

How to put your Clitics in their Place
or
Why the Best Account of Second-Position
Phenomena May be a Nearly Optimal One

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This article addresses the issue of how clitic elements come to occupy the positions they do in the surface forms of sentences. The empirical basis for the proposals here comes primarily from languages of the South Slavic family, but the treatment is intended to be more general. The background against which I would like to set this problem is the specific set of proposals made in previous work within the theory of A-Morphous Morphology (Anderson 1992, 1993). On this view, clitics are argued to represent a generalization to phrases of the kind of linguistic phenomenon we call “morphology” within the domain of individual words. The picture that results from this perspective is somewhat unorthodox, since it treats clitics not as syntactically functioning terminal elements within a phrase marker, lexical items that are located in a specific position by rules of the syntax, but rather as phonological material introduced into the PF representations of phrases by rules belonging to the same broad class as those of Word Formation.

The discussion below will be developed as follows. I will first provide some background on the nature and gross typology of clitics, and a summary of the argument and proposals concerning clitics within A-Morphous Morphology (Anderson 1992, 1993). I will then rehearse in somewhat greater detail the reasoning which suggests that the tools of syntactic analysis (*sensu stricto*) are not appropriate for the job of describing an important class of clitics (those appearing in ‘second position’). I will then discuss another recent proposal that supplements syntactic mechanisms with some attention to—and operations on—prosodic structure; I will claim that there are problems with this approach as well. I will then suggest

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that the specific mechanisms of clitic introduction (as a generalization of Word Formation) that were proposed in my own previous work also have shortcomings. I will argue that the sort of generalization the A-Morphous view tries to articulate can be preserved, however, by adopting the methods of Optimality Theory (Prince & Smolensky 1993). The conclusion will be that a generalization across word and phrase level phenomena is a plausible source of clitics, especially second position clitics, and that the role of syntax in the placement of these elements is much more narrowly circumscribed than many have believed.

1 Introduction: The nature of clitics

What, after all, are ‘clitics’? Despite the massive literature devoted to their analysis, there is less unanimity than one might expect concerning their nature. We can, however, distinguish two somewhat independent traditions of usage. One of these, characteristic of Classical grammarians like Jakob Wackernagel, construes ‘clitics’ (more properly ‘proclitics’ and ‘enclitics’ depending on their position relative to a non-clitic host word) in fundamentally *phonological* terms: as phonologically dependent elements. We can contrast this with the fundamentally *syntactic* usage of many contemporary linguists, who often equate ‘clitics’ with the members of a class of principally pronominal forms that must be placed in some special position.

As with most terms drawn from traditional grammar, there is no particularly interesting rationale *a priori* for restricting the sense of ‘clitic’ in one or the other of these ways, or even for assuming that either notion identifies a unitary and coherent linguistic phenomenon. The difference between them, however, corresponds closely to a fundamental division that was first stressed (in the generative literature) by Zwicky 1977: that of *simple* clitics vs. *special* clitics. In Zwicky’s formulation, simple clitics are syntactically normal elements that happen to be phonologically dependent on an adjacent word. Special clitics, in contrast, are elements whose location in surface structure would not be accounted for by the normal processes of the syntax, and for which specific rules of ‘clitic-placement’ must be invoked. This is still a somewhat impressionistic description, but it points the way to a more satisfying theoretical resolution in that it stresses the fact that there are two somewhat heterogeneous bases for the notion of ‘clitic’, and encourages us to disentangle them.

Zwicky’s distinction has become the basis for much subsequent discussion which will not be repeated here. The formulation in Anderson 1992 assumes that the typology of clitics rests fundamentally on two parameters: (a) degree of metrically complete prosodic structure; and (b) special placement. Simple clitics are prosodically ‘deficient’ lexical elements that lack higher levels of metrical structure of a sort that characterizes other (non-clitic) lexical items: perhaps an organization of constituent segments, syllables, etc. into a prosodic Word. If we assume a principle of “Full Prosodic Interpretation,” by which all material appearing in PF must be organized into prosodic categories at all levels of structure, the failure of simple clitics to present an independent analysis as phonological Words will force them to be incorporated into another (adjacent) Word in order to satisfy this condition. The necessity for such incorporation is the formal reflection of the presystematic intuition that simple

clitics are phonologically dependent elements.

Special clitics, in contrast, are defined by the sense in which their placement is (syntactically) special. I will enlarge on the range of special cliticization phenomena below, but at this point it is important to point out that the two parameters (prosodic deficiency and special placement) are logically and empirically quite independent. It can be shown (cf. Anderson 1992, Nespor 1994) that we find both prosodically normal full elements with special placement (e.g., Tagalog *tayo* ‘we (dual)’; Italian *loro*) and also prosodically deficient elements with no special syntax. The latter, of course, are the simple clitics, such as English *’s = is, has*. Many, if not most, syntactically ‘special’ clitics are also prosodically weak; while most syntactically normal words are prosodically full. This common correlation does not, however, compromise the claim that we are dealing with two quite distinct dimensions of “clitic-ness”: a phonological one and a syntactic one.

In the discussion below, we will not in general be concerned with simple clitics *per se*. What we wish to study, that is, is not prosodic deficiency, but rather the principles that locate special clitics within phrases in ways that are not generally applicable to the other elements that apparently belong to the same syntactic categories.

If special clitics are ‘special’ because they are located in syntactically unexpected positions, their study should logically begin with an inventory of the positional possibilities they exhibit. Where, then, do special clitics appear? Studies by a number of scholars¹ suggest that a small number of parameters characterize the full range of special clitic placement rules. Each such rule locates clitics within a given phrasal domain, positioning the clitic with reference to the first, the last, or the head element of that domain. The clitic may appear either before or after the element that anchors it, yielding a total of six possible positions: initial, post-initial (or ‘second position’), pre-head, post-head, final or pre-final. Of these, the last (penultimate or pre-final) position is only marginally attested, at best, but the other five are relatively robust across the spectrum of the world’s languages.

In earlier work, I have stressed the fact that this range of possible positions for special clitics suggests a strong analogy with the range of positions in which morphological affixes appear within words. In essence, affixes also appear initially, post-initially, finally, pre-finally, and either immediately before or immediately following a word-internal syllable that bears main stress. If we treat the main stressed syllable as prosodically the head of its word, we have an exactly parallel range of possibilities for the location of affixes (within words) and special clitics (within phrases).

This analogy is supported by a number of details. For example, just as pre-final clitics are vanishingly rare, so also are pre-final infixes in word-level morphology. While most affixes (like most special clitics) are prosodically weak elements that are incorporated into adjoining prosodic structure, some bear autonomous stress and other prosodic structure, just as some special clitics fail to be simple clitics as well. Affixes and clitics are both subject to quite specific principles of relative ordering, even in languages that otherwise provide remarkable freedom of ordering of independent words and phrases in the syntax. Functionally, mor-

¹Including Zwicky, Klavans, Kaisse, Halpern, and others; for references see Anderson 1992, chapter 8.

phonological material can be divided into inflectional and derivational categories, a distinction that can be given a theoretical reconstruction in terms of syntactic relevance. Special clitics, similarly, can be divided into syntactically relevant (“inflectional”) and semantically substantive (“derivational”) classes; and just as inflection appears outside of derivation in word level morphology, so also do “inflectional” clitics come outside of “derivational” ones once the relevant basis of comparison is clearly established. And so on.

Though it is beyond the scope of this paper to demonstrate these facts in detail, it appears that the special clitic systems of natural languages and their systems of Word Formation show many far reaching parallels, and very few substantive differences beyond the definitional one of phrasal *vs.* word-level scope. In particular, the rules that describe the location of these two sorts of element appear to be characterized by exactly the same theoretical apparatus, an apparatus that has little in common with the principles and mechanisms of syntax.

The theory of A-Morphous Morphology (Anderson 1992, 1993) proposes to articulate this insight 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 as the expression of the properties of the phrase. The syntactic consequences of this point of view are potentially quite far-reaching, since the properties of a phrase which may find their formal realization through the operation of such rules represent more or less the content of its functional categories. If the kind of analysis suggested here is indeed appropriate, it might eventually be desirable to eliminate much of the elaborate hierarchical structure posited in recent syntactic accounts of functional categories in grammar, replacing this structure by a flatter one involving unordered feature structures. We leave discussion of such extensions of the present analysis to future work, however.

Our concern here is the relatively more modest one of motivating an account of special clitic placement by means of rules similar to Word Formation processes, as opposed to normal syntactic movement. We wish to maintain that the right view of special clitics sees them as phonological modifications of the surface shape of a phrase, rather than as lexical elements that are introduced in phrase structure and moved around by rules of the syntax.

In the nature of things, it is difficult to find clear evidence distinguishing between these theories in the cases of initial, final, or head-related clitics. As already noted, the penultimate case is at best marginally attested. In the discussion of special clitics, however, it is those that appear in second position that are most obviously ‘special’. Their placement has been the focus of most of the discussion, and it is here that we can hope to distinguish the theoretical mechanisms that underlie alternative accounts. In the next section, therefore, we consider reasons to look for an alternative to normal syntactic movement in the placement of second-position clitics.

2 Problems with a syntactic theory of clitic placement

We begin by examining the possibility that straightforward devices of syntactic analysis will suffice to locate clitic elements in their appropriate surface positions. On the one hand, it

might be felt that our definition of special clitics (as elements that **cannot** be accounted for as a consequence of ordinary syntactic effects) biases the discussion against such an account. On the other hand, much of the syntactic literature simply assumes that syntactic movement, in the context of an appropriately elaborated theory of functional categories, must necessarily be sufficient to locate clitics appropriately, and that the only questions which can coherently be asked concern the nature of that functional organization. In contrast to both of these lines of reasoning, we take the problem of how clitics should be introduced and positioned in sentences to be an empirical one. Given that grammatical theory recognizes (at least partially) independent principles of phonological, morphological, syntactic, and lexical structure, the proper part of a grammar in which to locate the treatment of any particular phenomenon is something that has to be demonstrated, and cannot be assumed *a priori*.

How does a purely syntactic theory of clitic placement work? We assume that the most severe test of such a theory will be its adequacy in describing second position phenomena, and so we limit our discussion here to that case. In order to locate clitic elements in second position by syntactic movement, existing accounts proceed in one of the following ways. Within the relevant domain, they may first put the clitic in initial position, and then move or adjoin exactly one thing to its left. Alternatively, one can locate the clitic in a head position and then generate exactly one phrase to its left in the associated Specifier.

Either of these approaches will result in locating the clitic after exactly one syntactic unit: a constituent that has either been adjoined to its left, or one that occupies (either by base generation or after movement) the Specifier position relative to a head clitic. The available syntactic technology results in a rather straightforward prediction: material preceding a second-position clitic has to be something that can be moved, adjoined, or base-generated as a single syntactic constituent. This may seem (and indeed, is often taken to be) a straightforward consequence of the definition of “second position,” but it turns out to be empirically problematic.

Consider, as an example, the case of second position clitics in Serbo-Croatian.² These include elements from somewhat heterogeneous classes, whose representatives come in a fixed sequence as schematized in (1).

- (1) Question particle (*li*) < future, perfect, conditional auxiliary markers < dative pronominals < accusative, genitive pronominals < 3sg accusative reflexive (*se*) < auxiliary *je*.

As noted, the Serbo-Croatian clitics appear in ‘second position’ within their clause. What is interesting about them for our present purposes is the fact that there are two distinct senses

²Where no significant differences between Serbian and Croatian dialects are at stake, I will follow the traditional practice of talking about “Serbo-Croatian.” If a language is indeed “a dialect with an army and a navy” as Uriel Weinreich put it, ‘Serbo-Croatian’ surely represents a number of different languages, but the distinctions among these do not bear on most of the points to be made below. In other cases, however, ‘Serbian’ and ‘Croatian’ represent relevantly different linguistic systems (though perhaps not ones that coincide very precisely with political or other differences linked to armies and navies), and I will try to be more specific where the distinction matters grammatically.

of ‘second position’ that may be relevant. In the literature, these elements are usually said to follow *either* the first phrase *or* the first phonological word of the clause (Browne 1974). When the first word of the clause is not itself a phrase, however, to allow clitics to come immediately after it would be inconsistent with the purely syntactic view. As noted above, that view entails the conclusion that the pre-clitic material occupying ‘first position’ must have the structure of a (base generated or moved) phrase that is an immediate daughter of the node defining the clitic’s phrasal domain. In that light, consider the two variants of the same sentence in (2).

- (2) a. Moja mladja sestra **će** doći u utorak
 my younger sister fut. come on Tuesday
 My younger sister will come on Tuesday
- b. Moja **će** mladja sestra doći u utorak
 my fut. younger sister come on Tuesday
 My younger sister will come on Tuesday

In the first of these, the clitic (in boldface type, here and below) come after an initial phrase in a way consistent with the syntactic account above. But in the second, the clitic appears to interrupt a phrase, since it comes between a possessive Adjective and the rest of its associated NP.³

In the face of these facts, most defenses of the syntactic account have taken the form of arguing that the material preceding the clitic(s) in a sentence like (2b) actually *is* a syntactically unitary constituent. If that were the case, of course, we could retain the view that second position clitics are preceded by exactly one phrase. The basic path to this result is commonly argued to derive from the fact that Serbo-Croatian allows considerable freedom of word order, a freedom that can be claimed to follow from extensive scrambling. If *moja* in (2b) has been scrambled, it must be (or have been promoted to the status of) a phrase. And in that case, the two sentences in (2) do not in fact differ as to whether they can be accommodated by the syntactic account of clitic placement. Since Adjectives (including possessives) and the rest of their associated NP’s can be scrambled independently in Serbo-Croatian (at least to a first approximation), it appears that a syntactic account of (2b) is indeed available.

The argument from the pervasiveness of scrambling in Serbo-Croatian has another side, as well. If we could find some construction that could *not* be split by rules of word order variation, it ought to follow that the components of this construction must not be syntactically autonomous phrases. As a consequence, if we adopt the syntactic account of clitic placement, it ought to follow that the option of placing a clitic after the first word of a sentence should be unavailable just when the sentence begins with a phrase of the relevant type. And indeed, Progovac 1994 provides an argument of exactly this form. She notes that (at

³Substituting a DP analysis for the treatment of nominal arguments as NP’s assumed here would not appear to have a significant effect on the points to be made.

least for dialects she studied, which seem to have been primarily Serbian) Nouns governing genitives can not be separated from their complement by clitics. Thus, clitics must follow an entire initial phrase in such cases (as in example 3a) rather than being placed after the initial Noun (as in example 3b).

- (3) a. Roditelji uspešn-ih studenat-a **su se** razišli
 parents successful-gen students-gen have self dispersed
 The parents of the successful students dispersed
- b. (*)⁴ Roditelji **su se** uspešn-ih studenat-a razišli
 parents have self successful-gen students-gen dispersed
 The parents of the successful students dispersed

This observation follows, on the syntactic account, from the fact that just in these cases (Noun Phrases consisting of a head Noun governing a genitive complement), the two parts are also prohibited from scrambling. Similar arguments can also be constructed on the basis of other constructions that can be broken up neither by scrambling nor by clitic placement, including conjoined phrases and NP's containing post-head modifiers (e.g., *the man on the corner*).

These data appear to support the syntactic account of clitic placement, and to render irrelevant the apparent possibility of placing clitics after a single sentence-initial word. But we must also attend to another argument, due to Browne 1975. This is provided by cases where a two-part proper name is broken up by clitics. It is certainly not possible to scramble the two parts of such a name, nor is it plausible to maintain that each part constitutes a phrase. These considerations make it difficult to explain the possibility of both variants of (4) within the syntactic theory.

- (4) a. Lav Tolstoj **je** veliki ruski pisac
 Leo Tolstoj is great Russian writer
 Leo Tolstoj is a great Russian writer
- b. Lav **je** Tolstoj veliki ruski pisac
 Leo is Tolstoj great Russian writer
 Leo Tolstoj is a great Russian writer

Browne (personal communication; cf also Browne 1975, Zec 1987, Cavar & Wilder 1994) notes that the option of interrupting two-part proper names in this way is much more felicitous for western dialects—primarily Croatian—than it is for eastern ones—primarily Serbian. And in fact, in the dialects that allow this, the clitics can occur after the first word in at least some of the constructions referred to in connection with (3), for instance separating

⁴The parenthesized asterisk here reflects the fact that while this example is apparently excluded in the Serbian dialects from which Progovac cites it, it is not equally bad across the spectrum of relevant Serbo-Croatian dialects. We return to this point immediately below.

Nouns from a governed genitive. Thus, even though it is still impossible in these dialects to scramble the component parts of such a construction away from one another, sentences like (3b) are acceptable.

The conclusion that appears to follow is thus that Progovac’s argument (and others like it) show that in some (mostly Serbian) forms of Serbo-Croatian, the possibility of having second position defined as immediately after the first word may not actually exist: the single word units that precede clitics in such cases are analyzable as phrases. In other dialects (mostly Croatian), however, *either* the first phrase *or* the first full word⁵ within a clause can count as occupying the first position in determining the placement of clitics.

It is hardly surprising that dialects like the Serbian ones in which only potential phrases count as occupying ‘first position’ exist: many languages with second position clitics are of this type, as has long been recognized (cf. Kaisse 1981, in some respects the *locus classicus* for the distinction among various senses of ‘second position’). Insofar as languages are of this type, it is at least in principle possible for the syntactic account we are considering here to accommodate them (though it is still necessary to manage the mechanical details of ensuring that exactly one phrasal constituent will always precede the second-position clitic(s)).

What is more significant, however, is the existence of dialects of the Croatian sort, in which clitics can appear after a single word under circumstances where that word cannot plausibly be seen as a phrase (and where independent principles of the syntax may in fact prevent its separation from other words within some larger constituent, except for the appearance of an intervening clitic). Insofar as this possibility exists at all in any language, Universal Grammar must obviously provide a mechanism for it, and it does not appear that that mechanism can be one of the standard syntactic ones for describing the placement of elements (base generation or movement). And of course, we may well hope that an appropriate mechanism of this sort will generalize to the phrasal cases as well, suggesting that the usual apparatus of syntactic description is not directly relevant to clitic placement. But we still have some ways to go before we can claim to have established that conclusion.

3 ‘PF-movement’: prosodically based clitic placement

Let us then grant that we must accommodate at least some cases in which a ‘second-position’ clitic follows a single word which is not a phrasal constituent, and others where the clitic follows a single phrase (whose length is arbitrary, at least to a first approximation). A theoretical proposal for dealing with these two possibilities within a single language is made by Halpern 1992. Halpern proposes that the relevant clitics are to be represented as phonologically sub-categorized to attach to something on their left. Syntactic rules (whose precise characterization is irrelevant to our present concerns) initially locate these clitics in the

⁵As has been discussed at some length in the literature, there are additional problems involved in characterizing exactly what counts as a “word” in this generalization. This fuzziness around the edges does not obscure the fundamentally non-phrasal nature of at least one possible definition of ‘second position’ in the relevant dialects, however.

leftmost position within their domain. Under these circumstances, the sub-categorization requirements of the clitics are not satisfied, since there is no material to their left to which they can attach. Suppose, however, that syntactic processes allow a phrase to be adjoined to the left edge of the relevant phrasal domain. If such adjunction takes place, (a) the phonological requirements of the clitics will be satisfied, since there is now material to their left; and (b) the clitics will appear exactly after the first phrase.

This describes the generation of structures in which ‘second position’ is defined with reference to an initial (arbitrary length) phrase, but what of the single word case? To allow for this possibility as well, suppose that the adjunction referred to above is not obligatory. If it does not take place, then the clitic’s subcategorization requirement will not be satisfied, as we have already noted. To remedy this, Halpern proposes the application of a process we can refer to as “Prosodic Inversion” in the phonology: a rule applying to modify the phonological expression of a syntactic structure (its “PF” representation) by shifting the clitic the minimum distance necessary to allow it to satisfy its phonological requirements. The requirement imposed by the clitics will be satisfied if they move over one prosodic word; and in that event, the clitics will occur after the initial phonological word.

In these terms, we can formulate the parameters underlying typological distinctions among second-position clitic systems. Languages in which only the first phrase counts in defining second position lack the rule of Prosodic Inversion, allowing the requirements of their clitic to be satisfied only through syntactic introduction of a phrase before the clitic. Languages in which only the first word is relevant in defining second position, on the other hand, lack the relevant preposing or adjunction process altogether (for whatever reason), though they do admit Prosodic Inversion. Languages like Serbo-Croatian taken as a whole have both processes. If we add that while western (Croatian) dialects have Prosodic Inversion, it is more restricted (or absent) in eastern (Serbian) ones, then we get the difference between the facts described by Progovac on the one hand, and those cited by Browne on the other.

Such an analysis can describe the basic facts, as we have just shown, which gives it an advantage over a purely syntactic solution. This does not mean it is without problems, however. Some of these derive directly from its basic apparatus. The notion of rules that re-order syntactic terminal elements in a way limited to their phonological expression alone (“movement in PF”) is a rather radical one whose potential power is considerable, as emphasized by Cavar & Wilder 1994.

We might also point out that a derivation in which the clitic occupies phrase initial position for the purposes of the syntax, but appears overtly in a post-initial position, lacks real support. If the clitics actually occupy initial position, that is, we should expect to find some positive evidence for that in some language. In the absence of such evidence for the presence of clitics in their non-inverted position, we must regard such a derivation as involving a purely formal, non-substantive step of a sort that has traditionally been stigmatized in the linguistic literature (for a general discussion of one sort of case see Pullum 1976). Until affirmative support is provided for a derivation that *first* moves clitics to initial position,

and *then* moves them to the right in PF, we should seek an alternative account that avoids the vacuous step.

These lines of argument *a priori* against the Prosodic Inversion analysis of second position phenomena are unlikely to be persuasive on their own, especially in the absence of a clear alternative. But in fact there are other reasons to be suspicious of the overall picture presented by Halpern. Recall that the essence of this is the claim that second position clitics are really domain-initial, and only appear to be in second position because either (a) a phrase from within the domain has been preposed or adjoined to its left edge; or (b) the clitic has been prosodically inverted with a following word. We have already suggested that the second of these possibilities presents some formal problems in its mechanics; in fact, the account of clitics following an initial *phrase* is also somewhat problematic.

This follows from the requirement that exactly where a clitic follows a phrase, that phrase must have been fronted by an independent rule of the syntax. Recall that in all Serbo-Croatian dialects, *all* of the clitics under discussion must follow some initial element, a fact that has several implications on this theory. First, we note that in eastern dialects that have little or no Prosodic Inversion, some phrase must nearly always be fronted. On the other hand, in western dialects, there is predicted to be a syntactic difference between sentences with the clitics following a single word (derived by Prosodic Inversion, with no preposing) and those where clitics follow a (preposed) phrase. Finally, in cases where Prosodic Inversion allows the clitics to come after a word, no phrase can have been fronted. As long as we treat “pre-posing” as merely a mechanical detail necessary to get clitics located correctly, we may be perfectly content with these conclusions. But if fronting is considered to be a non-vacuous operation in the syntax, however—e.g., if it corresponds to topicalization—these predictions are not borne out.

Consider the pairs of sentences in (5), cited from Browne 1975. In the dialects studied by Browne, these pairs represent free variants. The two sentences in (5a) share the fact that the direct object NP *Sovetske goste* ‘the Soviet guests’ appears at the front of the clause. On the assumption that the basic constituent order in Serbo-Croatian is not **O–V–S**, this appears to represent fronting of the object NP. Such fronting is perfectly consistent with the location of the clitic in (5ai). It is harder to see how the clitic in (5a_{ii}) comes to occupy its surface position however, since the apparent phrasal fronting here would seem to make it impossible for Prosodic Inversion to place it after the first word of the sentence, and indeed it is unclear why Prosodic Inversion should apply at all. Similarly, in the two examples in (5b), the adverbial phrase *Prošle godine* ‘last year’ appears equally to have been fronted in the two sentences, while the operation of Prosodic Inversion in (5b_{ii})—but not in (5b_i)—suggests a syntactic difference between the two in terms of whether or not fronting has occurred.

- (5) a. i. Sovetske goste **je** primio i predsjednik Republike Austrije Jonas
 Soviet guests past received also president republic Austria Jonas
 The president of the Republic of Austria, Mr. Jonas, also received the Soviet guests

- ii. Sovetske **je** goste primio i predsjednik Republike Austrije Jonas
 Soviet past guests received also president republic Austria Jonas
 The president of the Republic of Austria, Mr. Jonas, also received the Soviet guests
- b. i. Prošle godine **su** otvorili ugostiteljsku školu
 last year perf. opened hotel-and-catering school
 Last year they opened a hotel-and-catering school
- ii. Prošle **su** godine otvorili ugostiteljsku školu
 last year perf. opened hotel-and-catering school
 Last year they opened a hotel-and-catering school

I conclude that, at a minimum, it remains for a proponent of Halpern’s or a similar analysis to justify its details. In particular, support must still be provided both for the apparently vacuous initial placement of clitics in syntactic structure and also for the reality of the syntactic differences this account predicts to exist between sentences with post-first-word and post-first-phrase clitics in Serbo-Croatian. Until such evidence is provided, another account that met the empirical burden of allowing for the full range of clitic positions but without incurring these problems ought to be preferred—assuming we can find one.

4 Clitic Placement as generalized Word Formation

Another view of these phenomena is suggested in work within the framework of A-Morphous Morphology (Anderson 1992, 1993; see also Beard 1994 for a related perspective). As suggested above in section 1, the essential feature of that treatment of clitics is to view them as the phonological expression of properties of phrases, introduced into phonological form by rules that are entirely comparable to those introducing affixes as modifications of the phonological forms of derived and inflected words. My principal concern in this paper is with the mechanics of placing clitics, but it is clearly necessary to say a bit more here about the substantive content which they express.

Our subject is a set of clitics whose domain is the clause, and so it is the ‘phrasal properties’ of clauses that are of interest. In Serbo-Croatian, the clitics in question represent the properties of certain arguments (in particular, pronominal objects), a set of (aspect-marking) auxiliaries, and a question marker. If we construe the pronominal clitics as a variety of Object Agreement marker (sanctioning the presence of phonologically null *pro* in the corresponding argument positions), all of these elements represent the content of what syntacticians usually regard as ‘functional categories.’

The standard assumption about functional categories is that each of these is represented by a unitary constituent in the syntax, heading its own projection and arranged hierarchically with respect to the other functional categories occurring in the same major constituent (Sentence, CP or IP, NP or DP, etc.). I prefer to regard functional categories not as syntactically separate constituents (with associated projections), but rather as aspects of the

featural content of the relevant maximal projection. At least some strains of work in current syntax (e.g., van Gelderen 1993) distinguish carefully between the features that provide the content of functional categories and the specific categorial nodes in syntactic representation where these reside; and explicitly avoid claiming that every such feature necessarily motivates its own category and projection in every language. My own view can be considered an extreme form of this line of thought, one on which virtually all functional category features are cumulated on one of a very small number of maximal projection types. On that analysis, agreement material, Tense, Aspect, etc. are all part of the featural content of the Complex symbol **S**.

Essentially the same analysis could be reconciled with the decision to treat functional categories as separate syntactic constituents, however. We might assume, for example, that the content of functional heads percolates up to the topmost category, and it is with respect to this node that it is overtly realized. What is important is the notion that whether functional categories are constituents or features within a complex symbol, they do not have inherent phonological form: that form is spelled out by a system of rules that introduce ‘affixes’ into phrases. Some of these rules locate specific functional material in the word-level inflection of particular words (see Anderson 1993): typically, for instance, Tense, Aspect, Subject agreement and perhaps other categories are spelled out in the inflection of Verbs. Other rules, however, introduce phonological content directly into the shape of a phrase, and when that occurs, we call the material introduced a (special) clitic.

The benefit of this analysis, of course, is that it allows us to generalize across the behavior of clitics and of affixes, as suggested above in section 1. Many of its specific details are beyond the scope of the present paper, but its basic nature should be clear. In particular, this approach treats the *content*, but not the *overt realization* of functional categories as present in (and accessible to) the syntax. The realization of functional categories, including the clitics studied here, is the responsibility of the phonological, morphological, and other rules that relate syntactic representation to Phonetic Form. The difference from the purely syntactic analysis, then, resides in the fact that these clitics are not moved or placed by syntactic rules (and thus not limited to placement at constituent boundaries). The difference from the Prosodic Inversion account resides in the fact that clitics *per se* are neither present in the syntax nor ‘inverted’ in the phonology: they are simply placed where they belong by rules that realize functional content as phonological form.

Adopting provisionally the notion that clitics are placed directly by processes that generalize the class of Word Formation Rules, we can go on to some of the details of such a theory. In the present paper we are primarily concerned with processes that will locate clitics in second position. We have already seen (in section 2) that an important problem for theories of clitic placement is the fact that ‘second position’ can have two distinct interpretations: it can mean either ‘after the first phrase’ or ‘after the first word’ within the domain. On the view being considered here, then, can we correctly distinguish the two possible interpretations of second position?

The crucial point to bear in mind is the fact that the phonological expression representing

a given phrasal domain has two aspects: on the one hand, it has a syntactic structure, and on the other hand, a phonological one. We would expect, therefore, that rules operating on it could in principle refer to either of these aspects. Accordingly, let us say that we can parse the phrase, for the purpose of finding its “first” element, either as a syntactic object (a hierarchically organized structure of phrases), or else as a phonological object (an organization in terms of categories such as the phonological phrase, foot, syllable, etc.; and what is of importance to us here, apparently, prosodic words). If we look at the syntactically motivated parse, we get the interpretation of second position as “after the first phrase.” If we look at the phonologically motivated parse, however, the second position comes “after the first word.”

Both of the necessary possibilities are available, then, depending on how we resolve the ambiguity inherent in parsing an object which has both a syntactic and a phonological structure. A problem arises, however, in the description of systems such as those dialects of Serbo-Croatian that allow both either interpretation. The difficulty results from the fact that while either one is possible, the analysis of any given sentence must be based on a uniform interpretation: all of the clitics in a given sentence have to be located in a way that is based on the same kind of parsing. That is, you cannot have some clitic(s) located after the first word and others after the first phrase.

We could of course stipulate this as a condition: “clitic placement rules in a given sentence must all operate on the same interpretation of that sentence’s structure.” This is a perfectly intuitive notion, but it does not appear to follow from anything, and thus remains an undesirable stipulation. This fact is indeed the principal argument presented against the theory of Anderson 1992 by Halpern 1992. The Prosodic Inversion account proposed by Halpern, in contrast, avoids this stipulation. That is because the difference between the two interpretations of second position, on that view, depends on whether or not there is a preposed phrase adjoined to the left of the (otherwise) domain-initial location of the clitics. Obviously, in any given sentence, either there is an initial phrase or there isn’t, and the location of clitics then follows uniformly from this structural difference. Halpern argues that this provides an advantage for the Prosodic Inversion account over the ‘direct placement’ account proposed in Anderson 1992 and in this section.

5 Clitic Placement and Optimality Theory

Is there a way to salvage the advantages of placing clitics directly through a generalized form of Word Formation Rules, while also answering Halpern’s objection about the uniformity of clitic placement? The problem appears to result from the fact that the rules introducing different clitics, on this view, are in principle independent of one another. Any analytic option available to each of them ought in principle to be resolved in a way that is local to an individual rule; while what we find is that the relevant kind of optionality (the choice of a syntactic *vs.* a phonological parse of the structure) takes on its value globally.

In attempting to remedy this problem, it appears that the place to look is in the technical

details of how clitic introduction rules are supposed to operate, and at the way collections of individual rules are organized into a unitary grammatical system. The kind of morphology to which the A-Morphous view tries to analogize clitic placement to is described in Anderson 1992 through the derivational application of a series of rules. In this theory, affix order (and clitic order) is reconstructed as order of application of the relevant rules. But other views of morphology describe affix placement in different ways. It is possible that such an alternative might offer advantages with respect to the problem presently confronting us.

One such other perspective is that of Optimality Theory,⁶ where all of the affixal material in an individual word is treated as simultaneously co-present.⁷ Relative ordering of individual affixes results from the fact that a number of elements are all subject to constraints requiring them to be located in the same position, but since the individual constraints are ranked relative to one another, the demands of some outweigh those of others.

Suppose, for example, that in some language we have a number of affixes which are all required to be located as prefixes. For each of them, there must exist a constraint to the effect that the affix should appear at the left edge of the word. But since these constraints are ranked, one will outweigh another: the affix corresponding to the constraint with the highest rank will actually succeed in appearing in the leftmost position in the word as an initial prefix. The affix corresponding to the next highest ranked constraint will not appear in absolute leftmost position, but it will occupy a position that involves as little violation of the leftmost requirement as possible: i.e., that of the second prefix. And so on for the others. Within this limited domain, ranking of constraints plays the role that is filled by derivational sequence in the theory of Anderson 1992.

What of elements that appear not at the very periphery of their domain, but internal to it, as infixes? Surveys of infixation phenomena suggest, as summarized above in section 1, that these are still located with reference to the left or right edge.⁸ Infixes differ from prefixes or suffixes in that they are typically separated from the domain edge by a single element of a given type (in word-level morphology, this is usually an initial segment or cluster, or a single syllable). The correct account of these phenomena is subtler than this, and to some extent a matter of controversy, but *grosso modo* an infix is located by placing it immediately after an initial (or immediately before a final) element of the relevant sort.

Within Optimality Theory infixes result, grossly, when we say that some affix is subject

⁶See Prince & Smolensky 1993, and a great deal of subsequent literature. We make no attempt to explain the principles of Optimality Theory here: the argument below relies only on some rather general notions from that theory, and does not presuppose the substantive results of the rapidly growing literature devoted to it.

⁷This may or may not be true in a strict sense. In at least some sources, it is suggested that something like the Lexical Phonological organization of a grammar into a small number of discrete strata is consistent with Optimality Theory, where the mechanisms of simultaneous constraint evaluation apply to describe the relation between pairs of adjacent strata. In that case, a limited amount of derivational structure would be present—one stage for each pair of adjacent strata. We ignore this complication here, since there is no reason to believe that distinct clitics in languages like Serbo-Croatian belong to different lexical strata.

⁸We ignore here the case of infixes located within words by reference to the placement of main stress.

to two ranked constraints: on the one hand, (a) it should be as close as possible to the left (or right) edge; but on the other hand, and outranking the first constraint, (b) it must not be absolutely initial (respectively, final) in its domain. Over-simplifying somewhat, let us assume there are constraint types⁹ **Non-Initial(e)**, saying that the element **e** can not be domain-initial, and also **EdgeMost(e, L)**, saying that the element **e** should be as close to the left edge as possible. Of course, there is also an analogous constraint type **EdgeMost(e, R)** that says that some elements **e** should be at the right edge, i.e. suffixed. If in fact there is no “Non-Final” analog of **Non-Initial(e)**, that would have the effect of excluding penultimate position clitics and affixes—perhaps correctly, since (as we noted above) such elements are vanishingly rare in the cases both of infixation and of special clitic placement.

The point of the analysis we wish to maintain, of course, is that the same apparatus applies both to affixation and to clitic placement, and that means we should seek the analog of second position clitics in post-initial infixes. Within the general framework of Optimality Theory, if we want to characterize a clitic (or affix) cl_i as a “second position” element, the most straightforward way to do this is to say **Non-Initial(cl_i)**, **EdgeMost(cl_i , L)** where the **Non-Initial** constraint dominates the **EdgeMost** one. As a consequence, the clitic will be located as far to the left as possible without actually becoming initial: i.e., it will appear in second position.

How do we describe just how much material appears to the left of the clitic? Suppose we assume that in the derivation of the form of phrases, there is an undominated constraint that new material cannot be introduced inside a phonological word. Perhaps material can be adjoined to words, but an existing word cannot be interrupted. Let us call this constraint **Integrity(Word)**.¹⁰ In most languages¹¹ **Integrity(Word)** is undominated. To the extent this is true, 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 **Integrity(Word)**. But the only way there could be more would be if some other constraint required it, because these clitics are constrained to appear at the left edge of their domain, and the optimal representation will be one in which they are found as close to that position as they can be, consistent with the requirements of higher ranking constraints.

And in some cases there must be some such higher-ranking constraint which requires more than the minimum single word to intervene between the left edge of a phrase and a second position clitic in some cases, because that is exactly what happens in a language where “second position” means (or at least can mean) “after the first phrase.” To derive this configuration, we can posit another constraint: **Integrity(XP)**, which requires that a phrase must not contain elements that are not members of that phrase. Note that this will

⁹Since there must be a separate instance of such a constraint type for each specific morphological element to which it is applicable, these are families of constraints rather than single constraints.

¹⁰A similar constraint is called “Contiguity” by Prince and Smolensky and elsewhere in the Optimality Theoretic literature.

¹¹But not all. In Pashto (cf. work by Tegey, *apud* Halpern 1992) there are clitics that come immediately after the primary stress of an initial Verb, thus violating Word Integrity: $\text{Ṭ}elwəhə́s=me$ ‘I was pushing (it)’ vs. $\text{Ṭ}él=me=wəhə$ ‘I pushed it.’

allow the clitics to appear within their largest containing phrase (i.e., within the domain to which the features they realize appertain), since they are in fact members of that phrase. But they cannot appear within another phrase entirely contained within that domain.

Actually, **Integrity(XP)** too must be a family of constraints, since it may be the case that phrases of some types are uninterruptible in a given language, while other phrases can be broken up. For example, Cavar & Wilder 1994 note that even in Croatian dialects which allow second position clitics to come after a single word, they are not allowed to intervene between a head Noun and an associated relative clause.

- (6) a. Djevojka, koju Ivan voli, **je** fina
 girl REL Ivan loves 3sg PRES pretty
 The girl, that Ivan loves, is pretty
- b.*Djevojka, **je** koju Ivan voli, fina
 girl 3sg PRES REL Ivan loves pretty
 The girl, that Ivan loves, is pretty

Here only (6a) is possible, and not (6b). This shows that while NP's (or DP's) are in general 'permeable' to clitics, certain sub-types are not. Of course, what we want is an explanation of why certain configurations can be broken up and others cannot: we want to be able to derive (the high ranking of) the constraint **Integrity**($[_{NP[S]} \]$) from other principles rather than simply stipulating it. This fact does not differentiate the Optimality Theory account from any other, however, since the existing syntactic accounts have no less stipulative way of ensuring that exactly these structures cannot be broken up, while other sorts of NP can.

Let us suppose that **Integrity(XP)** constraints, like **Integrity(Word)**, are undominated (to the extent their effects are visible at all). In that case, the earliest that "second position" can come is after the first (relevant) phrasal daughter of the containing phrase, and so that is exactly where second position clitics will be found. A location earlier in the phrase would either be internal to that first phrasal daughter (and thus violate **Integrity(XP)**) or else initial (and thus a violation of **Non-Initial(cl_i)**, by definition a high ranking constraint for second-position clitics). A location later in the phrase would be less optimal, since it would incur more violations of **EdgeMost(cl_i,L)** than the location after the initial phrase. In the absence of a principled alternative, we make provisional use of specific instances of the constraint family **Integrity(XP)** to describe instances of constituents that cannot be interrupted by 'foreign' material (such as clitics). Of course, In a system where no constituent can be so interrupted (i.e., where 'second position' always means "after the first phrase of any type"), the relevant constraint will be the maximally general one **Integrity(XP)**.

That shows us how to describe each type of "second position": to the extent this means after the first phrase, **Integrity(XP)** is undominated. In languages where it means "after the first word," **Integrity(Word)** is undominated, but **Integrity(XP)** is dominated by the **EdgeMost(cl_i,L)** constraints for the various clitics, meaning that their requirement of

being positioned as far as possible to the left can result in violations of phrasal (but not word) integrity where necessary.

So how do we describe the (western) dialects of Serbo-Croatian, where there is apparently an option in the interpretation of “second position”? The existence of this option means that the relative ranking of **Integrity(XP)** and the **EdgeMost(cl_i, L)** constraint family is optional: **Integrity(XP)** can *either* be treated as undominated or as dominated by the **EdgeMost(cl_i, L)** constraints. These two distinct constraint rankings constitute two distinct (but highly similar) grammatical systems, and the fluctuation between them is entirely parallel to other cases of grammatical variation in language.

This description immediately provides us with an important advantage over the original direct placement theory, since it gives the answer to Halpern’s objection to that view. That is, the consistency of interpretation of “second position” for all the clitics in a sentence now follows from the fact that evaluating the relative optimality of given candidate structures is a global process, so the optionality of interpretation of a particular constraint ranking has an all or nothing character. Only two systems are in question: one in which Phrase Integrity is undominated, and one on which it is outranked by the constraints placing clitics as far to the left as possible (without violating the Non-Initial constraint). It stands to reason that while the derivation of any given sentence may take place within one or the other of these systems, it would be logically incoherent for the position of some clitics to be evaluated with respect to one of them and that of others with respect to the other. We thus avoid a stipulation like “if the domain is parsed phonologically for one clitic rule, it must be so parsed for all the clitic rules applying to it.”

6 Further Support for the Optimality Account

What other sorts of evidence might we find that would help us to differentiate these two variants of a ‘morphological’ view of clitic placement? The principal distinguishing characteristic of the picture presented in Anderson 1992 is its derivational character: the clitics appearing in a given domain are introduced one at a time, by a sequence of rule applications corresponding to their surface order. The Optimality Theoretic view, in contrast, has all of the clitics present at the same time in any given representation. We could, therefore, look to see whether the property of individual sequential introduction makes a difference, and if so, in which theory’s favor.

As it turns out, there is indeed evidence of this sort to be found in Serbo-Croatian. Within the clitic sequence, an element with the expected shape /je/ shows up as /ju/ instead if another clitic with the shape /je/ appears *later* in the sequence. For the derivational theory, this is a problem, since the environmental information that triggers the alternation (a latter clitic with the shape *je*) is not present yet at the point where the alternating element is inserted. The alternation *je/ju* is restricted to a single specific element, and thus is not phonological in character, so it cannot be attributed to a later level of ‘post-lexical’ structure. On the Optimality Theory view, in contrast, there is no problem, since all of the relevant

elements are assumed to be introduced into the structure at the same time.

In fact, this is not a unique case: other languages also have idiosyncratic allomorphy in particular clitic sequences. The derivational view predicts that only other material appearing earlier in the derivational sequence could condition such allomorphy, but examination shows that there is no such asymmetry in general. Any condition on clitic sequences that requires a ‘global’ reference to the entire set of clitics present in a given linguistic expression will provide such an argument, providing the facts cannot be represented directly by the relative ordering of clitic introduction rules.

A rather dramatic case is potentially presented by facts discussed by Insler 1993. In studying the class of *dvandava* compounds in Sanskrit, Insler finds that the relative order of their components is governed by a complex set of inter-dependent conditions (shorter before longer, vowel-initial before consonant-initial, front vowels before back vowels, etc.). Once these ordering conditions are clarified, however, it becomes apparent that they govern a wide range of word order phenomena in Sanskrit other than the particular set of compounds in which they are initially identifiable. Among the elements whose relative ordering is determined by these conditions are the clitic sequences of the languages, thus providing an instance in which the ordering over such a sequence is apparently determined by global conditions of a sort that it would be inappropriate to express by the relative ordering of rules introducing the clitics. Of course, there is a great deal left to do to make this analysis of Sanskrit clitics explicit and precise, but the general idea seems much better suited to treatment in terms of optimizing the interaction of a set of mutually ranked simultaneous global constraints than through ordered rule application.

Another sort of argument, tending in the same direction, is provided by the fact that in most Romance languages, clitic pronominals accumulate in a fixed sequence before the finite Verb. In some of the languages, however, the clitics appear *after* a non-finite form of the Verb in same linear sequence as that found before finite forms. Of course, the facts are complex and vary somewhat from language to language, but this is at least a grossly accurate characterization.

It appears that the difference between the finite and the non-finite cases is that the rules introduce clitic material *before* a finite Verb, but *after* a non-finite one. But in that case, on the account that introduces clitics one at a time derivationally, we should expect the clitic sequence following the non-finite Verb to be the mirror-image of the sequence preceding the finite Verb. With the marginal exception of imperatives in French and a few similar cases, however, that is not what we find. This seems to argue in favor of an account similar to that of Kayne 1991, where the clitics are adjoined (in a fixed sequence) to a phonologically null functional head, and this element (together with its attached clitics) appears before a finite Verb but after a non-finite one. Since this analysis involves moving clitics to their surface position by rules of the syntax, it falls within the class of theories discussed in section 2 above, and does not offer the advantages of a view that unifies word level morphology with clitic placement.

Within a ‘morphological’ theory based on the mechanisms of Optimality Theory view,

on the other hand, we can provide an account that does not involve syntactic movement of clitics. Obviously, the Romance pronominal elements are not in the category of second position clitics: rather, they are located with respect to the main Verb of the domain within which they are motivated (the finite bearer of Tense and Agreement if there is one; an infinitive, participle, etc. or possibly an imperative otherwise). One way to describe these phenomena is to treat the clitics as introduced within a restricted subdomain of the main (phrasal) domain in which they occur, much as the theory of Prosodic Morphology (cf. McCarthy & Prince 1993) treats certain word-internal affixes as prefixes or suffixes within a prosodically circumscribed sub-part of an including word.

In the case of the Romance pronominals, we can describe them as being introduced within a domain circumscribed to the Head Verb node. At least in the finite case, they are subject to constraints of the form **EdgeMost(cl, L)** within that domain, ranked in such a way as to yield the observed order. But now in order to accommodate the alternation between preverbal position with finite main Verbs and post-verbal in other cases, all that needs to be assumed is that there is an additional, even higher-ranking constraint which requires that infinitives (and such other—typically non-finite—forms as are relevant) must appear at the left edge of the same domain. In this fashion, we derive the difference between the finite and the non-finite case from a single additional constraint governing the position of non-finite Verb forms. With the derivational theory, on the other hand, there does not appear to be such a simple and direct solution.

We can exemplify this kind of analysis with the treatment of a very similar set of facts from two other South Slavic languages, Macedonian and Bulgarian, where we also find another interesting wrinkle. Clitics in these languages precede the finite Verb (with one exception, to be discussed below), but follow gerunds, infinitives and imperatives. Consider first the sentences from Macedonian in (7). Note that in sentence (7a), the element *ne* counts as a word occupying initial position, and not as one of the clitics.

- (7) a. *ne bi mi go dal*
 neg should me it gave
 He shouldn't have given it to me
- b. *dajte mi go*
 give (imper.) me it
 Give it to me!
- c. *nosejki mi go*
 bring (gerund) me it
 bringing it to me

Parallel to the account of Romance pronominals just suggested, we characterize these clitics as leftmost within the circumscribed domain constituted by the head Verb node, a constraint which is out-ranked by the requirement that non-finite verbs (including in this case imperatives) be initial within the same domain.

In Bulgarian, there is an additional fact to consider: when the Verb of a clause is sentence initial, even finite Verbs are followed (not preceded) by their associated clitics. This is illustrated by the Bulgarian sentences in (8).

- (8) 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

In this language, then, there is an additional constraint, requiring that clitics not be clause-initial, which also outranks the constraint that they be initial within the circumscribed domain of the head Verb node. The internal order of the clitic sequence, however, remains invariant in all of these cases. We conclude that the phenomenon of fixed clitic sequences which can be located in different ways with respect to their apparent anchoring point can be accommodated within a theory that treats clitic introduction as a generalization of the kind of rules found in morphology, at least if the devices for locating affixal material (in words or in phrases) include mutually ranked violable constraints along the lines proposed in Optimality Theory.

7 Conclusion

We see therefore that problems raised in a purely syntactic account of ‘second position’ (and other) clitic placement can be successfully overcome, and without positing overt non-syntactic movement of syntactic elements in PF. The key seems to be to incorporate an Optimality Theory-like view of the mechanisms of determining appropriate surface forms into the overall picture developed in *A-Morphous Morphology*. We can then treat clitics as described by essentially the same theoretical devices as affixes, thus preserving the generalization argued for in Anderson 1993 that the same 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 Optimality Theory may well provide a better way to express the generalizations of a comprehensive theory of ‘morphology’ in the broadest sense.

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