CLITICIZATION VS. INFECTION: ENGLISH N'T

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Two types of bound morphemes — clitics and inflectional affixes — are found attached to their words in many languages. At least six bases of evidence support the clear cases on each side: the stages of selection between the dependent morpheme and the word to which it is attached; arbitrary lexical gaps; phonological diachronies; semantic or syntactic oppositions after the word combinations; and restrictions on the combination of clitics with inflectional affixes. These criteria all indicate that English con- trasted auxiliaries (She's gone) are clitics, but that the English contracted negative (Hasn't she gone?) is an inflectional affix — a rather surprising conclusion that turns out to have satisfying consequences.1

An important point about doing grammatical research on a well-known language is that there can still be surprises. Evidence, sometimes of a subtle and indirect kind, can be uncovered for analyses of a quite unexpected character. For example, Movil ( Mt.) presents syntactic evidence that English, near, in phrases like near the wall, is an adjectival taking NP complements — rather than a pre- position, as has commonly been assumed. (Note, most strikingly, that we find phrases like nearer the wall, nearest the wall; prepositions do not have inflec- tional comparative or superlative forms.) She further shows that the items like and worth, usually treated as adjectives taking NP complements (cf. Huddles- ton 1976:244), are both prepositions, despite their non-local and thus rather un-preposition-like meanings.

It is in part because such unexpected new discoveries can be made at any point, even about the grammar of a relatively well-understood language, that grammatical investigation continues to be interesting. Consider the question of whether some item is a member of a grammatical category at all — or whether it is, like an affix, syncretomorphic. Indeed, we might be in doubt as to whether some element is a syntactically independent word or an affix — a question without an straightforward answer, given that a possibility can exist for another word or phrase. One such case was discussed in this paper. The negative formative n't is assumed, in most recent analyses that mention it, to be an unstressed and contracted form of the word not. The background to our discussion will be a survey of the contrasting properties of the inflectional and cliticized words of English morphosyntax.

I. Background. Two types of bound morphemes are found attached to words in many languages: clitics and affixes, in particular inflectional affixes. English, for instance, has auxiliary verbs like has, have, and has, which may become clitic to words preceding them:

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1. A somewhat detailed list of criteria can be extracted from the proposals of Curtius (1981), who gives these definitions: (a) clitics are material positioned relative to adjacent syntactic con- stituents, rather than relative to ‘com or oder’ being (b) particular parts of speech; (b) inflectional affixes are material whose shape is affected by grammatical features (e.g. number, gender, case or declension-type or declension-type of the item which governs their position); and (c) inflectional affixes are also members of a relatively small closed system, one of whose members must always appear at the relevant place in structure (p. 4). Our criteria A follow from (a) and (b). However, English has such an impoverished system of inflectional affixes that (b) and (c) are of little utility. We agree that (a) and (c) will apply in other contexts, but conclude that they add nothing to our discussion of particular English examples.

Mousley (1981) lists six criteria for distinguishing clitics (which he measures by phrase-structure rules), from inflectional or derivational affixes (governed by word-formation rules): (a) word-bases have more restricted branching properties than phrase bases (208); (b) there is no equivalent to the 1-2 condensed constraining the operation of morphological rules (286-90); (c) word-formation rules are optional (295); (d) the base of a word-formation rule is specificable as being of a single category; (e) indeed, this must be one of the major categories; and (f) the base and output of a word-formation rule may belong to different categories, while the output of clitic- ization belongs to the same category as the preverb. (Omerick 1981) are quite weak, and in any case do not apply in our English data; (d) and (e) together amount to a high degree of selection for affixes, our criteria A; and (f) distinguishes derivational, not inflection, from cliticization.

2. Infection is viewed here in the sense of the structurality as in Halle 1951. Our reference to examples of infection is not to suggest that the selectivity of some linguistic form is necessarily quantifiable; we assume only that, in some cases, items can be ranked with respect to selectivity. A morpheme which occurs with all words from a major form class is thus less selective than one occurring only with verbs; this second morpheme is in turn less selective than a morpheme occurring only with some subclasses of verbs; and this third morpheme is in turn less selective than one occurring only with a few specified verbs.
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(B) There are no arbitrary gaps in the set of host-clitic combinations—no cases where a particular host word fails to combine with one of the three simple clitics we are using as illustrations. A number of general conditions on these combinations (involving syntactic structure, phonological properties of the host, category of the host, and sentence stress) have been suggested in the literature; but it is never the case that some single expected host-clitic combination fails to occur. Such arbitrary gaps do occur occasionally in inferential paradigms, as is well known; e.g., the English verb strike anomalously lacks a past participle.

(C) No morphophonological idiosyncrasies exist within clitic groups containing 'a' and 've—no cases where some particular host-clitic combination shows an unexpected phonological pattern. In the case of simple clitics or placing certain clitics themselves have allomorphs distributed by general rules referring to phonological and morphological properties of the hosts. For inflectional formations, morphophonological idiosyncrasies are very common; we find arbitrary groupings into paradigm sets, sub-regular and irregular forms for both stems and affixes, and suppletion. Relevant English examples include forms like dive, dived, and dived for the plural affix; sleep, slept, slept for the past affix; and best and worst for the superlative affix.

(D) There are no semantic idiosyncrasies for clitic groups containing 'a' and 've—i.e. no cases where the contribution of these clitics to sentence meaning is not identical to the contribution of their associated full forms. Inflectional formations, in contrast, do occasionally show idiosyncratic semantics: the meaning of the whole word is not always composed regularly from the meanings of its parts. It is not easy to illustrate this from the rather meager inflectional system of English; however, some indications can be gleaned from facts like the existence of last (etymologically a superlative from late), which has the syntax of a superlative but an idiosyncratic range of meaning (last words are final, not just maximally late or recent), or most, which in the slang of the fifties developed a meaning similar to best (Frankie Avalon is the most). Richer inflectional systems have greater possibilities of developing specialized uses of inflected forms.

We have illustrated criteria A-D with inflectional affixes; however, the contrast with clitics would be much more striking if we had used derivational affixes instead. Here the degree of selection between stem and affix is often higher than for inflectional affixes; and arbitrary gaps, morphophonological idiosyncrasies, and (especially) semantic idiosyncrasies are commonplace.

3. CRITERIA E-F. The predictions made in E-F are again borne out for the three simple clitics of English vs. the three inflectional affixes. With respect to E, no syntactic operations exist which treat a word combined

The relationship between full forms and simple clitics is not necessarily to be described by rules of general application elsewhere in the language. Kaisan, in fact, argues that the full and clitic forms of the English auxiliaries are simply different allomorphs, both found in the lexicon (e.g. have and h'ave for have). In line both with Kaisan's analysis and with criticisms by Klavans (1980, Ch. 2) of the conceptual framework of Zwicky (1977), we do not require that simple clitics derive synchronously from full forms by processes associated with causal or fast speech.

B. Arbitrary gaps in the set of combinations are more characteristic of affixed words than of clitic groups.

C. Morphophonological idiosyncrasies are more characteristic of affixed words than of clitic groups.

D. Semantic idiosyncrasies are more characteristic of affixed words than of clitic groups.

Further predictions follow from a strong hypothesis which we propose in our work on syntax—phonology interactions (see Zwicky 1982 for a summary of our position): All cliticization (including the 'simple' type illustrated in 1a-b above) follows syntax; or, equivalently, no syntactic operations apply after cliticization. On this view, cliticization rules work on surface syntactic structures, either re-organizing them (in the case of simple clitics) or placing certain morphemes within them (in the case of other clitics). From this assumption that no syntactic operations (including agreement and government processes) can follow these re-organizations and placements, at least two predictions follow:

E. Syntactic rules can affect affixed words, but cannot affect clitic groups.

F. Clitics can attach to material already containing clitics, but affixes cannot.

We illustrate these two differences in §3 below.

In §4, we turn to an item whose analysis has been unclear, namely the English contracted negative n't; and we show that, by all six criteria (A-F), it is not a simple clitic but an inflectional affix. This is a somewhat surprising analysis, but it is implicit in Harman (1965:610) and in Hudson (1977:76); it is relatively explicit in Starosta (1977); and Lapointe (1980:451, fn. 13) mentions some of the facts which we discuss below as evidence for a 'lexical' treatment of n't, which could be taken to mean an affixal analysis. We show that analyzing n't as an affix avoids known difficulties in earlier treatments, such as Zwicky 1965, Selkirk 1980, and Pullum & Wilson 1977. We do not deny that modern contracted n't had its historical origin as a simple clitic; but we maintain that it has unquestionably been re-analysed as an instance of inflectional affixation.

2. CRITERIA A-D. The simple clitics 'is', 'is', 'has', and 'have' contrast with the inflectional affixes 'noun plural', 'verb past', and 'adjective superlae' on all four criteria:

(A) The degree of selection between the clitics and the words preceding them is low. The clitics can attach to words of virtually any category, in addition to the pronouns in 1a-b:

1. a. The person I was talking to his going to be angry with me. [prep-osition]
   b. The ball hit's just broken my dining room window. [verb]
   c. Any answer not entirely right's going to be marked as an error. [adjective]
   d. The drive home tonight's been really easy. [adverb]

The inflectional affixes, by contrast, are quite specific in their selection of stems: the plural attaches only to noun stems, the past only to verb stems, the superlative only to adjective and adverb stems.

3. The relationship between full forms and simple clitics is not necessarily to be described by rules of general application elsewhere in the language. Kaisan, in fact, argues that the full and clitic forms of the English auxiliaries are simply different allomorphs, both found in the lexicon (e.g. have and h'ave for have). In line both with Kaisan's analysis and with criticisms by Klavans (1980, Ch. 2) of the conceptual framework of Zwicky (1977), we do not require that simple clitics derive synchronously from full forms by processes associated with causal or fast speech.
one with the clichés 'or' or 'as a unit.' Indeed, given the wide variety of hosts to which these clichés attach, it is hard to imagine what such an operation would be like. But inflected nouns, verbs, adjectives, and adverbs are of course regularly treated as units by syntactic operations.

With respect to F, the English ciclitize auxiliaries can attach to material already containing ciclizes, though the inflectional affixes cannot:

(3) I'd done it if you'd asked me.

Rather, n't can attach to words containing simple ciclices, although the simple ciclic 've can do so.

At this point, we turn to criteria A–D to see how they classify n't. In every case, they agree with E–F.

First, criterion A: the negator n't is highly selective, attaching only to auxiliary verbs—indeed, only to the finite forms of these. The restriction to auxiliary verbs might be interpreted merely as a consequence of the structures in which not occurs, since not is frequently preceded by auxiliary verbs. Still, words of other categories can precede not, and in these circumstances n't doesn't necessarily bear compressive or emphatic stress. However, n't cannot occur in these contexts as a variant of not.4

(11) a. I didn't try not [bereav'd] to pay attention; I just can't help it.

b. Well, for [here not] [here not] to understand is the last straw.

5 In any event, the restriction to finite auxiliaries, illustrated below is 12–14, shows that mere adjacency of an untrust not an auxiliary (in this case have) is not enough to licence n't in this position. This point is made, with similar examples, by Akmajian et al. (1979:48–9).

(12) a. It would be a shame to have not even had a chance to see it.

b. *It would be a shame to haven't even had a chance to see it.

(13) a. The police have not been informed.

b. The police haven't been informed.

(14) a. Would the police have not been informed?

b. *Would the police haven't been informed?

As background for a discussion of criteria B and C, we list in Table 1 (overleaf) the complete membership of the set of auxiliary verbs to which n't can attach. Note that in two instances, (i) and (ii), the contracted negative forms do not exist at all in our speech, at least; the forms *mayn't and *shan't are used by some speakers, but definitely not by us or a significant percentage of other speakers. Moreover, in one case, (ii), a negative form exists which has

4 Although this is not the place to explore the association between full-fledged forms and full-fledged stress, we should point one note here: the contract with full-fledged stress is very imperfect. In particular, it is much more natural to view forms like didn't in [details (No, I wasn't gool as corresponding to sentences with stressed not (No, I don't gool) than to view them as corresponding to sentences with a stressed auxiliary and an unstressed not (No, I don't say not)].

5 It is noted in Section 9 that it lacks a source, since 1a–b are both grammatic:

(10) a. I wouldn't be doing this unless I had to.

b. I'd be doing this unless I had to.


no direct positive counterpart, since ain't serves as the negative form of have, has, am, are, and is on an optional basis, in certain dialects and styles. We therefore, a pattern of gaps of exactly the sort we find in the realm of word formation. By criterion B, n't does not behave like a simple clitic.

As for the phonological forms in Table 1, (ain't) is completely idiosyncratic and unrelated to any positive form. At least five other negative forms cannot be related to their positive counterparts by regular phonological rules: don't, can't, shan't, won't, and mustn't. Don't has [də] for the expected [də] won't has [wə] for the expected [wə], shan't is idiosyncratically missing in [sən't].

Misin's shows a deletion of [t] also found in connective-causative verb forms with the suffix -en (musten, soften); however, the deletion is conditioned only by n't and the inchoative-causative suffix. (It does not occur within mor- phemes, since pission, Easton, and Lifton all have [n]; nor is it conditioned by the suffixes -en and -ened, as its existence, consistent, assistance, and persistency—or by [n] as a variant of -en, in busin' and liften). In fact, it seems

1 It is also true, as pointed out in Zuckert 1970, that intermediate forms with reduced [nə] do not exist: There are no possible variants of won't, and (don't) is an acceptable pronunciation of drought, but not of a partly reduced form between don't and don't, and hain't, the affix n't occurs after infinitival affixes; the well-known generalization that applies here is that infinitival affixes tend to close off words to us that no deletion would take place in neologisms with any of the various -en suffixes: An inchoative-causative *bosten, based on the adjective born, we would have a [bə]—as would a past participle *beften, based on the verb help, but with the suffix -en of taken or a plural *kosten, based on the noun ghost, but with the suffix -en of eaten or as an adjective *frosten, based on the noun frost, but with the suffix -en of solden. That is, the deletion of [t] in mustn't and mosten is idiosyncratic, limited to combinations of specific lexical items with specific appended morphemes. By criteria C, then, n't does not behave like a simple clitic.

Finally, criterion D. Here we point to the well-known irregularities in the semantic interpretation of the forms in Table 1. If we write the negation of P as not(P), and write the meaning contribution of must (for example) as must, then where P = You go home, the meaning of You mustn't go home is MUST(NOT(P)), not NOT(MUST(P)). But the order of operators is reversed when we consider can: You can't go home means NOT(CAN(P)), not CAN(NOT(P)); it refuses permission (or denies possibility), rather than permitting the addressee not to go home (or admitting that possibility). And this is an irregularity in the connection between contracted and uncontracted form; You must not go home has exactly the same meaning as its contracted variant, but You can not go home has a meaning that is lacking in You can't go home and You cannot go home. (The extra meaning of the uncontracted sentence comes out clearly if the not is not linearly separated from the can, as in You can simply not go home.) Such facts are discussed at length in Hinn 1971, 1975, where contrasts like the following are noted:

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Further Observations: We have now demonstrated that *n*'-behaves in no way like a simple clitic; and we have concluded that it is an inflectional suffix, defining an additional part of the finite paradigm of a small set of irregular verbs, namely the traditional *-i* option. While this is scarcely the standard view of English, the proposal that a language has negation as one of its inflectional categories is unremarkable; negative inflectional affixes on verbs are found in such well-known languages as Japanese, Swahili, and Turkish. There are even languages with suppletive positive/negative pairs of auxiliaries: Bliss (1968) reports on dialects of Sisala, a Gur (Voltaic) language of West Africa, with suppletive negative copulas; and suppletive negative copulas and auxiliar verbs are widespread in the Dravidian family. For Telugu, Lisker 1963 lists the negative copula *le*-'not to be' corresponding to the affirmative *ane* (94), and the negative auxiliary (constructed with infinitives) *le*-'cannot, be unable' corresponding to the affirmative *gala* (2M), as well as a negative copula *ki* constructed with two NP's and corresponding to an affirmative zero (94). There is also no difficulty in seeing how an inflectional affix *n*'-could have arisen historically, through re-analysis of what was originally a simple clitic. However, consideration of the steps in this development leads to another possible analysis for *n*', namely that it is a Special Clitic, rather than a simple clitic. The facts already presented argue against this treatment, but we must flush out our proposal before we can show this.

The basic property of simple clitics is that their distribution in sentences is exactly the same as that of associated full forms; the formal device which creates phonological words containing a simple clitic is a readjustment rule, operating on a surface syntactic structure. All other clitics are special clitics in our terminology (a refinement of that in Zwycka 1977): either no corresponding full forms exist, as in the Latin conjunctive particle *que*, the Tagalog clitic particles, and the English possessive *'s*; or else the clitics do not have the same distribution as the corresponding full forms, as in the pronoun clitics of many Romance and Slavic languages and of Modern Greek. Phonological words containing a special clitic could be regarded in transformational terms as created by a rule that takes features associated with some domain constituent (usually *S* or *NP*); transfers them to a *LOCUS*, a specified node within the domain (e.g. to an initial or final sub-constituent, or to the head of the constituent); realizes them as morphological material situated either before or after the locus; and attaches this material phonologically either to the right or the left. This rather complex scheme, based on Klavans' exposition, is designed to accommodate cases in which the constituent by which a clitic is located is not the constituent to which it attaches phonologically, e.g. the pronoun clitics of the Australian language Nganbiera, as discussed by Klavans; these are located before the
Following the analysis of Gazdar et al. ($2.23), we specify that negation can be marked only on a tensed auxiliary (would in 16a), or on a tenseless verb (sawbacks in 16b), or on both, with somewhat different semantic interpretations for the two instances. Negation on a tenseless verb is realized as not preceding the verb. Negation on a tensed auxiliary is realized either as not following that auxiliary, or as a feature associated with the auxiliary V node. Thus, what takes the place of a cliticization rule in this analysis is a principle permitting alternative expression for one type of negation: either as a separate word or as an inflectional feature. This principle is similar to the one required for the description of the comparative and superlative of adjectives and adverbs in English: these are realized either as separate words (more, most), or as inflectional features (associated with the suffixes -er and -est), but not both as in the same sentence.

We thus argue that, on all the available evidence, neither should be treated as an (inflectional) affix rather than a clitic (of any sort); and also that an inflectional suffix $n'$ can be accommodated in an account of English morphology using only garden-variety descriptive principles—indeed, using only those of types already advanced in the language.

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