

I

What is morphology?

Branches of linguistic theory: morphology as the study of 'forms of words'. Morphology in antiquity, and in nineteenth century: flectional, isolating and agglutinating languages. Morphology in structural linguistics: fusion of morphology with syntax (Bloomfield, Chomsky); and with generative phonology. Revival of morphology since 1970s; morphology and historical linguistics.

The scope of morphology. Double articulation of language; grammar vs phonology. Morphemes. Categories and inflections: inflections as markers, alternation of inflections. Compounds, word-formation. Limits of analysis: where should the division of words stop?

Morphology and general linguistic theory. Is a general theory possible? Theories of motivation; of laws and universals. Problems of universality; different models appropriate to different languages.

In the traditional view of language, words are put together to form sentences. The words differ from each other in both sound and meaning: *clock* and *gong*, for example, denote different sorts of object and are distinguished by different consonants at the beginning and end. Hence the sentences too will differ in sound and meaning, *The clock has been sold* being distinguished from *The gong has been sold* as a function of the words *clock* and *gong*. However, not only the words but also the construction and the 'forms of words' will vary from one individual sentence to another. *The gong has been sold* has a Passive construction, with *the gong* as Subject; contrast the Active *He has sold the gong*, in which it is Object. In both sentences, *gong* is Singular, and when it is the Subject the Auxiliary is *has*. Contrast *The gongs have been sold*, where *gongs* is Plural. In such examples, the choice between different forms of words – between the endings of *gongs* and *gong* on the one hand and *have* and *has* on the other – varies independently of the variation in construction (Passive versus Active). But in other cases the construction itself requires that a word should be in one form rather than another. For example, in *He hit them*, the word *them* is Object and must therefore appear in what is traditionally called the 'Accusative' Case. Contrast *They have sold the gong*, where the same Pronoun is Subject and must

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therefore appear as the ‘Nominative’ *they* instead. In describing a language all four varying facets – sounds, constructions, meanings and forms of words – have to be given due attention.

In the same spirit, the field of linguistic theory may be said to include at least four major subfields. The first is concerned with the study of speech sounds, a subject which in modern structural linguistics is handled on two theoretical levels. Of these the level of **phonology** is concerned with the functioning of sound-units within the systems of individual languages, whereas that of **phonetics** is concerned with the nature and typology of speech sounds in themselves. The second major subfield is that of **syntax** (from a Greek word meaning a ‘putting together’ or ‘arranging’ of elements), which traditionally covers both the constructions of phrases and sentences and also the features of meaning which are associated with them. For example, the Interrogative (*Has he sold the gong?*) is different both in construction and in meaning from the Non-Interrogative or Declarative (*He has sold the gong*). The third subfield of **semantics** then reduces to the study of word meanings – to which perhaps we may add the meanings of idioms (see chapter 5) or of special phrases generally. Traditionally, the problems of semantics have often been assigned to the dictionary. However, the oppositions of word meanings also lend themselves to structural analysis, most notably in specific ‘semantic fields’ such as those of kinship, colour terms, occupations, types of skill and knowledge, and so on. In addition, the limits of syntax and semantics have frequently been disputed both within and between the various structural schools. According to some, constructional meanings would also belong to semantics – syntax being reduced to the formal distribution of words and groups of words. Other writers make a further distinction between semantics, as a study of the meanings of words and sentences in the abstract, and **pragmatics**, as that of sentences used in specific situations. According to others, syntax itself is partly a matter of word meanings: for example, it is implicit in the meaning of ‘to sell’ or ‘to hit’ that it can take an Object. On many such issues, the debate continues in full vigour.

The last major subfield is that of **morphology**, and it is this that forms the central theme of this book. The term itself is a Greek-based parallel to the German *Formenlehre* (the ‘study of

forms'), and like many linguistic terms is nineteenth-century in origin, the first references for this sense in the *OED* being from the 1860s (s.vv. 'morphology', 'morphological', 'morphologically'). As a biological term it is older by at least thirty years (the first references for English in the *OED* being to 1830), and its linguistic sense was at first conceived in the same intellectual framework. It must be remembered that the science of language was at that time influenced by the evolutionary model of Darwin's *On the Origin of Species* (published in 1859). But the parallel between linguistics and biology is now seen as spurious. Philologists have long given up the hope (expressed so seductively in Max Müller's Oxford lectures of 1889) that by studying the 'evolution' of words in Indo-European, and their 'four or five hundred' basic roots in particular, the 'world-old riddle of the origin of language' can be solved.¹ On a less fanciful level, we no longer think of languages as organisms, which are born and grow and compete with each other. 'Morphology', therefore, is simply a term for that branch of linguistics which is concerned with the 'forms of words' in different uses and constructions. What precisely this means will be distinguished more carefully in the next section of this chapter.

The analysis of words has had varying fortunes in twentieth-century linguistic theory. In antiquity it was paramount: both Latin and Greek show complex variations in the forms of words, and their classification, into Cases such as Nominative or Accusative, into Numbers such as Singular and Plural, into Tenses such as Present, Past Perfect and so on, took the lion's share of ancient grammars. As we will see in chapter 10, ancient ideas are still worth debating. In the nineteenth century it lay at the heart of comparative linguistics. In the light of the ancient Indian analysis of Sanskrit, itself a masterwork in our field, it was possible to confirm and make precise its relationship to the classical languages of the West. As the understanding of other languages grew, it became attractive to group them into types. In Latin or Greek, each word is a whole but may subsume a range of distinguishable meanings. For example, a Verb has a time

¹ F. M. Müller, *Three Lectures on the Science of Language and its Place in General Education* (repr. Benares, Indological Book House, 1961), p. 32.

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reference (Past, Present or Future); it may identify an action from the viewpoint of one who performs it (Active) or one who experiences it (Passive); it will predicate the action of the speaker (1st Person), or of the person spoken to (2nd Person), and so on. These are the defining instances of what was called, and is still called, a **flectional** language. In Chinese, each word seemed invariable and each meaning seemed to have its own word. It was therefore identified as an **isolating** language. In Turkish, which we will look at in some detail in a later chapter, words may subsume several meanings but they are not fused into a whole. Its type was accordingly **agglutinating**. This typology is partly from the same source as the Darwinesque froth which we referred to in the last paragraph. But it is easy to skim off what was wrong and retain what was worthwhile.

In the twentieth century many structural linguists have attached far less importance to the word. One reason is that they could not devise an operational definition of it. As we will see in chapter 11, there is no single watertight criterion which will identify word boundaries in whatever language. Another reason is that part of morphology was assimilated to syntax. Take, for example, the word *trying*. It consists of a form *try-* followed by a form *-ing*: in phonetic transcription, [traɪ] + [ɪŋ].² Likewise *tried*, or [traɪd], consists of [traɪ] followed by [d]. Now take the sentence *They are trying hard*. It consists of the word *they* followed by three further words: *they* + *are* + *trying* + *hard*. At either level we might apply the terminology that Bloomfield used in his great work of the 1930s (BLOOMFIELD, ch. 10). In *They are trying hard*, the form *hard* is 'selected' and is 'ordered' after *trying*. That is the only possible order: one would not say, for example, *They are hard trying*. In *trying*, the form *-ing* is likewise selected and is ordered after *try-*. That is again the only possible order: there is no word *ingtry* or [ɪŋtraɪ]. If we limit ourselves to concepts of selection and order, it seems that both the word and the sentence can be analysed in the same way.

Bloomfield himself retained a division between morphology and syntax. But other and later structuralists were more radical. In Europe, Hjelmslev firmly rejected it. In the United States,

² Transcriptions of English (Southern British 'Received Pronunciation') will normally follow Gimson's revision of Daniel Jones's pronouncing dictionary (GIMSON).

Harris's 'morphology' covered formal patterning at both levels, and the word, with other familiar units such as the syllable and the sentence, was demoted to vanishing point (HARRIS). According to a form of grammatical theory that had emerged by the beginning of the 1960s, the word was merely one term in a hierarchy of units. In *They are trying hard*, the words *are* and *trying* (two units at 'word level' in the overall grammatical hierarchy of English) would constitute a phrase *are trying* (one unit at 'phrase level'). At the same level, *they* and *hard* are both one-word phrases. Likewise, at a higher level, the three phrases *they*, *are trying* and *hard* form a clause (one unit at 'clause level'). That clause is, in turn, the only element of a one-word sentence. Now syntax traditionally deals with the last three rungs in this hierarchy (phrase, clause and sentence). Morphology traditionally deals with the word. But just as the phrase *are trying* has as its elements *are* and *trying*, so the word *trying* has as its elements *try-* and *-ing*. The word *hard* has no internal structure; neither has the phrase *hard*. If we put things in this way, the natural conclusion is that morphology has no claim to separate treatment, any more than, if we may coin some barbarisms, 'phrase-ology' or 'clause-ology'.

The late 1950s also saw the development of transformational grammar. In Chomsky's first book (CHOMSKY, *Structures*), Harris's influence was still very strong, and in its treatment of the word, as in some other matters, it is an apotheosis of his ideas. With Harris, Chomsky began by assuming that a word like *trying* was a sequence of two separate units (*try-* + *-ing*). In *They are trying hard*, these are part of a larger sequence which is superficially four words. But let us now compare *are trying* with, for example, *have tried*. In both we can replace *try-* with, for example, *cry* or *wail*: *are crying* or *have cried*, *are wailing* or *have wailed*. But in *are trying* we cannot simply replace *are* with *have*: there is no sentence *They have trying hard*. The *are* and the *-ing* go together, and are opposed as a whole to the *have* and the *-ed* of *have tried*. In the same way, the more complex *have been trying* may be analysed into the three interlocking members *try-*, *be* and *-ing*, *have* and *-en*. The reason, again, is that in standard English one cannot say [*They*] *have being trying* (replacing *-en* in the member *have* + *-en* with *-ing*), or *have be trying* (dropping *-en* altogether), or *been trying* (dropping *have* but holding everything

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else constant), and so on. *Have* and *-en*, *be* and *-ing* are pairs of dependent variables.

This analysis is natural on semantic grounds also. In *are trying*, the *are* and *-ing* together mark what may be called the 'Present Progressive' Tense, as opposed, for example, to the Simple or Non-Progressive Present in *They try hard*. Likewise, the *have* and *-ed* of *have tried* mark what is normally called the 'Present Perfect', and in *have been trying* we have a combination of the Auxiliaries, with associated *-en* and *-ing*, that marks both 'Perfect' and 'Progressive' together. At an abstract level it is these concepts of Tense ('Present', 'Progressive', 'Perfect') that the analyst is above all concerned with. But at the same time the Verbal element *try-* or *tri(e)-* (*trying* and *tried* shorn of their endings) may be linked on its own with the separate word *hard*. *Hard* is an Adverb that sits easily with *try-*, whereas others (e.g. *mellifluously* or *away*) sit with difficulty at best; this fact is independent of the remainder of the Verb phrase, *They have tried away* being as awkward as *They are trying away*, but *They have gone away*, by contrast, being as natural as *They are going away*. The rest of the phrase may even be absent in certain Non-Finite constructions ([*We have made them*] *try hard*), co-ordinate structures ([*They'll try, and*] *try hard*), and so on. One cannot find a converse case in which *try-* is dropped from the phrase instead (*are -ing hard* or *are hard-ing*). Now *try-* and *hard* must, of course, be recognised as independent variables. But in a weaker sense they still go together against *are* and *-ing*.

We thus arrive at an analysis which cuts clean across the conventional boundaries between words. The construction is no longer *were + trying + hard* (two-word Verbal phrase and Adverb *hard*), but rather [*are -ing*] + [*try- hard*] or – we might be tempted to say – '*try hard*' in the Present Progressive. A few years later, Chomsky introduced a theory of grammar in which 'deep' syntax was distinguished from 'surface' syntax. It was only in the surface structure of this sentence that *trying* would be established as a unit. In deep structures this and many other words would be dismembered. Their parts were independently linked to whatever other elements they might be judged to go with, whether these were whole phrases, or words on their own, or the disjecta membra of other words.

But that was not all. For if a large part of morphology was by then assimilated into syntax, the same school arbitrarily assigned the rest of it to phonology. In Chomsky's account, a grammar or **generative grammar** was a series of rules relating meanings of sentences to the phonetic forms of sentences. These rules were of several sorts: for example, there were rules which described deep structures and other rules which related deep structures to surface structures. The term 'phonology' was then applied to a further series of rules, which in turn related surface structures to phonetic forms. One partial surface structure is, for example, *try- + -ing*. From that the rules of phonology, or specifically **generative phonology**, would derive a phonetic form which, if it is to represent my own speech, might begin with a rounded affricate, followed, after the [ɹ] glide, by a long monophthong. The details of all this are water under the bridge. What is important is that, by definition, Chomsky's scheme of grammar had no place for morphology. A part of grammar that had traditionally had its own rules and its own structures was eaten up completely by transformational syntax on the one hand and generative phonology on the other.

So far as structuralist theories were concerned, morphology was at an all-time low when I wrote the first edition of this book. But since then its standing has been restored. This is due, in part, to the disintegration of the classical Chomskyan scheme; by the end of the 1970s, it was clear that one could not cram everything about a language into a series of unidirectional rules relating successive levels of structure. But another factor is the renewed interest in historical linguistics. In its heyday, structuralist theory had been either primarily or exclusively synchronic. It was assumed, firstly, that a given state of a language is best studied in abstraction from its history. That step was, in itself, spectacularly fruitful. But a second assumption, for which authority could also be found in Saussure, was that changes from one state to another are individual, isolated events. Therefore a theorist might proceed without accounting for them. We may distinguish two structuralist attitudes towards diachrony. For some scholars, it belonged to another discipline: in HARRIS, p. 5, 'descriptive linguistics' explicitly excludes it. For others, a synchronic theory might help to explain changes: one thinks immediately of the

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work of Martinet on diachronic phonology.³ But it did not have to do so. A theory of language was not rejected merely because the insights of historical philologists contradicted it.

By the beginning of the 1980s this spurious wall between linguistic theory and philology was in ruins. But it was then very difficult to pretend that morphology was not there. To a historian, a morphological change is clearly different from, in particular, a sound change. The latter is phonetically natural and it often has a purely phonetic cause. It will also tend to operate regardless of grammatical categories. But a morphological change is typically motivated by analogy, for which parallels in grammar are the mainspring. By contrast, its phonetic character is irrelevant. Let us take two simple illustrations which will underline these differences. Firstly, in my speech and that of many other speakers of British Received Pronunciation, the triphthong [aɪə], as in *fire*, is monophthongised. Phonetically this is very natural, a more complex articulation being averaged to a simpler. At the same time, it does not respect the grammatical class or structure of the words involved. Thus it applies to Nouns and Verbs (*tyre* and *tire*), to the Comparative form of an Adjective (*higher*), to Nouns derived from Verbs (*buyer*). In both respects it is a typical sound change. Secondly, in some dialects of English a Past Tense *dove* has replaced *dived*: the formal relationship between Past and Present was apparently remodelled on the analogy of *drove* and *drive* or *throve* and *thrive*. Conversely, a child can easily say *drived* instead of *drove*. In explaining such alterations, one does not ask whether the phonetic change (of [aɪvd] to [əʊv] or [əʊv] to [aɪvd]) is inherently plausible. What matters are its morphological conditions. To a historian of languages these differences are fundamental. But they are precisely those which, in a synchronic context, the generative phonologists forgot or ignored. It is not surprising that when their notions were applied to diachrony the experiment rapidly went the way of all follies.

Our understanding of syntactic changes is far less secure. But one motivating principle is that, if two elements stand in a close semantic relationship, they will also tend to be adjacent in sentences. For example, the category of Prepositions in European

³ A. Martinet, *Economie des changements phonétiques* (Berne, Francke, 1955).

languages has developed from what may prehistorically have been an independent class of Adverbs. These came into closer relationship with Nouns or Noun Phrases and, as part of the same process, they became fixed in a position before Nouns or Noun Phrases. However, this principle does not apply to alleged syntactic elements within words. For example, there is no pressure in English for the *-ing* of *are trying* to move nearer to *are*. In discussing this phrase, I have tried to give a fair account of the original Chomskyan argument. But in historical linguistics it is misleading to think of the word as no more than a superficial unit. In the history of English the verb 'to be', as a whole, has developed into an Auxiliary which stands in a grammatical relationship to, among others, the *-ing* forms of verbs, also as wholes.

Diachronic morphology will not be treated systematically, since it is covered in another book in this series (BYNON). But it is one very good reason for taking the field as a whole more seriously than many structuralists, Chomskyan and pre-Chomskyan, once took it.

THE SCOPE OF MORPHOLOGY

So far I have merely hinted at the subject-matter of morphology; and, to some readers, it may seem that I have allowed these introductory paragraphs to run ahead of the argument. Let us therefore get back to basics. If we wish to begin with a definition, we can say that **morphology** is, briefly, the branch of grammar that deals with the internal structure of words. But although the word is a unit which is familiar in our culture, the notion that it has an internal structure is not. To put the definition in context, we will have to begin by looking more generally at different levels of linguistic patterning.

One of the most important properties of human language is the one that we shall describe as that of **double articulation**. Another common way of referring to it is to say that language has a **dual** structure, or that as a form of communication it has the property of **duality**. Any simple example in speech or writing will make

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this characteristic clear. If we take the first sentence of W. B. Yeats's 'Sailing to Byzantium':⁴

That is no country for old men

we can say, first of all, that it consists of seven words, *that*, *is*, *no* and so on. These combine to form phrases: *old men* is one phrase, and according to most writers would itself be part of a larger phrase *no country for old men*. Such phrases and clauses are articulated according to definite rules. If we put the final Noun into the Singular:

That is no country for old man

the result can be understood and could conceivably be poetry, by some standards. But strictly the Singular phrase (*old man*) ought to have an Article. The sentence could be intuitively corrected – say to the form:

That is no country for an old man

– and that would be more in accordance with English syntax. It is the job of the linguist to discover and elucidate these rules, distinguishing them from patterns of style etc. and testing their adequacy against the actual facts of usage.

This is the first level of organisation – the **first** or **primary articulation** of language – in which words or similar elements are related to each other in syntactic patterns. It is this that is referred to as the level of syntax or of grammar – the term 'grammar' being used here in the most restricted of its senses in linguistics. But the words *that*, *is* and so on have another internal organisation of their own. *That* consists of four separate letters, *t*, *h*, *a* and *t*; when spoken, [ðæt], it can be analysed into a consonant, vowel and further consonant which are assigned to the phonemes symbolised by 'ð', 'æ' and 't'. Likewise *is* [ɪz] may be analysed into two letters or two phonemes, and so on for the remainder. The units which are basic to the primary articulation of language are thus distinguished and identified by combinations of smaller units, letters or phonemes. Moreover, these combinations are in turn subject to rule. A native English word cannot begin, for example, with the consonants *cv* [kv], although it could begin

⁴ From *The Tower* (1928); in *Collected Poems*, 2nd edn (London, Macmillan, 1950), p. 217.

with *cl*, *qu* [kw] or the like. It is not merely that a word such as *cvab* ([kvæb] or [kvɒb]) does not happen to exist. To the author's knowledge *quab* does not exist either, but there is no reason why it should not do so in the future. It is not an elegant acronym, and perhaps not the word to choose for a new soft drink or washing powder. But if an embarrassed reader were to tell me that it is in fact a four-letter word, which for some reason I have not encountered even on National Service, I could just believe them. Another suggestion is that it might be a suitable name for a weed-killer! We can react in these ways because it is a possible English word, and we can sense its resemblance to other words. But if someone were to blush at *cvab* I would wonder whose army they had been in.

These smaller patterns of organisation form a **second** or **secondary articulation** of language – the level of phonology if, as normally, we are talking of sound-structure and not in terms of the spelling. Now perhaps some might wish to argue that it is phonology that is properly 'primary' and grammar that is properly 'secondary'; in so far as this is an issue of substance it need not concern us here. The important point is that the levels are distinguished, and it is this property which is referred to as that of duality or double articulation. For some scholars the distinction of units alone (words or the like on one side, phonemes etc. on the other) is a central 'design feature', serving to set human language apart from the communication of animals, or so-called 'natural languages' apart from many artificial 'languages' (the 'language' of arithmetical formulae, for instance).

If that were all, there would be no place for morphology. We would simply state which combinations of phonemes could form words, and list in a dictionary those which actually were words; there would be no other sense in which a notion of 'word-structure' would be meaningful. But of course it is not all. If we take a little more of Yeats's poem:

The young
In one another's arms, birds in the trees
– Those dying generations – at their song,
The salmon-falls, the mackerel-crowded seas,
Fish, flesh, or fowl, commend all summer long
Whatever is begotten, born, and dies.

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we at once find several words with parts which function separately. *Arms, birds, trees, generations, -falls* and *seas* share an ending *s* ([z]) by which, as Plural Nouns, they are distinguished from the corresponding Singulars *arm, bird* and so on. This *-s* is an example of what is usually called a **morpheme**. Similarly, *dies* has a morpheme *-s* which distinguishes it from *dying* (with a different morpheme *-ing* or [ɪŋ]) and from *die* (with no corresponding morpheme) or *died*; compare *tried, trying* and *try* in our earlier illustration. In general, then, we may proceed to specify the structure of this set of words by saying that any member (*bird* or *birds, dies, die* or *dying*) consists of a minimal Noun or Verb, followed either by no morpheme at all (*bird* or *die*) or by whichever of a series of morphemes (Plural *-s* etc.) suits.

According to a common proposal one would then say that it is not words, in fact, that form the basis of the primary articulation. In *birds in the trees* there are not four basic units but six (or five with one appearing twice). The words *birds* and *trees* are themselves combinations of units – the second unit being identified by the letter ‘s’ or the phoneme symbolised by ‘z’ – in much the way that, as we said, the phrase *old men* is a combination of *old* and *men*. If we could tear ourselves away from word spelling a student of grammar might find it more convenient to write the example as follows:

bird s in the tree s

The term ‘morpheme’ is then applied to each of these units. In our example, the first unit (*bird*) is one morpheme. It is followed by a second morpheme (*s*), which in turn is followed by a third morpheme (*in*) and so on. This is the starting-point for the structuralist analyses which we referred to earlier. In such analyses the morpheme is the minimal, indivisible or primitive unit; grammar is the study of the arrangements of morphemes within utterances; and the word is at best one of a hierarchy of complex or non-minimal units which also includes the phrase and the clause.

We will return to the morpheme in chapter 6. But for the moment there is a problem which we can easily illustrate with the same material. Let us return, for example, to *men* in the first line of Yeats’s poem. In meaning, this is Plural, just as *birds* or *trees* is

Plural, and just as the meanings of these are opposed to those of the Singulars *bird* and *tree*, so that of *men* is opposed to that of the Singular *man*. We might display this as a proportional series:

man:men = bird:birds = tree:trees

But this holds for the meanings only. In form the difference between *man* and *men* lies in the vowels: Singular *-a-* but Plural *-e-*. But in the other pairs it lies in the presence or absence of *-s*. Another example is *those* at the beginning of the third line. In meaning, the Plural *those* stands to the Singular *that* (contrast *that dying generation*) as *these* stands to *this*:

that:those = this:these

But the formal distinctions differ again: phonetically, [æt] versus [əʊz] and [ɪs] versus [i:z]. Now for syntactic purposes a grammarian will want to treat the oppositions between Singular and Plural as one and the same. For example, in *those dying generations* the plural *those* agrees with the Plural *generations* in just the way that, in *these dying men*, Plural *these* agrees with Plural *men*. Traditionally the words are assigned to the same **categories**: *man*, *bird*, etc. to the Singular category and *men*, *birds*, etc. to the Plural category. But they differ in their **inflections**. In *birds* or *trees*, the Plural inflection involves a morpheme *-s*. In *men* it involves a vowel *-e-* which is different from that of the Singular.

Similar points can be made for the Verbs in the same passage. In the line:

Whatever is begotten, born, and dies

there are two words, *begotten* and *born*, which grammarians traditionally assign to the category 'Past Participle'. If we then cite the final couplet of this verse:

Caught in that sensual music all neglect
Monuments of unageing intellect.

we find another, *caught*, and in the corresponding lines of the second verse:

And therefore I have sailed the seas and come
To the holy city of Byzantium.

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there are two more, *sailed* and *come*. We can establish a series in which these words are opposed to the corresponding Presents:

sail:sailed = bear:born = beget:begotten
= catch:caught = come:come

But there is again no constant inflection. *Sailed* has the regular pattern; compare *die:died* or *try:tried*. But the final consonant is different in *born* and *begotten*, and the vowels which precede it are different from those of the Present: [bɔ:] plus [n] versus [beə], [bɪgɒt] plus [n] versus [bɪget]. *Caught* [kɔ:t] and *catch* [kætʃ] differ in everything except the first consonant. Finally, between Present *come* and Past Participle *come* there is no formal distinction at all.

In syntax we will talk simply of the category 'Past Participle'. For example, in *I have sailed the seas and come* the two Participles are the same in respect of their relationship to the Auxiliary *have*. Morphology is then concerned with two sorts of variation in the 'forms of words'. In one case, inflections distinguish different categories: thus Past Participle *sailed* from Present *sail* or Present Participle *sailing*. We will say that the inflections **mark** the categories. Thus, in *sailed*, the presence of *-ed* at the end of the word marks the Past Participle, and also (in a construction such as *I sailed the seas*) the Past Tense. In the other case, different inflections mark the same category: thus the *e* in *men* and the *-s* in *seas* both mark Plural. We will say that the inflections **alternate**. In the Plural in English there is an **alternation** involving several inflections, of which Yeats's lines have supplied no more than a selection. Thus in *mice* and *lice* Plural is marked by a diphthong [aɪ] ([maɪs], [laɪs]), in *children* it is marked by *-ren* and by the vowel [ɪ], and so on.

But morphology is not only concerned with inflections. There are other aspects of word structure which can be illustrated in the same poem, and which shade away into patterning of finer and finer subtlety. For a straightforward example take *whatever*. This is one word, with a single accent ([wɒt'evə]). But it is in turn composed of two smaller words. In meaning, *whatever* is to *what* as *whichever* is to *which* or *whenever* to *when*. But *what* is itself a word in, say, *What was she wearing?* Likewise *ever* is a word in constructions like *if you ever see her*. A word whose parts may

themselves be words in other contexts is traditionally called a **compound**. Another example in the text is *salmon-falls*. This is written with a hyphen, and when we read the poem it too will be given a single accent: ['sæmən'fɔ:lz], not ['sæmən 'fɔ:lz]. In that respect at least it behaves like one word. But its internal structure subsumes not only the Plural inflection -s, but also *salmon* and *fall*.

However, this second example is not quite as straightforward as the first. We can look in any dictionary and find an entry for *whatever*: it has been a single grammatical unit since the Middle Ages, and the range of constructions into which it enters (in *Whatever is begotten, Whatever book you choose, I have no notion whatever, Bring your typewriter or whatever*) is peculiar to it. But the first three dictionaries I have looked at say nothing about *salmon-falls*. Its status as a unit is less clear, and for many readers it will be a new combination of words. It will accordingly be construed in the same way that one might understand a syntactic combination: for example, *The salmon are leaping. Mackerel-crowded* is still more clearly a nonce form. There are other hyphenated forms which establish the pattern: for example, *snow-covered, chocolate-filled, diamond-studded*. But in ordinary speech there are limits on the combinations that one might use. For example, one would not ordinarily say *I went out into a people-crowded street* instead of *I went out into a street crowded with people*. Part of the genius of the poet is the ability to transcend such limits.

Another aspect of word structure will be treated under the heading of **word-formation**. Take, for example, *unageing*. On the face of it, this might be analysed into a morpheme *un-* plus *ageing*, in much the sense that *died* consists of *die* plus the morpheme *-d*. The latter has *-d* as its ending, whereas the former has *un-* as its 'beginning'. But is it quite the same sort of case? We will normally think of *died* and *die* as forms of the 'same word' (see chapter 2 for this sense of 'word'). We would not expect them to have separate entries in a dictionary, and a statement about the meanings and syntactic uses of '*die*' would be taken to cover the Past Tense as well as the Present. We would likewise identify forms of the word '*age*' in both *It has aged* and *It will age*. But do we want to say that *unageing* is merely another form of the same

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word – the Negative form of the Participle, as it were, in contrast to the Positive *ageing* (e.g. in *He is ageing*)? Surely the answer is No. Indeed, whatever we think of *ageing* or *dying* in a Verbal construction of the type *He's ageing* or *He's dying*, do we still want to say that they are forms of the Verbs 'age' or 'die' when they appear in the phrase *his ageing father* or in Yeats's *those dying generations*? Again, a dictionary provides a rough practical test of our intuitions. We would certainly expect entries for *dying* and *undying*, and at least in a full dictionary for *ageing* and *unageing* also. The reader will find, for example, that the first pair have separate headings in the *Shorter OED*, and all four are in the *OED* proper. With many other forms in *-ing* the issue is even plainer. Take, for example, the Adjective in *a trying day*. This has its own meaning and its own range of constructions, which differ from those of *trying* as a form of the Verb 'try'. For instance, it can be followed by the Preposition *to*: *The day was very trying to all concerned*. This is not possible with the Verb 'try' (*They tried to all concerned*).

Nevertheless, the Verb and Adjective are related. We cannot say that the Phrase *a trying day* has nothing whatever to do with the use of *tries* in *I find this weather tries me very hard*, or that *dying generations* and *unageing intellect* have nothing whatever to do with 'die' and 'age'. Moreover, it is a relationship of meaning as well as form: it is not simply that *dying* or the like are Adjectives which happen to have a Verbal sort of ending. If we now take the word *generations* it is formally no more than a Noun. It has the Plural ending of *trees*, *arms*, etc., and in a phrase such as *three generations ago* it may function as a straightforward time word, as such just a little more imprecise than *five decades ago* and much more so than the potentially exact *fifty years ago*. In *the modern generation* or *later generations* it is still a straight Noun, though of a slightly different class. But at the same time it is related in form to the Verb *generate*, and may be used with a definite Verbal nuance: thus *Electricity is clean, but its generation makes a mess* (effectively with Object *it* = *electricity*; compare *generating it*), or less explicitly in *the act of generation*. In Yeats's poem this relationship is clearly exploited. Although *those dying generations* has the syntactic construction of *later generations*, *that sensual music* and so on, the underlying Verbal sense of *generate* may still

be caught and put in opposition to the sense of 'die' in *dying*. Similarly, the Adjective *sensual* (in the last couplet of this verse) has a formal and semantic connection with *sense* (compare *the gratification of the senses*) which brings it closer to its opposite *intellect* (compare *intellectual*). Yet an Adjective it remains.

Naturally, there are limits beyond which such analyses cannot be pushed. In one of Aldous Huxley's stories, a character feels like saying 'Bow-wow-wow!' when he hears the word 'cynic'.⁵ Here (as often in Huxley's work), the resources are purely etymological – *cynic* being from a Greek Adjective formed from the word for 'dog' (κύων *kýōn*, Genitive κυνός *kynós*). So far as English is concerned, there is neither a formal nor a semantic connection between *cynic* on the one hand and *dog* or any comparable Noun on the other. But what of the other English Nouns in *-ic*? *Music* in Yeats's poem has an etymological connection with *Muse*, just as *panic*, for example, is connected with *Pan*. The latter pair have no link in modern English, and indeed the god Pan will mean little to many speakers. But are *Muse* and *music* entirely divorced? There is certainly a morphological element, *-ic*, in Adjectives such as *horrific* or *melancholic*. Admittedly, no Nouns in *-ic* have a truly transparent analysis. But if a writer invokes an interplay between music and the Muses can we say with absolute confidence that it is etymology and not word-structure that he is playing with? One can also find instances in ordinary conversation where a speaker has reanalysed a word. It is a worn-out gibe that feminists avoid the form *-man-* at all costs: thus *Personchester* for *Manchester* or *huperson* for *human*. But in a radio interview⁶ something written by a woman was referred to, apparently in all seriousness, as 'a manifesto, or rather a woman-festo'. Momentarily at least, the speaker had treated *manifesto* as a compound of *man* and (*i*)*festo*.

The limits of morphological analysis can be illustrated with more humdrum examples. In *farmer* or *actor* we recognise an element *-er* or *-or* (phonetically both [ə]); the words have an obvious relationship to *farm* and to at least one sense of *act*. Well, let us go along the High Street. The *baker* is in origin someone who 'bakes', the *banker* runs a 'bank', the *furniture remover* 'removes furniture', and so on. What then of the *butcher*, the

⁵ The Gioconda Smile', *Collected Short Stories* (London, 1957), p. 93.

⁶ BBC, Radio 4, 16 May 1986.

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grocer, or the *ironmonger*? One answer might be that *butcher*, for instance, is indeed *butch-* plus *-er*; since this '*butch-*' is not connected in meaning with any other '*butch*', it would be established as a (so-called) 'partially independent' element, distinct from *-er* but nevertheless unable to enter into any other combination. Likewise *groc(e)-* and *mong-* would be extracted as elements which are restricted to *grocer*, *groceries*, *ironmonger* and the like. The other answer, of course, is that words such as *butcher* are morphologically simple; but why, one then asks, do even simple 'occupation' Nouns so often end in *-er*? One can fruitlessly prolong the discussion of this kind of patterning.

But there will come a point at which no analyst will wish to pursue the chopping-up process further. Let us consider the points of the compass: *East*, *West*, *North* and *South*. The first two are opposite to each other on the dimension of longitude, and the words both end in *-st*. The others are opposite on the dimension of latitude, and both end in *-th*. Shall we therefore divide each into successive parts: an ending *-st* or *-th* for the 'East/West' or 'North/South' co-ordinate, preceded by four 'partially independent' elements *Ea-*, *We-*, *Nor-* and *Sou-*? Indeed, shall we say that *Sou-* (phonetically [sau]) recurs independently in *Sou-wester*? In fact, we will not support such analyses. Even if there is something here worth saying, the pattern is too restricted to fall profitably within the morphological domain. Another case that is often discussed is that of phonaesthetic (loosely onomatopoeic) groupings: to take a well-known example, is the *-mp* or *-ump* of *bump*, *thump*, etc. a separable element? If we separated it consistently, any attractions the analysis might have would rapidly dissolve. But can one say with precision where the domain of morphological analysis should end? If these are limiting cases, then are there general criteria by which the line is drawn? On the face of it, each of the cases which we have mentioned raises slightly different problems.

Such marginal uncertainties concern word-formation and compounds in particular. As we will see more clearly in later chapters, these can in some respects be taken together in opposition to inflections. In another and more obvious sense, compounding (since it involves a combination of words) is opposed to inflection and word-formation. But for the moment

we have shown sufficiently that the study of word-structure must include all three.

MORPHOLOGY AND GENERAL LINGUISTIC THEORY

One reason for studying morphology is simply that it is there: it is a facet of language that has to be described and is a source of absorbing practical problems. But linguistics is not only concerned with practical description. We must also ask how far a general theory of morphology is possible.

The aim of such a theory will be to elucidate certain principles that apply to the structure of words in all languages. Take, for example, the order of inflectional morphemes. In English, they are at the ends of words (-s in *seas*, -ing in *dying*, and so on). In many other languages they are at the beginning: we will cite some forms in chapter 7 from Navaho, which is one of the Athabaskan family in North America. But in most cases there is at least a degree of consistency. In particular, it is unusual to find that the same individual category is marked sometimes here and sometimes there. Let us suppose, for the sake of argument, that English is an unknown language which we are investigating for the first time. So far we have found Plural morphemes at the ends of words: -s in *seas*; also, among others, -ren in *children*. We would not then expect to find others – still less, for example, the same morpheme -s – at the beginning. Of course, we might; in linguistics there are always exceptions. But that would not represent a common pattern.

As they stand, these are just observations. But it is not difficult to see that such facts might also have an explanation. If a category is always marked in the same place, it is more easily perceived, or more easily recognised by children learning the language, or contributes generally to a more orderly system. The patterns are in that way **motivated**. All else being equal, it is natural or logical that, where there are several inflections, they should tend to occupy the same position. We may then appeal to similar arguments in accounting for the ways in which a language changes. For example, a language might at one stage have a few inflections at the beginnings of words but most at the end.

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Ancient Greek was one such (see examples in chapters 8 and 9). Later it might change so that all are at the end. There are many factors to which a historian might look for explanation, but this form of motivation could be one.

The foundation of such arguments is doubtful and it might well be asked whether they are truly explanatory. Note, in particular, that at no point in this argument have we been dealing with anything stronger than a tendency. But is there a tighter theory that will cover every language? To be tighter it will have to be restrictive: it will have to set a limit to the possible structures that a language may have. It will accordingly identify not tendencies but **laws**, not patterns which we observe in languages but ones which a language must in some sense conform to. If it is true of all languages we will say that it is **universal**. In linguistics generally, such theories are particularly associated with Chomsky. According to Chomsky, certain restrictions are genetically inherited as part of the normal make-up of the human mind. They guide and limit a child's acquisition of language; therefore there is a very strong pressure for all languages to follow them.

But once we start to look for laws the differences between languages are more refractory. Two laws that we might at first sight take to be universal are (1) that all languages have words; (2) that all languages have morphemes. We may refer to these as **formal principles**: they concern the basic form of a language. But what exactly do they mean? Languages, as we have said, are doubly articulated; and, according to different conceptions, either the word or the morpheme is the basic unit of the primary articulation. Suppose that it is the word. In that case there are languages of the isolating type in which a word has no inflectional structure: Classical Chinese, in the words of a recent survey, was 'an almost perfect example'.⁷ Hence the morpheme, if defined as a unit of inflection, is not universal. Alternatively, let us say that morphemes are the indivisible semantic units. Now in agglutinating languages these are easily identified: as we will see in chapter 6, a word in Turkish is a sequence of distinct parts, each of which has a separate grammatical function. But in flectional languages they are not: in Ancient Greek the parts of words are

⁷ NORMAN, p. 84. Norman's brief account of the language is notably clear and useful.

less distinct, and when they can be separated as forms it is unusual for a single function to be associated with them. The term 'morpheme' might still be applied to them, but the criteria for the unit would be different. It can also be applied to an indivisible semantic unit in an isolating language; but then the status of the word is problematic. If we examine these principles carefully, either their substance dissipates or their universality is in doubt.

This typology of languages is more than a century old, and in the interval it has been modified and elaborated. It is also a typology of extremes: many languages (such as English) are not so clearly characterised. However, one way to avoid sacrificing substance to universality is to develop formal principles that hold, in the first instance at least, for a particular type. In some languages semantic properties will be predicated directly of the word. That is the traditional way of describing Ancient Greek and Latin, and it was originally conceived by speakers of those languages. Inflections are formal elements within the word, and we must then consider how its internal structure should be specified. In fact, there are alternatives; it may be that at this point different subtypes of language are distinguished by different formal principles, and that the classic flectional type is only one of them. In other languages, similar semantic properties will be predicated of morphemes. In some the word will also be established as a central unit, whose internal structure is governed by formal principles which differ from those applying to syntactic constructions. That broadly characterises the agglutinating type. In others morphemes will enter directly into syntactic relations, and these are the type that we would call isolating. Marginal cases will remain. But the more detailed the principles, the more the typology will be sharpened.

This is the way in which in practice, different languages have been described. In an influential article of the mid 1950s, Hockett pinpointed three **models** of grammatical analysis in general – three different 'frames of reference' (to adapt his words) within which an analyst might 'approach the grammatical description of a language and state the results of his investigation' (first sentence of HOCKETT, 'Models'). In the terms which we are using, these are particular sets of formal principles. Of Hockett's three, one, which he called the 'Word and Paradigm' model, evidently

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referred to the traditional description of the older European languages. Another, which he labelled 'Item and Arrangement', is a model in which morphemes are the basic units of meaning and in which they were arranged linearly. The third ('Item and Process') is one in which the structure of a word is specified by a series of operations; as we will see in chapter 7, this is one effective way to describe inflections. Hockett said little about the first model; but between the others he could not choose definitively. In part, at least, it was a matter of a grammarian's general outlook. But one reason why the outlook of grammarians differs is that they tend to be specialists in particular types of system. An 'Item and Arrangement' model has, in practice, been effective in Chinese. It has few attractions for a specialist in Latin, and not just through inculcated theoretical prejudice.

To speak in this way is not to renounce the prospect of identifying other, more general principles. It may be that some are more abstract and will cut across models. Another possibility is that certain principles in morphology may correlate with principles in syntax or in other branches of description. Such correlations would themselves be principles of a higher order. But before we are tempted to launch into flights of speculation, we should recall that morphology is also a practical subject. For particular languages or families of languages, various particular models or techniques of description have proved illuminating. It is at this level that an introduction can be most helpful.

RELATED READING

There are few general introductions to morphology: for readers who do not like mine, BAUER, *Morphology* is the natural alternative; for those who know German, there is an older text by H. Bergenholtz & J. Mugdan, *Einführung in die Morphologie* (Stuttgart, Kohlhammer, 1979). At a higher level WURZEL should be read, especially for an historical perspective. On historical morphology see further BYNON; ANTILA, especially ch. 5; also FISIÁK, which is a cut above most conference proceedings.

For an up-to-date survey of technical work within the generative school see A. Spencer, *Morphological Theory* (Oxford, Blackwell, 1991), which has unfortunately appeared too late for detailed reference. HAMMOND & NOONAN is a useful sampling of recent work in morphology, at least in the United States.

On nineteenth-century classifications see A. Morpurgo Davies, 'Language classification', in SEBEOK, pp. 606-716 (typological classes pp. 652ff.). Other

Related Reading

papers in SEBEOK are sporadically useful for the history of the subject. For a later typology, which stands as a monument without that much productive influence, see SAPIR, ch. 6. My own approach to the issue springs from an inaugural lecture by C. E. Bazell, *Linguistic Typology* (London, School of Oriental and African Studies, 1958; reprinted in P. D. Stevens (ed.), *Five Inaugural Lectures*, London, Oxford University Press, 1966).

For Hjelmslev's view of morphology and syntax see L. Hjelmslev, *Prolegomena to a Theory of Language* (trans. F. J. Whitfield, 2nd edn, Madison, University of Wisconsin Press, 1961), pp. 26, 59. But this is a difficult work; much easier is his *Language: an Introduction* (Madison, University of Wisconsin Press, 1970), also trans. F. J. Whitfield. Bloomfield's mature view is in a classic book (BLOOMFIELD) which all students of linguistics should read; for commentary I hope I may anticipate the publication of a study of my own, 'Bloomfield's morphology and its successors', to appear in *TPhS*.

For the semantics of the English Verb see, for example, PALMER. Chomsky's treatment first appeared in CHOMSKY, *Structures*, pp. 38-42; current textbook version in A. D. Radford, *Transformational Grammar* (Cambridge, Cambridge University Press, 1988), pp. 401ff. We will return to generative phonology in the reading for chapter 8; for the moment LASS, ch. 9, may stand as a sufficient obituary.

The importance of double articulation was first stressed by Martinet: for a textbook account see MARTINET, §1.8, but note that his term 'moneme', for a unit of the first articulation (§1.9), is not general. 'Duality' is Hockett's term: see HOCKETT, *Course*, p. 574. For its place among 'design features' see LYONS, *Semantics*, 1, pp. 70ff.

Ch. 8 of BAUER, *Morphology*, is a useful discussion of the limits to the recognition of morphemes: for the slide into etymology see pp. 116ff. The term 'partially independent element' is from HARRIS, p. 177. On phonaesthetic groupings see ULLMANN, pp. 82ff.; briefly, but in a useful theoretical perspective, in LYONS, *Semantics*, 1, p. 104. Words in *-ump* are among the examples introduced by BLOOMFIELD, p. 245; others, in profusion, are discussed with insight in a group of papers by D. L. Bolinger: see his *Forms of English* (ed. I. Abe & T. Kaneyiko, Tokyo, Hokuou Publishing Company, 1965), part 2, chs. 2-5.

For motivated patterns see chapter 12. For Chomsky's current conception of 'universal grammar' see his *Knowledge of Language* (New York, Praeger, 1986), noting especially the theory of parameters (pp. 146ff.). I have discussed its development in my contribution to N. E. Collinge (ed.), *An Encyclopaedia of Language* (London, Routledge, 1990), pp. 112-38.