

Introduction

As its title suggests, this book presents the major points of a theory of morphology and some reasons for viewing word structure in a particular way. Readers may legitimately wonder about whether the theory in question ought to bear a distinctive name, and if so, why this one: *A-Morphous Morphology*. In that connection, consider the following (probably apocryphal) story that was current around the MIT Linguistics Department when I was a student there.

One day one of the graduate students, who may as well remain nameless for present purposes, was talking with the chairman, Morris Halle, and asked him “What must I do to become rich and famous?” Morris’s reply: “Go forth and name things!” True or not, this undoubtedly represents a valid observation about the socio-politics of linguistics. Anyone who has been in the field for any length of time knows a number of cases in which the credit for some principle or theoretical position, at least in the general perception of linguists, went not to its originator(s) (insofar as it is possible to be clear who that might be), but rather to whoever first called it a principle, or a theory, and gave it a memorable name. More seriously, perhaps, we can take Morris’s observation as the recognition that principles and theories come into clear focus when their unity is recognized (or at least asserted) and a distinctive and unitary way is provided by which to refer to them. In that spirit, the theory described here has to have *some* name; and for a variety of reasons ‘A-Morphous Morphology’ seems appropriate.

It is to be hoped, however, that the view to be developed in the following chapters will prove to be a coherent one, so that the reader will not be tempted to see the name as denoting merely an amorphous or unformed theory of morphology. As opposed to that interpretation, there are several more systematic ways in which the word ‘a-morphous’ is intended to be appropriate. The first of these is the following: since it emphasizes the notion of morphology as the study of relations between words, rather than as the study of discrete minimal signs that can be combined to form complex words, it is literally a morphological theory that dispenses with morphemes. It is thus not a theory without form, but rather one without morphs.

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On the other hand, the view of word structure as a system of rule-governed relations between words leads to the elimination of much of the apparatus of word-internal boundary elements and constituent structure common in morphological discussions. To take seriously the idea that there is a structured system of morphological rules within a language is to imply an organization for this system; and much of what is usually thought to motivate word-internal structure of a non-phonological sort can instead be viewed as a consequence of this organization of the grammar. The present view is thus a theory that minimizes the amount of (non-phonological) form that is assigned to words.

Finally, the theoretical position taken here stresses the fact that word structure can only be understood as the product of interacting principles from many parts of the grammar: at least phonology, syntax, and semantics in addition to the 'lexicon.' As such, this is not a theory that deals with the content of one box in a standard flowchart-like picture of a grammar, but rather a theory of a substantive domain whose content is widely dispersed through the grammar. Much current work assumes that a part of grammar is only a meaningful object of study insofar as it corresponds to an isolable 'component of the grammar,' usually enshrined in such a box. In contrast, the view taken here is that it is the existence of coherent principles with determinate scope that defines a grammatical domain, regardless of whether that scope can be localized in the way conventional pictures assume.¹

The task of a theory of morphology is to bring order and coherence to our understanding of the way words are composed and related to one another. We therefore begin by posing some basic questions about what motivates our opinions about the internal structure of words, and how the theory of word structure has arisen. If there is any point to having such a theory, however, it must be because there are entities or principles identifiable within it which do not simply constitute additional cases of what goes on throughout the grammar of a language. We therefore continue in chapter 2 by posing the question of whether morphology constitutes a serious and independent object of study at all. After all, as discussed in chapter 1, much early work within the generative paradigm argued that the two subparts of structuralist morphology, the study of allomorphy and that of morphotactics, were simply proper subparts of phonology and of syntax, respectively, without any autonomous status.² The discerning reader will note that there are still twelve

¹ I should like to record here my debt to the late Osvaldo Jaeggli, who brought the importance of this issue to my attention with particular force in dealing with the 'place' of morphology in grammatical theory.

² Actually, much structuralist work also accepted that syntax and morphotactics were essentially the same thing, though this tradition saw syntax as the natural extension of morphotactics, rather than the reverse. The distinctness of phonology from the description of allomorphy, in contrast, was a major point of principle in at least American structuralist theories.

more chapters of the book to go, and so will not be surprised to find that we argue for the premise that there are indeed distinct principles that govern the form of words. We then examine in chapter 3 the justification behind what seems at first glance the only coherent way to talk about word structure: as the analysis of words into constituent minimal signs (in a Saussurean sense) called morphemes. We will argue that, whatever its surface plausibility, the view of words as built up out of morphemes is fundamentally flawed, and should be replaced by a rather different conception.

After establishing the integrity of the study of word structure and some of its primitive terms, we then proceed to examine its interaction with other parts of a complete formal grammar. First, in chapter 4, we discuss the extent to which morphology and syntax interact, and thus the form in which the Lexicalist Hypothesis (originating in Chomsky 1970) can be maintained. An important issue in this connection is the nature of the interface through which the syntax and the morphology interact. The notion of a Morphosyntactic Representation serving as the content of the terminal nodes of syntactic structures is developed, providing a narrow but non-trivial characterization of this interface. In that connection, a set of inflectional processes in natural languages is delimited and discussed. After the various aspects of a theory of inflection have been laid out in chapter 5, the proposed theoretical apparatus is exemplified in chapter 6 through an analysis of two somewhat different complex inflectional systems: first that of the principal member of the Kartvelian family, Georgian, and secondly that of the Algonquian language Potawatomi. Despite the differences between them, both of these languages provide an opportunity to pursue the virtues of a morphological answer to a morphological question. Both display inflectional patterns that some authors have taken as evidence of syntactic inversion, despite the absence of genuinely syntactic arguments for such restructuring in either case. We will see that within the framework of the present work, an alternative is available that ascribes the morphological complexity involved to the right part of the grammar. This chapter is quite dense, and may perhaps best be skipped on a first reading.

In contrast to inflection, which involves rules sensitive to Morphosyntactic Representations within Phrase Markers, derivational processes are argued in chapter 7 to correspond to Word Formation Rules that operate entirely within the lexicon (in one narrow but coherent sense of this term) of a language. The structure and inter-relation of these rules is introduced on the basis of typical exemplars.

A general issue in the treatment of word structure is of course the definition of 'words.' If we took this notion to have a primarily phonological basis (and there obviously *is* a phonological sense of 'word,' even if this is not the only one or even the one most relevant to morphology), this would have the

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consequence that the class of elements traditionally called *clitics* should fall within the scope of principles of word structure. It is necessary, therefore, to explore the relation between clitics and morphology *sensu stricto*. In chapter 8, we argue that a significant class of clitics (the ‘special clitics’ in roughly the sense of Zwicky 1977) is in fact closely analogous to word internal morphology, as recognized in the claim that these elements are ‘phrasal affixes.’ The consequences of this analysis turn out to be quite extensive.

We then turn to the relation between word structure and the principles of phonological form. In chapter 9 we outline the reasons for accepting a version of the view of how morphology and phonology interact that incorporates some (but not all) of the theory of Lexical Phonology (see Kiparsky 1982a; Kaisse and Shaw 1985). In developing the basis for that view, we explore a related question: the status of non-phonological boundary elements in phonological representations. We conclude that an adequate theory of word structure and phonology can probably dispense with these entirely, reducing the phenomena which are said to motivate them to principles of the phonology.

The other sort of non-phonological structure which is commonly assigned to words is an organization of their constituent morphemes into a sort of Phrase Marker. The work of Selkirk (1982), Di Sciullo and Williams (1987), and many others has taken the description of such structures to be in some ways the fundamental problem of morphological theory. As would be expected, though, a theory that questions the status of morphemes in linguistic analysis has little room for such a construct, and we argue in chapter 10 that the operation of Word Formation Rules does not in general result in building structure of a non-phonological sort. There *is*, however, motivation for assigning internal constituent structure to the traditional class of *compound* (or in a more general sense, *composite*) words, and a class of Word Structure Rules (largely, but not entirely, distinct from the Word Formation Rules) is discussed in chapter 11.

Having characterized the principles of word structure and their relation to other parts of the grammar, we turn finally to three ways in which these principles can be viewed from the outside. The question of how much diversity languages can exhibit is typically posed in terms of a framework for classifying them typologically. Most current work on linguistic typology concentrates on syntactic parameters, but the development of reasonably comprehensive pictures of morphology raises the question of whether a coherent typological framework can be presented in this area as well. Starting from the most fine-grained of the pre-generative approaches to typological issues in word structure, the proposals of Sapir in his *Language* (1921), we ask in chapter 12 how the properties of traditional typological interest can be formulated in terms of the present framework. We conclude that in fact there is no

substantive difference between a significant ‘typology’ of linguistic systems in a given domain and an explicit, articulated ‘theory’ of that domain.

We then consider in chapter 13 the ways in which morphological structure may be the object of linguistic change, and the light that morphological change may shed on the principles of synchronic morphology. Some consequences of the view taken here of synchronic morphological systems for our understanding of language history are explored. Finally, in chapter 14 we discuss the problem of how knowledge of morphological structure of the sort this theory attributes to a speaker might be the basis of actual linguistic performance in the task of lexical access and word recognition. This is posed in computational-linguistic terms, but it is argued that the problems (and their solutions) which arise in writing a computer program to ‘parse’ morphological structure are more generally revealing of the principles of human linguistic ‘computations.’

There are a number of aspects of the position developed here that are either somewhat novel or frankly iconoclastic. These include: the general rejection of the utility of the classical morpheme for morphological analysis; the claim that properties of individual lexical items (beyond their inflectionally relevant characteristics) are not available to syntactic operations, since lexical insertion takes place (effectively) at S-structure rather than at D-structure; the resolute assimilation of special clitic phenomena to morphology; and the claim that words do not in general have an internal morphological structure for phonological and morphological rules to refer to. Other points, such as the maintenance of a significant distinction among inflection, derivation, and compounding, may strike some as verging on the atavistic. Nonetheless, these things do all seem to form “un système où tout se tient,” and I hope that the way in which the whole seems to follow from the nature of the facts of word structure in natural language will overcome the reader’s fastidiousness about some individual details.

As will be clear from the above summary, there are many areas of inquiry concerned with word structure that are not explicitly addressed here. For example, such recent work as that of Dressler *et al.* (1987) and other representatives of the point of view of ‘Natural Morphology,’ as well as that of Bybee (1985), is not directly mentioned below. Much of this work is concerned not with the place of morphological principles in an explicit grammar but rather with principles that determine more or less preferred ways in which languages express particular categories, and with the substance of those categories. There are no doubt real and interesting concerns to be addressed in these areas, but they are not those of the present book. On the other hand, there are a number of other authors who have developed positions similar in many ways to that presented here (see, for instance, the recent work

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of Mark Aronoff, Robert Beard, Arnold Zwicky, and others): the detailed ways in which the present view resembles and/or differs from those others will not be addressed except to the extent necessary to make clear just what our position is. Other deficiencies of coverage could be cited as well: it is an interesting commentary on the recent reawakening of interest in the structure of words that, whereas twenty years ago a survey of generative work in morphology could probably have been given fairly within the compass of a journal article, no single book can now hope to do justice to all that is going on today. Indeed, the pace of development of current work has led to the unpleasant circumstance that I cannot address the relevant material as quickly as it appears. To attempt to do so would postpone indefinitely the appearance of a book that has already been too long in gestation. I can only hope that the positions taken here are well enough developed to serve as the basis of some discussion. After all, in morphology (as in other areas of grammar), we never do get to declare that matters are sufficiently wrapped up that we can go to the beach.

1 *The study of word structure*

The object of study in morphology is the structure of words, and the ways in which their structure reflects their relation to other words – relations both within some larger construction such as a sentence and across the total vocabulary of the language. Traditional grammars saw the study of words and their relations as absolutely central to an understanding of the workings of language. The analysis of word structure was, in fact, the context in which most of the problems we now call ‘syntax’ and ‘phonology’ arose, and as such it is probably no exaggeration to treat morphology as the foundation of traditional linguistics.

During the past 125 years or so, a concern for morphology has been particularly characteristic of the “mature” phase of various theoretical currents in the study of language. For example, the early excitement and sense of revolution associated with neogrammarian work (and more generally, with historical Indo-European studies) arose from novel ideas about phonological structure and change; but subsequent developments brought attention back to essentially morphological questions in the work of de Saussure, and later Hjelmslev, Kuryłowicz, and Benveniste; and it is arguable that the most active continuation of that paradigm (in the work of Calvert Watkins, the late Warren Cowgill, and their colleagues and students) focuses most clearly on morphology.

Similarly, synchronic structuralist theory (especially in the United States) began by dropping the question of word structure – indeed, denying that there was anything of interest to study there – and concentrating on phonology to the exclusion of all else. Later, though, when the basic results of the ‘phonemic’ approach to phonology were considered to have been achieved, the methods developed there were applied to the study of morphology. Seen as the consolidation of insights already achieved in phonology, morphological issues gradually assumed a more and more central position in later structuralist discussion, in the work of Harris, Hockett, Nida, and others.

The same development from an initial lack of interest in morphology to the (re)discovery that problems of word structure have a character and interest of their own can be identified in the relatively short history of generative

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linguistics since the 1950s. As we will discuss below, early generative views (typified by Chomsky 1957 or Lees 1960) assigned the internal arrangement of all linguistic elements within larger structures to the syntax, whether the structures involved were above or below the level of the word. The program of classical generative phonology, as summed up in Chomsky and Halle 1968, attempted in complementary fashion to reduce all variation in the shape of a unitary linguistic element to the effects of a set of phonological rules operating on a common base form; and this effectively reduced the (morphological) scope of the study of allomorphy to the listing of arbitrary suppletions. With nothing of substance to do in morphology, generative linguists had to become either syntacticians or phonologists.

By the early 1970s, however, both of these reductive attacks on morphology were in retreat. The program of generative semantics, within which 'syntactic' operations were responsible for organizing even submorphemic semantic constituents into larger structures, brought forth a reaction which was largely focused on the "Lexicalist Hypothesis," according to which words were to be treated as minimal, indivisible entities from the point of view of the syntax. The seminal work in establishing the importance of this claim was Chomsky 1970, though the actual assertion of that work was considerably more modest than its effect on the field would suggest, as we will see in a later chapter. Acceptance of the Lexicalist Hypothesis, however, brought with it the realization that if the syntax cannot combine morphemes into words, some other, independent mechanism must be available to do so. This re-establishment of the charter of the field of morphology was taken up in Halle 1973, the first work to establish the outlines of a generative approach to morphology as a distinct discipline, and Jackendoff 1975, where the relation between the lexicon and the syntax was made explicit.

The 1980s saw a growth of interest in morphology *per se* that can properly be called explosive. A number of (relatively) explicit theories of this part of grammar have emerged, and both syntacticians and phonologists have found it necessary to concentrate on the differences, as well as the similarities, between the proper domains of their work and that of morphology. Virtually everyone working in the general framework of generative grammar, indeed, would probably agree now that morphology is a distinguishable and legitimate object of study in linguistics. Whether it thereby constitutes a separate 'component' of a grammar is an issue of theoretical interest in itself, but the potential distinctness of morphological principles and vocabulary from those of phonology, syntax, and semantics is an area of active investigation rather than a mere logical possibility.

In the first section below, we lay out the basic question of morphological analysis and trace the intuitive path toward a set of apparently inevitable

1.1 How are words composed? 9

assumptions about word structure. Much of the remainder of this book, however, will be devoted to arguing that these are based on a series of inappropriate reductions and idealizations, and that morphological theory ought actually to have a rather different character than is commonly assumed.

The first issue to be confronted in any discussion of word structure is of course what sort of things these 'words' are whose structure is in question. In section 1.2 we take note of this issue, and say something about one class of phenomena – those associated with 'clitics' – which at first glance pose a serious problem for any coherent picture of word structure as a delimited domain within grammar. We will have more to say about clitics in chapter 8, but at this point it will suffice to observe that the scope of such phenomena can be delimited in a relatively uncontroversial way, and that their main import is the demonstration that it is words as grammatical, rather than as phonological, entities in which we are interested.

1.1 How are words composed?

The question of what words are made up of is of course the basic problem in linguistic morphology. The immediate, and probably the most obvious, answer is the following: words are made up on the one hand of sounds, on the other hand of meanings, and they are essentially (and perhaps irreducibly) constituted by the relation they establish between sound and meaning. In fact, we will eventually argue (in chapter 10 below) that this first answer is indeed the correct one, but in order to get to that point we will have to pass by way of a number of alternatives.

The picture of words as direct associations between the meanings they express (their *signifiés*) and the sounds through which they express those meanings (their *signifiants*) is of course the familiar picture of Ferdinand de Saussure's minimal sign, represented graphically as in figure 1.1. The unity of sound and meaning in the sign was the fundamental point of de Saussure's theory of language as a semiotic system (see de Saussure 1974; Anderson 1985b).

When we consider words that are a little more complicated than the sign in figure 1.1, however, it quickly becomes clear that there is more to be said than is made explicit there. Consider a word like *discontentedness*, for example. We might explicate its meaning as something like "the state of being discontented." This involves appeal to the meaning of *discontented*, which we could then explicate in its turn as something like "characterized by notable discontent (N)." Again, the meaning involves reference to that of another form, the Noun *discontent*, whose meaning is something like "the opposite of content." This Noun, in turn, should probably be regarded as based on

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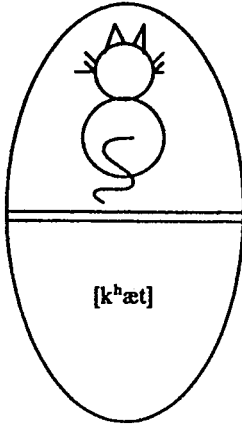


Figure 1.1 A Saussurean minimal sign

the Adjective content “satisfied.” There are thus several layers of reference to meaning, rather than a single homogeneous association of a spoken form with some semantic content.

The point made by such an example is the following. At each stage in accounting for the meaning of *discontentedness*, we disengage a part of the sense and associate it with the relation between one word and another (presumably more ‘basic’) one. It will certainly not have escaped the reader’s notice that in each case the other word is one whose form is included in that of the one being defined, in addition to their relation in meaning. This suggests, in fact, that there is a systematic connection between **proper subparts** of a word’s form and proper subparts of its meaning. We might assign *discontentedness* a representation such as that in (1) below, where (1a) indicates the decomposition of form and (1b) indicates the parallel analysis of meaning:

- (1) a. $[_N [_A [_N \text{dis}[_N [_A \text{content}]\theta]]\text{ed}]\text{ness}]$
 b. $[[[\text{OPPOSITE-OF}][[\text{SATISFIED}]\text{STATE}]]\text{CHARACTERIZED-BY}]\text{STATE-OF-BEING}]$

The correspondence between the two analyses of such a word suggests that (at least in the general case) the domain of the direct relation between form and meaning, represented in the Saussurean sign, is not the whole word but rather somewhat smaller subparts of words. If this case is at all typical, it suggests that a word like *discontentedness* is not a single sign but rather some structured combination of individually simple signs, each representing the unity of a discrete part of the word’s meaning with a discrete part of its form.

On the basis of just such observations, the structuralist linguists of the 1940s and 1950s concluded that words are in general composed of such smaller