the Verb to the pre-subject X position in 25, allowing the Verb to satisfy 21 in its basic position without movement. This analysis accounts directly for the incompatibility of Stylistic Fronting and topicalization, and most importantly for the subject-gap condition on fronting. But if it is correct, it must then follow that the Verb can satisfy its structural requirements while remaining in its original position within the VP,¹⁵ as well as when it moves to other positions (the pre-subject X position in 25, C, I, etc.). What unites all of these possibilities is clearly not formulatable as a requirement on the position for which Verb movement substitutes the Verb; rather, it is the fact that in all cases the Verb ends up in second position.

And of course that is exactly what the analysis in terms of a postinitial ‘clitic-placement’ rule states. Since rules of this class can involve explicit reference to second position, it ceases to be an accident that all of the positions in which the Verb may wind up have in common that they follow exactly one other constituent within the clause. Sometimes things are actually no more complex than they seem.

More significant than the aesthetic advantages of such simplicity, however, is the intuition underlying this analysis. Its point is that it assimilates the formal realization of the inflectional properties of a clause to other rules which locate markers for ‘relational’ concepts with respect to an anchoring position in the

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¹⁴ The problem remains of how to constrain this movement so that it only applies to Adverbs, particles, $e$kki, and the ‘right’ past participles. This question arises equally for any account of the construction, however, and is in no way particular to the analysis offered here.

¹⁵ As pointed out above, this view implies that a sentence with no topicalized constituent involves no movement. Both the subject and the Verb remain in their basic positions, providing another case in which the Verb achieves second position without movement.
string—its beginning, its end, or its structural head. By claiming that the Verb Second phenomenon is actually an instance of (a suitably general notion of) clitic placement, we achieve a unification of the formal mechanisms by which ‘relational’ (and ‘derivational’), as opposed to ‘radical’, concepts are manifested in natural languages.

5. CONCLUSION. A recent tendency, at least in the literature of Government/Binding theory, has been to elaborate the structure of clauses by introducing a series of ‘functional’ categories whose internal form is exactly parallel to that of categories based on lexical elements. The content of these functional categories, however, is unlike that of lexical categories: typically, it is instead the sort of information that is marked by the morphology of words, and not by distinct open-class lexical items. Because their content is thus similar to that of (inflectional) morphology, we might therefore expect these functional elements to behave formally and structurally in a way similar to that of morphological material, rather than to the syntax of lexical items.

Of course, if the forms of words and the forms of phrases and sentences are all governed by a single uniform set of rules and principles, as would be suggested by theories that treat morphology as the syntax of words, this is not very surprising, and the move to assimilate functional categories to the syntax of lexical categories seems straightforward. But if indeed the principles and mechanisms of morphology are rather different from those of syntax (as argued at some length in Anderson 1992, especially Chs. 2, 3, and 10), there is a serious issue of principle here. Within the generative tradition, a lack of serious attention to morphology until relatively recently has encouraged the assumption (implicit in much recent discussion of the syntax of functional categories) that the mechanisms of syntax could profitably be extended down into word structure to account for much of morphology. The proposal made here, in contrast, is that principles whose motivation is basically morphological may be profitably extended to interact with principles specific to the construction of phrases, in order to account for some of what might seem at first to be purely syntactic.

Of course, working out this program probably leads to a much narrower conception of the syntactic and lexical status of functional categories than the dominant one in much current syntax. That is because on this view the content of Tense, Agreement, etc., resides in the feature structure of phrasal categories, rather than constituting a set of syntactically autonomous functional heads. Surely if the syntactic force of functional elements can be accommodated without a need to treat them as autonomous elements with their own projections in the syntax (a status clearly unmotivated by the location of their realizations in the surface forms of sentences\(^\text{16}\)), such an account should be preferred on grounds of theoretical parsimony.

In the end, then, I propose that the Verb Second regularity is not an accident, due to a coincidental interaction of phrase structure with specifically syntactic

\(^{16}\) Of course, some proposed ‘functional heads’ surely do constitute syntactically autonomous units—for instance Determiners (whether or not these are phrasal heads) in most languages. But that fact hardly implies a similar analysis for all other functional elements.
mechanisms, but rather a language-particular choice in the rule that realizes
the inflectional features of a clause—a rule that says ‘put the clause’s (verbal)
inflectional material immediately after the first element of the clause’. Since
the possibility of such a rule arises within a theory of word structure when this
is generalized to the principles for the placement of clitics, we can conclude
that, although he might not have recognized the form in which his account
appears here, Wackernagel was right after all in a way. In some cases a mor-
phologically-based explanation may play a role in syntax; specifically, Verb
Second may be a kind of ‘clitic placement’, even though this is not based (as
Wackernagel thought) on similarities of word accent.

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