Towards an Optimal Account of Second Position Phenomena

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One of the early classics in generative grammar, published in the same year as Chomsky’s Syntactic Structures, was a paper by Morris Halle (1957) “In Defense of the Number Two.” The present paper might be seen as a further attempt to substantiate the linguistic significance of “two,” this time in the ordinal sense of “second” rather than that of binarity.

A variety of recent analyses have attempted to claim, in effect, that the appearance of a notion of ‘second position’ in the descriptive statement of several natural language regularities is actually an artifact, that the real generalizations in each case refer to something else, and that the connection with second position is coincidental. I will argue, in contrast, that a number of effects are indeed related in a fundamental and unitary way to the notion of second position. The most appropriate way to capture these regularities appears to be in terms of a system of interacting constraints of the type envisioned in Optimality Theory, referring to the organization of a “post-Spell Out” level of syntactic structure such as PF.

In the syntactic literature of the past hundred years and more, there are two principal places where the notion of ‘second position’ seems to figure. Although the phenomena in question are at least superficially rather heterogeneous, one’s curiosity is naturally aroused as to whether there might

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be some generalization that would unite them. What is involved, basically, is the question of whether there is any connection between the placement of certain clitics immediately after an initial element (of their clause, or in some instances, of a phrase to which they are relevant) and the well known requirement in several languages (the most discussed cases being Germanic, but also including several others) that the finite Verb come in second position in e.g. German declarative main clauses.

Do these facts have anything to do with one another? Jakob Wackernagel, with whose name the placement of clitics in second position is commonly associated, certainly thought so. In his widely cited (but perhaps less widely read) discussion of the clitic facts, Wackernagel (1892) explicitly argued that Verb-Second in Germanic could be derived from the same principles as those governing second position clitics in the classical languages. Let us recall that for Wackernagel, the class of “clitics”\(^1\) was precisely that of “unstressed words.” The bulk of his paper is devoted to a demonstration that in Proto Indo-European, these clitics appeared in second position, as illustrated by the following Homeric Greek example.\(^2\)

(1) pôleis=te=min ἐρεῖςαντο ἡππεῖσ phorein
   many-and-it prayed riders carry
   And many riders prayed to carry it (Iliad 4.143)

Facts such as the accentless nature of finite main Verbs in Sanskrit and the consistent regressive accentuation of finite Verbs in Greek led Wackernagel to the conclusion that finite Verbs in PIE were unaccented, a conclusion which is still accepted today by most Indo-Europeanists. But in that case, by virtue of its lack of accent, the PIE finite Verb was by definition a member of the class of clitics, and thus should behave in the same way as other clitics: in particular, it ought to be attracted to the same, second position within the clause. On this basis, Wackernagel argued that the Verb-Second phenomenon in Modern German should be regarded as the reflex of this original clitic status.

\(^1\)To be more accurate, *enclitics* and *proclitics*: the modern generalization to a class of *clitics* is a rather recent terminological innovation.

\(^2\)Clitics in this and subsequent examples appear in bold type, separated from their phonological ‘hosts’ by =. This convention is purely typographical, and is not intended to make any claims about boundary elements or other aspects of their phonology beyond their incorporation into a phonological word with the host.
Taken literally, Wackernagel’s analysis seems rather unpersuasive as an account of the synchronic syntax of Modern German (or other Germanic Verb second languages). For one thing, German lacks second position clitics, and thus there is no wider class for the Verb’s behavior to be derived from; and for another, German main Verbs bear stress, and thus would not be candidates (in Wackernagel’s terms) for clitic status in any event. Recall, of course, that Wackernagel intended his account to be taken diachronically, such that the potential unity of the two phenomena is not essentially compromised by these facts about German. Even in a diachronic sense, however, Wackernagel’s account of Verb-Second has not gained many adherents. Germanic Verb second appears to be historically a relatively recent innovation, not dating to a stage for which second position clitics can be reconstructed. Kiparsky (1995, p. 159) argues that Germanic poetry based on alliteration (and thus implying stress on alliterating words, including finite Verbs) “was certainly flourishing around the time Verb-second word order gained ground in the Germanic languages.” Although other work (Eythórsson 1996) suggests that Verb-second actually appears much earlier in Germanic than Kiparsky’s account assumes, a diachronic connection with second position clitics has not seemed very appealing.

The question remains, however, of whether there is anything that the phenomena of second position clitics and second position finite Verbs have in common beyond mere descriptive appearance. In order to determine whether there is anything deeper that relates these facts to one another, we need to equip ourselves with a concrete theory of clitics, and then ask whether that theory extends in a natural way to encompass Verb-Second. In section 1 below, I will summarize a particular view of clitics which suggests they (or at least the relevant ones among them) should be regarded as analogues at the phrase level of morphological affixation in words. Section 2 supports that conclusion by demonstrating that the descriptive regularities governing the placement of (especially second position) clitics are ones that fall outside the scope of syntactic formulation. Section 3 then addresses the issue of how clitic placement is to be described, and after considering other alternatives, proposes a system based on the notions of Optimality Theory. Section 4 discusses the differentiation in these terms of various notions of “second position.” Section 5 then returns to the question of Verb Second, and argues that the system developed for clitics provides an appropriate account for the position of the Verb in Verb second languages. Section 6 draws some general conclusions about the architecture of linguistic description.
1 A View of Clitics

We begin by noting that the notion of a ‘clitic’ actually conflates two rather different kinds of behavior. On the one hand, in what we can think of as “traditional” (by which I mean pre-generative) grammatical usage, such as Wackernagel’s, a clitic is a linguistic element that “leans” on another word. That is, clitics are classically construed as elements that are phonologically (especially accentually) dependent on an adjacent word. On the other hand, in the usage of many syntacticians, a clitic is a member of a class of (typically pronominal) forms whose placement is unusual or unique in terms of the syntax of corresponding non-clitic elements. The paradigmatic exemplars of clitics in this sense are the non-subject pronouns of, e.g., French or Spanish.

These two senses were usefully disentangled in a classic paper by Arnold Zwicky (1977), where a distinction was introduced between simple clitics and special clitics. The former are the phonologically dependent elements, while the latter are the syntactically unusual ones. One interpretation of Zwicky’s distinction (that of e.g. Anderson 1992) sees in simple clitics a class of elements that are “prosodically deficient,” in the specific sense that they lack some of the higher level prosodic organization (assignment to a phonological word, for example) that characterizes other words in their language. As a result of this lack of structure, they must necessarily be incorporated into some adjacent element of an appropriate prosodic type, resulting in their “leaning” on that element and thus exhibiting the characteristic phonological dependency.

Special clitics, in contrast, are not actually lexically autonomous linguistic elements at all, but rather should be seen as the morphology of phrases (cf. Anderson 1992, 1993, 1995, 1996). Functional (and in some cases, substantive) properties of phrases can be realized by affixes (as well as certain “non-concatenative” markers) added to phrases, just as the functional content of words is reflected by the inflectional (and derivational) markers they bear. The apparently unusual placement of clitics within their phrase then, does not result from strictly syntactic mechanisms (special or otherwise), but rather from essentially morphological processes.

This view, then, results in two distinct parameters that characterize the overall class of “clitics”: (a) prosodic deficiency; and (b) special placement by morphological, rather than syntactic means. These are independent of one another, since we can have prosodically full elements with special place-
ment as well as prosodically deficient elements with no special syntax. These latter, of course, are Zwicky’s simple clitics, such as the English reduced auxiliaries spelled ‘s (= is, has).

In most cases, special clitics are also prosodically deficient elements, just as most (but not all) word level affixation consists in the addition of elements lacking independent stress or other properties of higher-level prosodic structure. Just as some inflectional affixes may demonstrate independent stress or other word like properties, though, so some special clitics (e.g., Italian loro; cf. Nespor 1994) may fail to be simple clitics, establishing the independence of these two dimensions.

While the phonological dimension of cliticization has interesting and important properties and consequences, it is the regularities underlying the placement of special clitics that concern us here. Descriptively, we can identify (following a substantial literature, summarized in Anderson 1992) a limited set of positional possibilities for special clitics. With reference to the phrase that contains them, and whose properties they reflect, these may appear initially, or finally; post-initially (second position) or (perhaps) pre-finally; or preceding or following the head of the phrase. With the exception of pre-final (penultimate position) clitics, these are fairly robustly attested in the world’s languages.

When we look at these positional possibilities for (special) clitics, they seem strikingly analogous to those for affixes inside words, where we find essentially the same range of placement options relative to the word in which they appear (as well as other similarities, such as rigid ordering). The parallel extends to such details as the relatively tenuous attestation of pre-final infixes, comparable to the situation with respect to pre-final special clitics. The theory of A-Morphous Morphology (Anderson 1992, 1993) takes this analogy seriously, and proposes to generalize this result by treating special clitics not as lexical items inserted and moved around within the syntax, but rather as phonological material inserted (like affixes) into the phonological content of a phrase.

Special clitics, then, are elements that fall under the general theory of

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3 A long research literature makes it clear that the special properties of English reduced finite auxiliaries are not confined to their prosody; see Wilder 1997 for a recent summary. Nonetheless, it seems clear that the possible positions in which these elements appear constitute a proper subset of the positions in which corresponding full forms can be found; and at least one dimension of their behavior follows from their reduced prosody, as suggested here. We leave a fuller account of the syntactic conditions on the occurrence of these forms to another time and place.
morphological form. They are formal markers within phrases that express (a) the phrase’s properties (the content of its functional categories, more or less), or (b) modifications to the semantics, discourse properties, etc. of the phrase.\footnote{This latter possibility provides a clitic analog to derivational morphology; see Kaiser 1997b for an analysis of a Korean construction that makes crucial use of this notion. Our focus below will be primarily on “inflectional” clitics, so the properties of such elements will not play a role in this discussion.} The precise character of the mechanisms responsible for placing both clitics and word-level affixes should follow from these considerations, and it is to this matter that we now turn.

2 Can the syntax be responsible for the placement of clitics?

The common view among syntacists (who have long tended toward this kind of imperialism, especially \textit{vis à vis} morphologists) is of course that special clitics are ‘special’ in that they undergo particular processes in the syntax. That is, special clitics occupy the position in sentence structure that they do by virtue of rules of the syntax — just different rules (in part) from those applicable to non-clitics.

In evaluating this position, what we want is evidence as to whether the kinds of regularity that turn up with respect to special clitics are such as to fall, at least potentially, within the independently motivated capacities of the syntactic computational system. For those purposes, evidence from clitics that are located in phrase-peripheral positions (i.e., initial or final clitics) is unlikely to be probative, because virtually any sort of mechanism one can imagine should be able to accommodate these positions. Much more interesting, however, are examples of clitics that are located in second position, and it is these cases that will principally occupy us in this section.

How does a syntactic account yield the result that clitics occur systematically in the second position within a given phrasal domain? Essentially, there are two such mechanisms that have been proposed. On the one hand, the clitic might be generated in (or moved to) a structural position within the phrase where it will be preceded by exactly one other element. The standard form of such an analysis is to assume the placement of clitics in the position of the functional head of the relevant phrase, on the assumption
that exactly one other constituent will consistently precede this position, to wit the occupant of the Specifier position with respect to that head.

A second way to secure the result that clitics follow exactly one element within their phrase is to position them at the left edge; and then to require that exactly one other constituent move to their left. This movement might be an instance of adjunction to the phrasal category; or it might consist in the filling of some structurally characterized position (that of “Topic,” for example). In any event, the clitics will now be in second position because they are preceded by exactly this pre-posed constituent.

Both of these approaches appeal to quite standard syntactic mechanisms, though of course the details (such as the motivations for the various movements involved) remain to be filled in. The two have in common, however, a pair of predictions that make it possible to test the adequacy of such accounts. First, each of these analytic lines relies on the claim that the clitics occupy some specific, designated position in syntactic structure; and secondly, each has the consequence that the clitics will be preceded by exactly one syntactic constituent. When we explore the facts surrounding second position clitic placement in a variety of languages, however, we find that neither of these expectations is actually met in the general case.

Taking up the second of these matters first, we can examine the constituency of the material preceding second position clitics. It is interesting to observe that, although Wackernagel’s name is routinely invoked in connection with the observation that clitics often follow exactly one constituent within their clause (or phrase), Wackernagel himself thought of ‘his’ position as “after the first word,” rather than “after the first constituent.” His discussion was primarily focussed on the facts of Homeric Greek and Vedic Sanskrit, languages in which extensive scrambling suggests that virtually any (non-clitic) word can be a syntactically movable constituent, thus obscuring the difference between these two notions. In other ancient Indo-European languages, however, scrambling is considerably less free, and we can better distinguish words from phrases.

In Hittite (Garrett 1990), for example, word order is generally quite fixed. Members of a set of clitics\(^5\) appear consistently in second position within the clause. The applicable notion of “second position” is quite consistently “after

\(^5\)This clitic cluster was rather more extensively elaborated at some stages in the long history of Hittite than others, but its placement with respect to the rest of the sentence was consistent over time.
the first word,” even when that involves placement internal to a constituent which would never be broken up through scrambling or syntactic movement.

(2) a. kun=**wa=za** DUMU-an da **mu=kan** É,ŠÀ-ni anda it ... 
   this=QUOT=REFL baby-ACC take CONN=DIR house-LOC in go ... 
   Take this baby and go into the house ... (KUB XXIV 7 IV 45–6)

b. nepisás=**as=sta** DJŠKUR-unami āssús ēsta 
   heaven-GEN=he=PTC Weather-God-DAT dear-NOM he-was 
   He was dear to the Weather-God of Heaven (StBoT 18.2)

c. Lupakkin=**ma=kan** Uzalman=**na** INA Amka paraa naista 
   Lupakkis=QUOT=PTC Uzalaas=and into Amka forth he-sent 
   He sent L. and U. forth to Amka (JCS 10, p. 94, *apud* Golston 1991)

In example (2a) above, the clitics immediately follow a Noun Phrase-initial demonstrative. In example (2b), the clitics appear between a genitive modifier and the Noun it modifies, while in example (2c) the clitics follow the first of two conjoined elements. In none of these cases is the material preceding the clitic an independently movable constituent within the grammar of Hittite.

The best known example of a language in which it is a single word rather than a single syntactic constituent that precedes second position clitics is of course Serbo-Croatian. Browne 1974 was the first work (in the generative literature) to point out that, for at least some speakers, either the first word or the first constituent could define the location of second position clitics, as in the following examples.

(3) a. Moja =**če** mladja sestra doći u utorak 
   my fut. younger sister come on Tuesday 
   My younger sister will come on Tuesday

b. Moja mladja sestra **=če** doći u utorak 
   my younger sister fut. come on Tuesday 
   My younger sister will come on Tuesday

c. Lav=**je** Tolstoi veliki ruski pisac 
   Leo is Tolstoi great Russian writer 
   Leo Tolstoi is a great Russian writer

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d. Lav Tolstoi is great Russian writer
Leo Tolstoi is great Russian writer

A massive subsequent literature has discussed the details of these facts, and it is clear that speakers vary considerably (perhaps, but not necessarily, along otherwise motivated dialect lines) in their acceptance of sentences with clitics located after exactly one (non-constituent) word. What is clear, however, is that for at least some speakers, in at least some constructions, this placement is possible; and that when it occurs, it involves locating the clitic after material that does not constitute a syntactically motivated constituent of the clause.

Facts of the sort just reviewed militate against accounts that derive second position for clitics from their placement in such a way as to be preceded by exactly one phrasal position (whether this is a Specifier, and adjoined phrase, or some designated position such as “Topic”), because the preceding material is not a phrasal unit. Syntactic accounts that treat second position as essentially epiphenomenal are also challenged by the observation that the structural position in which clitics must appear cannot in some cases be characterized in a unitary way.

An argument to this effect is provided by Željko Bosković (1995) who shows (in the context of an account based on syntactic mechanisms for clitic placement) that there is no consistent structural position for Serbo-Croatian clitics. Bosković assumes, along with most of the literature, that sentence structure in these languages is straightforwardly right-branching, and thus that when an element A precedes another element B in sentences, the structural position of A is higher in the tree than that of B. On this basis, the sentences in (4) show us the position of VP adverbs relative to that of sentence Adverbs, since fronted participles may move to a position that precedes that of VP-adverbs, but not sentence adverbs:

(4) a. Jovan =je potpuno zaboravio Petra
   Jovan Aux completely forgotten Petar
   Jovan completely forgot Petar

b. Jovan =je zaboravio potpuno [t_i] Petra
   Jovan Aux forgotten completely Petar
   Jovan forgot Petar completely
c. Jovan =je nesumnjivo istukao Petra
   Jovan Aux undoubtedly beaten Petar
   Jovan undoubtedly beat Petar

d.*Jovan =je istukao_i nesumnjivo [t_i] Petra
   Jovan Aux beaten undoubtedly Petar
   *Jovan beat Petar undoubtedly

Note that in all of these examples, the clitic (=je) precedes both sentential and VP adverbs. Assuming that clitics occupy a consistent structural position, this position must thus be higher than that of either variety of Adverb — in particular, it must be higher than that of sentence adverbs. But participles can precede (and thus occupy a position higher than) clitics, so long as they do not also precede sentence Adverbs — an apparent contradiction:

(5)  a. Predstavili =smo =mu =je mudro juče
     introduced Aux him her wisely yesterday
     (We) introduced her to him in a wise manner yesterday

b. Jovan =je pravilno odgovorio Mariji
   Jovan Aux correctly answered Marija
   either Jovan gave Marija a correct answer
   or Jovan did the right thing in answering Marija

c. Odgovorio_i =je pravilno [t_i] Mariji
   answered Aux correctly Marija
   only (He) answered Marija correctly
   not (He) was correct to answer Marija

The problem disappears if we assume that while VP-Adverbs and sentential Adverbs may occupy consistent positions with respect to one another, and participles may precede one (but not the other), the position of clitics is simply “after the first element of the sentence,” without regard to the hierarchical position in phrase structure this may entail.

In work based on premises closely similar to those of this paper, Legendre develops a set of arguments for Bulgarian (Legendre 1998) and Romanian (Legendre 1997b) leading to the same conclusion. In each of these languages, the assumption that clitics are attracted to a position with a consistent structural characterization (e.g., a particular functional head) leads to a host of
complications, unwarranted assumptions and otherwise unmotivated movements. For Serbo-Croatian, on the other hand, the assumption that the clitics are located in second position (regardless of the way that might be described in terms of hierarchically organized phrase structure) is clear and straightforward. The only complication is the choice between an initial word (prosodically characterized) and an initial phrase as occupying the first position, a matter that will be addressed below.

Most of the discussion of second position clitic placement has focused on cases in which the clitics at issue have the clause as their domain. This is not the only possibility, however. In several languages, we find clitics that occupy second position within a nominal expression. The structural properties of these clitics are quite parallel to those of clausal second position elements, and the problems they pose for a syntactic account of their positioning are at least as significant.

The best known cases of second position nominal clitics are the definite determiner elements found in a number of Balkan languages, including Albanian, Bulgarian, Macedonian, and Romanian. These appear after the first word of the relevant NP, regardless of the function of that word, as in the examples in (6) from Macedonian.

(6)  
a. luge = vo  
    people + the  
The people  
b. gostoljubivi = ve luge  
    hospitable [pl.] + the people  
    the hospitable people  
c. nası = ve gostoljubivi luge  
    our [pl.] + the hospitable [pl.] people  
    our hospitable people  

A syntactic analysis of the placement of these determiners is offered by Tomić (1996), who proposes to derive e.g. (6c) as follows. Assuming that

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6 In addition, Legendre 1997a details arguments showing that in these systems, the clitic elements are syntactically 'inert,' as opposed to corresponding non-clitics.

7 Except where the issue of a DP analysis of such expressions is explicitly at issue, I will simply refer to these as NP’s, without necessarily presupposing a specific stand on what their head may be.

8 See Harrison 1997 for an account of NP clitics in Albanian along the lines suggested below.
the expressions in (6) are DP’s, the clitic element (=vo/=ve) is generated as the D⁰ head of the DP, with the rest of the phrase’s content in a NP that is the complement of this element. The first word of this NP then raises to the Spec position of the DP, thus coming to precede the clitic article.

In terms of widespread assumptions about syntax, this analysis poses some problems. First, we note that the element that raises to SpecDP position consists of a single word, rather than a syntactic constituent of arbitrary size. This suggests that the movement in question must be of a head; but the Spec position within a phrase is generally considered to be a phrasal position, not a head position. The movement posited by Tomić, then, must be of a head to a phrasal position, which is not well formed.⁹

A further problem arises when we attempt to account for why the movement should take place at all. As Tomić puts it, the movement is driven by the fact that the clitic requires an element to its left to which it can attach. Putting aside the issue of why a preceding phrase cannot satisfy this requirement (as indeed it can in some languages: see the discussion of Kwak’ala immediately below), we can note that this is inconsistent with the assumptions of current work in the Minimalist Program. In that framework, movement must always take place to satisfy the requirements of the element that moves (“Greed”), rather than those of some other element of the structure. It must thus be the clitic, not its host, that undergoes movement, and we would then be confronted with a problematic instance of lowering.

A full account of the Balkan determiner clitics involves a number of additional features as well, but the basic regularity is quite similar to that which we saw above for clausal clitics in e.g. Hittite: the clitic element appears immediately after the first word of the phrase that constitutes its scope. Such a regularity, based on the (prosodic, phonological) notion of a “word” rather than the (syntactic) notion of a phrase, is not the sort for which syntactic

⁹On the other hand, Tomić also notes that when an otherwise phrase-initial Adjective is preceded by an adverbial or PP modifier, the article clitic attaches to the Adjective, not to the first word. In exactly that case, but no other, the movement involved would have to be that of a phrase, not a head. The target position for movement thus does not have a consistent characterization as head or phrasal, and the type of movement involved is problematic. On the account to be offered below, in contrast, this distribution is straightforwardly accounted for: the clitic attempts to position itself as far to the left as possible within the phrase. Words cannot be broken up, so the leftmost position that is accessible in general is after the first word. If we add the condition that modified AdjP’s also cannot be broken up, a phrase beginning with such a modifier will have the clitic following it.
mechanisms are appropriate.

Similar conclusions can be drawn from the properties of another system of second position NP-internal clitics, those of Kwak’ala (cf. Anderson 1984). In this language, determiner elements are structurally complex. Every NP is preceded by an element which indicates case, deictic status, definiteness, and possibly a possessor. This is a clitic whose position is straightforward (it appears at the left edge of the phrase to which it relates), but whose phonological attachment is unusual, in that it attaches to the rightmost element of the preceding phrase, a fact which has made these clitics a standard example in the literature of the independence of phonology and syntax in clitic placement. More interesting for our purposes, however, is the fact that in certain deictic categories there is an additional overt element which attaches to the end of the first word in the NP, as illustrated in (7). In these examples, the NP-initial element is indicated as “\text{det}_1” and the second position element as “\text{det}_2”

(7)  
\begin{enumerate}
\item \text{max’id=id} \text{a walas=i bag’anam=xa g\text{an}\text{an}\text{am}}
\text{hit=det}_1 \text{big=} \text{det}_2 \text{man=} \text{Obj}[\text{det}_1] \text{child}
\text{The big man hit the child}
\item \text{(vs.) max’id=id} \text{a bag’anam=a=xa g\text{an}\text{an}\text{am}}
\text{hit=det}_1 \text{man=} \text{det}_2 = \text{Obj}[\text{det}_1] \text{child}
\text{The man hit the child}
\item \text{le na’nakw la=xes has=aq guk’u a}
\text{AUX goes home} \text{to=} \text{self’s}[\text{det}_1] \text{own=} \text{det}_2 \text{house}
\text{She goes home to her own house}
\end{enumerate}

Since the functional content of the “\text{det}_1” and “\text{det}_2” elements in Kwak’ala NP’s is quite intermixed, there is no plausible analysis of these facts as involving two discrete head positions, one of which is followed by the rest of the NP (or DP) and the other of which undergoes movement into a preceding specifier (or other) position. In addition, the motivation for such a movement would be even more problematic in this case, since the “\text{det}_2” element would always be preceded by material to which it could attach phonologically even if no movement took place. We must conclude that these elements are simply placed in second position (that is, following the first word) within the NP, by mechanisms which it is hard to see as fundamentally those of the syntax.

A further reason to doubt that the syntax is responsible for the placement of special clitics (second position or others) comes from the following consideration. Whatever it is that determines clitic placement also determines the
order among clitics, relative to one another. Now if this is a fundamentally
syntactic mechanism, we ought to find that the ordering within sequences of
clitics is coherent in terms of syntactically relevant factors, such as the relative
scope of functional categories, etc. At least since the work of Perlmutter
(1971), however, we have known that this is not in general the case. While
clitic sequences may largely follow some syntactically coherent principle (e.g.,
direct object clitics preceding indirect object clitics, etc.), there are nearly
always a few syntactically unexplained deviations from this regularity. Two
such examples, one quite well known and the other less so, are given in (8).

(8) French: dative/accusative me `1sg', te `2sg', se `3 reflexive', nous `1pl',
vous `2pl' < 3rd person accusative le, la, les < 3rd person dative
lui, leur < (adverbial) y < (partitive) en

Hittite: (following Friederich 1974, Hoffner 1986):
Sentence connectives < quotative (-wa(r)-) < dative/ accusative
plural < 3rd person nominative, accusative singular < 1st, 2nd
person dative/accusative singular, 3rd person dative singular <
reflexive (-z(a)-) < local, aspectual particles

In each of these cases we can see that some functionally unitary classes
(indirect objects, datives, etc.) are not consistently ordered with respect
to others; while some functionally heterogeneous classes of clitics have a
consistent place in the ordering.

An even more dramatic example of syntactically incoherent ordering is
apparently furnished by Sanskrit, where second position clitics can be shown
(cf. Insler 1997) to follow a sequence determined by a small set of entirely
phonological conditions. The conditions at issue are also applicable to the
sequence of items in compounds and various fixed collocations. They are
similar to the sort of conditions studied by Ross, Bolinger and others on
preferred orders in English. These are chiefly “Shorter before longer,” otherwise
“V-initial before C-initial,” otherwise by the vowel of the first syllable
(where ō/c>ā/o>r>ā>a) and otherwise “prosodically lighter before heav-
ier.” Syntactic categories seem to play no role in determining the required
sequence.

For a variety of reasons, then, I conclude that syntactic accounts of clitic
placement (and specifically, of the basis of “second position” phenomena
in clitic systems) are not appropriate (or, in general, adequate). For that
reason, taken together with the substantive parallels between clitics and the
morphology of words referred to above, it seems worthwhile to explore an account of special clitics as the “morphology” of phrases. We go on in the following section to consider the formal mechanisms that might underlie such an analysis.

3 Clitic Ordering and Optimality

Suppose, then, that clitics are not syntactically autonomous elements comparable to the words and phrases that constitute Phrase Markers, but rather the morphological markers of the properties of phrases. In that case, their introduction into sentences (and more generally, phrases) is not an instance of Lexical Insertion but rather the overt manifestation of a phrasal analog to a Word Formation Rule. At least in the inflectional domain, such a rule modifies the PF shape of a phrase on the basis of its functional content. I assume (cf. Anderson 1992) that principles generalizing notions such as ‘feature percolation’ and ‘Agreement’ construct a Morphosyntactic Representation for a phrase, a representation of its phrasal properties that includes most of the content of what are often treated as structurally autonomous heads of functional categories. Rules of phrasal morphology refer to this representation and modify the shape of the phrase in a way precisely analogous to the way Word Formation Rules modify the shape of a word on the basis of its Morphosyntactic Representation.

I thus assume that clitics are the overt realization of material that is part of the featural content of the node dominating the phrase. Most of this analysis could, however, be translated into other terms: the featural content of a node such as IP, in a system based on articulated structures with independent functional heads for Tense, Agreement, etc. might be taken to mean “the content of functional categories dominated by IP” without loss of generality.

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10 See footnote 4 above.

11 E.g., in the case of clitics associated with a clause, the content of S (or IP), or with CP. In the discussion below, I will generally assume much flatter structures, with much less functional articulation, than has become general in the syntactic literature. Attributing functional content to phrases directly, rather than to hierarchically structured heads, has a number of advantages, but I will not defend these overall assumptions here. A tendency away from the elaborate functional structures of recent years can be discerned in recent work such as that of Chomsky (1995, chap. 4), Williams (1994), Bresnan, Grimshaw and others.
A fundamental issue arises immediately for this theory of clitics from the fact that a single phrase may contain more than one clitic associated with the “same” (e.g., second) position. In such a case, what ensures that the clitics will appear in the right sequence in the surface form? If clitics are (the surface manifestation of) rules, an obvious possibility is to relate linear order of clitics to order of application of rules. But some apparently minor mechanical problems that follow from that assumption suggest a somewhat different view.

Sometimes the shape of a clitic depends on that of another clitic which follows it, and which (on an analysis where surface sequence is the reflection of the order of application of rules) would have to be introduced later in the descriptive sequence. In Serbo-Croatian, for example the feminine singular accusative clitic, normally *je*, is pronounced *ju* when another clitic with the shape *je* occurs after it. This is not due to any general phonological rule of the language, but is rather a fact specific to this particular clitic. Since the conditioning environment for the change of *je* to *ju* would (on the view we are examining) only be introduced after the affected element, however, there is a difficulty in the statement of the relevant variation.

This example is by no means isolated. In Italian, for example, the clitics *mi, ti, si, ci, vi* are replaced by *me, te, se, ce, ve* when they come immediately before *ne, lo, la, li, le*. In the same environment, *gli* and *le* are both replaced by *gliè*. These changes, again, are part of the idiosyncratic “allomorphy” of the clitics involved, but their statement requires reference to an element that would only be introduced by a rule following\(^\text{12}\) the one introducing the affected clitic.

These examples, involving clitic introduction rules that would apparently have to look ahead, could be avoided if in fact the clitics were introduced simultaneously, rather than one at a time. In that case, they would all be simultaneously ‘co-present,’ and presumably available to condition one another’s form. This suggests part of the character of an analysis that could replace the one based on rule ordering.

Another problem is presented by the fact that, in several languages, the same sequence(s) of clitics can appear either preceding or following an anchor

\(^{12}\text{In both the Serbo-Croatian and the Italian examples, it might be asked why the clitics should be introduced from left to right, rather than from right to left. The reasons are related to the theory of how clitic positions are anchored, and will not be explored here; suffice it to say that parallel examples with the opposite orientation could be presented against introducing the clitics in the opposite order.}\)
point, depending on various environmental factors. In such an instance, if surface order derives from sequence of application, we would expect the sequences preceding and following a comparable anchor to be mirror-images of each other, resulting from a simple change of “precedes” to “follows” in the content of the rule. In virtually every case, however, the linear order of a sequence of clitics remains the same regardless of whether the sequence as a whole precedes or follows the anchor point.

Italian pronominal clitics, for example, precede the finite Verb in a fixed order, but follow non-finite Verbs and imperatives (in the same sequence). E.g., me=lo=dice ‘he tells me it’, but dicendo=me=lo ‘saying it to me’, dir=me=lo ‘(to) say it to me’, dimmelo ‘tell me it!’ Pronominal and auxiliary clitics in Macedonian appear in a rigid sequence before finite Verbs (which themselves appear in second position: cf. Legendre 1997a), but (in the same sequence) after non-finite Verbs or the imperative:

(9) a. Ne =bi =me =go dal
   neg aux me it gave
   He wouldn’t give it to me

b. Dajte =mi =go
   give (imper) me it
   give it to me!

c. nosejći =mi =go
   bringing me it
   bringing it to me...

In Bulgarian the facts are quite similar to those of Macedonian, but clitics (except šte, ne, li, which are subject to slightly different conditions: cf. Legendre 1998) also follow the finite Verb when this is sentence initial:

(10) a. Ivančo =mi =go pokaza
   Ivancho me it showed
   Ivancho showed it to me

b. Pokaza =mi =go Ivančo
   showed me it Ivancho
   Ivancho showed it to me

Bulgarian clitics also follow the same classes of Verbs as those mentioned for Macedonian noted above.
Because the same ordering is maintained in these cases regardless of the relation of the entire clitic sequence to its anchor point, they too argue for a view of clitic introduction other than that provided by a set of sequentially ordered rules applying one at a time.

An alternative view that offers remedies for the problems just noted is suggested by analyses of the sort associated with Optimality Theory (or “OT” — cf. Prince & Smolensky 1993). Without necessarily adopting all of the assumptions that have come to characterize OT as a theory of PF relations, we can draw on some of its leading ideas in ways that seem particularly relevant to the analysis of clitic sequences. Prominent among these is a greatly reduced reliance on sequential derivation as a mechanism for reconstructing left-right relations within phonological representations. Instead of introducing, e.g., affixes within a word one at a time such that each new prefix comes to precede the ones already introduced, etc., OT descriptions associate a number of affixes with a form simultaneously, such that their surface order results from a kind of competition regulated by the relative priority of element-specific constraints.

Such a view has the advantage that, as we have seen above for clitics, all of the comparable material within a domain may be treated as co-present at its introduction. Descriptive order reflects the ranking of element-specific constraints, not the sequence in which the elements are introduced. Relative ordering results from the fact that a number of elements all want to be located in the same position, but the demands of some outweigh those of others. For example, suppose a number of affixes all want to be prefixes. That means that for each of them, there is a constraint to the effect that it should be at the left edge of the word. Since these constraints are ranked, however, one will outweigh another. The one with the highest rank will actually be an initial prefix; the next highest ranked will occupy a position as close to the left as possible: i.e., that of the second prefix, etc.

Such an analysis would allow us to resolve the other problem that arose with respect to clitic ordering, namely the invariance of internal order within the clitic sequence regardless of where that sequence appears relative to an anchor. That is because the relative ranking of constraints specifying the position of individual elements remains the same regardless of how those constraints are ranked with respect to some other constraint. As we will see below, this is exactly what is necessary to allow the same clitic sequence to be anchored in different ways in different environments.

In section 1 above, we gave a descriptive characterization of the posi-
tions in which special clitics appear, which are entirely parallel to those in which affixes appear in words. In Anderson 1992, this typology was taken to specify the structural changes of a set of Word (and by natural extension, Phrase) Formation Rules: such rules make a specified phonological modification (such as the introduction of affixal material) within a specified domain; with reference to the initial, final, or head element of that domain; and either preceding or following the designated element. How are we to translate that derivationally oriented description into a more representational framework based on the OT assumptions we have just been considering?

Let us take Word (and Phrase) Formation rules to associate phonological material with a domain, without specifying where within that domain it is to be realized, with that being determined by constraints specific to the individual elements. Assume there is a family of constraints \textbf{EdgeMost}(e,E,D), each of which says the element \( e \) should appear as close to the edge \( E \) (Left or Right) of the domain \( D \) as possible. Analogous constraints \textbf{EdgeMost}(e,L,D) and \textbf{EdgeMost}(e,R,D) say \( e \) should be at the left or right edge of \( D \). A given clitic/affix is characterized as a prefix or as a suffix, depending on whether \textbf{EdgeMost}(cl,L,D) dominates \textbf{EdgeMost}(cl,R,D) or \textit{vice versa}. The descriptive order of two clitics \( cl_i \) and \( cl_j \), both prefixes or both suffixes, is determined by the dominance relation that obtains between their corresponding \textbf{EdgeMost} constraints.

Post-initial infixes and second position clitics can now be described by saying that the element in question (a) should be as close as possible to the left edge of its domain (a word or a syntactic constituent); but (b) should not be absolutely initial. To achieve this, let us assume a constraint family \textbf{Non-Initial}(e,D) that says the element \( e \) should not be initial within a domain \( D \).\textsuperscript{13} To characterize a clitic (or affix) \( cl_i \) as “second position” on this view, what we want to say is that \textbf{Non-Initial}(cl,D) dominates \textbf{EdgeMost}(cl,L,D). That means the clitic/affix will go as far to the left of \( D \) as possible without actually becoming initial: i.e., it will appear in second position within \( D \).

In some instances, second position effects result from factors other than the prominence of \textbf{Non-Initial}(cl,) constraints, since the phonology will do the right work without the need to invoke additional requirements. Consider

\textsuperscript{13}Both the \textbf{Non-Initial} family and the \textbf{EdgeMost} constraint family must be relativized to a given domain, but we will sometimes omit reference to this domain in the constraint formulations below, where it is either obvious or not directly relevant.
Warlpiri, for example. In this language, auxiliary clitics are located in either first or second position within the clause, according to the principle in (11):

(11) a. When the base of the auxiliary is monosyllabic (or $\emptyset$), the auxiliary follows the first word of the sentence.

b. When the base of the auxiliary is bi-syllabic, the auxiliary can appear either initially or in second position.

The fact that the phonological shape of the base determines its position suggests that the phonology is implicated in this effect, rather than its being a consequence of element-specific constraints.

To account for this distribution, we can note that the “minimal word” in Warlpiri, as in many languages, is bisyllabic. An element containing fewer than two syllables presumably cannot be independently footed within the phonology, and thus must be treated as prosodically deficient. Let us assume that Stray Adjunction\(^{14}\) in Warlpiri always operates leftward. In order to be incorporated into prosodic structure, then, an unfooted auxiliary base will have to be preceded by some other material. This, of course, will affect all bases with fewer than two syllables, which are intrinsically incapable of being footed independently. When we say that auxiliary bases are subject to \textbf{EdgeMost}(cl,$L$,$S$), the furthest to the left that they can go is after the first word, if they are to be footed. That accounts for their appearance in second position.

We can note that, according to Simpson 1991, even “small” Auxiliary bases can appear in sentence initial position, provided the sentence in question is preceded closely in discourse by other material. In that case, the auxiliary attaches phonologically to the final word of the preceding sentence. In this case, it is quite clear that the relevant requirement on the base is not that it be non-initial within its clause, but that it attach to preceding material within a phonological phrase (or some other relevant domain). Where a larger domain is available for the (leftward) operation of Stray Adjunction, a sentence initial auxiliary base can still satisfy phonetic Full Interpretation.

\(^{14}\)“Stray Adjunction” refers to the partially language specific principle(s) governing the way in which prosodically deficient material is incorporated into an adjacent prosodic constituent in order to render it pronounceable with respect to a principle of Full Phonetic Interpretation. As such, it subsumes the effects achieved in some theories of clitics by clitic-specific directionality of phonological attachment, a degree of lexical idiosyncrasy that seems unnecessary.
Bisyllabic bases, unlike shorter ones, contain enough material to constitute a foot (and thus a word) on their own. Suppose we say that these bases have two variants: one where the potential foot constitutes a phonological word, and one where it does not. If we choose the prosodically autonomous form, then $\text{EdgeMost}(c_l, L, S)$ will locate it in initial position. If we choose the prosodically weak alternant, $\text{EdgeMost}(c_l, L, S)$ will give us second position just as for short bases. Such lexical optionality is quite comparable to the fact that English is and has have both full forms (/ɪz/ and /hæz/, respectively) and a simple clitic, prosodically deficient variant (/z/ in both cases).

Such an account may be available for many languages, but it is unlikely to work for all. For instance, some second position clitics are not prosodically deficient, in which case there is no phonological reason why they could not be initial: it is simply a fact that they must satisfy $\text{Non-Initial}(c_l, D)$. In some languages, some clitics appear in second position, but other (prosodically weak) clitics are allowed to appear initially (e.g., Bulgarian не, сме as opposed to others: cf. Legendre 1998). In such a language, Stray Adjunction must in principle be able to operate in either direction. The need to satisfy Full Interpretation could thus be met in initial as well as second position, but the clitics are still required to be non initial. These arguments show that we cannot replace the constraint $\text{Non-Initial}(c_l, D)$ entirely by appealing to phonological requirements.

Note that, unless we assume a “Non-Final” analog of $\text{Non-Initial}(e)$, the present account has no mechanism for (and thus implicitly excludes) penultimate position clitics and affixes, one of the types that have figured in discussions such as those of Klavans 1985 and Anderson 1992. The extent to which real examples of these categories exist, however, is quite tenuous. It is entirely possible that it was the apparent symmetry of the earlier system that impelled us to seek them; within the present system, their absence follows without further stipulation (though of course real, secure examples might force a revision that would accommodate this possibility). In any event, “penultimate” or “pre-final” position seems about as marginal in clitic systems as in morphology, which re-inforces in a way the decision to treat them as parts of the same grammatical domain.

Apart from languages like Warlpiri, where phonology is partly responsible for the effect, we have effectively equated the notion that an element e appears in second position within a domain D with the claim that the constraint $\text{Edgemost}(e, L, D)$ is highly ranked within the overall hierarchy of
constraints governing PF in the relevant language, and Non-Initial(e,D)\textsuperscript{15} even more so. These two constraint families thus provide us with a rather parsimonious apparatus for characterizing exactly the three robustly attested varieties of special clitic. Two other types, pre-head and post-head clitics, do not require additional apparatus, but rather reflect a different parameterization of the domain within which clitics are introduced, as we will note below.

4 The Nature of ‘Second Position’

As we saw above in discussing Serbo-Croatian, the notion of “second position” is subject to a certain amount of variation as to what occupies the related first position, and we must now ask how that variation is to be reconstructed within the OT based theory under consideration. In particular, how are we to describe the difference between languages (or even constructions) in which a second position element is preceded by a syntactic phrase, as opposed to those in which it is preceded by a single word?

Suppose we assume that in the derivation of the form of phrases, there is a high-ranking constraint (Integrity(Word)) to the effect that a word may not be interrupted by phonological material that is not a part of that word. In virtually all languages,\textsuperscript{16} this constraint is undominated. As a result, there will always be at least one phonological word between a second position clitic and the left edge of the phrase, since the only way there could be less would be by violating either Integrity(Word) or Non-Initial(cl,D), both of which (\textit{ex hypothesi}) dominate EdgeMost(cl,L,D).

But given EdgeMost(cl,L,D), the only way there could be more than one word before the clitic would be if some other higher-ranking constraint re-

\textsuperscript{15}Note that the relevant domain D to which these constraints are relevant is the same. Some “second position” phenomena are somewhat more complex, however: Richardson 1997 suggests that in Czech, second position clitics are subject to EdgeMost(e,L,IP) but are required to be Non-Initial(e,CP). Since the left edges of IP and CP generally coincide in main clauses, this difference only shows up when other material, such as certain topicalized elements, is part of CP but external to IP.

\textsuperscript{16}The most notable \textit{prima facie} exception to this generalization is Pashto: cf. Tegey 1977, van der Leeuw 1993 and references cited there. Other authors, however (e.g., Roberts 1996) have argued that the constructions in which clitics appear to be located within a word in this language are actually internally complex so that they do not really violate Integrity(Word).
quired it.

We can now describe cases where ‘second position’ means “after the first phrase” by generalizing the notion of Integrity to a constraint family: **Integrity(C)**, where C ranges over prosodic and syntactic category types. The basic instantiation of this notion is where $C = \text{Word}$, but other instances of the same family involve syntactic phrasal categories. Where $C = \text{XP}$, the effect is to require that phrases not contain elements that are not members of that phrase. **Integrity(Word)** and **Integrity(XP)** are obviously instances of the same family: constraints to the effect that material cannot be properly contained within a domain unless it represents a member or element of that domain.

In some languages, some phrasal types may be more ‘permeable’ than others. The literature on Serbo-Croatian suggests that in this language, speakers vary considerably as to what constructions can be interrupted by clitics when they appear sentence initially (cf. Anderson 1996 and references cited there). In that case, certain instances of **Integrity(XP)** would be highly ranked (e.g., the case where XP consists of a Noun governing a following genitive), while the more general constraint would be ranked lower than **EdgeMost(e,L)** constraints applicable to various second position clitics. Another example is supplied by determiner clitics within the Macedonian or Bulgarian NP: these clitics generally follow exactly a single word at the left edge of their phrase, but when the NP begins with an Adjective that has a preceding modifier, the clitic does not interrupt this phrase. Thus, compare the (Macedonian) examples in (6) above with those in (12), cited from Tomić 1996:

(12)  
(a) mošne rasprostraneta=ta upotreba  
very widespread+the use  
the very widespread use  
(b) so maka dobiena=ta stipendia  
with pain obtained+the scholarship  
the painfully obtained scholarship

These facts indicate that in these languages, **Integrity(AdjP)** is ranked above the clitic lefmost constraints.

Now suppose that where **Integrity(XP)** is relevant, it is, like **Integrity(Word)**, effectively undominated. In that case, the earliest that “second position” can come is after the first phrasal daughter of the containing phrase, and so that
is exactly where second position clitics will be found. The difference between cases where clitics appear after the first word and those where they appear after the first phrase (either in general, or of a specifiable type) then, comes down to the question of where \textbf{Integrity}(XP) constraints are ranked. We assume that \textbf{Integrity}(Word) is essentially always undominated, but only if \textbf{Integrity}(XP) is dominated by \textbf{EdgeMost}(cl,L,D) constraints for the various clitics can their desire to get to the left violate phrasal (though still not word) integrity if necessary.

The apparatus developed to this point, involving the constraint families \textbf{EdgeMost}, \textbf{Non-Initial}, and \textbf{Integrity}, suffice to describe clitics (or affixes) located initially, finally, or in second position; and we have suggested above that the further possibility of pre-final elements may well be illusory. The remaining possibility for clitics, first raised in Kaisse 1985 and incorporated into the theory of Anderson 1992, is that of clitics located with respect to a phrase’s (possibly non-peripheral) head.

Where clitics are located with respect to the head of a phrase, instead of treating this as the result of some other mechanism, we can accommodate it in terms of the relevant domain D within which the clitics are placed. That is, we say that they are actually placed (by the same constraints as those just discussed) within a domain circumscribed to contain only the head (e.g., V).\footnote{Note that this syntactic domain is not to be identified with the word that might otherwise be its only content: thus a clitic placed within the domain V, otherwise occupied only by a single word which is the lexical Verb inserted there, is not the same as a morphological affix of the Verb itself.}

In cases such as those of object clitics in the Romance languages, clitics are introduced within a domain circumscribed to the Head Verb — typically, the finite Verb that also bears the properties of Tense and (Subject) Agreement within the clause. They are then subject to constraints of the form \textbf{EdgeMost}(cl,L,V) within that domain, ranked in such a way as to yield the observed order.

But now we are in a position to describe the cases where the clitic cluster appears sometimes before the Verb (as when the Verb is finite) and sometimes after the Verb (when the Verb is an imperative, or non-finite, etc.). All we have to say is that in languages like Italian, additional, even higher-ranking constraints require that imperatives (and such non-finite forms as are relevant) are constrained to appear at the left edge of the same (or an including) domain, and these constraints outrank the \textbf{Edgemost}(e,L,V)
constraints applicable to the clitics. We thus derive the difference between the finite and the non-finite case as a single additional constraint on the non-finite form; while with the derivational theory there is no such simple and direct solution.

We can also accommodate the facts of European Portuguese, where the preverbal clitics become post-verbal when the finite Verb is initial in IP: ¹⁸

(13) a. Ninguem o=viu
no-one him-saw
No one saw him
b. Viu=o o João
saw-him art John
John saw him

In such a case we say that the clitics are constrained not to occur sentence initially: that is, that the applicable LeftMost constraints ([EdgeMost(\text{cl}_1, \text{L}, \text{V})]) are themselves dominated by Non-Initial constraints ([Non-Initial(\text{cl}_1, \text{CP})]). What is interesting about this situation is the fact that the domains within which the clitics (a) attract to the left and and (b) must be non-initial are distinct. In discussions of the Romance languages, this requirement that clitics follow a Verb that is initial within IP (or in some cases, CP) while otherwise preceding the main (or finite) Verb is known as the Tobler-Mussafia Law. As is evident, our account extends straightforwardly to this variant of the second position placement of clitics.

Notice that in cases where some constraint requiring e.g. non-finite Verbs to be initial in their local domain dominates the corresponding leftmost constraints for clitics, the relative order of the EdgeMost(\text{cl}_1, \text{L}) constraints is not affected. The internal order of the clitic sequence, therefore, remains invariant in all of these cases, as we saw above is necessary.

We have now provided a formal theory of clitics within an OT-like framework. This approach treats the introduction and placement of clitics as essentially a PF phenomenon, akin to morphology rather than to syntactic

¹⁸As discussed by Barbosa 1996, several types of pre-verbal NP’s as well as Adverbs should be regarded as preposed and adjoined to IP within CP in Portuguese. As a result, the choice of whether clitics precede or follow the Verb appears to depend on factors such as the referentiality of the subject, but in fact what is at stake is the requirement that reference (though not non-referential) subjects regularly move to this position, leaving the Verb initial within its IP.
movement. On this view, the appearance of clitics in (several distinguishable variants of) second position is not an epiphenomenon, but rather results from the interaction of constraints specifying their PF position: specifically, the interaction of \textbf{EdgeMost}(cl_{1,L,D_{x}}) and \textbf{NonInitial}(cl_{1,D_{y}}) within the same domain (where \( x = y \)) or different domains (where \( x \neq y \)). We now return, in the following section, to the issue of whether this notion of “second position” can be unified with the principles necessary to an understanding of the Verb-second phenomenon.

5 Back to Verb-Second

The central issue in the recent literature on Verb movement, and Verb second in particular, is that of the motivation for such movement. That is, the location in which the Verb originates and the target position to which it moves are typically clear, at least within a particular view of clause structure, and what must be elucidated is the principle that requires the dislocation in question.

A major theme in recent syntax is the notion that movement is forced by “morphological” considerations. Theories invoking “morphologically based movement” are not generally very closely related to a theory of morphology, however, because the connection between the required movement and the concrete details of word formation is often quite obscure or even contradictory. Rather than movement being an integral part of the way words are to be constructed, the image is sometimes more like that of a scavenger hunt, where the grammar has scattered inflectionally relevant features here and there within the structure, and it is a word’s (or a constituent’s) task to visit all of these places and reassure itself that its features are exactly those that are called for. The actual workings of morphology hardly come into play, if at all. Perhaps, however, movement in some instances is based on more centrally morphological concerns than the need to check features.

If clitics are introduced into the PF forms of phrases by a generalization of essentially morphological mechanisms, and find their position within the representation through a system of hierarchically ranked violable constraints, as we proposed in section 3 above, is there any relation between the notion of “second position” as it relates to clitics and the principle(s) governing Verb-second, as Wackernagel proposed? Ignoring the conditions under which Verb
second is found, the descriptive generalization which defines Verb second is the following:

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

That is, the formal markers of a clause’s relational properties (a subset, perhaps, of its functional categories) appear as morphology on a Verb that is placed immediately after the the first element of the clause in terms of its syntactic analysis.

This is not very different from the descriptive regularity governing second position clitics: these, too, appear immediately after the first (non-permeable) constituent of the clause. And there is a substantive analogy, as well: both finite main verbs and sentential clitics provide formal realizations for the content of a clause’s functional categories in the form of inflectional features. From the present perspective, a Verb second language like, e.g., Icelandic differs from a second-position clitic language like Warlpiri in that the clause’s grammatical features are realized by the inflectional form of the Verb in Icelandic, but by phrasal affixes (the Auxiliary and agreement clitics) in Warlpiri.

Taking the analogy seriously, we ask how the descriptive regularity in (14) could be translated into the theoretical framework in which clitic placement has found its expression, or in other words, how to express (14) in terms of ranked, violable constraints. In fact, we can characterize the position of the Verb in a Verb second structure by saying that the locus of realization of Tense, Aspect, Agreement, etc. is constrained as in (15), with these constraints outranking others relevant to clause internal word order.

(15) a. NonInitial($V_{\text{fin}}, S$)
    b. EdgeMost($V_{\text{fin}}, L, S$)

A language that expresses the functional content of a clause (tense and various forms of agreement) through a system of clitics in second position

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19Thus, in German, Verb second characterizes declarative main clauses, while (most) subordinate clauses are Verb final; across the Scandinavian languages, Verb second is found in clauses of all types; etc. There are certainly interesting issues involved in distinguishing the Verb second environments of a language from others, as an abundant literature attests, but we ignore those matters here.
obviously contains a virtually identical constraint ranking, except that the
categories in question refer to clitics rather than inflected Verbs as the ex-
ponents of the relevant properties. In the Verb second case, a high ranking
for the constraints in (15) expresses the requirement that unless some even
higher ranking consideration intervenes, structures in which the finite Verb
is in second position are to be preferred to candidate structures in which it
appears elsewhere.

What is the role of these constraints in the grammar? How, that is, do
they participate in ensuring that the generalization in (14) holds? For sake
of argument, I assume that the framework within which an answer is to be
sought involves the assumption that the finite Verb in German main clauses
moves from its underlying clause final position to one following the initial
constituent of the clause. Commonly, this is assumed to be movement from
a position I^{20} to that of C, where C is itself preceded by a single phrasal
position (Spec_{CP}). In the syntactic literature of the past 10 years or so, a
derivation of Verb second clauses something like that indicated in the Phrase
Marker below has thus come to be widely accepted.

\footnote{The initial movement of the Verb from its base position to I simply reflects the fact
that this Verb bears inflection. On a view such as that of Anderson 1992 where functional
content propagates as features, rather than constituting a head of its own, this movement
is unnecessary.}
By no means all of the details of this derivation are crucial: what is important to understand is the movement of the inflected Verb, represented here as going from I (the locus of inflectional properties) to C. Does such movement take place because of some property of the C position itself? Attempts to force this movement, for instance by positing some feature-checking relation between the positions Spec$_{CP}$ and the Verb in C, or by requiring C to be lexically filled, etc., amount to camouflaged language-particular stipulations of the requirement “Move I to C”. The movement remains, accordingly, without independent motivation.

The suggestion of the present analysis is that it is not a need to check some hypothetical feature(s) that drives the placement of the Verb, but rather the requirement that it be in second position. The Verb moves from I to C (or whatever positions are involved) because (a) this movement is syntactically possible, and violates no constraints of the syntactic computational system; and (b) the structures that result have fewer violations of the constraints in (15) than structures in which this movement has not taken place, and in which the Verb is thus farther from the left edge of the sentence. The movement of the inflectionally marked (finite) Verb into second position is
thus forced by constraints on PF representations that are nearly identical with those that obtain in a language that realizes the functional content of a clause through phrasal affixation (special clitics) in second position.

  Note that the theory of Verb second presented here does not *per se* deny that this involves movement of the Verb into C (though it is neutral with respect to whether this is the correct structural characterization of its target position). This account simply proposes that the reason for such movement is to get the Verb to be in second position, rather than to check a feature or to fill C. The thrust of the proposal concerns the motivation for the movement, not its mechanics.

  If this view is on the right track, we might expect to find cases where the effect of the Verb-second constraints (15) can be seen, but where the position occupied by the Verb in derived structure is not uniform (apart from the fact that it follows the first element of the clause). This would be quite analogous to the evidence we discussed above that second position clitics do not in general occupy a single, consistent position in the hierarchical structure of clauses (apart from the fact that they are always preceded by exactly one other element).

  In fact, that seems to be the case in Icelandic. Icelandic exhibits Verb second in both main and subordinate clauses, as shown in (17).

(17)  a. Jón harmar að 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 að það hefur enginn lesið bókina
      I know that there has no one read the book
      I know that no one has read the book

  These examples above show that the finite Verb (italicized in these sentences) may follow (a) the subject; (b) a preposed, topicalized XP; or (c) an expletive such as það (where the pre-verbal constituent is underlined in each case in (17)). In addition, there is also a further possibility illustrated in (18):

(18) a. Ég hélt að kysst hefðu hana margir stúdentar
      I thought that kissed had her many students
      I thought that many students had kissed her
b.*Ég hét að hana kysst hefðu margir studentar
   I thought that her kissed had many students
   I thought that many students had kissed her

Example (18a) illustrates the application of “Stylistic Fronting,” a construction with well established and distinctive characteristics (Maling 1980, Jónsson 1991, Holmberg 1997a), quite separate from Topicalization. It involves the movement to a position before the inflected Verb of a single word (participle, negative ekki, or certain Adverbs). Example (18b) shows that stylistic fronting cannot take place when the Verb is otherwise non-initial in its clause: such a movement would of course produce a violation of Verb second.

There are several points to note about this construction: (a) As opposed to Topicalization, Stylistic Fronting involves no special emphasis, foregrounding, or other pragmatic effect; (b) Stylistic Fronting involves the movement of a single word, not a phrase, and thus must be an instance of head movement rather than of phrasal movement, with a head position rather than a phrasal position as its target;21 and (c) Stylistic Fronting is possible exactly if the subject position is not overtly occupied (as in impersonals, or as a consequence of extraction, postponing, etc. — the “Subject gap condition” described by Maling).

(19) a. i. Honum mætti standa á sama, hvað sagt væri um hann
to him would be the same what said would be about him
   It would be all the same to him, what was said about him

ii.*Honum mætti standa á sama, hvað sagt hefði Hjördís um hann
to him would be the same what said had Hjördís about him
   It would be all the same to him, what H. had said about him

21Examples have occasionally been cited in the literature (cf. Holmberg 1997a) in which a PP or NP appears to have undergone stylistic fronting. Significantly, these cases mostly involve determinerless one-word NP’s with abstract reference, or a single word NP together with a phonologically short preposition (e.g., í Oslo ‘in Oslo’). If such fronted units are in fact analyzed as single words, as seems plausible, they are potentially compatible with the account offered here. Clearly phrasal NP’s are at best marginally attested in stylistic fronting constructions: I assume that they can ultimately be analyzed in some other way, perhaps as topicalized elements.

22Holmberg 1997b discusses several cases cross linguistically in which a head has apparently moved into a Spec position. This is therefore a possibility countenanced by at least some syntacticians, though the resultant weakening of the structure preserving nature of movement operations is obviously to be avoided if possible.
b. i. Hann er só eini, sem ekki er líklegur til að koma
   he is the only that not is likely to come
   He is the only one that is not likely to come

   ii.*Hún spurði, hvort líklegur væri hann til að koma
   she asked whether likely would be he to come
   She asked whether he would be likely to come

   c. i. þetta er bærim, þar sem fæddir eru margir frægir Íslendingar
   this is the town where born are many famous Icelanders
   This is the town where many famous Icelanders were born

   ii.*þetta er bréfð, sem ekki skrifaði Helgi
   this is the letter that not wrote Helgi
   This is the letter that Helgi didn’t write

In each of the pairs in (19), the second sentence is bad because Stylistic Fronting has applied in the presence of an overt subject, while the first sentence of each pair illustrates the possibility of applying the rule when the subject is not in its base position.

Analyses of Stylistic Fronting in the existing literature have generally fallen into two classes. Some, such as Maling 1980 have assumed that the fronted element actually moves to the subject position. This gives a natural account of the relation between the construction and the requirement of a subject gap, but requires us to say that a head moves to a phrasal position, a problematic assumption as noted above. The other possibility (Jónsson 1991) is to treat Stylistic Fronting as adunction to the finite Verb; but on that analysis, there is no longer any natural connection between such movement and the requirement of a gap in subject position. It seems reasonable to say that no satisfactory account of the structure and motivation of Stylistic Fronting constructions has yet emerged, despite the very considerable attention that has been paid to them.23

Let us attempt to find a unified account of the basic properties of Icelandic constituent order as just sketched. The properties of ordinary clauses (as illustrated in (17)) argue that the base positions for the subject and for the Verb must be preceded by a phrasal position, to which some phrase can move as an instance of topicalization. The properties of the Stylistic

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23I include the account of Holmberg 1997a among those that do not really resolve the problems of Stylistic Fronting, though a discussion of the very different assumptions underlying Holmberg’s analysis would take me much too far afield here.
Fronting construction, on the other hand, indicate that there must also be a non-phrasal, head position preceding the base positions of subject and Verb, a position which can serve as the target of this distinct movement. Let us then assume (as is general in the literature) that Icelandic has basic SVO order, and that clauses have the structure in (20):

\[(20) \{ (XP) (X) [ (Subject) \{ vp (Verb) \ldots \} ] \}\]

“X” and “XP” in (20) might be “C” and “SpecCP”, “Top” and “SpecTopP,” or something else, but nothing here hinges on the choice of one or another categorial analysis.

We can now describe the Verb second phenomenon in Icelandic as follows: Tense/Aspect and Agreement are realized on the main Verb (where they appear as its inflection). If we then rank NonInitial(Vfin,S) above EdgeMost(Vfin,L,S)\(^{24}\) and both of these high in the hierarchy of constraints governing PF, this will force a preference for structures in which the finite Verb appears immediately following the first constituent of the clause.

It will now be apparent that there are several diverse ways in which structures that are relatively optimal with respect to the Verb second constraint can be formed. First, if no phrase moves to the (topic) XP position in (20), and everything remains in its ‘natural’ base position, Verb second is satisfied without further movement. This avoids the claim that where nothing else is topicalized, the subject must move to topic position: the only motivation for that movement is the assumption that Verb second must consist in the movement of the Verb to C (and thus, something else must always appear in SpecCP). On the present account, Verb second can be satisfied without the sometimes counter-factual claim that subjects are always topical if nothing else is.

Secondly, some phrase may move from clause-internal position to the initial XP position in (20), where it is interpreted as a topic. In that case, if the subject remains in place, the finite Verb must move to the X position in (20).

Thirdly, there may be no topicalized phrase in the topical XP position; if the finite Verb precedes the subject (perhaps because this is indefinite, or has

\(^{24}\)The domain of these constraints is simply left as “S,” without further commitment about the relevant structure. The domain within which Icelandic Verb second applies generally includes all of the main clause, and excludes an introductory complementizer in a subordinate clause.
been postposed), an expletive (pað) can be inserted in the initial X position to avoid a violation of NonInitial(Vfin,S), as in (21):

(21) pað eru margir frægir Íslendingar fæddir í þessum bæ
(expl.) are many famous Icelanders born in this town

There were many famous Icelanders born in this town

As is well known, expletives in Icelandic appear only in clause-initial position, which is also the only position where they would be motivated under this analysis.

Finally, if no phrase moves to topic XP, but there is a gap in the subject position, “Stylistic Fronting” can move a participle, or ekkí, etc. to the initial X position. The relation between Stylistic Fronting and a subject gap follows from the fact that the former moves an element into a pre-subject position, where it would produce a violation of Verb-second exactly if the subject were overt. The Verb itself could not move to the left of such a filled subject position, since the head position that would be the target of such movement is already filled by the stylistically fronted element.

What unites the position of the Verb in all of these cases is not its configurational definition, but rather the fact that in each instance, the Verb is second in its clause. And of course, this is exactly the claim of an analysis on which Verb second results from a mechanism similar to that governing second position clitics. The non-uniform nature of the structures in which Verb second is satisfied is quite comparable to the point made by Bosković 1995 (see section 2 above) concerning the nature of second position in the placement of Serbo-Croatian clitics, and similar points made by Legendre in relation to the position of clitics in Bulgarian and Romanian.

There is one further issue to be resolved in connection with this analysis. If Verb second results from a ‘morphological’ imperative which is formally more or less the same as what governs second position clitic placement, why do we never find languages in which the finite Verb appears (at least as an option) immediately after the first word of its clause, rather than (uniformly) after an initial phrase? Why, that is, are certain initial phrases in some languages ‘permeable’ for the purpose of clitic placement, but the parallel possibility is never instantiated with respect to Verb second?

There is a straightforward answer to this: such placement of the finite Verb is never found because the syntax cannot in general access this position. Clitics are placed by ‘affixation’ rules that modify the phonological shape of the form; it is thus possible for these rules to introduce material anywhere
in the structure, subject only to the **Integrity** constraints. Verb-second, on the other hand, is the result of syntactic movement, and the only structures the syntax provides for comparative evaluation by the constraint system are ones that instantiate well formed syntactic operations.

We assume that the computational system involves a subsystem which produces a set of formally possible structures, and a set of constraints on PF that choose the optimal one from among these various candidates. The former sub-system is usually referred to as ‘GEN’ in the OT literature, and we assume that it incorporates basic notions of syntactic well-formedness such that only structures conforming to fundamental principles (e.g., **X**-theory) and involving syntactically possible movements are presented for comparative evaluation by the constraint system. Thus, the only structures that are available for evaluation at PF (with respect to constraints such as **EdgeMost**($V_{\text{fin}}, L, S$) and **Non-Initial**($V_{\text{fin}}, S$)) are ones that are syntactically well-formed in terms of these general principles. Insofar as syntactic movement of the Verb to a position after a sentence initial word but internal to a larger containing phrase is disallowed by the general nature of movement, candidate structures of this sort are not found in the output of GEN, and thus no language preferring them could exist.

## 6 Conclusion

We see, then, that we can incorporate an OT-like view of the mechanisms determining appropriate surface forms into the overall picture developed in *A-Morphous Morphology*. We can treat clitics as described by essentially the same theoretical devices as affixes, thus preserving the generalization argued for in Anderson 1992 that a single theory is applicable both to words and to phrases. While Optimality Theory has primarily been employed in the description of phonological phenomena, its originators have stressed that its basic notions might well be applicable to a much broader range of facts in language. The present paper suggests that this is indeed true, and that OT may well provide a better way to express the generalizations of a comprehensive theory of the morphology of words and phrases.

Essentially the same account extends naturally to the other principal class of “second position” phenomena in natural language, Verb second. What second position clitics and Verb second have in common is the following: both reflect constraints requiring the grammatical properties of a phrase or clause
— that is, the functional categorial content that is often treated as a separate structural head (I) or set of heads (T, Agr_S, Agr_O, etc.) — to be aligned as closely as possible with its left edge, without being absolutely initial. They differ, on the other hand, in that clitics are introduced by a phonological mechanism of affixation, while Verbs that inherit the functional properties of the clause they head are subject to movement by normal syntactic mechanisms.

The discovery that grammatical well-formedness involves an interplay of “pure” syntactic principles with others of a more “morphological” character may seem somewhat surprising. The descriptive burden of the syntactic system, on the view presented above, is distributed across (at least) two distinct parts of the grammar. On the one hand, a basic computational system describes a set of formally possible structures. Much of the burden of describing just which movements are not only possible but forced, however, falls not on this part of the grammar but rather on a system of hierarchically ranked constraints that choose the “best” from among a number of syntactically possible structures. These constraints refer to properties of PF, and are clearly integrated with principles that are a natural extension of those governing word formation.

The class of possible languages thus lies in the intersection of the morphological and the syntactic possibilities. In these terms, both the syntactic and the morphological principles can be stated with a very high degree of generality, leaving many apparent idiosyncrasies as matters of their interaction. And that, of course, is just the kind of result a modular approach to grammar is supposed to lead to.

The properties that constrain the range of structures produced by GEN have a kind of necessary and inviolable character, while those that choose the optimal output from among the formal possibilities are intrinsically contingent, violable, and hierarchical. Indeed, much discussion of principles such as “Greed,” “Procrastinate,” etc. in the recent syntactic literature attributes to them a kind of relative status: they rank one derivation with respect to another, rather than defining the very logical space within which derivations are carried out, as do principles such as those of X-theory or anaphoric binding. The division of labor between these two sorts of principle remains an empirical issue, of course, but the fundamental architecture of grammar that we assume here is not radically innovative.

It is not obvious that Wackernagel would recognize his original insight in the form in which this unification is achieved here, but the fact remains
that his attempt to connect two prominent roles of the number “two” in language was undoubtedly more appropriate than some subsequent writers have suggested.
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