There are no special clitics

Ricardo Bermúdez-Otero and John Payne
University of Manchester

Linguistics and English Language
The University of Manchester
Oxford Road
Manchester M13 9PL
United Kingdom

r.bermudez-otero@manchester.ac.uk
john.payne@manchester.ac.uk

Abstract

The hypothesis of Clitic Idiosyncrasy holds that special clitics are neither words nor affixes, but constitute a separate type of object whose behaviour is partly governed by dedicated grammatical mechanisms. In an influential implementation of this idea, Judith L. Klavans and Stephen R. Anderson claim that special clitics are phrasal affixes, introduced by a set of postlexical morphological rules that is separate from stem- and word-level morphology. This paper criticizes the hypothesis of Clitic Idiosyncrasy and its implementation through phrasal affixation. First, we show that the identification of a distinct class of special clitics depends on a concept of 'special syntax' that is not well-defined: in many instances, there are syntactically autonomous units that exhibit the same behaviour as putative special clitics. Secondly, we note that the theory of phrasal affixation incorrectly predicts that special clitics will be invisible to lexical morphophonology. Thirdly, we demonstrate that, in certain crucial cases, phrasal affixation cannot place special clitics in the right positions: in Bulgarian, for example, the definiteness marker is suffixed to the head of the first syntactic phrase immediately contained within the NP. We show that this behaviour is straightforwardly handled by a theory of syntactic feature-passing within subtrees that allows phrasal features to be transferred now to heads, now to edges. This theory is independently motivated by phenomena such as the English *'s* genitive and Old Georgian *Suffixaufnahme*.

1. Introduction[1]

Linguists of very different theoretical persuasions have come to agree upon the view that clitics do not exist as an independent kind of grammatical object: whilst in a language-particular description one may want to resort to the term *clitic* as a convenient means of highlighting some property or cluster of properties of certain words or affixes, general grammatical theory should not recognize clitics as a category.[2] This conclusion has been reached by both lexicalist and nonlexicalist syntacticians: see e.g. Monachesi (2005: 3-4) among the former, and Embick and Noyer (2001: 570-73) or Julien (2007: 221) among the latter.

Alongside this widely shared consensus, however, there also exists a tradition of research that upholds the hypothesis of Clitic Idiosyncrasy:

(1)   *Clitic Idiosyncrasy*
        Certain clitics are neither words nor affixes, but constitute a separate type of
        object whose behaviour is partly governed by dedicated (i.e. clitic-specific)
        grammatical mechanisms.

Notable contributions to this research programme include Klavans (1980, 1983, 1985), but the most recent, detailed, and complete articulation of Clitic Idiosyncrasy is that developed in Anderson (2005), prefigured in Anderson (1992: ch. 8). In this paper we criticize the programmatic assumptions and empirical basis of Clitic Idiosyncrasy. We naturally pay particular attention to Anderson's (2005) implementation of this hypothesis, but our arguments are aimed at the research programme as a whole and are intended to refute any grammatical theory that upholds Clitic Idiosyncrasy.

Developing the programme summarized under (1) logically implies two tasks. First, the proponent of Clitic Idiosyncrasy must formulate a set of criteria that define a nonnull set of grammatical objects that are neither words nor affixes: these are the 'clitics'. Secondly, the proponent of Clitic Idiosyncrasy must find a special place for clitics in the architecture of grammar.

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[2]   The terse manifestation of this view in our title is, of course, not original: see the title of Everett (1996, 2000).

The first task, then, requires that clitics should be defined in opposition to words, on the one hand, and to affixes, on the other.[3] Taking Zwicky's (1977: 6) classic distinction between *simple clitics* and *special clitics* as his starting point, Anderson realizes that only 'special clitics' can lead to Clitic Idiosyncrasy. In Anderson's approach, a simple (or 'phonological') clitic is an ordinary word which displays syntactic behaviour appropriate to its category, but happens not to project a prosodic-word node (ω) in the phonology (1992: 201, 2005: 34); the incorporation of simple clitics into prosodic structure is regulated by independently required constraints on prosody and on the syntax-prosody interface (1992: 203, 2005: ch. 3). But if simple clitics are just plain words, then Clitic Idiosyncrasy stands or falls on the allegedly *sui generis* properties of special (or 'morphosyntactic') clitics. These peculiar properties of special clitics have been known since Zwicky (1977: 4) as their *special syntax* (Anderson 1992: 201-02; 2005: 31, 75).

In section 2 of this paper, we criticize the notion of 'special syntax'. We first challenge the assumption that an item can be designated as a special clitic simply because its behaviour does not conform with that of other free elements of its category, or with that of other affixes, within the same language; the decisive question is, rather, whether or not there are in fact any clitics that follow rules other than those allowed by universal principles of syntax and lexical morphology. As we shall see, Anderson (1992, 2005) secures an affirmative answer to this key question by implicitly adopting a maximally strict view of the interface between syntax and morphology (cf. Stump 2001: 12ff). Invoking the Head-Feature Convention of Generalized Phrase Structure Grammar (Gazdar et al. 1985: 94ff; see e.g. Anderson 1992: 107ff, 2005: 146, 233), Anderson seems to allow the features of a phrase XP to appear in just two types of location in the syntax: on the head X of XP by the Head-Feature Convention, or on other phrases (and therefore on *their* heads) by agreement. Concomitantly, the affixes introduced by the lexical morphology can only be exponents of features of phrasal heads, where such features may be inherent, or may be assigned to the head either directly (i.e. by the Head-Feature Convention) or indirectly (i.e. to a phrasal node by agreement and thence to that phrase's head by the Head-Feature Convention): see e.g. Anderson (1992: 216-17). We henceforth call this *the heads-and-agreement restriction*. Under the heads-and-agreement restriction, the morphological realization of features in any other position within a phrase (e.g. initial, final, or second) cannot be a matter of ordinary syntax and lexical morphology.

We contend, however, that the heads-and-agreement restriction is invalid. It has long been argued that this conception of the syntax-morphology interface is too narrow: in particular, authors like Miller (1991), Lapointe (1992), Halpern (1992, 1995), and Stump (2001: 12-13) have demonstrated the need for 'edge morphology', i.e. for the transfer of features to the first or last word in a phrase. We shall propose a refinement of these

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[3] Conversely, when criticizing a certain typological generalization about 'clitics', Zwicky (1985: 295) seeks to show that the putative instances of the generalization actually involve either independent words (1985: §4.1) or affixes (1985: §4.2).

mechanisms that allows edge transfer within subtrees, so that in a configuration of the type [$_{XP}$ [$_{YP}$ ... Y ...] ... X ...] it is possible for a feature of XP to be first transferred to the initial phrase within XP, i.e. YP, and thence to the head of YP, i.e. Y. Section 4 shows that precisely this state of affairs obtains in the case of Bulgarian noun phrase clitics; further examples such as Old Georgian *Suffixaufnahme* (section 6) are naturally handled by this extended mechanism. Within such a theory of the syntax-morphology interface, many of Anderson's supposed special clitics can be treated as standard affixes.

We saw above that the hypothesis of Clitic Idiosyncrasy requires not only that a class of special clitics should be isolated (in Anderson's case, by the heads-and-agreement restriction), but also that these special clitics should be provided with their own special home in the architecture of grammar. Anderson (2005: 33-34) sets about accomplishing this second task by adopting a lexicalist framework in which the lexicon and the syntax are separate generative modules: words are formed in the lexicon and combined in the syntax.[4]

> First, I assume that words are built (including affixation) within the lexical phonology. As a result, affixation processes have access to the form and meaning of stems, and can depend on (and affect) this in idiosyncratic ways. Second, words are combined with one another post-lexically, through the syntax. On the assumption of the Lexicalist Hypothesis (cf. Anderson (1992)), the syntax does not manipulate or have access to the internal form of words [...]
>
> (Anderson 2005: 33-34)

On this basis, Anderson proceeds to define a special clitic as the morphological spell-out of a property (a feature) of a syntactic phrase (e.g. 1992: 217; 2005: 34, 83, 127, etc.). The grammar is thus divided into three distinct components:

(2) Lexical morphophonology   controls the distribution of affixes
     Syntax   controls the distribution of words
     Postlexical morphophonology   controls the distribution of special clitics

In sum, Anderson's implementation of Clitic Idiosyncrasy rests on his analysis of special clitics, which requires the splitting of morpho(phono)logy into two components: the 'morphology of words' or 'lexical affixation', and the 'morphology of phrases' or 'postlexical (phrasal) affixation'. Anderson's (2005) substantive claim, then, is that the behaviour of items excluded from the class of words and from the class of affixes by the heads-and-agreement restriction will be successfully described by a postlexical set of morphological and phonological rules of phrasal affixation.

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[4]   The grammatical architecture sketched in Anderson (2005) appears to be significantly different from the one developed in Anderson (1982, 1992). Note 8 below addresses the relevance of this issue to our argument.

In this paper we offer a twofold critique of the notion of phrasal affixation. First, we show that a grammar subject to the heads-and-agreement restriction fails to place certain clitics in the correct location even when supplemented with a set of rules of phrasal affixation. One instance of this failure is the Bulgarian definiteness marker (section 4): the correct generalization in this case is that the marker is attached—as a suffix—to the head of the first syntactic phrase immediately contained within the NP. As noted above, this requires a view of the syntax-morphology interface which allows features to be transmitted sometimes to edges, sometimes to heads, sometimes to both within different subtrees; but a rule of phrasal affixation positioning the Bulgarian definiteness marker after the first grammatical word—or the first prosodic word or phrase—in the NP will not achieve the correct results (cf. Anderson 2005: 111).

Secondly, the architecture in (2) predicts that lexical morphophonological rules will not be sensitive to the presence of 'special clitics': words have already been spelt out before phrasal affixation applies. But, as noted by Spencer and Luís (2007), counterexamples to this prediction abound: many items diagnosed as exhibiting 'special syntax' by the usual criteria (incorporating the heads-and-agreement restriction) trigger arbitrary stem- or affix-allomorphy or affect the application of lexical phonological rules. In section 3 we discuss two relatively simple examples from Spanish and Catalan, but the same phenomenon can be observed in the case studies that we use to demonstrate the existence of edge morphology: notably, section 5 shows that Anderson's (2005: 89-94) refusal to treat the English genitive as an instance of edge affixation forces him into a purely diacritic use of prosody in order to handle the interaction between the allomorphy of plural /-z/ (an affix) and genitive /-z/ (allegedly, a special clitic).

In sum, as soon as one drops the heads-and-agreement restriction and acknowledges the need for edge morphology, it becomes straightforward to analyse so-called 'special clitics' either as independent words or as affixes. This solves the problems raised by those clitics that cannot be correctly positioned by morphophonological rules of phrasal affixation, and accounts for the fact that lexical morphophonology can be—and often is—sensitive to the presence of clitics. The term 'clitic' itself becomes no more than a label that may be used in descriptions of particular languages to refer to certain prosodically deficient objects in intermediate stages of grammaticalization; but the label captures no universally valid generalizations and points to no distinct theoretical mechanism.[5]

2. Against 'special syntax'

In much of the literature on clitics, it is often far from clear what the 'special' syntactic properties are which prevent supposed special clitics, or in more complex cases clitic clusters,

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[5]   Spencer and Luís (2007: §8) reach the same conclusion on the grounds that a low degree of host selection (Zwicky and Pullum's 1983 criterion A) fails to correlate with the inability to trigger arbitrary stem allomorphy (Zwicky and Pullum's 1983 criterion C).

from being analysed as phonologically deficient words—like simple clitics—or as affixes (on this point, see Zwicky 1985: specially §4). Following Zwicky and Pullum (1983: 510), Anderson (2005: 78) explicitly rejects Zwicky's (1977: 3) criterion than a special clitic must have an independent counterpart with distinct syntactic behaviour. The criteria that are left take two basic forms (see e.g. Anderson 2005: 75):

(3)   *Diagnostics of 'special syntax'*
       a. Syntactic rules of the kind required to specify the properties of the clitic are
           not in principle allowed.
       b. Syntactic rules of the kind required to specify the properties of the clitic are
           in principle allowed, but the behaviour of the clitic is unusual for its
           category in the given language.

Taking (3b) first, we observe that it is not at all out of the ordinary for a language to possess syntactic elements whose behaviour is 'unusual' for their category or even uniquely idiosyncratic within the relevant language (Culicover 1999). English, for example, is almost exclusively prepositional, but it has a small number of postpositions too: e.g. *notwithstanding*, *apart*, *aside* (Pullum and Huddleston 2002: 631-32). Accordingly, the fact that the English *'s* genitive is not a preposition in no way implies that it is not a word: *ceteris paribus*, it could just as a well be a postposition (though cf. below). This possibility would remain even if items like *notwithstanding*, *apart*, and *aside* were absent from the language: it might nevertheless be the case that the *'s* genitive was the *only* English postposition. In this respect, consider the example of modern Persian, which is almost exclusively prepositional but has one postposition: the object marker *ra* (see e.g. Masica 1976: 32). All else is not equal, however: in section 5 we show that the English genitive is an affix.

More generally, we assert that nothing at all is gained by labelling an item with idiosyncratic behaviour for its category as a 'clitic' unless the label has some empirical content, i.e. unless the designation 'clitic' makes predictions. As we saw in the introduction, Anderson's theory does make empirical predictions (e.g. that clitics will be invisible to lexical morphophonology), but these predictions are false: see section 3 below.

Turning now to (3a), let us consider the positions in which putative special clitics are claimed to appear (see e.g. Anderson 1992: 202 and references therein). Most of these positions are in fact straightforwardly amenable to a description in purely syntactic terms: this is true for first position in a phrase, final position in a phrase, immediately preceding the head of a phrase, and immediately following the head of a phrase. For one of the remaining cases, namely *second position after the first phrasal constituent*, there is an obvious syntactic parallel: the placement of the finite verb in V2 languages. Anderson (2005: ch. 7) notes the parallel, but insists that 'the clitics are introduced into the relevant position by a phonological affixation mechanism while the verbs arrive in their position by syntactic displacement' (2005: 225). Yet this concedes the fundamental point, for any syntactic theory that can place a verb in second position after the

first phrasal constituent should be able to do the same for a clitic. Linearization domains (e.g. Kathol 2000) are at least one mechanism for achieving this result without resorting to a special system of phrasal morphology.[6]

In contrast, there appear to be no genuine attestations of the mirror image of the case described in the previous paragraph: i.e. a case in which a clitic would appear in *penultimate position before the last phrase in the clause*. Klavans (1985: 103-05) adduces Nganhcara crossreferencing pronouns (Smith and Johnson 1985, 2000) as a potential case, but, as Embick and Noyer (1999: 294-98), Billings (2002: 63), Anderson (2005: 79-80), and many others point out, the example is not persuasive because the relevant elements always appear immediately before or after the verb, which is itself in clause-final position: from a morphosyntactic viewpoint, therefore, it is in principle possible to analyse the crossreferencing pronouns of Nganhcara either as simple clitics (i.e. as prosodically deficient words) or as affixes. The correct choice between these two alternatives will depend on other syntactic, morphological, and phonological facts. The latter will of course include the observations with which Klavans (1985: 104-05) is primarily concerned. She notes that crossreferencing pronouns like second-person dative *=ngku* begin with consonant clusters that are not otherwise allowed word-initially in Nganhcara. This phonotactic violation is presumably repaired by syllabifying the pronoun with the preceding word (Billings 2002: 63), and so, Klavans concludes, Nganhcara crossreferencing pronouns can be described as phonologically dependent on the preceding word. We observe, however, that this syllabification behaviour by itself is not enough to exclude either the simple-clitic analysis or the verbal-affix analysis. This point can be concisely illustrated with the example of Italian 'impure *s*': in *città sporca* [tʃit.tàs.pɔ́r.ka] 'dirty city', the initial /s/ of *sporca* behaves postlexically as a coda to the syllable headed by the final vowel of *città* (Chierchia 1986: 26-27), but of course no one will deny that the /s/ is nonetheless lexically affiliated to *sporca*. In Nganhcara, evidence of a suitably strong prosodic boundary between a crossreferencing pronoun and the following verb might, if forthcoming, rule out the verbal-affix analysis, but would still be compatible with a simple-clitic account. In the absence of stronger arguments, such as lexical morphophonological interactions between a preverbal crossreferencing pronoun and the immediately preceding item, there is no need to countenance more complex analyses.

Santali has been claimed to furnish another instance of special clitics occurring before the final phrase in the clause (Kidwai 2005). This example is similar (but not identical) to that of Nganhcara, and fails for the same reasons. Santali exhibits prosodically deficient subject-

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[6]   In certain versions of generative theory, 'narrow syntax' knows nothing of linear precedence, and it is beyond its generative capacity to place a finite verb in second position either directly or as an epiphenomenon of independently motivated mechanisms. In such frameworks, linearization and V2 take place in a later component of the grammar (see e.g. Burton-Roberts and Poole 2006: §7.1). Typically, however, this later grammatical component incorporates much of the province of traditional syntax (see Bermúdez-Otero and Börjars 2006: 713), possibly including agreement and case assignment (e.g. Bobaljik 2006). In such theories, therefore, V2 may still happen earlier in the derivation than the insertion of inflectional affixes and in a component partly resembling traditional syntax.

agreement markers that are positioned immediately to the left of a clause-final verbal projection and attach phonologically to a preceding host, such as an object or an adverbial. *Pace* Cysouw (2005: 21), however, there is absolutely no evidence of lexical morphophonological interaction between the subject-agreement marker and its prosodic host (Kidwai 2005: 193), and so there is no obstacle at all to analysing the subject-agreement markers as simple clitics. In the Santali case, a verbal-affix analysis does seem to be excluded: the subject-agreement marker immediately precedes the leftmost element in the verbal projection and, while this position is typically occupied by the lexical verb, it may also house other elements such as applicative purpose phrases (see example 16a in Kidwai 2005: 197).

More generally, we suspect that it is no accident that, in contrast with the placement of finite verbs and simple clitics in second position, there are generally no obvious examples of syntactic rules which locate elements in a genuinely penultimate position, i.e. before an *arbitrary* final phrase. Our proposals for syntactic feature transfer within subtrees (sections 4, 6, and 7) do not formally preclude the placement of affixes in this position, but we expect such affixes to be rare or nonexistent because the grammaticalization paths required to bring them into being rarely, if ever, arise: notably, an intermediate diachronic stage of simple proclisis to an obligatory clause-final XP would be required, but obligatory clause-final XPs are invariably verbal.

We have thus disposed of putative special clitics occurring in second position after the first phrase in the clause, or alleged to occur in penultimate position before the last phrase in the clause. There remain a number of interesting candidates for special clitichood, however. First, there are clitics that are placed *after the first syntactically autonomous unit within their domain* (typically a grammatical word): e.g. clausal clitics in some dialects of Serbo-Croatian. Browne (1974) was the first to note instances in which a clitic can appear after a possessive adjective and before a head noun, or after the first element of a proper name, thereby apparently splitting a subject noun phrase. However, subsequent analysis, notably by Bošković (2000, 2001), has revealed that noun phrases that cannot be independently split by movement rules are likewise immune to splitting by the clitic placement rule: this is true of coordinate noun phrases, proper names whose component parts are not independently inflected, and head+genitive constructions. In all such cases, the clitic must follow the whole noun phrase. In general terms, Anderson (2005: 186) wishes to treat the parallelism between movement rules and clitic placement rules in terms of syntactic integrity constraints applying in both of the postulated domains. But we contend that, just as in the V2 case, this concedes the fundamental point against 'special syntax': for, again, whatever syntactic mechanisms determine the splittability of a noun phrase for the purposes of syntactic movement should be able to do exactly the same when it comes to the placement of a clitic; the noun phrase is syntactically split by the intervention of the clitic just as it is by the intervention of other syntactic material.

Secondly, there are situations in which the rules governing clitic placement need to make reference primarily to prosodic units: this is the case for the clausal clitics of Chamorro, which appear *after the first phonological phrase in the relevant domain* (Chung 2003); see Anderson

(2005: 114-16) for reference to this and other examples. In such instances, we can see no objection in principle to treating such clitics as freely positioned within their domain as far as syntax is concerned, but subject to phonological output conditions.

Finally, there are cases in which the clitic is *placed with respect to the head—rather than the first word—of the initial syntactic constituent*: e.g. noun phrase clitics in Bulgarian (see section 1 above and section 4 below). Here, a morphological solution will indeed be required unless crossing branches are permitted in the syntax; but, as we adumbrated in the introduction, the right solution involves the transmission of syntactic features to edges and to heads in different subtrees, rather than a postsyntactic module of phrasal affixation.

The preceding paragraphs have been primarily concerned with the weaknesses of the arguments usually adduced against analysing certain so-called special clitics as independent words. As we noted in section 1, the arguments against analysing the same elements as affixes rest on the heads-and-agreement restriction. In this area, we are presented with two package deals: one option is to impose the heads-and-agreement restriction upon syntax and lexical morphophonology, at the cost of countenancing a phrasal morphophonology module devoted to special clitics; the other option is to countenance edge morphology and to do away with phrasal affixation. The choice will obviously depend on which theory makes the right empirical predictions. As we noted in the introduction, phrasal affixation fails on two counts: first, it incorrectly predicts that so-called special clitics will be invisible to lexical morphophonology; secondly, it is unable to place certain clitics in their correct positions. The next section focuses on the first of these failures.

3. Against phrasal affixation

As we observed in section 1, Anderson (2005) develops the Clitic Idiosyncrasy programme by means of two theoretical moves: first, he isolates a class of special clitics by tacitly espousing the heads-and-agreement restriction; then, he provides these special clitics with their own home in a lexicalist architecture of grammar (2) by postulating the existence of a dedicated module of postlexical morphophonology where phrasal affixation takes place. What empirical predictions follow from the latter move? On this point, Anderson (2005: 34) makes a bold claim: he asserts that Zwicky and Pullum's (1983: 503-04) well-known criteria for distinguishing between affixes and clitics, which we reproduce in (4) in Anderson's (2005: 33) own formulation, "can be derived as theorems" from his proposals.

(4)   a.   Clitics have a low degree of selection with respect to their hosts; affixes a high degree of selection.

        b.   Affixed words are more likely to have accidental or paradigmatic gaps than host+clitic combinations.

c. Affixed words are more likely to have idiosyncratic shapes than host+clitic combinations.

d. Affixed words are more likely to have idiosyncratic semantics than host+clitic combinations.

e. Syntactic rules can affect affixed words, but not groups of host+clitic(s).

f. Clitics, but not affixes, can be attached to material already containing clitics.

Anderson does not merely suggest that the criteria in (4) are compatible with, or in general agreement with, the architecture in (2): given the meaning of the word *theorem*, he can only be understood as claiming that (2) logically entails (4). However, this claim is false, as can be shown by mere inspection of the form of the relevant statements. Observe, for example, that criteria (4b), (4c), and (4d), as well as criterion (4a) in one of its possible readings, are gradient: they do not assert that this or that behaviour is or is not possible, but merely say that it is more or less likely. Zwicky and Pullum (1983) explicitly confirm that this is the intended interpretation: see e.g. their foonote 2. But one cannot logically deduce a gradient cline of behaviour from a categorical dichotomy between lexical and postlexical morphology.

The concept of phrasal affixation implied by (2) *does* make empirical predictions, though not all of those stated in (4). We agree that statements (4e) and (4f) do follow logically from Anderson's (2005) proposals, as does statement (5) below:

(5)   Morphosyntactic (i.e. special) clitics are invisible to lexical morphology and lexical phonology.

This is entailed by the hypothesis that lexical morphology and lexical phonology have already applied before special clitics are introduced postsyntactically. Prediction (5) overlaps to a significant extent with criterion (4c), but differs from it in crucial respects: it is categorical rather than gradient, and it presupposes the existence of operational definitions of 'lexical morphology' and 'lexical phonology'. Thus, we hold that (5), unlike (4c), *is* a theorem of (2).

Yet, surprisingly, Anderson (2005: 12-13) appears to equivocate on precisely this point:

Phonological rules that apply internal to words will treat [clitics] as part of the same domain as adjacent material to which they are adjoined, though whether "Lexical" or "Post-lexical" phonology will apply at the boundary between clitics and their hosts, whether the presence of a clitic can affect the location of stress within the host, and other phonological matters will depend on the intricacies of the precise structure which results from the adjunction, and also on the details of the phonologies of particular languages.

This is a *non sequitur*. According to Anderson's (2005) theory, *all* host+clitic combinations are created postlexically: this is true in cases involving simple clitics, since these are words by definition and combine with other words in the syntax (see section 1 above), and it is true of special clitics, since *ex hypothesi* these combine with their hosts postsyntactically by means of phrasal affixation. Hence, Anderson's assumptions do entail as a theorem that only postlexical phonology can apply at the boundary between a clitic and its host: see (5). By the same token, Anderson (2005: 14) betrays logic when he states that "whether 'Lexical' or 'Post-lexical' phonology will apply at the boundary between clitics and their hosts [...] will depend on the intricacies of the precise structure which results from the adjunction".[7] The noun phrase "the intricacies of the precise structure which results from the adjunction" alludes to Selkirk's (1996) typology of prosodic adjunction types, summarized in (6), which Anderson (2005: ch. 3) imports wholesale into his own framework.

(6)   a. *Free cliticization*   b. *Affixal cliticization*   c. *Internal cliticization*
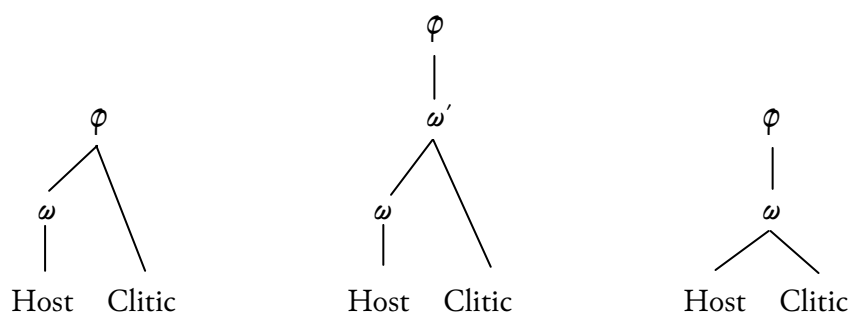
Legend: φ = phonological phrase
           ω = prosodic word

However, Anderson's incorporation of Selkirk's typology of adjunction can only have one effect: specific *postlexical* phonological processes may or may not apply at the boundary between a clitic and its host depending on the process's sensitivity to prosody and the clitic's prosodic adjunction type; but no manner of prosodic adjunction, however intimate, will be able to turn a host+clitic combination into a domain for *lexical* phonological rules, for Anderson's (2005) theory strictly entails that all host+clitic combinations are created postlexically.[8] Observe

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[7]   The import of the scare quotes around 'Lexical' and 'Post-lexical' in this sentence is unclear: insofar as Anderson's theory commits him to the existence of lexical and postlexical phonology as separate components of the grammar, the scare quotes cannot possibly be interpreted as suggesting that the terms are used here as terminological shorthand devoid of theoretical status.

[8]   As far as we can tell, the grammatical architecture postulated in Anderson (2005) is not the same as the one defended in Anderson (1982, 1992). The latter assumes the Split Morphology Hypothesis (for this term, see

carefully that, when an instance of internal cliticization like (6c) takes place postlexically, the grammatical word (which is the domain of lexical phonological rules) and the postlexical prosodic word (ω) will not be coextensive: only the latter will include the clitic.[9]

We shall therefore proceed on the understanding that the analysis of special clitics as phrasal affixes makes the prediction stated in (5). However, as noted by Spencer and Luís (2007), counterexamples to (5) occur in great profusion. Here we shall discuss two instances found among Romance pronominal clitics: one from Catalan, the other from Spanish.

Many scholars have argued—correctly, in our view—that Romance pronominal clitics are *not* special clitics: many must be agreement affixes (see e.g. Miller 1991; Miller and Sag 1997; Monachesi 1999, 2005; and Luís 2004).[10] However, Anderson (2005: ch. 8) states explicitly that these elements are phrasal affixes attached to the head of the verb phrase in the postlexical morphology. Under the Clitic Idiosyncrasy hypothesis, this claim must rest upon evidence that Romance pronominal clitics display 'special syntax' (see sections 1 and 2 above). Presumably, the evidence that Anderson takes to be decisive is the fact that, in the Romance languages, pronominal clitics fail to behave like other inflectional affixes such as subject agreement suffixes. We shall illustrate two key differences with examples from Catalan (Hualde

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Perlmutter 1988), according to which derivation (i.e. lexeme formation) takes place presyntactically in the lexicon whereas inflection takes place in the postsyntactic morphology: see e.g. the diagram in Anderson (1982: 594). In contrast, Anderson (2005) ignores the Split Morphology Hypothesis: we have found no reference to it in the book at all, and it is directly contradicted by the statement cited above that "words are built (including affixation) within the lexical phonology" and "words are combined with one another post-lexically, through the syntax" (Anderson 2005: 33-34). Interestingly, whereas Anderson (2005: 34) asserts that Zwicky and Pullum's (1983) criteria for distinguishing between affixes and clitics follow as "theorems" from (2), Anderson (1992: 223) merely claims that Zwicky and Pullum's criteria are "quite compatible" with a split-morphology architecture, the "detailed proof" being left "as an exercise for the reader" in a footnote. However, even at this point, Anderson (1992: 223) equivocates, for he suggests that they key fact behind the clitic-affix distinction, as drawn by Zwicky and Pullum, is that "words, not phrases, are what appear in the lexicon"; but in a split-morphology architecture like that of Anderson (1982: 594, 1992) the lexicon builds lexemes (or stems), not words.

[9]   As pointed out in Bermúdez-Otero (forthcoming), the failure to acknowledge the lack of coincidence between grammatical words and postlexical prosodic words is not unprecedented: see e.g. Borowsky (1993: 221).

[10]   The pronominal clitics of European Portuguese are an interesting case. Bermúdez-Otero and Luís (2009) and Luís (forthcoming) provide convergent morphosyntactic and morphophonological arguments to show that, in European Portuguese, a pronominal proclitic cluster lies outside the grammatical word containing the verb, whereas a pronominal enclitic cluster belongs to the same grammatical word as its verbal host. We suggest that these facts should be analysed as follows. Both proclitic and enclitic clusters are generated by the same morphophonological mechanisms of exponence, and so both display the same effects of arbitrary allomorphy internally. However, proclitic clusters are words (plausibly belonging to the category 'pronoun') and so are positioned by the syntax, whereas enclitic clusters are affixes inserted into the verb by the morphology. This state of affairs in European Portuguese is not particularly surprising, as shown by the parallel case of negation in English negative interrogatives: negation is realized as a free word when preceding a nonfinite verb (e.g. *Will the President not reconsider?*), but, as famously shown by Zwicky and Pullum (1983), it is realized as an affix when following the finite auxiliary (e.g. **Won't** *the President reconsider?*).

1992). First, there is a difference in placement: Catalan pronominal clitics appear in postverbal position with infinitives, gerunds, and positive imperatives, and in preverbal position with all other verb forms (Hualde 1992: §2.1.8.2); in contrast, subject agreement markers are exclusively suffixal.

(7)   a. **Ho**=vaig   fer   per a   tu
           3SG.NEUT.ACC=AUX.1SG.PAST do.INF for   to   you
           'I did it for you'   (Hualde 1992: 253)

        b. Rep=**ho**!
            receive.IMP.SG=3SG.NEUT.ACC
            'Receive it!'

Notice, in addition, that (7a) is an example of clitic climbing: the accusative proclitic *ho*= realizes an argument of the infinitive *fer* 'do', but attaches to the finite matrix verb *vaig*. Secondly, Romance subject agreement suffixes are obligatory even in the presence of a full NP subject, whereas pronominal clitics are in partially complementary distribution with full NPs: in Catalan, for example, the clitic doubles the full NP in a range of environments (e.g. dislocated direct objects), but it is otherwise absent if a full NP argument is present.

(8)   a. Aquest   llibre, no **l'**=he   llegit   pas   (doubling)
           this.MASC book   not 3SG.MASC.ACC=have.1SG read.PTCP NEG
           'This book I have not read'   (Hualde 1992: 169)

        b. No he   llegit   pas   aquest   llibre   (no doubling)
           not have.1SG   read.PTCP NEG   this.MASC book
           'I have not read this book'   (Hualde 1992: 169)

This argument, however, incurs the fallacy we noted in section 2: although the phenomena illustrated in (7) and (8) distinguish pronominal clitics from other agreement affixes within Romance, they are both attested in agreement affixes in other languages and so are perfectly compatible with an affixal analysis, as Anderson (2005: ch. 8) himself acknowledges.

      Nonetheless, our purpose here is to evaluate the Clitic Idiosyncrasy programme on its own terms, and so our concern in this section will be to establish whether the analysis of Romance pronominal clitics as phrasal affixes fulfils prediction (5). It does not. We shall first exhibit an instance of a Romance pronominal clitic that is visible to a word-level phonological rule: more specifically, the Catalan neuter accusative enclitic =*ho* bleeds a word-level phonological process of laryngeal neutralization targeting coda obstruents. Next we shall exhibit an instance of a Romance pronominal clitic that triggers arbitrary allomorphy in an affix: in

standard Peninsular Spanish, the second-person plural imperative suffix *-d* is idiosyncratically realized as -∅ when immediately followed by the second-person plural enclitic *=os*.

In Catalan, obstruent voice contrasts are neutralized in the coda (Hualde 1992: 393-94; Recasens i Vives 1991: chs. VI and VII, specially 176; Wheeler 1979: 310-13, 2005: ch. 5).[11] For our current purposes it will be enough to focus on the nonstrident obstruents /p, b, t̪, d̪, k, g/: these surface as voiced stops in the coda before voiced consonants (including sonorants), and as voiceless stops in the coda before voiceless consonants or pause.[12]

(9)   a.   /p/   escop-i-r   [əs.ku.ˈ**pi**]   'to spit'

                    escup molt!   [əs.ˌku**b**.ˈmol]   'spit a lot!'

                    escup tot!   [əs.ˌku**p**.ˈt̪ot̪]   'spit all!'

                    escup!   [əs.ˈku**p**]   'spit!'

   b.   /b/   llob-a   [ˈʎo.**β**ə]   'she-wolf'

                    llop lliure   [ˌʎo**b**.ˈʎiw.ɾə]   'free wolf'

                    llop trist   [ˌʎo**p**.ˈt̪ɾist̪]   'sad wolf'

                    llop   [ʎo**p**]   'wolf'

Postlexically, word-final consonants are resyllabified into the onset if the following word begins with a vowel (Hualde 1992: 382-83; Wheeler 2005: 84-87). Crucially, laryngeal neutralization overapplies to word-final obstruents resyllabified into the onset: in (10b), the final consonant of the first word ought to have a voiced realization, since it is underlyingly voiced and it surfaces in the onset, which is not a neutralizing environment; but its actual realization is voiceless.

(10)   a.   llob-a   [ˈʎo.**β**ə]   'she-wolf'

      b.   llop amic   [ˌʎo.**p**ə.ˈmik]   'friendly wolf'

This state of affairs submits to a straightforward two-step analysis.[13] Voice neutralization is triggered by a word-level process of delaryngealization, which removes the LARYNGEAL node of coda obstruents. Since delaryngealization applies at the word level, it is counterbled by postlexical resyllabification into the onset. In turn, the phonetic realization of neutralized

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[11]   Catalan laryngeal neutralization is pregnant with implications for the theory of grammar. For discussion of some of the issues, see Bermúdez-Otero (2006, 2007d, forthcoming).

[12]   On the behaviour of the strident fricatives /f, s, z, ʃ, ʒ/ and its analysis, see Bermúdez-Otero (2006: §17-§18, 2007d: §34).

[13]   See Mascaró (1987) for germane ideas. Similar two-step derivations are needed to handle related phenomena in Cracow Polish (Rubach 1996: 82ff) and in Highland Ecuadorian Spanish (Bermúdez-Otero 2007a: §8-§12). Harris (1993: 184-87) adopts a similar overall approach to the Catalan facts, but implements it in crucially different ways: see Bermúdez-Otero (forthcoming) for a critique.

consonants is determined by a postlexical process of assimilation that targets delaryngealized obstruents: delaryngealized nonstrident obstruents assimilate to a following consonant if there is one; otherwise they become voiceless. Assimilation must obviously apply postlexically since it crosses the boundaries of grammatical words.

(11) lloba llop lliure llop amic

Cyclic domains [PL [WL ʎobə]] [PL [WL ʎob] [WL ʎiwɾə]] [PL [WL ʎob] [WL əmig]]

Word-level phonology .ʎo.bə. .ʎoP. † .ʎoP. †
Postlexical phonology .ʎo.βə. .ʎob.ʎiw.ɾə ‡ .ʎo.pə.mik. ¶

† Obstruent undergoes delaryngealization in the coda.

‡ Delaryngealized obstruent undergoes voice assimilation preconsonantally.

¶ Delaryngealized nonstrident obstruent resyllabifies before a vowel and becomes voiceless by default.

For our current purposes, the crucial fact is that Catalan voice neutralization is triggered by a word-level process of delaryngealization counterbled by postlexical resyllabification.

We can now turn to the phonological behaviour of the accusative neuter enclitic *=ho* [u]. If this were a phrasal affix, as Anderson claims, then it would attach to the verb postlexically, i.e. too late to prevent an immediately preceding verb-final obstruent from undergoing coda delaryngealization at the word level. In Catalan verbs, by the same token, laryngeal contrasts among stem-final obstruents should be neutralized before enclitic *=ho*. But they are not (see e.g. Wheeler 2005: 155-56):

(12) a. /p/ escup=ho! [əs.ˈku.**pu**] 'spit[2SG.IMP]=3SG.ACC.N'

 b. /b/ rep=ho! [ˈrɛ.**β**u] 'receive[2SG.IMP]=3SG.ACC.N'

 cf. reb-re [ˈrɛ.**β**ɾə] 'receive-INF'
  rep això! [ˌrɛ.**p**ə.ˈʃɔ] 'receive[2SG.IMP] that'

These data show unequivocally that enclitic *=ho* belongs in the same grammatical word as the verb stem, since it causes the stem-final consonant to be syllabified as an onset already at the word level.

(13) *Cyclic domains* [PL [WL rɛb=u]] *[PL [WL rɛb] =u]
  Word-level phonology .rɛ.bu. .rɛP.
  Postlexical phonology .rɛ.βu. * .rɛ.pu

Therefore, enclitic =*ho* cannot be a phrasal affix. Prediction (5) is falsified.

Let us now turn to imperatives in standard Peninsular Spanish. As shown in (14), verbs in the second-person plural nonhonorific affirmative imperative form take the suffix -*d*, but -*d* is replaced by a null allomorph before the second-person plural object enclitic =*os*.[14]

(14)   a.   am-a-d!   love-TV-2PL.IMP   'love!'   [a.ˈmað]

         b.   am-a-∅=os! love-TV-2PL.IMP=2PL.OBJ   'love each other!' [a.ˈma.os]

In turn, the contrast between (15a) and (15b,c) indicates that the alternation between -*d* and -∅ is not caused by regular phonological processes, nor does it involve phonologically driven allomorph selection (on the latter, see e.g. Kager 1996; Mascaró 1996, 2007; Rubach and Booij 2001).

(15)   a.   am-a-∅=os   hoy!   [a.ˈma.o.ˈsoj]
               love-TV-2PL.IMP=2PL.OBJ today
               'love each other today!'

         b.   am-a-d   o   soy ...!   [a.ˈma.ðo.ˈsoj]
               love-TV-2PL.IMP   or   be.1SG.PRES.IND
               'love or I am ...!'

         c.   am-a-d-o-s   hoy   [a.ˈma.ðo.ˈsoj]
               love-TV-PTCP-TV[M]-PL today
               'loved today'

At the same time, there is evidence to suggest that, by itself, agreement with a second-person plural object does not suffice to trigger the null allomorph: the actual presence of an immediately following clitic =*os* is required. Consider, for example, the contrast between (16a) and (16b).

(16)   a. comenz-a-d   a am-a-r=os!
             begin-TV-2PL.IMP to love-TV-INF=2PL.OBJ

         b. comenz-a-∅=os   a am-a-r!
             begin-TV-2PL.IMP=2PL.OBJ   to love-TV-INF

            'begin to love each other!'

---

[14]   In our glosses, TV stands for 'theme vowel'. On the status and distribution of Spanish theme vowels, see Bermúdez-Otero (2007c, 2007b).

Numerous authors, including Anderson (2005: 246), assert that clitic climbing in sentences like (16b) is enabled by a syntactic configuration in which the object agreement features of the infinitive percolate upwards to the VP node dominating the imperative verb (see e.g. Miller and Sag 1997: 598ff). However, if the overt exponent of the object features, namely the enclitic =*os*, appears after the infinitive, as in (16a), then the null allomorph of the inflectional suffix is not triggered on the imperative.

The evidence of (14), (15), and (16) together shows that the alternation between imperative -*d* and -∅ depends on the presence of an immediately following second-person plural object clitic =*os*. This allomorphic alternation is morphologically controlled: it is governed neither by phonological properties nor solely by syntactic features. There can be no doubt, however, that -*d* is an inflectional suffix. It therefore follows that that enclitic =*os* conditions arbitrary allomorphy within the domain of the grammatical word, and so it cannot be a phrasal affix, since it does not comply with statement (5).

In sum, this section has demonstrated the first empirical failure of Anderson's (2005) implementation of Clitic Idiosyncrasy through phrasal affixation: items designated as special clitics by the 'special syntax' criterion, as usually applied, fail to fulfil the prediction that they will be invisible to lexical morphology and phonology. In more recent work, Anderson has in fact acknowledged the existence of several counterexamples of this kind (Anderson et al. 2006, Anderson 2008: §2). All the cases that he concedes involve peripheral case marking of noun phrases. The heads-and-agreement restriction holds that case can be marked by means of lexical morphology only on the head of the noun phrase and on agreeing dependants. Therefore, when case is marked just on the initial or on the final word of the noun phrase, Anderson's (2005) theory assigns responsibility to the postlexical morphology. In turn, this predicts that peripheral case marking will not display sensitivity to the lexical identity of the peripheral word bearing the marker. However, Anderson et al. (2006) and Anderson (2008: §2) observe lexical morphophonological idiosyncrasies in peripheral case marking in Nias Selatan (Austronesian, Sumatra), Kuuk Thaayorre (Paman, Cape York), and Somali (Cushitic). Anderson et al. (2006) and Anderson (2008) respond to these counterexamples by abandoning the heads-and-agreement restriction and conceding the need for edge morphology, precisely as we argue here. However, they attempt to salvage Clitic Idiosyncrasy by claiming that *both* edge inflection *and* phrasal affixation exist. In our view, this proposal has no merit. First, it must succumb to Ockham's Razor: if peripheral marking displaying lexical morphophonological effects *must* be handled by edge morphology, and peripheral marking not displaying such effects *can* be so handled (when it is not a matter of simple cliticization), then there is no work left for phrasal affixation to do. Secondly, the compromise proposed in Anderson et al. (2006) and Anderson (2008) has no empirical content: any instance of 'special syntax' that fails to display the properties expected of phrasal affixation goes into the catch-all category of edge morphology, which receives no positive empirical characterization. In this connection, Anderson et al. (2006: §5) assert that "there are some generalizations that might be made about

EDGE inflections"; but they go on to say that "These seem basically to be accidental correlations, [...] rather than reflecting essential properties that ought to follow in some way from the analysis of the phenomenon".[15] Finally, when Anderson (2008) seeks to draw a line in the sand by emphatically claiming that a phenomenon involves phrasal affixation rather than edge morphology, he is demonstrably wrong: see the discussion of the English genitive in section 5 below.

We conclude that the onus of argument falls on a theory that countenances both edge morphology and phrasal affixation; in the form presented in Anderson et al. (2006) and Anderson (2008), this proposal holds no promise. We shall therefore continue to address the implementation of Clitic Idiosyncrasy developed in Anderson (2005), which at least has the virtues of conceptual elegance and empirical content. In this section, we have disproved its prediction that special clitics should be invisible to lexical morphology and lexical phonology. The same problem may be observed in our next case study, which in addition illustrates a second empirical shortcoming of Anderson's (2005) theory: phrasal affixation cannot place certain putative special clitics in their correct positions.

4. The Bulgarian definiteness marker

According to Anderson (2005: 111), the Bulgarian definiteness marker is a prototypical example of an NP-internal second-position special clitic. He adduces the following examples:[16]

(17)   a.   knigi=**te**
              books=DEF
              'the books'

         b.   interesni=**te**   knigi
              interesting=DEF   books
              'the interesting books'

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[15]   Anderson et al. (2006: §5) and Anderson (2008: §2) do provide a preliminary sketch of a formal mechanism for handling instances of edge morphology: see note 19 below for details. However, Anderson and his collaborators do not attempt to derive clear and falsifiable empirical predictions from this theoretical proposal. As a result, their characterization of edge morphology remains predominantly negative, and their position viciously circular. In section 6, however, we discuss a phenomenon that may raise difficulties for their proposal.

[16]   In this section we transliterate Bulgarian examples using the United Nations system, which has the advantage of distinguishing between <ă> [ə] and <a> [a].

    c.   mnogo=**to**   interesni   knigi
         many=DEF   interesting books
         'the many interesting books'

In this case, second position is supposedly defined by reference to the first word in the noun phrase. The principles assumed by Anderson (2005), and in particular his tacit adoption of the heads-and-agreement restriction, exclude a lexical morphological analysis because there is no agreement in definiteness and also because the first word is not necessarily the head of the noun phrase. If the data were restricted to examples like (17), one could not a priori exclude a syntactic analysis treating the definiteness marker as a prosodically deficient word; but in Anderson's view this is presumably ruled out on grounds of 'specialness': no other item has this distribution in Bulgarian (though see section 2 above on the unreliability of this argument).

The data, however, are considerably more complex than Anderson would have it. First of all, the form of the definiteness marker is determined by a mixture of partially arbitrary lexical, morphological, and phonological criteria typical of lexical morphophonology. Our examples are drawn from Stojanov (1964).

(18)   a.   Common nouns

    (i)   *-ăt* (oblique form: *-ă*)
          Most masculine singular nouns ending in a consonant:
          e.g.   *urok* 'lesson'   *urok-ăt* 'lesson-DEF'

    (ii)   *-at* (oblique form: *-a*)
          Masculine nouns ending in *-j*:
          e.g.   *tramvaj* 'tram'   *tramvaj-at* 'tram-DEF'

    (iii)   *-jat* (oblique form: *-a*)
        • Masculine singular nouns ending with the suffixes *-tel* or *-ar* denoting persons or appliances:
          e.g.   *prepodavatel* 'teacher'   *prepodavatel-jat* 'teacher-DEF'
        • Listed masculine nouns:
          e.g.   *den* 'day'   *den-jàt* 'day-DEF' (with stress shift)

(iv)   *-ta*

- Feminine singular nouns ending in a consonant:

    e.g.   *văzrast* 'age'   *văzrast-tà* 'age-DEF' (with stress shift)

- Listed nouns ending in *-a*, regardless of gender and number:

    e.g.   *kniga* (F.SG) 'book'   *kniga-ta* 'book-DEF'

            sădija (M.SG) 'judge'   *sădija-ta* 'judge-DEF'

            zdanija (N.PL) 'buildings'   *zdanija-ta* 'buildings-DEF'

(v)   *-to*

Listed singular nouns ending in *-o* or *-e*, regardless of gender:

    e.g.   *djado* (M) 'grandfather'   *djado-to* 'grandfather-DEF'

            slănce (N) 'sun'   *slănce-to* 'sun-DEF'

(vi)   *-te*

Plural nouns in *-i* or *-e*:

    e.g.   *oči* 'eyes'   *oči-te* 'eyes-DEF'

b. ADJECTIVES

                                                    e.g.   *nov* 'new'

M.SG	*-ijat* (*-jat* for stems ending in *-i*)	*nov-ijat*
F.SG	*-ta*	*nova-ta*
N.SG	*-to*	*novo-to*
PL	*-te*	*novi-te*

c. NUMERALS

'1'	*edin*	*edin-ijat*	(M.SG)
		edna-ta	(F.SG)
		edno-to	(N.SG)
		edni-te	(PL)

'2'	*dva*	*dva-ta*	(M.SG/N.SG)
		dve-te	(F.SG)

'3'	*tri*	*tri-te*	
'4'	*četiri*	*četiri-tè*	(with stress shift)
'5'	*pet*	*pet-tè*	(with stress shift)
'20'	*dvadeset*	*dvadeset-tè*	(with stress shift)
'100'	*sto*	*sto-tè*	(with stress shift)
'300'	*trista*	*trista-ta*	

Secondly, the definiteness marker can trigger stem allomorphy both in nouns and in adjectives.

(19) *∅CV-VC∅ alternation*
| | | a. | grăk | 'Greek' | gărk-ăt | 'Greek-DEF' |
| cf. | | a′. | străk | 'stalk' | străk-ăt | 'stalk-DEF' |

ja-e alternation
| | | b. | gnjav | 'anger' | gnev-ằt | 'anger-DEF' (with stress shift) |
| cf. | | b′. | bljan | 'dream' | bljan-ăt | 'dream-DEF' |

e-∅ alternation
		c.	interesen	'interesting'	interesn-ijat (M.SG.DEF)
					interesna-ta (F.SG.DEF)	etc.
cf.		c′.	studen	'cold'	studen-ijat (M.SG.DEF)
					studena-ta (F.SG.DEF)	etc.

The evidence of (18) and (19) clearly shows that the definiteness marker cannot be a phrasal affix, for the rules that govern the exponence of the definiteness feature clearly interact with lexical morphophonological rules. Which of these alternations, if any, involve synchronic rules of yer vocalization and yer deletion is irrelevant to our purposes, since it is clear that such rules, if they exist, must be lexical (Scatton 1980). Thus, the Bulgarian definiteness marker is yet another counterexample to prediction (5).

However, the Bulgarian definiteness marker provides evidence of another sort against the theory that special clitics are introduced by postlexical morphophonological rules. Crucially, Anderson's simple characterization of this element as a second-position clitic is incorrect. While the examples in (17) illustrate the basic principle that marking occurs on the first constituent within the NP, whether this is the head noun as in (17a) or a prehead modifier as in (17b) and (17c), they fail to reveal how the definiteness marker behaves when the prehead modifier is itself phrasal: e.g. an adjective phrase rather than a single adjective. When the adjective is followed by a complement, the definiteness marker does follow the adjective, rather than the whole adjective phrase:

(20) naj-blizka-ta   do   pošta-ta   kăšta
      SUPERL-close-DEF   to   post_office-DEF   house
      'the house closest to the post office'

However, when the adjective is itself premodified by an adverb, the definiteness marker will still be attached to the adjective, not to the adverb:

(21) tvărde interesna-ta   kniga
      very   interesting-DEF   book
      'the very interesting book'

Interestingly, a standard grammar of Bulgarian (Scatton 1984: 41) describes the positioning of the definite article as follows: "The definite article [...] is enclitic on the first stressed constituent of the noun phrase—*except adverbs*" [our italics]. The grammar then goes on to include the definite article in the sections on inflectional morphology. These quaint contradictions nicely illustrate the fact that the distribution of the definiteness marker cannot be characterized in prosodic terms (prosody does not know what adverbs are) and that its morphophonological behaviour is incompatible with postlexical status.

Note then that we cannot save the notion that the definiteness marker is 'second' but positioned after the first phrase rather than the first word: (20) rules this possibility out. The correct generalization is clearly that the marker is attached—as an affix—to the head of the first syntactic constituent within the NP. And this requires in the end a view of morphology which allows affixes to be placed by reference to edges as well as heads (see section 7 for discussion of the formal implications of this idea).

Incidentally, the placement of the Bulgarian definiteness marker is problematic for any theory which attempts to account for the facts by means of upward movement rules: e.g. Dimitrova-Vulchanova and Giusti (1998, 1999). First, consider cases like (21), in which the adjective is premodified by an adverb: if the adjective alone moves upwards by head movement to a postulated D head housing the definiteness suffix, then the incorrect order adjective-DEF-adverb will result. Now consider cases like (20), in which the adjective takes a following complement: movement of the entire adjective phrase to the specifier position of D predicts the incorrect order adjective-complement-DEF. Analyses of (21) relying on the lowering operation shown in (22), as in Embick and Noyer (1999: 275-76, 2001: 568-73), encounter equally intractable problems.

(22) *Lowering of X^0 to Y^0* (Embick and Noyer 1999: 269, 2001: 561)
      $[_{XP} X^0 ... [_{YP} ... Y^0 ...]] \rightarrow [_{XP} ... [_{YP} ... [Y^0+X^0] ...]]$

In an account of (21) invoking (22), a postulated empty D head would be lowered to the head of the complement of D. This correctly derives the skipping of the adverb, which is an adjunct. However, since the definiteness marker attaches to the adjective, the analysis entails the untenable conclusion that it is the modifying adjective, rather than the noun it modifies, that heads the complement of D: i.e. since Embick and Noyer's lowering operation cannot derive (23a), undesirable (23b) is required instead.

(23) a. $[_{DP} t [_{NP} [_{AP} \text{tvărde interesna-ta}] \text{kniga}]]$
      b. $[_{DP} t [_{AP} \text{tvărde interesna-ta} [_{NP} \text{kniga}]]]$

The proposal that a construction consisting of an adjective modifying a noun belongs to the category AP, as in (23b), derives from Abney (1987: 338-39). It suffers from at least two fundamental objections. First, such constructions fail to exhibit the basic distributional properties of adjective phrases: for example, they do not occur as predicative complements (cf. English *He is good man*). Secondly, treating the noun as the complement of the adjective preempts the existence of a genuine complement: in (20), for example, the complement of the adjective *naj-blizka-ta* 'closest' is the prepositional phrase *do pošta-ta* 'to the post office', not the noun *kăšta* 'house'. See Williams (2007: 373-74) for further discussion. The Bulgarian definiteness marker is in fact precisely the kind of case that Williams adduces as a hypothetical counterexample to systems in which lowering must precede dislocation: what it would actually require in Embick and Noyer's framework is a dislocation of the definiteness feature to the leftmost constituent in the noun phrase, followed by lowering to the head of that constituent.

In sum, the Bulgarian definiteness marker delivers a double blow to the theory that so-called special clitics are phrasal affixes introduced by postlexical morphophonological rules. First, the putative special clitic interacts with lexical morphological and phonological rules, in violation of (5). Secondly, it is not really a second-position clitic at all, but it is rather positioned by an unmistakably syntactic process, albeit one that disproves the heads-and-agreement restriction: the definiteness feature is first transferred from the mother NP node to its leftmost daughter by edge transfer, and it is thence assigned to the leftmost daughter's head.

5. The English genitive

There is a widespread view in standard grammars and textbooks that the English *'s* genitive should be treated as a (special) clitic: see for example Quirk et al. (1985: 328). Its most salient characteristic is that it attaches to the rightmost element of the genitive noun phrase, whether this be the head, as in (24a), or the final element of some posthead constituent, as in (24b), which is an example of the so-called 'group' or 'phrasal' genitive.[17]

(24)   a.   the man's face
        b.   the man opposite me's face

The clitic treatment correctly predicts that the *'s* genitive can attach even to a pronoun form which is itself independently marked for case, as with the accusative form *me* in (24b). Separate rules for the realization of the genitive are then required for pronouns in head function, where the genitive is mainly suppletive or irregular (*my, your, his, her, our, their*) and perforce subject to a lexical morphological treatment.

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[17]   Surprisingly, Scott, Denison, and Börjars (2007) show that phrasal genitives in general occur very infrequently. They are nonetheless attested and are uncontroversially judged to be grammatical.

Nevertheless, Zwicky (1987) observed that the form of the genitive in plural noun phrases can depend on arbitrary morphological properties of the element to which it attaches. Since then, there has also been a widespread view that the genitive is not a clitic, but an edge affix: the morphosyntactic case feature is passed from a genitive-marked NP to the rightmost element within that NP, where it is then realized by lexical morphological rules (Lapointe 1990, 1992; Miller 1991; Miller and Halpern 1993). Examples such as (24b) then require that, in phrasal genitives, the genitive case should be realized externally to any existing inflection on the rightmost element: see Payne and Huddleston (2002: 479-81) for discussion of this property of the phrasal genitive. The layering of cases observed here is in principle identical to the Old Georgian *Suffixaufnahme* phenomenon discussed in section 6 below, and requires the same mechanisms of feature passing.

Zwicky's (1987) key observation is that, in the case of genitive NPs that are plural, a separate genitive /-z/ is not realized on nouns that have the regular plural /-z/ ending. According to Zwicky, this is true whether the genitive is marked on a plural head noun, or on a plural nonhead noun at the right edge of a phrasal genitive.

(25) a. the **ducks'** plumage   [dʌks]
      b. the man with the **ducks'** gun   [dʌks]

However, Miller and Halpern (1993) and Carstairs-McCarthy (1995) report the existence of variation, with many speakers treating right-edge plurals (as opposed to head plurals) differently: these speakers allow a genitive ending to follow the standard plural ending in phrasal genitives. No speaker allows the genitive to be suffixed to a regular plural noun in head position.

(26) a. the **ducks'** plumage   [dʌks]
      b. the man with the **ducks's** gun   ['dʌksɪz]

On the other hand, when the plural is an irregular one the genitive must be realized as usual, even if the noun stem ends, like regular plurals, in an alveolar fricative:

(27) a. the **geese's** plumage   ['giːsɪz]   *[giːs]
      b. the man with the **geese's** gun   ['giːsɪz]   *[giːs]

Thus, the morphological realization of plural number, which is clearly internal to the grammatical word, interacts with the form of the genitive. This interaction, together with the suppletive realization of pronoun forms, again presents a *prima facie* counterexample to (5): recall that, by the heads-and-agreement restriction, rules that realize features in edge positions must necessarily be postlexical in Anderson's (2005) terms, and so should not interact with lexical morphological rules.

Anderson (2005: 89-94, 2008) deploys a twofold strategy to avoid this damaging conclusion. Firstly, the suppletive pronoun realizations are hived off and dealt with by lexical morphological rules. The putative generalization which purportedly governs this schizophrenic treatment of the genitive feature is that pronouns are unbranching members of the category D, and word-level, whereas DPs containing head nouns will necessarily branch. Moreover, to account for the genitive plural phenomena, a set of allegedly purely phonological rules is devised which fuse affixal occurrences of plurals and genitives in certain environments. Both manoeuvres are profoundly unsatisfactory, as we now proceed to show.

Let us first consider Anderson's (2005: 90-92) treatment of the pronoun forms. Even accepting for the sake of argument that these belong to the category D rather than N, we note that unbranching determiners/pronouns vary as to whether they have an irregular or suppletive genitive, no genitive, or simply a regular genitive. Included among those which accept a regular genitive ending are *it ~ its*, *one ~ one's*, *either ~ either's*, *neither ~ neither's*, *none ~ none's*, *another ~ another's*, and *who ~ whose* (the latter obscured by the orthography). Those which do not readily accept a genitive at all exhibit the same behaviour when modified, and thus branching: e.g. **any's ~ *hardly any's*, **all's ~ *almost all's*. Here, Anderson (2008: §3) openly acknowledges that he has no explanation: "The present analysis would suggest that they ought simply to be suffixed with /z/, which is not the case, so some further principle(s) must be involved." Rather than split the realization of the genitive into two subsystems of lexical and phrasal morphology, it seems simpler to us here to maintain one system of lexical morphology, with lexically listed irregularities and exceptions.

The most unsatisfactory aspect of Anderson's strategy, however, is his purely phonological treatment of the genitive plural (2005: 92-94, 2008: §4). Here we shall focus on his analysis of dialects that do not allow the possessive /-z/ to attach to regularly inflected plural nouns either in head or in nonhead position: i.e. dialects like (25). As we shall see below, dialects that tolerate *the man with the **ducks's*** [ˈdʌksɪz] *gun*, as in (26), present even greater difficulties for Anderson.

If the *'s* genitive is a phrasal affix, then its failure to attach to nouns already bearing the regular plural suffix /-z/ raises an obvious problem. As we have seen, possessive /-z/ attaches freely to bases ending in an alveolar fricative, provided that the latter does not mark plural number: see (27) above. It thus looks as if the postlexical morphophonology must be able to look inside a grammatical word in order to determine the morphological affiliation of its final segment. This offends against two principles that are absolutely fundamental to grammatical architectures such as Anderson's: the atomicity clause of the Lexicalist Hypothesis (Williams 2007: 356) and Bracket Erasure (see e.g. Orgun and Inkelas 2002).
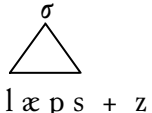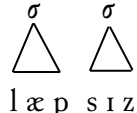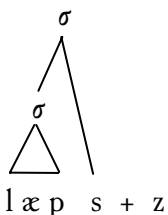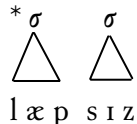
Anderson responds with a familiar analytical move: to recode a morphological distinction as a prosodic one. He suggests that a word-final alveolar fricative occupies the syllable coda unless it realizes the regular plural suffix, in which case it is extrasyllabic:

(28) a.   b.   σ

                 σ   σ

            g iː s   d ʌ k   s
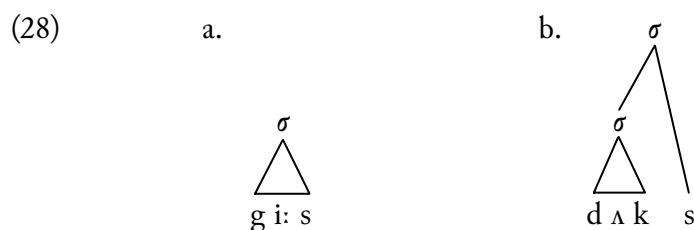
Assuming that plural nouns like *geese* and *ducks* exit the word-level phonology with the prosodic structures shown in (28), Anderson proposes that the postlexical phonology of dialects with (25) has a process that fuses the possessive /-z/ with an extrasyllabic alveolar fricative.

Recoding morphology as prosody *can* be a legitimate—and indeed principled—strategy, for there is no doubt that morphological structure can influence prosodification via alignment constraints and that prosodic units are phonological objects that can be preserved faithfully between cycles. An instance of the principled deployment of this strategy is the prosodic explanation of the Withgott effect proposed by Kiparsky (1998), Davis (2005), and Bermúdez-Otero and McMahon (2006: 403-04). However, the legitimacy of the recoding gambit is directly proportional to the amount of independent empirical support that one can adduce for the relevant prosodification; in the absence of independent evidence for the latter, recasting morphology as prosody becomes an *ad hoc* manoeuvre for avoiding the consequences of one's own principles. Unfortunately, Anderson's recoding gambit not only lacks independent support, but is in direct conflict with other facts of English prosody.

Note, first, that Anderson's recoding manoeuvre requires some delicate and otherwise unmotivated stipulations. In his analysis, both the word-level phonology and the postlexical phonology must have processes of vowel epenthesis to repair violations of the Obligatory Contour Principle (Goldsmith 1976) triggered by plural /-z/ and by possessive /-z/: observe that plural *buses* [ˈbʌ.sɪz], which contains a word-level suffix, is homophonous with possessive *bus's*, which supposedly contains a phrasal suffix. However, to capture the facts of dialect (25), postlexical epenthesis must be placed under the added constraint that a vowel may be inserted between a coda and another consonant, but not between an extrasyllabic appendix and another consonant.

(29) *input to the postlexical phonology* *output*

a. lapse's
   i.e. lapse[SG].POSS

   σ
   /\
   l æ p s + z

   σ   σ
   /\   /\
   l æ p s ɪ z

b. laps'
   i.e. lap.PL.POSS

   σ
   /\
   σ \
   /\ \
   l æ p s + z

   *σ   σ
   /\   /\
   l æ p s ɪ z

We fail to see how this can be done phonologically in the optimality-theoretic framework that Anderson (2005) espouses. In (29), both mappings incur the same markedness penalties (since the output representations are exactly identical) and the same faithfulness costs (since both involve the insertion of a vowel and the prosodic reaffiliation of the final /s/ of the base); yet Anderson must find some means of enforcing (29a) whilst banning (29b). The only solution that we can think of is brute force: Anderson will have to stipulate that the possessive /-z/ subcategorizes phonologically for bases ending with a properly syllabified segment—and, indeed, the expedients contemplated in Anderson (2008: §4) amount to precisely the same thing. This awkwardness is symptomatic of the theoretical cost of recasting an unremarkable word-level morphological fact (namely, that the features [plural] and [possessive] undergo cumulative exponence) as a postlexical phonological pseudofact.

More seriously, however, Anderson's appeal to extrasyllabicity clashes with the established uses of this device as independently motivated by English phonotactics. In support of his claim that plural /-z/ is extrasyllabic, Anderson (2008: §4) argues that "This account, widely accepted in the phonological literature, accommodates the observation that syllables ending in inflectional /z/ and /d/ commonly violate the regular phonotactics of the language, a fact that suggests that these elements are not actually part of the syllable at the lexical levels of the phonology." However, this argument self-servingly misrepresents the phonologists' consensus: what is widely accepted in the phonological literature is that, in English, word-final coronal obstruents commonly violate the regular phonotactics of the language *whether they realize inflectional affixes or not*. Thus, if the final [s] of *lap-s* 'lap-PL' is declared extrasyllabic on phonotactic grounds, then the same must be true of the final [s] of *lapse* 'lapse[SG]'; and, if both *lap-s* and *lapse* exit the word-level phonology with an extrasyllabic final [s], then Anderson's analysis of possessive /-z/ as a phrasal affix will not be able to capture the contrast between *laps'* 'lap.PL.POSS' [læps] and *lapse's* 'lapse[SG].POSS' [læpsɪz], not even by means of the brute-force stipulations described in the previous paragraph.

Yet the consensus of the phonological literature is precisely that the final [s] is extrasyllabic both in *lap-s* 'lap-PL' and in *lapse* 'lapse[SG]'. Leaving aside the issue of stress-

related extrasyllabicity (Hayes 1982), we should note that, in English, the extrasyllabic appendix has been assumed since at least Fudge (1969: 268ff) to house coronal obstruents—and only coronal obstruents—in two circumstances: (i) when the coronal obstruent would otherwise violate the Sonority Sequencing Generalization (Selkirk 1984: 116), as in *lapse* and *lap-s*, both [[$_\sigma$læp]s], and (ii) when the coronal obstruent would otherwise violate rhyme-maximality conditions, as in *ounce* [[$_\sigma$aʊn]s] (cf. *[$_\sigma$aʊŋk] and *[[$_\sigma$aʊŋ]k]); see e.g. Goldsmith (1990: 146ff). Obviously, Anderson cannot allow the final /s/ of *lapse* and *ounce* to remain in extrasyllabic position in the output of the word-level phonology, for this would incorrectly rule out the singular genitives *lapse's* ['læp.sɪz] and *ounce's* ['aʊn.sɪz]: cf. (29b) above. A possible escape route would be to suggest that the prosodification of *lapse* as [[$_\sigma$læp]s] and of *ounce* as [[$_\sigma$aʊn]s] holds at the stem level to satisfy stem-level phonotactics, but that extrasyllabic appendices affiliated to stems are incorporated into the coda at the word level: i.e. *lapse* [[$_\sigma$læp]s]$_{SL}$ → [$_\sigma$læps]$_{WL}$, *ounce* [[$_\sigma$aʊn]s]$_{SL}$ → [$_\sigma$aʊns]$_{WL}$.[18] Of course, it would have to be stipulated that extrasyllabic appendices affiliated to inflectional affixes are exempt from this word-level rule: *lap-s* 'lap-PL' [$_\sigma$læp]$_{SL}$ → [[$_\sigma$læp]s]$_{WL}$.

However, there is a crucial morphological fact standing in the way of this accommodation between phonotactically motivated extrasyllabicity and Anderson's treatment of the *'s* genitive. As Anderson (2005: 93, 2008: §4) himself acknowledges, certain proper names ending in coronal fricatives can idiosyncratically behave like regular plurals in rejecting the possessive /-z/: e.g. *Liz's* ['lɪzɪz] *ideas* vs *Socrates'* ['sɒkɹəˌtiːz] *ideas*. In fact, the problematic cases are not limited to the class of proper names: a number of common nouns ending in alveolar fricatives exhibit the same idiosyncratic rejection of possessive /-z/. In particular, these include nouns that are identical in the singular and the plural, like *species*, *series*, and *innings* (Palmer et al. 2002: 1589, 1596). Therefore, Anderson's analysis requires singular nouns like *Socrates* and *species* to enter the postlexical (morpho)phonology with an extrasyllabic final /z/. However, this will fail to happen if there exists a regular word-level phonological process whereby extrasyllabic consonants belonging to stems are incorporated into codas, as hypothesized in the previous paragraph.

In conclusion, not only does Anderson's analysis fail to receive support from English phonotactics, but it is strictly incompatible with established phonological practice. Indeed, Anderson handles the opposition between *Liz's* and *Socrates'* by means of underlyingly contrastive syllabification, a possibility generally believed to be forbidden by Universal Grammar (e.g. Hayes 1989: 260).

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[18]   Indeed, Anderson (2005: 94) countenances such a procedure for other reasons: "We must recognize that while the /z/ affixes are added in a structurally adjoined position phonologically, they must eventually be incorporated into simple syllables by the time they are produced phonetically". This reasoning is odd and once more misrepresents the established practice of phonologists: it is normally assumed that the incorporation of a segment into prosodic structure suffices to exempt it from Stray Erasure; it is not normally assumed that phonetic interpretability requires strict layering in the phonology.

The difficulties for Anderson's phonological analysis become compounded in dialect (26). In this case, Anderson has to craft derivations in which plural nouns that do not head the possessive phrase incorporate their final /-z/ into the coda before the addition of genitive /-z/, but plural nouns heading the possessive phrase still have the plural suffix in extrasyllabic position at the same stage. We shall not discuss this idea here, since Anderson (2005: 94, 2008: §4) himself acknowledges that he does not have a fully articulated proposal. We shall merely observe that, stated as word-level morphological generalizations, the patterns illustrated in (25) and (26) look much more reasonable.

The key idea is that, under circumstances to be specified presently, the features [plural] and [genitive] exhibit cumulative exponence. Of course, *any* theory of inflection needs morphophonological mechanisms for handling cumulative exponence, but the precise choice is irrelevant to our purposes. Of interest here, rather, is the syntactic basis of the contrast between the dialects illustrated in (25) and (26). The theory of edge inflection enables us to handle this contrast naturally by means of the distinction between head (or 'internal') features and edge (or 'external') features: recall that, in an expression like *the man opposite me's face* (24b), the pronoun *me's* bears internal accusative case and external genitive case. In head genitives like *the ducks' plumage*, [plural] passes as an internal feature from the mother *the ducks'* to the head *ducks'*; but, because the head happens to stand at the right edge, the right-edge external [genitive] of *the ducks'* also passes from mother to head. The paths of transfer being the same, the head vs edge contrast is neutralized, resulting in the configuration [PL, GEN]. In group genitives like *the man with the ducks'(s) gun*, however, [plural] passes as a head feature from the phrase *the ducks* to its head *ducks*, whilst [genitive] passes as an external feature from the superordinate noun phrase *the man with the ducks'(s)* to its right-edge dependant *with the ducks'(s)* and thence all the way to *ducks'(s)*. This results in the configuration [[PL] GEN]. Now, all we need to say is that the configuration [PL, GEN] triggers cumulative exponence in all dialects; in contrast, the layered configuration [[PL] GEN] is subject to cumulative exponence in some dialects but not others. See Payne (forthcoming) for further details.

In sum, English genitive /-z/ is not a special clitic, but rather an edge affix: the lexical idiosyncrasies of genitive marking, and its interactions with plural inflection, raise insuperable problems for Anderson's theory of phrasal affixation. In this light, it is ironic that, having finally acknowledged the existence of edge morphology in Anderson et al. (2006), Anderson (2008) should choose to make a stand on the status of the *'s* genitive as a phrasal affix (see section 3 above) . In contrast, the English facts receive a straightforward account under a theory of edge inflection distinguishing head features from edge features. This distinction is independently required by the *Suffixaufnahme* phenomena discussed in the next section.

6. Old Georgian *Suffixaufnahme*

Old Georgian (5th century onwards) has a rich written tradition, starting with translations of the Gospels. Standard Modern Georgian developed in the 19th century as the official language

of the Republic of Georgia. The language has in general been remarkably conservative, but the modern language has not preserved some features which are significant for the present discussion. Our data are based on Boeder (1995), to whose transliteration system we adhere.

The first point to note is that Old Georgian had a nominal inflection system consisting of eight cases and two numbers. In the singular, three of the cases (genitive, dative, and instrumental) have two forms: a short form and a long form ending in *−a*. Proper nouns, and some pronouns, have null endings in the absolute, vocative, nominative, and ergative, and in contrast with regular common nouns only admit the short forms of the genitive, dative and instrumental. Basic paradigms are given in (30), adapted from Boeder (1995: 153):

(30)   Old Georgian nominal inflection: *kac* 'man' and *Grigol* 'Gregory'

	Common nouns		Proper nouns
	Singular	Plural	Singular
Absolutive	*kac*	_____	
Vocative	*kac-o*	*kac-no*	
Nominative	*kac-i*	*kac-ni*	
Ergative	*kac-man*		*Grigol*
Genitive	*kac-is(-a)*		*Grigol-is*
Dative	*kac-s(-a)*	*kac-ta*	*Grogol-s*
Instrumental	*kac-it(-a)*		*Grigol-it*
Adverbial	*kac-ad*		*Grigol-ad*

These forms show many of the hallmarks of lexical morphology, including separate paradigms for different subclasses, syncretisms, and gaps. There are also some suppletions and irregularities. For example, the nominative singular form of the demonstrative/article *igi* employs a suppletive stem (cf. *ma-s* DEM/ART-DATIVE), and the ergative form *man* is not standardly segmentable into a stem and an affix (it is identical to the ergative suffix itself, so the stem would be zero). There is also syncope of stem vowels conditioned by individual suffixes, e.g. *kmar-i* (husband-NOM) but *kmr-isa* (husband-GEN).

In basic noun phrases, all constituents including the head noun share the features of case and number: i.e there is full agreement. A typical example in which two adjectives, the definite article, and the noun head all agree in nominative singular is given in (31):

(31)   cmida-j   igi   mcire-j   eklesia-j

         holy-NOM.SG   ART.NOM.SG   little-NOM.SG   church-NOM.SG

         'the holy little church'   (Boeder 1995: 154)

In passing, we note that the article (unlike initially positioned demonstratives which have exactly the same form) is placed following the first immediate constituent of the noun phrase, and is most probably phonologically weak with attachment to the left. The best analysis, we would argue, is one where the article is placed in this position by standard syntactic mechanisms. As we argued in section 2, linearization domains (Kathol 2000) are at least one mechanism for achieving this without resorting to a special 'second-position' system of phrasal morphology.

One particularly relevant aspect of the agreement system is the fact that, like case and number, the opposition between short and long forms participates in agreement as well. According to Vogt (1947), the distinction between short and long forms originated in a referential opposition between 'generic' (short-form) and 'specific' (long-form), with a genuine number opposition existing solely between the singular long form and the plural. Proper nouns, and other forms that are inherently specific (personal pronouns, demonstrative, the definite article) did not enter into this referential opposition, and only have short forms. The system is however already not systematically observed even in the oldest texts, with common nouns sometimes rendered long and sometimes short in precisely the same contexts. This suggests that agreement in short and long forms reflects a syntactic feature whose semantic force has been somewhat weakened (much as gender systems with historically clear origins may gradually become more arbitrary). The article and the demonstrative are in fact neutral with respect to the agreement system. However the presence of a proper noun, which only permits short forms, requires short-form agreement. Compare (32a) with long-form agreement and (32b) with short-form agreement:

(32)   a.   qovel-sa   ma-s   kueqana-sa
            all-DAT   ART-DAT   country-DAT
            'the whole country'   (Boeder 1995: 154)

       b.   netar-s   Grigol-s
            blessed-DAT   Gregory-DAT
            'blessed Gregory'   (Boeder 1995: 156)

For our current purposes, the key facts are those related to the application of agreement to genitive noun phrases. Old Georgian exhibits an instance of the phenomenon known as *Suffixaufnahme* (see Plank 1995 for discussion and a survey of the origins of this term). In constructions with genitive noun phrases, the case and number of the superordinate noun phrase are applied externally to the genitive case and number marking of the subordinate one. A basic example is given in (33a):

(33) a. šeçevn-ita   çmid-isa   sameb-isa-jta
       help-INS.SG   holy-GEN.SG   Trinity-GEN.SG-INS.SG
       'with the help of the Holy Trinity'   (Boeder 1995: 159)

    b. * šeçevn-ita   çmid-isa-jta   sameb-isa-jta
       help-INS.SG   holy-GEN.SG-INS.SG   Trinity-GEN.SG-INS.SG   (Boeder 1995: 161)

In (33a), the instrumental case of the superordinate noun phrase is layered externally to the genitive case of the noun phrase 'Holy Trinity'. The ungrammaticality of (33b) indicates that, within the subordinate genitive noun phrase, the external instrumental case is not subject to the same agreement rules as the internal genitive case: crucially, it is not realized on the adjectival premodifier 'Holy'.

      Although in examples like (33a), which constitute the majority, the external case happens to be marked on the head noun 'Trinity', other data show that the correct generalization about the placement of external case is that it occurs on the final element of the subordinate noun phrase. When a modifier is placed after the head, it is the modifier which attracts the external case, not the head:

(34)   sisxl-ita   kac-ta   ma-t   martal-ta-jta
       blood-INS.SG   man-GEN.PL   ART-GEN.PL   just-GEN.PL-INST.SG
       'with the blood of the just men'   (Boeder 1995: 185)

In (34), the external case is borne by 'just', not 'men'. As far as external case is concerned, we are dealing then with edge or final marking. A variety of factors show, however, that the external case cannot fit the paradigm of a final 'special' clitic.

      First, the genitive noun phrase is itself not necessarily the final constituent in the superordinate noun phrase. Prehead genitive phrases essentially exhibit two patterns. In the first, without *Suffixaufnahme*, the genitive phrase appears to form a close-knit subconstituent with the head noun. This constituency, which distinguishes the genitive phrase from other modifiers which appear to be immediate constituents of the superordinate noun phrase, is shown by the position of the article, which follows the genitive+head subconstituent in second position, rather than just the genitive phrase:

(35)   [venaq-is   mokmed-sa]   ma-s
       vineyard-GEN.SG labourer-DAT.SG   ART-DAT.SG
       'the dresser of (his) vineyard'   (Boeder 1995: 164)

In the second pattern, however, where the prehead genitive phrase is an immediate constituent of the superordinate noun phrase, *Suffixaufnahme* does take place:

(36) [xuro-jsa-j]   igi   ʒej
  carpenter-GEN.SG-NOM.SG   ART.NOM.SG   son-NOM.SG
  'the son of (the) carpenter'   (Boeder 1995: 163)

Note the position of the article here: it follows the first constituent, which in this case is just the genitive noun.

  The correct statement about case and number marking in Old Georgian is therefore as follows: internal case and number is copied to all immediate constituents of a given noun phrase; but, when it is copied to a genitive phrase, it becomes external and, within the genitive phrase, it is copied to the right edge. When the genitive phrase precedes the head of the superordinate phrase, it becomes immediately apparent that reference to distinct subtrees is required, as in Bulgarian: the case of the superordinate noun phrase is copied to the genitive phrase, which is not final, but then within the genitive phrase it is transferred as an external case to the final element.[19]

  There is thus conclusive evidence that external case in Old Georgian cannot simply be treated as a 'final' special clitic. In addition, there is also evidence that, as an edge phenomenon within the genitive phrase, it displays many characteristics of standard lexical morphology. Perhaps the clearest is the behaviour of proper names. Recall that proper names in isolation require the short form of the genitive. This requirement is however optionally waived in the presence of *Suffixaufnahme*:

(37) kueq̇ana   Zabilon-isa-j
  land-NOM.SG   Zabulon-GEN.SG-NOM.SG
  'the land of Zabulon'   (Boeder 1995: 179)

If the nominative-singular external case were simply a final 'special' clitic, it should not be able to affect the morphological realization of the internal genitive case. The interaction however follows straightforwardly from an analysis in which external case is edge lexical morphology.

  There are further interactions between internal and external case which indicate the correctness of this analysis. The sequence *–ta-ta* is blocked in *Suffixaufnahme*, although it is phonotactically well-formed. Typically, haplology takes place, and the sequence is reduced to just *–ta*:

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[19] Having conceded the existence of edge inflection (see the conclusion to section 3 above), Anderson et al. (2006) and Anderson (2008) suggest that it should be handled not by a syntactic feature-passing mechanism, but by a system of optimality-theoretical constraints. The basic idea is that an alignment constraint will require some word marked for the relevant feature to stand at the edge (left or right) of the phrase associated with that feature. There may be difficulties in extending this proposal to cases like Old Georgian that motivate the passing of features in different ways within subtrees.

(38)   a.   kar-ta   kalak-ta
            door-OBL.PL   city-GEN.PL.OBL.PL
            '(the) gates of (the) cities'   (Boeder 1995: 68)

       b.   * kar-ta   kalak-ta-ta
            door-OBL.PL   city-GEN.PL-OBL.PL

Again, this kind of interaction between internal case and external case follows straightforwardly from an analysis which takes external case to be lexical morphology.

Finally, we note that external case is positioned *inside* any article belonging to the subordinate genitive phrase itself:

(39)   sartul-i   [saxl-isa-j   mi-s]
       roof-NOM.SG   house-GEN.SG-NOM.SG   ART.GEN.SG
       '(the) roof of the house'   (Boeder 1995: 168)

This fact would follow from an analysis in which the external nominative case is a morphosyntactic feature copied to the final content word of the genitive phrase (which in this example happens to be the head), and the article is positioned in second position following this constituent. It would not follow from an analysis in which both the external case and the article were special clitics, since in that case the external case should rather follow the article.

To recapitulate, our analysis of the Bulgarian definiteness marker in section 4 led us to assume that, within different subtrees, features can be transferred now to heads, now to edges. In section 5, our analysis of English dialects of type (26) led us to postulate a distinction between internal (head) and external (edge) features. The evidence of Old Georgian *Suffixaufnahme* in this section has demonstrated that both postulates are amply motivated.

7. Theoretical implications

In conclusion, we contend that, given a reasonable definition of the notion 'syntactic rule', and feature-passing that is not restricted to head-marking and agreement, there is no grammatical object which does not fall either in the category 'grammatical word' or in the category '(lexical) affix'.

For concreteness, assume that morphosyntactic features can in principle copy freely within subtrees. Individual languages will have constraints: e.g. copy to head, copy to all daughters, copy to leftmost daughter, copy to rightmost daughter, copy to specific categories wherever they are, or combinations of these. No doubt some of these (e.g. copy to head) are more common than others, but the less obvious cases can be found. For example:

(i) copying of definiteness to adjectives only: e.g. Lithuanian (Payne 1994);

(ii) copying of case to demonstratives and to the rightmost daughter: e.g. Hungarian (Moravcsik 2003, Payne and Chisarik 2000);

etc.

In Lithuanian, where only adjectives have paradigms containing exponents for the relevant feature, it might seem that a 'scatter-gun' approach might work: i.e. copy the feature to all daughters, and let the lexical morphology determine that the feature has no exponents except for the appropriate category (adjectives). However, the Hungarian example demonstrates that this cannot be the general solution: instead, precision targeting is required. In Hungarian, the case feature always appears on demonstratives, but then also on the final element in the noun phrase; typically this will be the head noun, but it can also be an adjective if no noun head is present. Crucially, however, when a head noun does exist, any adjective which precedes it does not show case. Therefore, it will not do simply to copy case features *ad libitum* to both adjectives and nouns: the adjective will only bear case *if* it is final.

Consider, then, the following schematic tree, consisting of three subtrees:

(40)
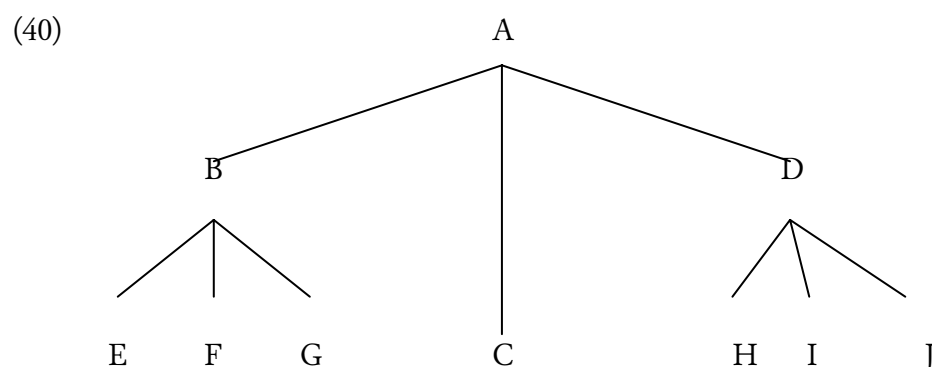
A morphosyntactic feature instantiated on A may in principle be also instantiated on any or all of B, C, and D, and then on any of the daughters of B, C and D. In Bulgarian (section 4), definiteness on A is copied to B as first constituent, and then to F, if F is the head of B. In English (section 5), genitive case on A is copied to D as the final constituent (externally if D is not the head of A) and then similarly to J as final constituent within D. In Old Georgian (section 6), case and number on A are copied to all of B, C and D. Now suppose that D is a genitive noun phrase and that I is the final content word within D. If that is the situation, then the case and number that were copied from A to D will be transferred as external features to I. In this scenario, J can be an article.

As far as syntactic rules are concerned, assume no crossing branches. On this assumption, a phonologically deficient grammatical word can be syntactically positioned as indicated by the broken lines in (41).

(41)
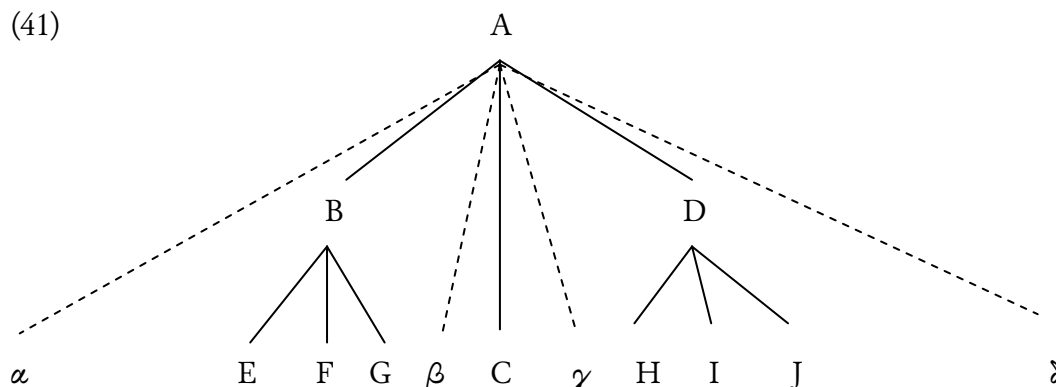
In this scenario, each of the elements α, β, γ, and ẟ could in principle submit to more than one analysis, at least as far as the morphosyntax is concerned:

(i) α may be a prosodically deficient word adjoined to the right, or a prefix on E;

(ii) β may be a prosodically deficient word adjoined to the left, or a suffix on G, or a prosodically deficient word adjoined to the right, or a prefix on C;

(iii) γ be a prosodically deficient word adjoined to the left, or a suffix on C, or a prosodically deficient word adjoined to the right, or a prefix on H;

and (iv) ẟ may be a prosodically deficient word adjoined to the left, or a suffix on J.

Lexical morphophonological interactions of the kind discussed above may force a choice, as in the case of the English genitive, which must be a suffix. But in cases where no such interactions can be found, many phonologically deficient objects which have been called 'clitics' will in the end be analysable using either mechanism.

Intermediate situations in which both a syntactic analysis and a morphological analysis are possible may arise from, and further drive, the diachronic process of grammaticalization. In this context, one may choose to use the term 'clitic' to refer to phonologically deficient objects in a given language which are less advanced on grammaticalization pathways than routine head-marking and agreement morphology. But there is not going to be any cross-linguistic uniformity as to what count as clitics, and there is not going to be a justification for postulating a distinct theoretical mechanism to handle them.

8. Conclusion

Often, as we saw in section 2, special status is granted to clitics all too liberally: many elements that have been so described in the literature can in fact be easily analysed as affixes or as prosodically deficient words without the least violence to the heads-and-agreement restriction. There does remain, however, a set of elements that cannot be accommodated in the lexical morphophonology under this particularly restrictive theory of syntactic feature distribution. If one is to keep the heads-and-agreement restriction, then, the only solution is to find another home in the architecture of grammar for these recalcitrant elements. Phrasal affixation provides the obvious—perhaps the only—solution; but the theory of phrasal affixation fails on empirical

grounds: so-called special clitics cannot be introduced postlexically because they often interact with lexical morphological and phonological rules, and placing special clitics cannot be a matter of mere morphophonology because their host is often selected by syntactic criteria, albeit criteria that are incompatible with the heads-and-agreement restriction.

The Bulgarian definiteness marker provides a particularly clear illustration. Its placement obeys a rule of an unmistakably syntactic flavour: it must appear on the head of the leftmost syntactic phrase immediately contained within the NP. One just needs a theory of syntactic feature distribution that can deal with this generalization. Such a theory, we have suggested, must abandon the heads-and-agreement restriction, and must allow phrasal features to be transferred now to heads, now to edges. Just as unequivocally, the Bulgarian definiteness marker must belong in the same grammatical word as its host, for it triggers and undergoes lexical allomorphy. These observations lead to an obvious conclusion: if the Bulgarian definiteness marker is a piece of morphology that certain grammatical words must contain when they appear in certain syntactically defined environments, then it is an affix. But this treatment, we have argued, generalizes to all the members of the refractory class of 'special clitics': for example, it applies to the English *'s* genitive, and it applies to the Old Georgian case and number markers participating in *Suffixaufnahme*. The conclusion thus seems inescapable: there are words (including simple clitics) and there are affixes (including edge affixes), but there are no phrasal affixes and, in this sense, no special clitics.

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