

From: Theoretical Morphology (ed. by M. Hammond
+ M. Noonan. Academic Press, 1988)

Chapter 11

The How and Why of Diachronic Morphologization and Demorphologization

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1. Introduction

Morphology and diachrony have exhibited a puzzling complementary distribution within generative linguistics. When, some years ago, diachrony was in vogue, morphology was not in fashion. Of late, however, morphology has become all the rage, yet diachrony is now in a state of relative neglect by generativists.¹ As a result, there currently is comparatively little work being done on morphological change within the generative framework. Thus, with notable exceptions such as Bybee (1985) and Dressler (1985), most recent investigations in morphology (as represented, for example, by the work of Anderson, Kiparsky, Lieber, Marantz, McCarthy, Williams, and Zwicky) have focused almost entirely on the testing of theoretical claims and constructs in purely synchronic terms and with purely synchronic data.

There is, however, clearly another important side to morphology—and to the study of language structure in general—namely, the diachronic aspect:

¹Thus, e.g., while Kiparsky (1968, 174) could confidently state that linguistic change “is a window on the form of linguistic competence that is not obscured by factors like performance,” Kiparsky (1982, viii) expresses the more pessimistic view that “language change is not as direct a ‘window’ on linguistic structure as one might have hoped.” Given that the earlier concentration on historical linguistics by Kiparsky and certain other generativists involved an unquestionably formalistic bent, the present complementarity between morphology and diachrony does not reduce to a formalist/functionalist opposition, nor is it an accidental result of the fact that there just happen to be relatively few functionalists working on morphology at the moment. As we emphasize in this chapter, historical morphology has much to gain from and contribute to both formal and functional approaches to linguistic analysis.

the manner in which earlier synchronic states give way, across time, to new and somewhat-altered later synchronic states. Diachrony is best viewed as the set of transitions between successive synchronic states, so that language change is necessarily something that always takes place in the present and is therefore governed in every instance by constraints on synchronic grammars. As a result, synchronic morphological theory not only should consider the results of diachronic morphological investigations but must be responsive to—and should ultimately explain—morphological changes.

This notion of the interconnection of synchrony and diachrony is not idiosyncratic to us; it originates with Halle (1962) and continues through such works as Kiparsky (1965), Chomsky and Halle (1968), and King (1969). More recently, it has been advocated by Lightfoot in several of his works, most notably Lightfoot (1979), and Culicover (1984, p. 118) has labeled such a view “reasonable.” If diachrony were not linked to properties of the grammars of a language to be found at individual synchronic points in time, then that language would have to be viewed as a disembodied entity that somehow exists apart from its use by speakers at such particular points in time. Indeed, one of the underlying tenets of diachronic linguistic investigation is the assumption that, as the surface forms of a language—the stuff from which grammars are constructed by speakers—are transmitted through time (i.e., across generations and/or peer groups consisting of members relatively close in age), aspects of such transmitted forms and their underlying grammars can be uncovered and can lead to meaningful comparisons between stages of a particular language.

We recognize that some linguists (especially variationists such as Bailey, 1973) deny the distinction between synchrony and diachrony, instead advocating for the study of language a single perspective which is claimed to be “dynamic.” With all due respect, we do not believe that this view is supported by either logical or empirical considerations. On the one hand, we take it as beyond question that, at any one moment, a given speaker has some particular linguistic system in his or her head—a synchronic grammar. The existence of such a system is not belied by the mere presence in it of variation; after all, a major thrust of modern sociolinguistics has been to show that variation is systematic. Hence synchrony indeed exists as a distinguishable phenomenon. On the other hand, it is indisputable that, as already stated, some language change arises via the transmission of linguistic phenomena between speakers of different generations or between lects spoken by speakers of the same generation. Hence diachrony also exists as a distinguishable phenomenon. In denying synchrony and diachrony, the view that there is only a panchronic or achronic dynamism in language suggests that there exist grammatical principles or mechanisms which direct speakers to change their languages in certain ways other than through cross-generational and cross-lectal transmission. To the best of our knowledge, however, there is absolutely

no evidence suggesting that this kind of asocial individual causation of linguistic change really exists. But such questionable devices can be dispensed with on the usual view, taken here, that language change occurs solely via two independently motivated entities: the present (synchrony) and time (a succession of presents, i.e., diachrony).

The interplay of synchrony and diachrony can be illustrated by a schematic example representative of numerous real cases. Consider a situation of the following sort: A linguistic stage in which a particular phenomenon can be analyzed as only phonologically conditioned is succeeded first by a stage where the same phenomenon is amenable to analysis with either phonological or morphological conditioning and finally by a stage in which morphological conditioning is an analytic necessity. In the second stage, *ex hypothesi*, neither analysis is favored over the other by any data. Consequently, it would seem that some synchronic grammatical mechanism, made available through universal grammar either as part of the language-acquisition device or as a general constraint on the form of individual grammars, must be posited in order to explain why a morphological analysis—actually a reanalysis of the earlier situation—is preferred and ultimately chosen at the third stage. Only if linguistic theory (via universal grammar) is suitably enriched so as to include the relevant grammatical mechanism can such a diachronic development be accounted for. In cases of this type, therefore, not only are diachronic examples directly relevant to the form of synchronic linguistic theory, but also synchronic linguistic theory becomes indispensable to the explanation of language change.

Given this conclusion, diachronic morphology obviously has no shortage of issues to explore, questions to address, and problems to solve. At the top of the agenda for research in this regard is the challenge presented by the common diachronic phenomenon of morphologization, alluded to in our schematic example. This phenomenon is frequently alleged to be widespread and thus certainly deserves a focused investigation that not only identifies real examples but also carefully defines the nature of the elements involved (e.g., what is meant by “morphological” and “phonological”).

By PHONOLOGICAL as applied to a rule, constraint, and so on, we mean a generalization which makes exclusive reference to phonological features (such as coronal, nasal, labial, strident, voiced, continuant, and/or phonological boundaries/domains (of syllable, word, phonological phrase, etc.)). By MORPHOLOGICAL we mean a generalization with any morphological and hence nonphonological feature(s); these include features which are morphosyntactic (e.g., [+dative] or [+3sg]), morphosemantic (e.g., [+agentive], for nouns), or morpholexical (e.g., [+ \bar{o} -stem]), as well as other, difficult-to-classify morphological features (see also Zwicky, 1986, on classifying feature types). MORPHOLOGIZATION, then, describes any transition (via dephonologization or desyntacticization) from a state in which a generalization is nonmorphological in nature to a state in which the corresponding generalization is

morphological in nature. DEMORPHOLOGIZATION [which could potentially occur via either (re)phonologization or (re)syntacticization] describes the opposite process. Our use of this latter term should be distinguished from that of Klausenburger (1976), who employed it to label a historical development whereby an already-morphological generalization becomes (more) lexicalized. For us, demorphologization in Klausenburger's sense constitutes nothing more than a subtype of morphologization, namely, greater (morpho)lexicalization. It is no accident that we group together morphology and the lexicon. It is universally recognized that there are intimate ties between these domains, and, in most current theories of grammar, the lexicon contains at least some morphological rules (see especially lexical morphology and phonology).

Two things make morphologization especially interesting. First, the diachronic phenomenon of morphologization is exemplified by the movement of syntactic phenomena into morphology as well as by the movement of phonological phenomena into that domain. Second, it is widely presupposed that these processes are virtually unidirectional, so that probably most linguists would agree that transitions into morphology are in fact the norm. On the other hand, movement out of morphology into phonology or syntax, demorphologization, is generally held to be rare or even nonexistent. In keeping with these views, most investigations of morphologization deal only with the how of that diachronic change and do not even mention the possibility of the existence of the opposite type of development, diachronic demorphologization.

In this chapter, we point out that, while instances of diachronic demorphologization are admittedly rare, they are nevertheless known to exist. In view of this fact, we submit that the more important question to be addressed in this regard is why diachronic morphologization occurs, and furthermore, why so often, whereas the converse direction of reanalysis is so (relatively) infrequent.

Our answer is that both the how and the why of diachronic morphologization (and, for that matter, demorphologization) can be understood only by assigning to morphology a more central position and role in grammar than has heretofore been done, even in approaches like the lexical morphology and phonology of Kiparsky, Mohanan, and others. That is, nothing short of a conception of language in which grammar, even syntax, is morphocentric can explain the facts and trends of diachronic morphology, and of much of diachronic phonology and diachronic syntax as well.

2. Diachronic Morphologization

The phenomenon and the frequency of historical shifts from both syntax and phonology into morphology are familiar enough that they do not need much in the way of detailed explanation. Here, in fact, we merely present a brief

listing of some representative cases. The classic example illustrating morphologization of an originally phonologically conditioned process is provided by Germanic umlaut. This phenomenon represents numerous different morphologizations in a variety of Germanic languages at a variety of different times in the course of their development, but for our present purposes these can all be brought together under a single rubric.²

Other such cases include the subpart of Grassmann's Law in Sanskrit which survives as part of the morphological processes of reduplication (see Sag, 1976; Schindler, 1976; Janda and Joseph, 1986), many of the consonant mutations in Celtic, and accent shifts in Modern Greek compared with their Ancient Greek counterparts (see Warburton (1970), where a pseudophonological account with a phonetically/phonologically unmotivated feature [+long] is used, as well as Bubenik (1979) and Joseph and Philippaki-Warburton (1986, Chap. 3)).^{3,4} The most solidly established examples of morphologization of phonology have been provided from within the tradition of Indo-European studies. Nevertheless, further cases from other language families can be found, although they are not as widely known and thus require more extensive discussion than can be presented here.⁵

As regards the morphologization of syntax, a familiar case concerns the development of person-agreement affixes from free pronouns in many Bantu languages as analyzed by Givón (1971), who formulated the now well-known slogan, "Today's morphology is yesterday's syntax." Similar instances of this kind of desyntactization include noun incorporation in Iroquoian (see Mithun, 1984, 1985) and the evolution of a synthetic future in Romance from a Late Latin analytic future with *habere* (see Benveniste, 1968; Fleischmann, 1982). Finally, the standard handbooks have made familiar yet other morphologizations of syntax, such as the Romance development of an adverbial suffix *-mente* out of a free word in Late Latin, as well as numerous parallel transitions from free words to derivational affixes in various Germanic languages (as for English/German *-hood/-heit*, *-less/-los*, etc.).

²The morphologization of umlaut in Germanic has been most extensively treated for High German (see Wurzel 1970, 1980; Robinson 1972, 1975; Janda 1982a,b, 1983a, and references there).

³This is most massively the case under the traditional analysis, e.g., that implicit in Lewis and Pedersen (1937). We are aware, by the way, that some of the Celtic facts can be given a phonological treatment. Still, this is possible only at the expense of assuming fairly abstract triggers, and there are other mutations in various Celtic dialects for which even such an abstract analysis cannot work and has therefore never been suggested. See, for example, Thomas-Flinders (1981) on lenition in the Scots Gaelic of Leurbost, Isle of Lewis.

⁴We take it as beyond argument that the mere manipulation of sound by some linguistic rule does not *ipso facto* render that rule phonological.

⁵For example, Holman (1985) presents consonant gradation in Finnish as a morphologized originally phonological process (though he argues that the process has further been "semasiologized"). An instance of desyntactizing morphologization from the history of Japanese is discussed by Vance (1982) (following traditional Japanese scholarship, although this analysis is disputed by Miller, 1985, pp. 140-141, 158n.2, 159n.9), and a similar example from Cantonese is provided by Wong (1982).

3. Diachronic Demorphologization

As we noted earlier, though, the opposite developments—both the syntacticization of a former morphological element or process and the phonologization of a once morphologically determined alternation—have also been argued to exist. All of the cases known to us, however, are controversial, a property which is not at all surprising, given that demorphologization is generally held to be a rare phenomenon. Accordingly, in this section, we present and discuss the facts of four such possible cases of demorphologization, limiting ourselves to those in which the facts are known to us in sufficient detail to allow a judicious consideration and evaluation of their merits. While it is clearly not possible to examine all reported instances of such a development, we nonetheless strongly believe that these examples are representative of the general situation to be found with instances of demorphologization. The cases in question—taken up in turn below and then reevaluated in Section 4—are the following: the conditions under which a prefix marking past tense appears in Ancient and Modern Greek, allomorphy in the Hittite quotative particle, the development of the English possessive ending, and the deaffixation of the Saame (Lappish) abessive morpheme.

In Ancient Greek, a prefix traditionally known as the “syllabic augment” served as one of the elements marking a verbal form for the past tense, the other possible elements being stem change, different endings, and a different stress pattern. The prefix in question was usually *e-*, though the prefixation process was occasionally realized differently under conditions irrelevant here. (1) lists some examples of regular augment-prefixation in Ancient Greek.

- (1) *paidéu-o*: ‘teach, 1sg present’ ~ *e-paidéu-on* ‘taught, 1sg imperfect’
lambán-ete ‘take, 2pl present’ ~ *e-láb-ete* ‘took, 2pl aorist’
lambán-ei ‘take, 3sg present’ ~ *é-lab-e* ‘took, 3sg aorist’

In some forms, though, the augment was the sole marker of past as opposed to present tense. That is, in such cases, none of the other possible marking devices happened to be present, as in (2), for example.

- (2) *paidéu-omen* ‘teach, 1pl present’ ~ *e-paidéu-omen* ‘taught, 1pl impf’
lambán-ete ‘take, 2pl present’ ~ *e-lambán-ete* ‘took, 2pl impf’

The augment, therefore, must be considered to be present in the underlying morphological structure of Ancient Greek past tense forms; furthermore, its occurrence there is not linked to any phonological feature(s).

Under one analysis of the occurrence of the same prefix in Modern Greek (see Kaisse, 1982, pp. 77–79), however, the augment is assumed to be a completely phonologically determined element, one which is present only on the surface and occurs only when it can be stressed. Because of the predictable antepenultimate placement of stress in certain types of past tense formations,

the augment apparently serves as a mere phonological placeholder for that stress. Thus, under this analysis, the augment occurs only when there is no syllable in a verb stem which can bear the necessarily antepenultimate stress—necessarily antepenultimate because the form at issue is by definition an appropriate past tense:

- (3) Underlying morphological form: /lav-a/ [+past] ‘took, 1sg’
 Antepenultimate past tense stress: [’ + lav-a]
 Phonological augment epenthesis: [é + lav-a] ‘I took’

The form *élava* can be contrasted with the 1pl form *lávame*, where no augment is needed because the combination of a bisyllabic stem (*lava-*) with a monosyllabic ending (*-me*) provides an antepenultimate syllable that can carry stress. Under such an analysis, then, the once purely morphologically conditioned rule of augment prefixation has become phonologized in Modern Greek.⁶

Similarly, the Hittite quotative particle, which introduces direct speech, has two forms: *-wa* before consonants and *-war* before vowels. According to one proposed etymology for this particle, Joseph (1981; see also Joseph and Schourup, 1982), this phonologically based alternation between *-wa* and *-war* derives from an originally morphological distinction. To wit, a Proto-Indo-European particle **-wo* (which would directly yield Hittite *-wa*) was contrasted with a variant form of the same particle which differed in its morphological makeup by having an additional adverbial (actually locative) suffix **-r*, their combination giving **-wor* (which would in turn directly yield Hittite *-war*). Here, too, a once-morphological difference appears to have been transformed into a matter of phonological conditioning.

An example of demorphologization via syntacticization has been discussed for the history of English by Janda (1980, 1981), who argues at length that, during the late Middle English period, the possessive inflectional affix (i.e., the genitive singular suffix *-(e)s*) was reinterpreted by at least some speakers as the reduced version of an independent form, the possessive pronominal determiner *his*. In this way there arose syntactic expressions like *John his book* (= [*John* [*his book*]]), where possession is indicated by a presumably clitic form of an underlyingly free word rather than a bound affix (as in *John's book* = [[*John*-s] *book*]). The construction with *his* in fact persisted well into the Early Modern English period, its gradual demise apparently being principally attributable to the concerted attacks of Latinizing prescriptive grammarians.

⁶Kaisse's analysis could be translated into more current terms by positing an empty prefix for the past consisting of a V-slot which can be stressed and which, if stressed, is spelled out as *e* (a default specification—other values are found) but which, if not stressed, is either deleted or simply not realized. Describing these facts in such terms does not change the basic thrust of an analysis of this phenomenon as apparent demorphologization, for there would still have been a change in the type of conditions under which the augment appeared: from purely morphological to more phonological (though see Section 4 for a reevaluation of this view).

A parallel case is provided by Nevis (1985b), who discusses the course of events by which the Saame (Lappish) abessive morpheme *taga* was demorphologized via its syntacticization from an affix to a clitic to a free word by speakers of the Northern Saame Enontekiö dialect. The form *taga* derives from an affixal sequence **pta-k-ek/h* consisting of caritive **pta* + lative **-k* + an extra lative suffix **-k* or **-n* (with epenthetic *-e-*); other Finno-Permic languages show reflexes of **pta-k* (without the extra lative suffix). One might think that Enontekiö Saame is archaic in having a reflex of **pta-k(-ek/h)* as a free word and that the other dialects and languages were the innovators here in developing a clitic or affix from an original free word or sequence of free words. Compelling evidence, however, supports the reconstruction of the entire protosequence in question as affixal. For one thing, in the vast majority of Saame dialects and in fact throughout Finno-Permic in general, the reflexes of **pta-k* are suffixal. Moreover, the sequence is clearly composed of two (or three, in the case of Northern Saame) morphemes, each reconstructible on its own, and the single-segment elements **-k* and **-n* simply could not have been independent words in the protolanguage. Finally, in most of the Finno-Permic languages, **pta* shows idiosyncrasies of combination—in particular, attachment as a case suffix to verbal stems—which are unpredictable and unexpected and thus unlikely to have occurred independently in each language. Thus it seems safest also to reconstruct affixal status for **pta* in the protolanguage.⁷

The most relevant fact for the matter at hand, though, is that, in all dialects of Saame, *(-)taga* has undergone deaffixation and has been reanalyzed as a true clitic (on this term, see Nevis, 1985a). In Enontekiö, however, *(-)taga* has further undergone decliticization, thereby gaining status as an independent word. In particular, it seems now to be a stressless postposition. (A similar case from Old Estonian is discussed in Nevis, 1987.)

4. A Reconsideration of Demorphologization Cases

The importance of these putative cases of demorphologization cannot be denied. However, they are only as strong as the data and interpretations upon which they rest. As it happens, though, at least some of these putative cases of demorphologization are not without problematic aspects and thus are subject to challenge concerning whether they truly constitute examples of demorphologization. It is significant that such is the case far more often with demorphologization examples than with morphologization examples (e.g., those in Section 2 above). In particular, this fact points up the difficulty of finding real examples of demorphologization and thereby attests to the rarity of the phenomenon. In what follows, we briefly indicate some of the problems faced by the proposed examples.

⁷It may well be that the origin of these protolanguage affixes is to be sought in free words in some preprotolanguage stage, but we know of no evidence requiring such a conclusion. For the directly reconstructible protolanguage stage, the affixal status of the morphemes in question seems assured.

In the case of the Modern Greek augment, the analysis given is based on an idealized version of the standard language. Due to decades of a diglossic situation within Greek, however, there are now—and have always been, to a greater or lesser extent—several verbs with unstressed augments that are borrowings from the “high”-style language but which are nonetheless in relatively common use. For example, the past tense of *prókite* ‘it is a question of, it is about to’ is commonly *e-prókito*, with an unstressed augment. Furthermore, many verbs occur with an augment (the so-called internal augment) even though they have a lexical prefix which provides enough syllables to allow the form to satisfy the antepenultimate-stress requirements of the past tense without epenthesis of the augment. For example, the past tense of *meta-frázo* ‘I translate’ (prefix *meta-* with bound verbal root *-fra(z)-* ‘(having to do with) speech or language’; see also *ek-frázo* ‘express,’ *frásis* ‘phrase,’ etc.) is commonly *met-é-frasa* ‘I translated,’ with an internal augment, and not, for many speakers, *metá-frasa*.⁸

Such facts make it clear that a strictly phonological solution for the Modern Greek augment cannot work, and consequently one cannot say that past tense augmentation in Greek has truly become phonologized. Moreover—and this bears directly on the issue of defining such terms as “phonologization” and “morphologization” in the first place (see Section 1)—even if the facts concerning the augment were such as to allow the phonological solution outlined in Section 2 to stand, the change in question would be a matter of a morphological process becoming not completely phonologically determined but instead only somewhat more phonological in nature. That is, the epenthesis rule would still apply solely in past tense forms and not generally, since antepenultimate stress is not called for everywhere in Modern Greek (as, for instance, with neuter nouns in *-ma*, e.g., *ónoma* ‘name, nom’ ~ *onómatos* ‘name, gen’ but *ríma* ‘verb, nom’ ~ *rimatos* ‘verb, gen’ instead of **éríma* ~ *rimatos*).⁹

⁸Forms such as *metá-frasa* do occur, but many speakers reject them as “unnatural” and favor the *met-é-frasa* type. See Mackridge (1985, pp. 182–187) for general discussion of the augment in Modern Greek and a consideration of the complex sociolinguistic factors involved in any individual’s choice of augmented versus unaugmented forms.

⁹Matters are similar with the case of the German perfect-participial prefix *ge-* (see e.g., Paul, 1917, pp. 276–279; Kiparsky, 1966, pp. 70–75). The Germanic perfective marker **ga-* (as in Gothic *ga-*), which essentially could appear on any verb form in any tense, was in Old High German restricted to marking perfect participles, as *gi-* (which became Middle High German *ge-*). Such participles lacked *gi-* only if they belonged to an inherently perfective verb or already contained certain other prefixes. By the Modern High German period, these conditions had been reanalyzed (and altered) so that *ge-* now always occurs prefixed to perfect participles except when the initial syllable of a verb stem to which it would otherwise be added is unstressed. This development clearly represents a phonologization of the rule(s) for the occurrence of a morphological element. But, as with (one account of) the Greek augment, the case of German *ge-* does not represent an instance of demorphologization in the sense developed here, since the relevant process—of *ge-* omission or deletion—remains a fact about a particular morpheme (or set of morphemes). That is, the rule for *ge-* has not been so phonologized as to become a morphemically/lexically free process of German sound structure. Rather, it has remained a morphological rule, albeit one with greater phonological conditioning.

The Hittite example is similar, but it has an added problem. Just as in the case of the Greek augment, the phonologization of the *-wa/-war* alternation is really just increased phonologicity of conditioning. It represents a shift in the direction of greater phonological determination for two allomorphs of a single lexical item and is not the result of a general phonological rule of intervocalic *r*-insertion at word boundary. Moreover, the case for demorphologization depends crucially on the etymology proposed above, which, it should be recalled, derives *-wa/-war* from **-wo/*-wo-r* (**wo* being the etymon of the particle found in Sanskrit *i-va* 'like, as if' and **-r* being the locative adverbial suffix also found in English *there, where*, and the like). As is well known, though, etymology is the most brittle of the linguistic sciences, and, as it turns out, there is another possible etymology for *-war*. Many scholars (e.g., Friedrich, 1952, s.v.) connect it with the Hittite verb *wer-ya-* 'say' (cognate with Latin *ver(bum)*, etc.) and take the *-wa* form to be a generalization of a sporadic *r*-loss process found elsewhere in the language. Under that proposal, there is no demorphologization, because the original difference between the two Hittite quotative morphs did not reside in their morphological makeup.

Finally, it must be noted that, when the common Middle English expression of possession by the *John his book* construction later fell out of use in Early Modern English, it gave way to a situation where the only way to express possession preminally was use of the phrasal affix *-s* (on this term and concept, see especially Nevis, 1985a, and earlier references there). This change, then, represents a kind of desyntacticizing remorphologization of the periphrastic possessive with full-word *his*, since the full sequence of changes was *-s* > *his* > *-s*.

These difficulties notwithstanding, we believe that demorphologization must be recognized as a possible type of linguistic change. In particular, there seems to be nothing standing in the way of accepting the Saame example, and it appears indisputable that some Middle English speakers did reanalyze their language's affixal-possessive construction in such a way as to express possession syntactically where speakers at earlier stages had done so morphologically. Thus, demorphologization does exist, after all.

5. Explaining the Preponderance of Morphologization Cases

Unobjectionable examples of this phenomenon are so few and far between, especially compared with the easily found examples of morphologization (see Section 2), that we must recognize a lopsided asymmetry between historical morphologization and historical demorphologization in grammatical change.

Perhaps more importantly, though, this lopsidedness is totally unexpected in any linguistic theory where there is no separate morphological (sub)com-

ponent, even in the lexicon—as in most generative theories until recently—or where phonology, morphology, and syntax are all accorded equal status in the overall organization of grammar.

As we noted at the outset of this chapter, we feel that this relative asymmetry can be accounted for by embedding a diachronic view of morphology in a synchronic theory of language where the various aspects of word formation and word structure, along with the lexicon, constitute the central component of grammar.

Synchronically, the best evidence for such morphocentricity comes from the fact that there is no aspect of grammar which interacts with all the others to the extent that morphology does. The connection of morphology with phonology via morphophonology is obvious, and the connection of semantics with morphology both in lexical entries and in morphological rules goes almost without saying. Much of syntax can actually be seen as concerning either the ordering and grouping of morphologically defined categories or the co-occurrence properties of various morphemes, especially affixes. Relevant here are such inflectional phenomena as case marking and agreement, as well as the correlation of different derivational affixes with different argument structures. Finally, even phonetics interfaces with word formation via such phenomena as sound symbolism and onomatopoeia.¹⁰

Rather than diagramming our conception of morphocentric grammar, we simply point out that the centrality of morphology in language is reflected in the fact that, of the various subparts of grammar, morphology alone may refer to all the other subparts in its rules and principles. Thus, analysts rarely comment when morphological rules refer to or manipulate all of semantics, syntax (categories, subcategories, configurations, etc.), phonology, and even pragmatics. But much recent work attempts to show that syntax is autonomous, that is, phonology-, semantics-, and even morphology-free. Furthermore, we maintain that a proper conception of phonology takes that realm to be morphology-free and syntax-free. This is because, on the one hand, sound-structure rules referring to morphological features are really morphological rules, while on the other hand, syntactic considerations are only indirectly relevant to phonology (insofar as they define phonological phrases and other related domains).

Against the claim that grammar is morphocentric, it might be objected that some languages (like Chinese) are said to lack morphology and that all languages participate in a great cycle of downgrading whereby analyticity and

¹⁰Recent work on sound symbolism and onomatopoeia, e.g., Ohala (1983), suggests that universal semantic associations must be posited for certain phonetic phenomena such as particular tonal/intonational pitches, vowel quantities, and consonantal places of articulation. This is so because the association of such meanings and sounds with one another is so cross-linguistically widespread as to be clearly nonaccidental and hence presumably part of universal grammar, at least as an unmarked tendency or default setting of some parameter.

syntactic expression give way to syntheticity and morphological expression, which themselves give way to analyticity and syntactic expression again, ad infinitum. Clearly, morphocentricity cannot be a linguistic universal if some languages now lack morphology or if all languages pass through stages where they lack and then regain morphology.

However, neither of these situations is actually the case. On the one hand, we know of no language that lacks both affixation and compounding; Chinese for example, certainly has compound morphology. Furthermore, clitics and free morphemes (or words) which structure sentences also seem to be present in all languages (like the Chinese enclitics discussed by Huang, 1985). On the other hand, the fact that downgrading seems to be constantly at work wearing away morphology—and provoking its replacement with syntactic means—at the same time that it converts syntax into morphology does not disprove the grammatical centrality of morphology. It is not as if syntax first decays into morphology, and morphology then eventually decays into nothing and thereby dies. Morphology is not a graveyard. Instead, it is more as if syntax feeds morphology, while morphology itself undergoes (greater) lexicalization which, for speakers of the world's languages, does not apparently resemble death so much as nirvana. And, since syntax continues to pass into morphology even as the latter undergoes lexicalization, morphology indeed remains as a central constant of grammar.

Of further relevance to our notion of a centrality for morphology in synchronic grammar is an evaluation of the opposite claim made by Roeper and Siegel (1978). These authors maintain that, in cases where morphological rules might come into competition with syntactic rules, as in their analysis of English compounding, the generativity and general freeness of syntactic rules lead them to prevail over even productive morphological or morpholexical rules. For Roeper and Siegel, this principle accounts for the absence of [adverb + noun] deverbal compounds of the type **beautifully dancing* (which would otherwise be predicted by their general morpholexical rules for English verbal compounds), since syntactic [adjective + noun] sequences are independently generated by the phrase structure rules for noun phrases and thus would block the morphological formation of the relevant compounds.

For us, such a principle would be directly at odds with the view of the role of morphology in synchronic grammars that we are espousing here. However, even if Roeper and Siegel's principle might work for the English case at hand—and note that other analyses have been proposed for English verbal compounds which do not need such a blocking of morphology by syntax¹¹—it

¹¹For example, for Selkirk (1982, p. 46 et passim), the absence of adverbs in compounds with final deverbal noun heads follows from a broader restriction excluding adverbs from noun compounds and certain other compound types as well. Furthermore, Allen (1978, 182n. 23) points out that Roeper and Siegel's use of syntax to block morphology effectively constitutes a transderivational constraint. To these considerations, we add two further criticisms. First, Roeper and Siegel's

cannot be universally valid. Joseph (1980) has shown that their principle is contradicted by developments in Medieval and Modern Greek involving adjectival compounds with *tough*-Movement semantics, for example, *efkoló-spastos* 'easy to break, easily broken' (cf. *éskolos* 'easy' and *spázo* 'I break'). These compounds have become widespread in Greek despite the availability of syntactically generated *tough*-Movement patterns and in fact seem to be spreading at the expense of the syntactic construction, to judge from the general avoidance by speakers of the syntactic patterns and their extremely low text frequency.

An even more powerful argument for assigning to morphology the central place which we believe it requires in synchronic grammars comes from certain recurrent types of diachronic developments. The diachronic evidence for morphocentricity comes not only from the numerous cases of morphologization already alluded to (Section 2), but also from such developments as the morpholexical particularization and fragmentation over time of umlaut in German (sketched briefly above but treated in more detail in Janda (1982a,b, 1983a; Joseph and Janda, 1986) and of Sanskrit reduplication. In what follows, we summarize our fuller treatment of the Sanskrit facts presented in Janda and Joseph (1986).

Both proto-Indo-European (in the standard reconstruction) and Sanskrit have reduplication in five verbal categories (present, perfect, and aorist tenses; desiderative and intensive secondary conjugations). Proto-Indo-European is usually reconstructed as having had relative unity within each reduplicated category (e.g., the vocalism in perfect reduplication was generally **e*, in present reduplication generally **i*, and few if any irregularities in its reduplicative formations). By contrast, Sanskrit has a variety of vocalisms within all reduplicated categories (although there is usually one default value for each category), as well as numerous highly particularized forms not even obviously reduplicative such as the perfect stems *u-va:c-* (for \sqrt{vac} 'speak'), *a:n-rdh-* (for \sqrt{rdh} 'thrive'), *ja-bhar-* (for \sqrt{bhr} 'bear'). Within Sanskrit, forms such as these latter can be explained only as particularized replacements for more regular forms (*u-va:c-* by lexicalization of a former sound change grown opaque, *a:n-rdh-* by analogy, *ja-bhar-* probably by contamination, etc.).

Such changes reveal a strong and constant tendency on the part of speakers to particularize formerly more general morphological processes as markers of more specific lexical and grammatical categories, and, in so doing, to make

principle would incorrectly predict that [adjective + noun] compounds like *blackbird* and *highchair* should be blocked by the existence of their (syntactically derived) phrasal equivalents (see also Joseph, 1980). Second, their use of syntax to block morphology runs directly counter to current assumptions about the "blocking" of syntax by morphology and the lexicon; e.g., Kiparsky (1983) argues that the nonexistence of the phrase **the day after today* is due to the lexical existence of *tomorrow*. This kind of blocking moreover provides further evidence for morphocentricity.

local generalizations over (unified) subsets of the totality of the relevant data.¹²

Under the usual generative assumption that language change is governed primarily by constraints of synchronic grammar, the above evidence regarding speakers' preference for particularized (i.e., morpholexical) analyses of reduplication and morphological processes in general requires that grammars be constructed so as to place a premium on morpholexical solutions to linguistic problems involving sounds as well as sentence structure.¹³

Clearly, much work is needed in order to transform our programmatic statements here into an elaborated representation of the notion MORPHOLEXICAL PREFERENCE within the valuation metric of a generative grammar. Still, the outlines of the mechanism and its consequences are clear. For example, the famous Maori case discussed by Kiparsky (1971) and Hale (1973) shows speakers disregarding an apparently obvious and simple purely phonological solution in favor of a fragmented morphological analysis involving considerable allomorphy. As a syntactic example, we cite the following: Like Modern German, Old English had case marking and a presumably base-generated double-object construction where indirect objects preceded direct objects. When the Old English case system was lost and, concomitantly, the use of prepositions was generalized, the continuing occurrence of nonprepositional indirect object + direct object sequences was apparently evaluated as much more marked and thus, on many synchronic analyses of Modern English, is now taken to be the result of (something analogous to) a Dative Movement transformation. However, this reanalysis clearly involved a morpholexical restriction, since it was basically not generalized beyond the then-existing stock of appropriate verbs in Old English (e.g., Latinate verbs are still resistant to Dative Movement alternations, so that **explain me the text* is unacceptable).

Unmistakable historical trends involving increased splintering of already-morphologized processes bespeak a tendency on the part of speakers to opt, in their internalized grammars, for analyses which focus on individual morphological and lexical elements, rather than alternative analyses which are

¹²As discussed by Janda and Joseph (1986) and Joseph and Janda (1986), fragmentation over time of affixation, and, in fact, of morphological processes in general, is also common. Regarding fragmented affixes, consider, e.g., English *-al/-ar* (as in *linear/lineal*) and the various *-ables* (as in *movable/survivable/comfortable/potable*), as well as German *-(e)n/-ern* and *er/-ler/-ner*. As for fragmented replacement processes, consider umlaut in German (Janda 1982a,b, 1983a) and in Rotuman (see Janda, 1983b, 1984; Hoeksema and Janda, 1985). Concerning fragmentation of both subtractions and permutations in morphology, consider the "incomplete-phase" apocope and metathesis also found in Rotuman (treated in the references just given).

¹³See Section 1. Note also that, on this assumption, language change occurs by innovations either in underlying/base forms or in rules, e.g., by addition, reordering, alteration, and/or loss. All of these phenomena obviously are subject to the constraints of synchronic grammars. However, our own view is that analyses couched in such terms must be strongly tempered by a sharper focus on the role of surface forms in triggering the reshaping of grammars.

generalized over broader, less idiosyncratic classes of grammatical elements (whether phonological or syntactic).

The explanation for this morpholexical preference may well have to do with the apparent fact that, in their dealings with language, speakers are severely constrained in scope by a highly limited window determining how much grammatical and lexical structure they can consider at one time. If speakers do not have available to them pencils, papers, and notebooks full of charts and tables for performing morphological and general grammatical analysis, we suggest that linguists should at least think twice about proposing descriptions and theories arrived at through a heavy reliance on the aforementioned tools.¹⁴ Instead, imposing a more lexically based limitation on morphological analysis and reanalysis seems to yield exactly the right predictions regarding both morpholexical fragmentation and—to return the focus to our more central concern—morphologization.¹⁵

We believe that finding one or more answers regarding the asymmetry which exists between historical morphologization and historical demorphologization depends largely on asking the right question. In the morphological literature, most attention has been focused on the important issue of how morphologization occurs diachronically, for example, by such mechanisms as the obscuring of phonological conditioning (for such processes as umlaut) or else just simple reanalysis (as in the case of agreement markers). Nevertheless, an even more important question would seem to concern why it is that both "lower-level" phonological processes and "upper-level" syntactic constructions (and/or processes) so often have morphology as the ultimate target of their diachronic development.¹⁶ We know of no current conception

¹⁴Appearances to the contrary, we deny that this suggestion concerns only the methodology and practice of linguists and so is irrelevant to linguistic theory and analysis. After all, linguistic analyses and theories are usually based on the full range of available relevant data in a language. But if speakers do not or cannot consider more than a limited window of data, then linguists' deviation from speakers in this regard is not only methodologically ill-conceived but also analytically and theoretically so. If children are indeed "little linguists" but differ from adult, professional linguists in not always considering the totality of available and relevant linguistic data, then surely it is the members of the latter group who should change their theory and practice.

¹⁵This centrality of morphology (with its concomitant of frequent morphologization) can thus be overcome, via demorphologization, only by massive accidental convergences of linguistic circumstances. We in fact know of no valid cases where a morphological process was completely (re)phonologized (i.e., so as to become a morphemically/lexically free process of some language's sound structure) and thereby completely demorphologized. Furthermore, the cases of (re)syntacticizing demorphologization in Middle English and in Enontekiö-Saame discussed earlier seem to have resulted, respectively, from accidental homophony of an affix (ME *-(e)s*) with a preexisting free word (ME *his*) and from a rather convoluted intersection of the results of certain sound changes (including loss of vowel harmony) with particular phonotactic restrictions. Given the number of unsystematic coincidences required to set the stage for such demorphologizing reanalyses, it is not surprising that demorphologization is so rare.

¹⁶Our suggestion that the frequency of morphologization is due to morphology's status as the nexus of all grammar represents both a convergence with and an expansion on the semiotically based proposals of Dressler (1985).

of word formation and grammar overall from which this situation could be predicted. But in a morphocentric theory, one in which morphology occupies a central place in the grammars of particular languages and hence in the underlying architecture of universal grammar, it is only to be expected that the morphological component should come to be, via dephonologization and desyntacticization, the final resting place of so many different kinds of originally nonmorphological linguistic phenomena.

Acknowledgments

The two authors' respective contributions to this chapter have been equal in every respect; the nonalphabetical order of the names here is dictated by our practice of following an onomastic "alternation condition" in the various results of our collaboration as they appear.

We would like to thank Wolfgang Dressler, Paul Kiparsky, and Jürgen Klausenburger for their helpful comments at the oral presentation of this chapter. Keith Johnson and Brad Getz also deserve thanks for their technical assistance in making that presentation possible.

References

- Allen, M. (1978). *Morphological Investigations*, Ph.D. dissertation, University of Connecticut.
- Bailey, C.-J. (1973). "Variation and Linguistic Theory," Center for Applied Linguistics, Arlington, VA.
- Benveniste, E. (1968). Mutations of linguistic categories. In "Directions for Historical Linguistics. A Symposium." (W. Lehmann and Y. Makiel, eds.), pp. 83-94. University of Texas Press, Austin, TX.
- Bubenik, V. (1979). Historical development of the Ancient Greek accent system, *Indogermanische Forschungen* 84, 90-106.
- Bybee, J. (1985). "Morphology. A Study of the Relation Between Meaning and Form." Benjamins, Amsterdam. (*Typological Studies in Language*, 1.)
- Chomsky, N., and Halle, M. (1968). "The Sound Pattern of English." Harper, New York.
- Culicover, P. (1984). Review article [on] "The Logical Problem of Language Acquisition," L. Baker and J. McCarthy, eds. *Language* 60, 115-122.
- Dressler, W. (1985). "Morphology: The Dynamics of Derivation." Karoma, Ann Arbor, Michigan. (*Linguistica Extransea Studia* 12.)
- Fleischmann, S. (1982). "The Future in Thought and Language: Diachronic Evidence from Romance." Cambridge Univ. Press, Cambridge. (*Cambridge Studies in Linguistics* 36.)
- Friedrich, J. (1952). "Hethitisches Wörterbuch. Kurzgefasste kritische Sammlung der Deutungen hethitischer Wörter." Winter, Heidelberg.
- Givón, T. (1971). Historical syntax and synchronic morphology: An archaeologist's field trip. *CLS* 7, 394-415.
- Hale, K. (1973). Deep-surface canonical disparities in relation to analysis and change: An Australian example. *Current Trends in Linguistics* 11, 401-458.
- Halle, M. (1962). Phonology in generative grammar. *Word* 18, 54-72.
- Hoeksema, J., and Janda, R. (1985). *Implications of Process-Morphology for Categorical Grammar*. Paper presented at the Conference on Categorical Grammars and Natural Language Structures; Tucson, AZ, May 31-June 2.
- Holman, E. (1985). On the semasiologization of phonological rules: The semiotic evolution of Finnish consonant gradation. *ICHL* 6, 281-290.
- Huang, C.-R. (1985). *Chinese Sentential Particles: A Study of Cliticization*. Paper presented at the Annual Meeting of the Linguistic Society of America; Seattle, WA, December 27-30 (abstract published in *Meeting Handbook* 18).
- Janda, R. (1980). On the decline of declensional systems: The overall loss of OE nominal case-inflections and the ME reanalysis of *-es* as *his*. *ICHL* 4, 243-252.
- Janda, R. (1981). A case of liberation from morphology into syntax: The fate of the English genitive marker *-es*. "Syntactic Change (Natural Language Studies 25)" (B. Johns and D. Strong, eds.), pp. 59-114. Department of Linguistics, University of Michigan.
- Janda, R. (1982a). Of formal identity and rule-(Un)collapsibility: On lost and found generalizations in morphology. *WCCFL* 1, 179-197.
- Janda, R. (1982b). *Umlaut and Morphologization*. Unpublished paper, University of Arizona.
- Janda, R. (1983a). Two *Umlaut*-heresies and their claim to orthodoxy. *Coyote Papers (Working Papers in Linguistics, University of Arizona)* 4, 59-71.
- Janda, R. (1983b). Morphemes aren't something that grows on trees: Morphology as more the phonology than the syntax of words. *CLS* 19 Parasession (Interplay), 79-95.
- Janda, R. (1984). Why morphological metathesis rules are rare: On the possibility of historical explanation in linguistics. *BLS* 10, 87-103.
- Janda, R., and Joseph, B. (1986). One rule or many? Sanskrit reduplication as fragmented affixation. *Proceedings of the Second Eastern States Conference on Linguistics [ESCOL '85]*, OSU, Department of Linguistics. Columbus. pp. 103-119. [Revised version published in *Ohio State University Working Papers in Linguistics* 34(1987).]
- Joseph, B. (1980). Lexical productivity versus syntactic generativity, *Linguistic Inquiry* 11, 420-426.
- Joseph, B. (1981). Hittite *iwar*, *wa(r)* and Sanskrit *iva*. *Zeitschrift für vergleichende Sprachforschung* 95, 93-98.
- Joseph, B., and Janda, R. (1986). *E Pluribus Unum: The Rule Constellation as an Expression of Formal Unity Amidst Morphological Fragmentation*. Paper presented at the Milwaukee Morphology Meeting (Fifteenth Annual UWM Linguistics Symposium), April 4-6.
- Joseph, B., and Philippaki-Warbuton, I. (1986). "Modern Greek." Croom Helm, London.
- Joseph, B., and Schourup, L. (1982). More on *(i)wa(r)*. *Zeitschrift für vergleichende Sprachforschung* 96, 56-59.
- Kaisse, E. (1982). On the preservation of stress in Modern Greek. *Linguistics* 20, 59-82.
- King, R. (1969). "Historical Linguistics and Generative Grammar." Prentice-Hall, Englewood Cliffs, NJ.
- Kiparsky, P. (1965). *Phonological Change*. Ph.D. dissertation, MIT.
- Kiparsky, P. (1966). Über den deutschen Akzent. In "Studia Grammatica VII. Untersuchungen über Akzent und Intonation im Deutschen," pp. 69-98. [East] Berlin: Akademie-Verlag (Deutsche Akademie der Wissenschaften zu Berlin, Arbeitsstelle Strukturelle Grammatik).
- Kiparsky, P. (1968). Linguistic universals and linguistic change. In "Universals in Linguistic Theory" (E. Bach and R. Harms, eds.), pp. 170-202. Holt, New York.
- Kiparsky, P. (1971). Historical linguistics. In "A Survey of Linguistic Science" (W. Dingwall, ed.), pp. 577-649. Univ. of Maryland Linguistics Program, College Park, MD.
- Kiparsky, P. (1982). "Explanation in Phonology." Foris, Dordrecht.
- Kiparsky, P. (1983). Word formation and the lexicon. *Proceedings of the 1982 Mid-America Linguistics Conference*. Lawrence, KA: University of Kansas Department of Linguistics pp. 3-29.
- Klausenburger, J. (1976). (De)morphologization in Latin. *Lingua* 40, 305-320.
- Lewis, H., and Pedersen, H. (1937). "A Concise Comparative Celtic Grammar." Vandenhoeck & Ruprecht, Göttingen.
- Lightfoot, D. (1979). "Principles of Diachronic Syntax." Cambridge Univ. Press, Cambridge.
- Mackridge, P. (1985). "The Modern Greek Language." Oxford Univ. Press, Oxford.
- Miller, R. (1985). Externalizing internal rules: Lyman's Law in Japanese and Altaic. *Diachronica* 2, 137-165.
- Mithun, M. (1984). The evolution of noun incorporation. *Language* 60, 847-894.

- Mithun, M. (1985). Diachronic morphologization: The circumstances surrounding the birth, growth, and decline of noun incorporation. *ICHL* 6, 365-394.
- Nevis, J. (1985a). *Finnish Particle Clitics and General Clitic Theory*. Ph.D. dissertation, Ohio State University. [Published as *Ohio State University Working Papers in Linguistics* 33(1986).]
- Nevis, J. (1985b). *Decliticization and deaffixation in Saame: Abessive taga*. Paper presented at the Annual Meeting of the Linguistic Society of America; Seattle, WA, December 27-30. [Published in *Ohio State University Working Papers in Linguistics* 34(1987), 1-9.]
- Nevis, J. (1987). Decliticization in Old Estonian. *Ohio State University Working Papers in Linguistics* 34, 10-28.
- Ohala, J. (1983). Cross-language use of pitch: An ethological view. *Phonetica* 40, 1-18.
- Paul, H. (1917). "Deutsche Grammatik. Band II. Teil III: Flexionslehre." Niemeyer, Halle an der Saale.
- Robinson, O. (1972). *Synchronic Reflexes of Diachronic Phonological Rules*. Ph.D. dissertation, Cornell University.
- Robinson, O. (1975). Abstract phonology and the history of umlaut. *Lingua* 37, 1-29.
- Roeper, T., and Siegel, M. (1978). A lexical transformation for verbal compounds. *Linguistic Inquiry* 9, 199-260.
- Sag, I. (1976). Pseudosolutions to the pseudoparadox: Sanskrit diaspirates revisited. *Linguistic Inquiry* 7, 609-622.
- Schindler, J. (1976). Synchronic and diachronic remarks on Bartholomae's and Grassmann's Laws. *Linguistic Inquiry* 7, 622-637.
- Selkirk, E. (1982). "The Syntax of Words." MIT Press, Cambridge, MA. (*Linguistic Inquiry Monographs* 7.)
- Thomas-Flinders, T. (1981). Initial Lenition in Celtic: Evidence for Inflection as a Phonological Process. *Inflectional Morphology: Introduction to the Extended Word-and-Paradigm Theory* (UCLA Occasional Papers #4: Working Papers in Morphology), pp. 72-83.
- Vance, T. (1982). On the origin of voicing alternation in Japanese consonants. *Journal of the American Oriental Society* 102, 333-341.
- Warburton, I. (1970). Rules of accentuation in classical and modern Greek. *Glotta* 48, 107-121.
- Wong, M. (1982). *Tone Change in Cantonese*. Ph.D. dissertation, University of Illinois.
- Wurzel, W. (1970). *Studia Grammatica VIII. Studien zur deutschen Lautstruktur*. [East] Berlin: Akademie-Verlag (Deutsche Akademie der Wissenschaften zu Berlin, Arbeitsgruppe Strukturelle Grammatik).
- Wurzel, W. (1980). Ways of morphologizing phonological rules. In "Historical Morphology." (J. Fisiak, ed.), pp. 443-462. Mouton, The Hague [*Trends in Linguistics, Studies and Monographs* 17].
- Zwicky, A. (1986). *Phonologically Conditioned Agreement and Purely Morphological Features*. Paper presented at the Milwaukee Morphology Meeting (Fifteenth Annual UWM Linguistics Symposium), April 4-6, University of Wisconsin-Milwaukee, Milwaukee, WI.