ENGLISH

DAVID CRYSTAL

1.   The word classes of English have probably been studied more thoroughly, and from more different viewpoints, than those of any other language: apart from English grammars, English is usually the language of exemplification in most theoretical linguistic discussion of the subject. One almost unnoticed result of this lengthy tradition, however, has been the development of an extremely unhealthy complacency, in both a theoretical and a descriptive context, which manifests itself in a number of ways. The surface structure of this complacency is readily identifiable with the terminological vagueness seemingly endemic in this subject: familiar terms, like 'partial conversion', 'full word', 'adverb' or 'particle' have been bandied about in a cavalier way, with little attention being paid to the extent of their intelligibility. This point needs (and will get, below) further discussion: clearly, to say that a word is an adverb, for example, explains little and confuses much, when one thinks that by 'adverb' one could be taken to be referring to the range of words in which such disparate items as 'the', 'however', 'yes', 'slowly', 'very', 'well' and 'who' have been yoked together. The near-universal use of a very small number of labels has obscured the existence of deeper problems, and has meant that people can rarely be sure of where they stand in any debate involving such labels. One person's use of a term like 'function word' or 'adverb' (even, at times, 'noun' and 'verb') is likely to be significantly distinct from another's, because its descriptive basis and theoretical status will hardly ever have been defined before discussion begins. Nor can one readily judge whether the word class discrimination of an adult is due to his perception of gross similarities in form and function of a group of words, or whether he is (unconsciously or otherwise) paying lip-service to a

familiar label. And as no-one seems to be able to do without these terms, nor the general concept of word class, in talking about English, whether this be in a generative context, in the context of pattern classification within a corpus, or in teaching-grammars, it is all the more unfortunate that the existence of terminological shortcomings is rarely acknowledged.

More worrying than this is the misdirected emphasis on word classes *per se*, seen in isolation from the rest of the grammar, and in textbooks usually given separate discussion towards the beginning.[1]) It is frequently assumed that one can satisfactorily describe the word classes of (say) English before going on to the 'meaty' part of a grammar, for which the classes are seen merely as a kind of grammatical shorthand. This is complacency, because to isolate word classes in such a way is both misleading and distorting: word classes should not be taken as being in some way part of a terminological preamble to grammar, because in a real sense they assume a grammar before one can begin to talk about them. Their definition is an abstraction from grammatical and other criteria – not directly from data – and their purpose is ultimately to act as the constituents of a grammatical meta-language, which one manipulates to display more interesting syntactic relations. It is the interrelationships between word classes, and their function in helping to formalise transformational and other relations, which is the really important issue arising out of a consideration of word classes – and not the establishment of a set of isolated classes as an end in itself. Again, the distinction between establishing and describing the word classes of English is still often confused and unnoticed. This too is worth stressing here and now. The problem of setting-up word classes is basically a question of discovery procedures, and the issues arising here are very different from the purely descriptive problem, where word class criteria are verified against an independently-verifiable grammar. Nor are procedural issues relevant to the descriptive task: for example, given that all word class definitions in English were to be syntactic, to criticise this as being 'circular in a way that

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[1]) A recent example is B. Ilyish, *The Structure of Modern English* (Moscow, 1965), where Part One ('Morphology') covers the parts of speech, first in general, then in individual detail; Part Two covers 'Syntax'.

vitiates all the definitions'[2]) is to confuse procedural with de-
scriptive method. Syntactic criteria may not be the best criteria
for all classes, but there is no necessary circularity. Problems of
'where to start' are not of descriptive or explanatory interest, and
defining X by Y and Y by X is from the viewpoint of descriptive
grammar quite permissible.

There are other issues which have hardly been raised. Very
little attempt has been made to evaluate systematically the multi-
plicity of different analyses which have been made of English
word classes (apart from the familiar, and usually rather superficial
remarks about the unreliability (unqualified) of notional criteria.[3])
This of course relates to the general question of evaluating a gram-
mar, which is only beginning to be explored. Again, the relationship
of word classes to considerations of language typology is a useful
approach to the whole concept, which has largely been overlooked:[4]
what are the problems facing the word class analyst which
are characteristically English? This in turn is a question which
can only be answered by relating it to the more fundamental
matter of the nature of linguistic universals. The presence of such
issues,[5]) makes it quite clear that any complacency about word
classes in English is unfounded; and this paper, consequently, is a
discussion of some neglected points of principle within this context.
It is not an academic review of past work, nor a systematic de-
scription, for the first would produce an encyclopedia of territory
well-charted already, while the second could only result in a
complete English grammar. Its main aim is to stimulate further
discussion on the matter by looking 'meta-meta-linguistically' at
familiar descriptive concepts in a critical light, to see how far
familiarity has bred too great a content, and obscured some real
problems.

2.   To begin near the beginning: word classes, it is agreed, do

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[2]) H. A. Gleason Jr., *Linguistics and English Grammar* (New York: Holt,
Rinehart and Winston, 1965) p. 115, footnote.

[3]) Cf. below, p. 43.

[4]) But cf. C. E. Bazell, *Linguistic Typology* (University of London Inaugu-
ral Lecture) 1958.

[5]) Discussed, for example in N. Chomsky, *Aspects of the Theory of Syntax*
(Cambridge: MIT, 1965).

'simplify our description of the structure of the language',[6]) and are an essential stage in the construction of an adequate grammar of a language. It is important to be able to make statements about the grammatical relationships and restrictions exercised by groups of items upon each other than by individual items, for only in this way can one successfully achieve any notion of 'generality' – a notion which is inherent in the concept of 'rule' (generative, pedagogical, or any other). This implies, as already mentioned, that one cannot isolate word classes, giving them an identity of their own apart from the grammar. The proper emphasis in establishing or describing them does not allow them to be disassociated from the grammar at all: the concept word class implies the prior establishment of a grammar, and explicating the word classes of a language involves explicating its grammar. This is because the important and interesting aspect of the problem (as is now generally recognised) lies in the nature of the *criteria* which are used in defining the classes. 'The definition of a class, and its membership, can only arise from the criteria used to establish it in the first place'.[7]) In the past, while the role of criteria was usually implicit in the definition of classes (e.g. a label like 'defective form' implied a ranking of criteria of some kind – defective and regular in what respects?), these criteria were rarely investigated explicitly, which accounts for much of the arbitrariness in description.[8]) These days the shift in attention is clear: 'as many classes are set up as words of different formal behaviour are found'.[9]) This as it stands, of course, is not satisfactory, for a criterion of formal difference, without further qualification, is going to take us too far. For example, one has to allow in the co-occurrence restrictions which exist between grosser classes, and which tend to reduce English to a very large number of very small classes. If one

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[6]) H. A. Gleason Jr., *An Introduction to Descriptive Linguistics* (New York: Holt, Rinehart and Winston, 1961) p. 93.

[7]) R. H. Robins, *General Linguistics: An Introductory Survey* (London: Longmans, 1964) p. 228.

[8]) An early exception is O. Jespersen, *Essentials of English Grammar* (London: Allen and Unwin, 1933) § 7.7$_1$: 'in order to find out what class a word belongs to it is not enough to consider its form in itself; what is decisive is the way in which the word in connected speech 'behaves' towards other words, and in which other words behave towards it'.

[9]) Robins, op. cit., p. 229.

only considers the restrictions governing the 'behaviour' of verbal tense-forms in relation to temporal adverbials, this being a fairly easily definable field, the intuitive homogeneity of the class 'temporal adverbial' in English is shown to be clearly superficial, a number of important sub-classes becoming apparent immediately; [10]) and one wonders what would happen if other co-occurrences of this general type were examined. Again, 'different formal behaviour' would attribute undue significance to morphological characteristics, which would result in the unsatisfactory situation of 'house', 'say', and other morphologically unique forms in English being set up as 'classes' of their own. The reductio of this approach, however, is to consider the restrictions exercised by collocability on individual lexical items, which suggest that very few words have an identical overall formal behaviour, even in a given restricted grammatical environment.[11]) One would end up with a multitude of single member classes – ignoring the point, for the moment, that the phrase 'single member class' is usually taken to be a contradiction in terms (though this is an unnecessary conclusion, as it depends on one's definition of 'class' in the first place) – and the purpose of the exercise would have backfired. The requirement that classes be distinguished by different formal behaviour is clearly too absolute for the linguist, who wishes to set up a fairly small number of word classes if it is to be worth his while (as far as descriptive 'economy' is concerned).

An alternative and more careful formulation of the problem is therefore more reasonable, while retaining the emphasis on criteria suggested above, e.g. 'we must class together words which play essentially identical roles in the structure of the language';[12]) 'the aim must be a system of word classes characterized by maximum homogeneity within the classes';[13]) 'a class of forms which have similar privileges of occurrence in building larger forms is a form class' . . . 'a part of speech is a form class of stems which show

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[10]) Cf. D. Crystal 'Specification and English tenses', *Journal of Linguistics* 3 (1966) 1–34.

[11]) Cf. below p. 31, for an instance of this, by no means maximal in depth of detail.

[12]) Gleason, 1961, p. 93.

[13]) Gleason, 1965, p. 130.

similar behaviour in inflection, in syntax, or both';[14]) form classes
are treated as separate when they show 'enough difference' from
other classes.[15]) As they stand, of course, such statements only
postpone the central issue, namely, How can notions of 'identity of
role', 'maximum homogeneity', 'similarity of behaviour' and
'enough difference' be precisely defined? This question does not
seem to have been answered. If the decision is arbitrary, as Bloom-
field[16]) thought,[17]) then perhaps there is no one answer – but
people should at least be aware of this weakness and limitation of
the word class concept, and note the extent to which decisions
become little more than a matter of linguistically sophisticated
taste (cf. below, p. 47). This problem is acute for English, because
there is no obvious single criterion, such as inflectional type, or
fairly self-evident combination of criteria, which could be used to
classify all, or even most words. One needs an aggregate of criteria
of various degrees of generality, and hence some further criteria
of selection and evaluation. A technique for assessing the relevance
of all potential criteria is required to make any notion of 'maximum
internal homogeneity' workable, to avoid introducing unimportant
and irrelevant criteria into one's description, to allow judgements
about 'exceptions', 'overlapping classes', and so on. But before
looking in more detail at the criteria relevant for English (cf.
section 4 below), we need to consider further the implications of
the requirement of 'simplicity' or 'economy' which seems to lie
behind most word classifications.

An ideal situation seems to exist if one can assign all words of
a language to a very few classes by applying a very few general
criteria – a balance between the number of classes, and the number
and degree of complexity of the criteria. This is as near as one can
get to maximal generality without overburdensome explanation.
On the whole, there is a ratio between number of criteria and
classes: the more criteria one introduces, the more classes will be

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[14]) Cf. Hockett, *Course in General Linguistics* (New York: Macmillan,
1958), p. 162, 221.

[15]) Cf. R. A. Hall Jr., *Introductory Linguistics* (New York: Chilton Books,
1964), p. 163. Any potential distinction between 'word-' and 'form-' class is
irrelevant for this paper.

[16]) L. Bloomfield, *Language* (New York: Holt, 1933) p. 269.

[17]) Cf. Gleason, 1961, p. 92.

established, with each class having fewer members. The current tendency is towards a more delicate or refined subclassification,[18]) and while this is certainly the right direction in which to be moving (accurate general statements being more desirable as a first end than simple ones), it should also be remembered that the more subclassification one allows, the more points of general similarity become less clear: one begins to see some new trees that had not been visible previously, but one also begins to lose sight of the wood. And ultimately there is the danger of finding oneself with such small classes of items that general statement becomes impossible, and listing of members becomes the only simple descriptive solution, which is hardly an explanation. On the other hand, too few criteria produce the alternative danger of under-classification – major classes, e.g. bipartite (e.g. noun vs. non-noun), tripartite, with a very uncertain and miscellaneous constitution, lacking any readily perceivable homogeneity.[19]) For English, this has usually taken the form of a Noun-class, a Verb-class, and a mixed bag. With very general classes of this kind, it is extremely difficult to define conditions of membership precisely: all one can usefully do is characterise the classes with reference to the most 'general' criteria, and list (usually a large number of) exceptions.[20]) There are, however, other general classifications of a different type from these, whose widespread use and usually unquestioned status warrant separate discussion.

3.   There have been a number of attempts to find a major binary division in English words, at least four dichotomies being very familiar (and not, of course, being restricted to a context of

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[18]) The difference between 'class' and 'sub-class' is clearly one of degree, but in the absence of any satisfactory definition of the former, the distinction between them has unfortunately become extremely tenuous, and the same group of words (e.g. adverbs of manner, colour adjectives) has at times been referred to as a class, at times a sub-class.

[19]) Cf. Hockett, op. cit. p. 221 ff.

[20]) One danger of this is that it tempts people to talk in terms of a class having a 'central core' of regular members, and a 'periphery' of uncertain members, or some such metaphor – a pseudo-statistical priority which is based on size of membership alone, and ignores considerations of overall frequency of a word's occurrence and the crucial question of the ordering of criteria. Cf. below, p. 46.

English): 'full/empty', 'open/closed', 'variable/invariable', and 'lexical/grammatical'. Reference to these classifications seems to be made more often than any other; [20a]) so it is a pity that there has been little attempt to define these terms clearly, to see how far they are meaningful or can be consistently applied in any exhaustive study of English words. It is often assumed that their meaning and definition is self-evident, and (more worryingly) that there is a parallelism between the pairs: 'full', 'lexical' and 'open' seem to be treated as synonymous very frequently, and similarly 'empty', 'grammatical' and 'closed'. Also one comes across unhelpful 'definitions', of the extreme form 'function words are grammatical words are lexically empty words are words functioning in a closed system ...', phrased more subtly, all too often. A look at what is involved in these dichotomies would thus seem to be called for, to see what help, if any, these classifications are in defining word classes for English.

(a) *Variable* vs. *invariable* words (*inflectional* v. *non-inflectional*). This is a dichotomy which is clearly distinct from the others, and which has often been taken as an obvious and potentially useful starting-point in word-classification.[21]) The inflected words are usually listed as nouns, verbs, adjectives, pronouns and a few adverbs;[22]) invariable words, having little internal coherence, are most easily described as everything other than these. Having said this, the poverty of the classification should be apparent, for it is hardly a classification in any useful sense. The invariable group is merely a convenience; and within the variable fold, there are different types of inflection and degrees of variability which one would expect to see distinguished. Neither has a coherence supported throughout by any other (e.g. distributional) criterion. The major difficulty, however, is that the rigid division implies a

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[20a]) E.g., classification in terms of monomorphemic and polymorphemic words, whose analysis and classification in any case belongs primarily to the lexicon of the language (cf. Robins, 'In defence of WP', *Transactions of the Philological Society*, 1959, p. 121, 122.)

[21]) Cf. Robins, 1959, p. 121.

[22]) Apart from 'more/most', 'worse/worst' and other familiar 'irregulars', one would have to list 'closer/-est', 'faster/-est', 'nearer/-est', 'oftener/-est', etc.

naturalistic view of word class membership, and fails to provide a satisfactory account of words which can occur in different types of syntactic environment, and thus 'belong to more than one class', as it is traditionally put. There is no problem if such words inflect through their *whole* range of occurrence (e.g. words which occur as both nouns and verbs), or if neither inflect at all (e.g. as prepositions and adverbs); but if this does not happen, then one has words which are variable or invariable depending on the point of view, e.g. 'out', which may inflect as a noun ('ins and outs', etc.), and many more. Of course one can and does distinguish such cases syntactically, but this is at once to go beyond the basis of the variability criterion. Another criticism of this criterion, also, is that it does cut across certain other (intuitively important) classifications. Invariable nouns would be cut off from the main class, for example – such as in the case of some uncountable nouns (like 'tolerance' or 'perseverance') which do not inflect for number, and hardly ever for case (the nouns taking the postmodifying genitive instead).[23] Finally, the term 'variable' has also to be related to 'clusters' of the kind 'in-inside-into-within', where there is no obvious reason why these could not be seen as variable forms of 'in'.

(b) *Full* (*content*) vs. *empty* words. It perhaps needs stressing these days that 'empty' here really does (or at least did) mean words which have no meaning at all. Sweet, the founder, used 'empty' to refer only to form-words (words like 'the' and 'is', as he puts it) which are 'entirely devoid of meaning'.[24] This point needs to be made because a scepticism about the existence in English of truly empty words has now become so general, that there has developed a retrospective doubt that the term could ever have been seriously used in this absolute way. Even Sweet had trouble with the division, of course, and had to coin the phrase 'full form-words' to cope with words like 'became' in 'he became Prime Minister', and his vague definition here reflects his basic dissatisfaction: 'a word combines

[23] Cf. Jespersen, op. cit., 142, ff., B. M. H. Strang, *Modern English Structure* (London: Arnold, 1962) p. 93. I am excluding humorous and poetic licence, where these contrasts do exist, as this licence also applies, though not always in the same degree, to the majority of invariable words.

[24] H. Sweet, *A New English Grammar* (Oxford: Clarendon, 1892), § 58. Cf. Jespersen, op. cit., § 36.6.

the function of a form-word with something of the independent
meaning of a full word' (§ 59); cf. § 61, 'It will, of course, be under-
stood that it is not always easy – or even possible – to draw a
definite line between full-words and form-words'. It is now generally
accepted that the absolute terms and the rigid division of the
dichotomy are misleading: on the one hand, there is no agreed way
of quantifying the degrees of fulness which exist; on the other hand,
the only words which seem to qualify as empty are the forms of
'be', 'to', 'there' and 'it' – but only in certain of their uses, of course,
viz. 'be' as copula, infinitival 'to', 'there' and 'it' as unstressed
subject 'props'. It is not difficult to produce examples of these
words being used with important contrastive function in other
contexts, e.g. the existential use of 'be', all other uses of 'to' (and
also cf. 'I'd like to go' v. 'I'd like a go'). Most of the words commonly
adduced as empty (e.g. 'of', 'the') can be shown to contain meaning,
definable in terms other than stating grammatical contexts,
particularly when one considers them, as one must, in a full prosodic
context: 'of' contrasts readily with other prepositions (e.g. 'the
material of/by/near ... that book is ...'), and the OED takes
many column-inches giving the referential meanings of 'the'. Most
of what people normally label 'grammatical words' (cf. below)
have referential relevance, in fact. All prepositions, for example, are
definable literally, in terms of spatial-temporal dimensions: only
when they are used as parts of idioms may they be strictly meaning-
less, and only then because the meaning is now being carried by
the larger lexical unit (cf. the use of 'the' in proper names, etc.).
Finally, the inadequacy of the dichotomy's semantic basis is
pointed by its restriction to cognitive meaning: 'full' is usually
explicated empirically. But this is to ignore the meaningfulness
imposed on words by connotation, as well as the relevance of
non-idiosyncratic attitudinal meaning deriving from the use of
prosodic features of utterances,[25] which affect 'grammatical'
words as well as 'lexical'.

The 'full-empty' opposition, then, is not a realistic classification.
To salvage anything, one has to substitute a scale or continuum
between the two poles, between words which have a complex

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[25] D. Crystal, 'The linguistic status of prosodic and paralinguistic
features' (University of Newcastle-upon-Tyne Philosophical Society) 1966.

metaphysical, attitudinal and empirical relevance and words which have very little of this, but which nevertheless have a meaning of some kind independent of grammatical considerations. The difference is one of degree: exactly how many places along this continuum there are is an open question, which is unlikely to be answered until techniques of measuring meaning become more sophisticated. Meanwhile, it is worthwhile remembering that the full-empty distinction as it stands is of little theoretical or practical value in the definition of English word classes.[26])

(c) *Lexical* vs. *grammatical* (*form* or *function*) words (or *functors*).[27]) This division is usually taken as paralleling the full-empty classification. Again, there is mutual exclusiveness: lexical words imply absence of grammatical meaning and vice versa. It is difficult to say just what 'lexical' refers to: an expansion of the form, 'words about which statements of meaning are made in a lexicon' is unsatisfactory, because most 'grammatical words' have non-grammatical meanings which would also have to be listed there. 'Lexical' must not be seen as incompatible with 'grammatical', and it is not difficult to show that the dichotomy is unreal at both ends. On the one hand, there are numerous words usually called 'lexical' which have grammatical meaning 'built-in', as it were, due to the presence of a morphologically-identifying suffix, e.g. '-ance', '-tion', '-less', '-able', '-ize', '-wise', and many more (cf. below, p. 42). (This of course implies a prior morphological analysis, so that 'station' and 'interrogation', for example, may be distinguished.) On the other hand, as stated in the discussion of (b) above, all of what are usually called 'grammatical words' have a function or meaning which is clearly not grammatical (*ergo* lexical?) as well as their undeniably grammatical function. The article

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[26]) Cf. Robins, 1964, p. 277.

[27]) Chomsky's distinction between lexical and grammatical formatives op. cit. p. 65, ff.) seems to be similar in principle, but the latter are defined in a different way from that discussed here: as non-lexical constituents of a terminal string, they include formatives like *Perfect*, *Possessive* and ⧣ (boundary symbol) as well as 'the', etc.

For 'function words', cf. C. C. Fries, *The Structure of English* (New York: Harcourt Brace, 1952) and W. N. Francis, *The Structure of American English* (New York: Ronald Press, 1958), p. 231.

system, for example, may be discussed in terms of co-occurrence, substitutability, place in the system of determiners, and so on; but it may also be discussed in terms which are of empirical relevance. The auxiliary verbs and prepositions in English are even clearer examples of the impossibility of any kind of rigid division. And there is the further case of idioms which makes the division seem unreal: whatever the grammatical meaning of a word, it stands to resign this by becoming part of a larger lexical unit, e.g. 'in' in 'in case', 'out' in 'eke out', 'the' in 'the Thames'. Idioms clearly have to be taken as a separate class in this context. As with 'full-empty', then, there seem to be degrees of both 'lexicalness' and 'grammaticalness' in English, and a scale

+LEXICAL	—LEXICAL
—GRAMMATICAL	+GRAMMATICAL

would really be the only way to retain these terms usefully.

It is worth discussing the criteria which have been suggested for the definition of 'grammatical words' (henceforth, inverted commas understood) in more detail: such criteria, of course, are usually also relevant for the definition of (b) and (d). They bring particular difficulties, largely because there are different types of such words. Six main kinds of criterion seem to have been used in discussing this subject. (Tautologies of the kind 'grammatical = structural meaning' or 'form words indicate grammatical relationships' will not be commented on). First, there is an appeal to phonological criteria, which can be briefly dismissed as being of little assistance. It is true that the majority of grammatical words have weak sentence stress,[28] and many of them have reduced forms, but in certain environments, such words are regularly stressed (e.g. 'do' in 'I do like it'), or given full form (e.g. prepositions at the end of sentences). Also, the position of stress as a factor in the definition of 'full' words and 'empty' or 'form' words is often unclear: Sweet [29] seems to have begun a circularity by implying in his examples (see. p. 38 below) that 'some' has stress because it is a full-word, whereas 'piece' and 'lump' are to be taken as (nearly) form-words partly because of their diminished stress.

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[28] Cf. Sweet, op. cit., § 60.
[29] Op. cit. 61.

Secondly, grammatical words are usually said to be relatively 'small' and 'finite'. Assuming these terms to be distinct, and assuming one can give some definition to 'relatively', the only meaning one can give to the former (phonological or graphological length – 'little words' is a familiar phrase) is readily disprovable. (One does not have to explain away the absence of long grammatical words but the presence of short lexical ones!) 'Finite' has been taken to mean countable, 'not open-ended', 'the whole range readily listable', or some such formulation – a requirement which becomes extremely difficult to follow when one considers the whole range of prepositions, for example. These must of course include 'complex prepositions' ('on account of', 'in accordance with', etc.) which have a very gradual shading-off into compound nominal groups (e.g. 'at the side of') and which are only beginning to be studied.[30]) Thirdly, grammatical words are also said to be relatively permanent, to not have any continuous growth (*contra* lexical and 'open-class' words); but this is a statement which is only relatively true, over long historical periods (cf. the major changes between Old and Middle English, for example), and hence of little synchronic relevance. It is true that, within a given period of years, one can point to new lexical items having emerged and no new grammatical items; but apart from haphazard exemplification there is little information about this process or the variables involved in it (e.g. no information about different rates of lexical addition in different periods in different areas of vocabulary); and in any case one still needs a concept to explain the relative stability of the grammatical words (cf. (d) below).

A fourth point, which is frequently made, is that the 'meaning' of grammatical words is only demonstrable by exemplifying their use in sentences. This is not the case, as the comments on 'full-empty' have already suggested. Very few grammatical words are in fact predictable in sentence-frames. It is possible to predict the occurrence of *some* grammatical words in a few contexts (excluding occurrence in formulaic utterances, which are wholly predictable), but only under very favourable conditions: 'it' and 'the' are pre-

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[30]) Cf. R. Quirk and J. Mulholland, 'Complex prepositions and related sequences', *English Studies*, (1964), Supplement to volume 45, pp. 64–73, and below, p. 50.

dictable in such contexts as '∼ seems that' and '∼ only way' respectively, but in most other contexts, e.g. '∼ good men', 'the' is but one choice from a number of alternatives (though widening the context would probably reduce the number substantially).[31] Any criterion of predictability is clearly more of a scale than a polarity, and if applied would display many different types of word, differentiating the high degree of unpredictability of prepositions from the more restricted auxiliary verbs and conjunctions: there would certainly be no nice parallel between what is predictable and what is grammatical. Again, some lexical items are largely or wholly predictable in certain contexts, e.g. 'better' in 'I think we'd – get off this bus', or 'never' in '/John'll !nèver agrée with you # /will he #'. To make such a criterion work would also involve considering such problems as the evaluation of the frames within which an item may be said to be predictable, the structure of 'units' higher than the sentence, and the distinction between notional and grammatical predictability – problems which have hardly been faced as yet. But while this makes the notion of predictability of little value in the context of word-classification, it is still possible to salvage something from this approach, at a fairly practical level. A good case could be made for seeing as grammatical words those about which statements of their use have to be made individually: they are unique in most or all respects. If this is taken to imply 'at a relatively surface level' (and not to enter into the question of collocability), then it is probably a helpful way of looking at them – as long as one remembers that there are liable to be quite a few more than one thought,[32] and that the resultant grammatical words will not coincide with the traditional views–many prepositions would be excluded, for example. By definition, of course, all these words would not be eligible for inclusion in classes at a more general level.

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[31] But allowing in wider contexts would tend to reduce the lexical-grammatical distinction to nil on this point, as over long contexts, lexical words (except at the very beginning) would also become highly predictable.

[32] The Survey of English Usage at University College London (cf. R. Quirk, 'Towards a description of English usage', *Transactions of the Philological Society*, 1960, pp. 40–61), has a separate file of 'closed system words'. These are words which have been set aside as belonging to small finite groups (such as the 'personal pronouns') or about which it is assumed that individual statements are necessary (such as *all, enough*). There are about 400 of these.

Fifthly, 'another practical test of form-words is that they may often be omitted with a slight change in the form of the sentence – sometimes without any change at all – or in translating into some other language. Thus *of* in *man of honour* is omitted in the synonymous expression *honourable man*, and *the earth is round* may be expressed in Latin by *terra rotunda*, literally 'earth round', where both form-words are omitted. So also *some* in ʽ*some people think differently*, being a full word has strong stress and cannot be omitted; while in *give me some more bread* it has weak stress, and might be omitted without loss of clearness'.[33]) He compares French *du*, and continues: 'Even such words as *piece* and *lump* are used nearly as form-words in such groups as *a piece of ʽbread, a lump of ʽlead*, as is shown by their diminished stress, and by their having practically almost the same meaning as the weak *some* in *some ʽbread*'. The tentative nature of this criterion is clear from such qualifying vagueness as 'may often', 'slight change', 'might be omitted', 'nearly as', and so on; but it is of little value for other reasons also. Apart from the irrelevance of the appeal to translation, one can easily think up counter-examples of uses of form-words which are non-omissible because there is no permissible attributive or other transformation; and there is usually more than a 'slight change' in the form and synonymity of the sentence when prosodic considerations are brought in. The implied circularity in the mention of stress has already been referred to (cf. above p. 35). There is also an obvious danger in relying too heavily on any criterion of near-synonymity, and an equally undesirable flexibility enters in with the reference to such an indefinable stylistic consideration as clearness – on such grounds *full*-words may at times be omitted. Sixthly, and finally, it is said that grammatical words transcend distinctions in register – that all varieties of English will exemplify their use. This is a criterion which it should be possible to prove statistically: the frequency of grammatical words in any corpus should be far above that of any lexical words, and there should be a clear break in relative frequencies of occurrence. But of course as a statistical definition, it would have no necessary linguistic relevance, to prove which we are back where we started.

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[33]) Cf. Sweet, op. cit., § 61.

(d) *Open-class(-set)* words vs. *closed-system(-class)* words. This is a more valuable dichotomy, which again runs only partially parallel to (b) and (c). The concept of system, first, is one which has received fairly clear exposition through analogies with cybernetics, and other fields, though there are nonetheless dangers in its uncritical linguistic use. If a system is an organised complex of a finite number of inter-related components (or some similar definition), then it is readily demonstrable that the components will have a stability of function (a definable positive and negative value) which would not be found in an inventory. In language, this seems to be true for relatively small closed systems of items, at any rate: with such cases as the personal pronouns, articles and other determiners, the internal contrasts are clear; there is the absence of synonymous terms; and there is homeostasis, so that to alter the value of one component is to alter the values of the others, such 'movements' being clearly identifiable and discussable at a practical as well as a theoretical level.[34] It is doubtful whether this notion is very helpful for systems with a finite, but relatively large membership, however, e.g. conjunctions, prepositions: here, to say there is a formal 'balance' between items is only true in an extremely theoretical sense, the implications of which linguists ignore in practice. One may discuss corners of the prepositional system, for example – or even the tense system – without feeling bound to refer to what would be inordinately complex sets of internal contrasts; and ignoring the whole network of formal relations seems to have no ill effects. If one artificially 'omits' the pluperfect tense from English, for example, there does not seem to be any difference in one's discussion of the present tense; its formal status has only 'altered' in a rather pickwickian sense, and to try to formalise the alteration seems pointless. This argues, then, that the notion of system has been stretched too widely, and that not everything which we may wish to call grammatical is systematic in the same (closed) sense throughout.

The weakness in the term 'system' is underlined by its being

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[34] Cf. Halliday (1961) pp. 246–247, who uses the notion of closed system as 'the crucial criterion for distinguishing grammar from lexis', though it is not clear how 'open set' and 'closed system' can be 'two distinct types of pattern' and at either ends of a cline at the same time. Cf. also Strang, op. cit., p. 77, Robins, 1964, p. 230.

opposed to open-set words, which, it is claimed, are potentially infinite in number, display synonymity, and can have changes in number and – more important – meaning of single words take place without this affecting the whole. The distinction is not as clear-cut as this, however, for it is not true that there is no interdependence between open-class words. There are groups of open-class words which have a clear systematic function in relation to each other, either defining each other, or being ordered in some way. This is implied by such terms as the 'logic' of a particular use or discourse of language (though this is only common in a philosophical context), and by more specific cases, such as the numeral system, months of the year, and many other groups of proper names. One finds groups of mutually-defining open-class words cutting up temporal-spatial dimensions,[35]) and a relatively open-class prefixation working similarly (e.g. 'palaeolithic', 'neolithic', 'megalithic', etc.): all this beside the more familiar colour-spectrum and kinship-term vocabulary. [36]) The establishment of these and other lexical subsystems on the basis of such semantic relations as incompatibility, hyponymy and antonymy[37]) is clearly going to have an important influence on the dichotomy of class v. system, and the evidence so far suggests that the division as it stands may well have to go. From the closed-system point of view, also, there is a great deal that has not been done: the systematic basis of many 'grammatical words' has often been assumed, and hardly studied at all (e.g. subordinating and co-ordinating conjunctions,[38]) or the predeterminers in the nominal group). Finally, some words are of unclear status in the light of the open-closed dichotomy: what are interjections, for instance?

One cannot but conclude that these four pairs of terms are not as valuable or as fundamental as has been implied by the frequency

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[35]) Cf. Crystal, *J. of Linguistics* 3, for examples.

[36]) Cf. J. Lyons, *Structural Semantics*. Publication of the Philological Society *XX* (Oxford: Blackwell, 1963) p. 38.

[37]) Cf. Lyons, op. cit., p. 59 ff.

[38]) But cf. L. R. Gleitman, 'Co-ordinating conjunctions in English', *Language* 41 (1965) 260–293, for an approach to the latter. A particularly tricky corner is how to relate conjunctions as they are discussed here to sentence-initiating optional 'conjunctions' as in: 'And there remains another point...'

of their use, and are of very little relevance for word classification, as the resultant divisions are too general and ill-defined. Variable-invariable is clearly distinct from the others, and cuts across them to a large extent (there being so many grammatical words which inflect). And while the other pairs do have a partial parallelism (particularly at the lexical-full-open pole), the distinctions are largely vacuous because there is no actual rigid demarcation of this kind in language. The concept of 'closed-system' does, however, suggest lines of approach which could be useful; and it would be valuable if more attention were paid to refining the notion of 'grammatical word' along the lines suggested. There is also the general criticism that to set up dichotomies of this nature once again focusses attention too strongly on the concept of grammatically isolated word classes, whereas the needed emphasis, as already mentioned, is on the selection and grading of criteria. Finally, any further subclassification of these dichotomies would of course have to elicit further criteria of a completely different kind, and it is to a consideration of these that we must now return.

4. What is needed is a balance between the over-classification of words as mentioned in section 2, and their under-classification as described in section 3. The classes, to be useful to the linguist (or teacher) have to be few and fairly general, and have some degree of intuitive coherence. This ideal situation, however, can only be approached by in some way ranking the criteria which one considers relevant to the task of class definition.[39] As a first step in this direction, we may make use of the concept of 'levels' of linguistic analysis, and discriminate criteria as belonging to one or other of these levels.[40] Theoretically, criteria from any level are potentially relevant – phonological, grammatical, lexical and semantic – so long as they are well-defined, and one avoids the

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[39] Which theoretically of course then means evaluating these other meta-meta-linguistic criteria as well: but we will not enter any further along this infinite regress.

[40] One must bear in mind throughout the need for an ultimately integrated statement of all the criteria discriminated, and not maintain a rigid division between (say) morphological and syntactic criteria, as in G. L. Trager and H. L. Smith Jr., *An Outline of English Structure*, (Norman, Okla.: Battenburg Press, 1951).

correspondence fallacy of expecting all criteria used to produce identical results in classification. It cannot be aprioristically assumed that any one group of criteria is irrelevant. Moreover, one group of criteria at one level will not satisfactorily define all word classes for English, and recourse must be had to other levels, though as one might expect (the word being by definition a grammatical abstraction) the centre of interest does stay firmly at the syntactic level ((v) in the following discussion) for most purposes.

(i) *Phonological/graphological criteria*. While stress has occasionally been brought into the definition of some English word classes,[41]) other types of sound-pattern (and their associated graphic representation), e.g. number of syllables or sounds, vowel harmony, segmental structure, prosodic or paralinguistic characteristics, all seem to be grammatically irrelevant for English, providing no systematic information about word classification – though of course some intonational features are of relevance in plotting other grammatical relations (and cf. footnote 63 below). There are of course features like vowel-alternation in nouns and verbs, and morphophonological criteria of the type 'form the plural of the subclass of nouns ending in $/\theta/$ by $/\theta/ \rightarrow /\delta/ + /z/$, but only if a long vowel or diphthong precedes, and there is no intervening consonant' (i.e. to exclude 'breath', 'length', etc.); but these are only relevant for the description of very small classes, and are in any case better taken under the general heading of morphology.

(ii) *Morphological criteria*. In English, suffixation is the main criterion,[42]) being of two types, inflectional (indicating plurality, possession, pastness, 3rd person, participiality and degree) and lexical (derivational): noun designators, e.g. '-phile', '-let', '-ence', '-dom', '-ism', '-ology', '-scopy'; adjective designators, e.g. '-ish', '-less', '-oid', '-ward'; verb-designators, e.g. '-ify', '-ize', '-ate'; and adverb-designators, e.g. '-wards', '-where', '-ly'. This is not an entirely satisfactory criterion, of course, because many suffixes (e.g. '-ly', '-en') can be added to other words which belong to one of a number of classes depending on syntactic position. For this reason, morphological criteria would seem to be clearly outranked

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[41]) E.g. by Strang, op. cit., p. 84.

[42]) 'a-', commonly cited as an adverb-designator, is extremely dubious, cf. below, p. 52.

by syntactic[43]) (though procedurally one might well want to start with the clear-cut morphological distinctions in establishing some basic classes.[44])

(iii) *Lexical criteria.* This would involve defining classes in terms of similarity or identity of collocability, ranging from identity within a grammatically-defined context to complete non-equivalence. So little work has been done in this field, however, that it is impossible to apply it to the present problem.

(iv) *Semantic or notional criteria.* There have been many objections made to defining word classes in English on a notional basis – difficulties of definition and delimitation of the referents of word classes, lack of parity between notional and grammatical categories, and so on – which are presumably too familiar to need discussion at this point, and are well covered elsewhere.[45]) But bad definitions in the past are no justification for refusing to allow notional criteria any place in word classification at all. There are certain classes of words where notional definition would seem to provide obvious and intuitively most satisfactory information, e.g. certain types of time reference, the numeral system, some systems of proper names; and it is to be hoped that formally-based classes will in any case have some notional coherence that can one day be defined.[46]) Meanwhile, one must not rule out carefully-formulated notional criteria as being wholly irrelevant in the definition of word classes, even though they may be secondary: to deny this is to invite a theoretical distortion comparable to that which was condemned when formal criteria were disregarded.

(v) *Syntactic criteria.* A discussion of criteria at the syntactic level has been left until last because of its central importance for word class description, although there has as yet been little done on the problem of grading. The main reason for this lies in the classification procedures used: for word classes, syntactic

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43) Cf. Robins, 1964, p. 226.
44) Cf. Hall, op. cit., p. 145.
45) E.g. Gleason, 1965, Part One and Chapter 6.
46) Cf., for example, R. Brown, 'Linguistic determinism and the part of speech', *J. of Ab. and Soc. Psychol.* 55 (1957) 1–5, reprinted in *Psycholinguistics*, ed. S. Saporta (New York, 1961), and *Words and Things* (Glencoe: Free Press, 1958), on the perception of semantic properties shared by groups of words.

criteria generally come down to substitutability in frames, which is not entirely satisfactory. Not all the objections to this procedure are convincing, of course, e.g. criticising noun-establishing sentence-frames such as 'the $\sim$ is good' on the grounds that many nouns are given uncertain status because of doubtful semantic/lexical relationship between them and 'good' ('the murder is good', 'the alacrity is good', etc.). This objection can usually be avoided, either by thinking up a genuine – if rare – context in which such utterances would be likely, or being more careful in the definition of the frame (e.g. by substituting a lexical 'prop' like 'such-and-such' for 'good' in these contexts). But substitutability does have other, unwanted results: taking just the above example, one is forced to omit many uncountable nouns which cannot co-occur with 'the' (unless the noun is also postmodified – in which case most proper nouns would be permitted). More generally, prosodic restrictions on occurrence and the environment of the sentence-frame as such are at times important considerations which are usually ignored; and there is no way for sentence-frames to reveal 'deeper' structural differences – they are restricted to defining classes on the basis of surface structural similarities. Quirk has criticised substitutability procedures on a number of other grounds, pointing out that the technique prejudices informant reactions by drawing too much attention to the feature being investigated; that it provides 'a proliferation of forms in a misleading guise of free variation';[47] and that the unsupplemented substitution test confuses idiomatic constructions with others, and tends to obscure the distinction between marginal and normal usage. A major objection, also, in the context of word classification, is that frames are only a temporary *deus ex machina* for the linguist, as they merely evade the evaluation question. He still has to decide how many and which frames to use.

The value of the sentence-frame technique is really that of an *ad hoc* measuring rod which can show at a glance whether two words are syntactically identical in respect of a particular criterion, though it does not help in providing an abstract definition of any frame or in relating frames to each other on the basis of their transformational relations. Thus all one has to do to show super-

[47] R. Quirk, 'Substitutions and syntactic research', *Archivum Linguisticum* 10 (1958) 41.
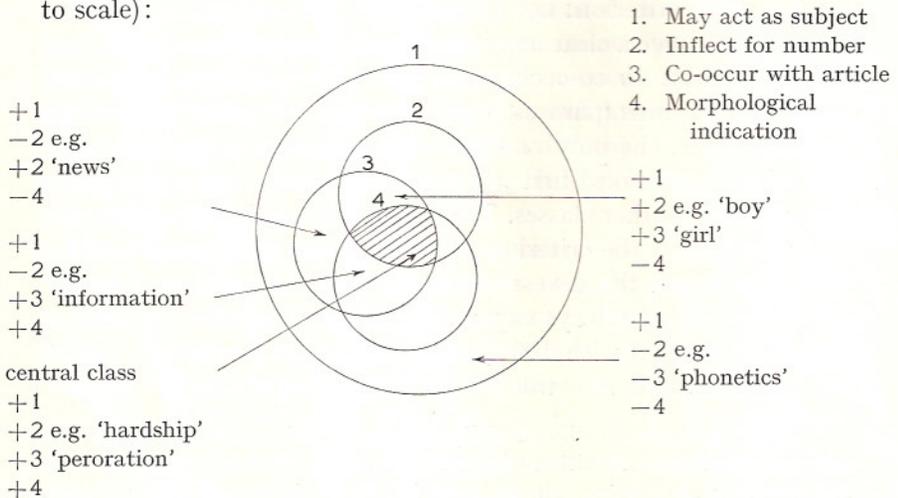
ficial the similarity between 'new' and 'railway' in 'new station' and 'railway station' is to point out that it is permissible to say 'this station is new' and not to say 'this station is railway'; and this process is presumably sufficiently familiar not to require any further exemplification. The point of present concern is: whether one takes them as belonging to different classes or not will depend on how many differences of a similar order one can find using other contexts. If two words are different in respect of every sentence-frame one can think up, then there is no problem. Likewise, if they are identical. The problem of grading comes when two words are identical for some frames and different for others. In assessing such similarities and differences, we are forced to rank criteria, and problems of the following type come to the fore: is the more important criterion for adjective class that a word may occur between determiner and noun or that it may occur directly after the verb 'to be' (attributive vs. predicative)? Or, more generally, should morphological criteria take precedence over syntactic in defining a class of nouns in English? And so on.

Any answer to such questions can only be reached in the light of some more general principle. Taking the second question, and using just four criteria as examples, how can one grade: number/case inflection in nouns, the ability of a noun to act as subject of a sentence, its ability to follow the article directly, and its being characterised derivationally? Constraints of different kinds come to mind for each criterion: not all nouns inflect for number and case, not all nouns have a clear non-inflectional morphological indication, not all are able to co-occur with the definite article, and other things beside nouns (phrases, clauses, pronouns) can be subject of a sentence. Here, the only realistic solution seems to be statistical: that criterion is ranked first which applies to most cases, and which least applies to other classes. The more words which fit a criterion, the more general the criterion; or, in the case of classes which are relatively 'open', the fewest words for which a criterion does not apply. One would always expect a coherent word class to have at least one criterion with 100% applicability, to justify one's intuition of coherence:[48] traditional classes which lack this (e.g.

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[48] There is no reason why carefully selected negative criteria could not be introduced into the definition of a word class, though these will usually be the corollary of positive criteria used for the definition of other classes.

adverbs) would have no alternative but reclassification until this principle is met. Single words with a unique range of criteria would be defined independently as functors (cf. above, p. 37). In this way, the criterion of being subject would be clearly primary (the overlap with phrases and clauses not posing any problems in *word* classification), and the others could be rated accordingly – as soon as someone does the relevant work! One would expect, for example, number inflection to rank fairly high, and derivational morpho-logical indication to be fairly low; or, taking the question of adjec-tives, attributive position would outrank predicative, because of the predicative slot's applicability to other words which never occur in attributive position and which differ from attributive words in all other morphosyntactic respects – predicativeness would be largely non-diagnostic for this problem.

The suggestion, then, is that some statistical approach along such lines could produce illuminating results over this question of the grading of criteria: what seems to us to be intuitively the most satisfactory solution should to a large extent reflect our unconscious awareness of proportions of frequencies. This approach would also seem to be the only way whereby one can give meaning to the notion of 'centrality' of membership of a word class. The technique is common to lexicography also, and illustratable through a series of overlapping circles (simplified here, as only certain criteria have been chosen, stylistic dimensions ignored, and the diagram is not to scale):

1. May act as subject
2. Inflect for number
3. Co-occur with article
4. Morphological
   indication

+1
−2 e.g.
+2 'news'
−4

+1
−2 e.g.
+3 'information'
+4

central class
+1
+2 e.g. 'hardship'
+3 'peroration'
+4

+1
+2 e.g. 'boy'
+3 'girl'
−4

+1
−2 e.g.
−3 'phonetics'
−4

A statistical rationale of the criteria for word classification seems to be the only alternative to the unqualified arbitrariness which Bloomfield stated was implit in the definition of English word classes.[49]) Arbitrariness cannot be eliminated, however, as there remain the questions of how many criteria to apply and how much sub-classification to allow. Where one draws the critical demarcation line between criteria which are deemed relevant to the definition of a word class and criteria which are not is a question which is better left open. There may not be an optimum level applicable to all word classes, a statistically definable boundary beyond which the ratio of criteria to members of a class (or exceptions?) goes beyond a statistically significant point. And if this is so, then one is forced to conclude that word classes may be as broad or as narrow as there is need of in a particular situation, and that no one classification is absolutely better than any other. So long as the requirement of total accountability is kept in mind, there seems nothing wrong with this *laissez-faire* approach: different linguists for different purposes will make more or less detailed classifications; and teachers will presumably stay at a more general level, using the most widely applicable criteria, at least in the early stages of teaching English. In this way, one may produce results which are at once linguistically satisfactory and not too far removed from traditional classification: continuity of some kind seems to be essential, in view of the criticisms which were evoked by the merely terminological aspect of the innovations in Fries's *The Structure of English*. But it is difficult to avoid the conclusion that in English the problem of defining word classes ultimately resolves into no more than a question of taste.

5.   A further issue which is often raised in connection with the definition of word classes in English is the problem of 'overlapping', in various forms. 'Form classes are not mutually exclusive', said Bloomfield[50]) which meant, presumably, in respect of their members (not criteria) through the existence of homophones. In English, as one might expect, the paucity of inflection makes this a major

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[49]) But cf. his definition of 'categories' (270): 'Large form classes which completely subdivide either the whole lexicon or some important form class into form classes *of approximately equal size*' (my italics).

[50]) Bloomfield, op. cit., p. 269.

problem, of typological significance, and a source of the language's productivity. How then should one take account of the presence of homophones in different classes? It is generally assumed that this is an important problem for word classification. Much of traditional grammar took a fundamentally naturalistic position on this question – once a part of speech, always a part of speech! They were defined on a notional basis (as in the noun or verb in English), given a pseudo-formal/functional definition (as with such terms as 'modifying' or 'qualifying' for adverb and adjective respectively), or characterised figuratively (as with the definition of interjection, very often);[51]) consequently a main, if hidden, assumption was that each English word belonged to a single, specifiable part of speech. Words like 'punch', which could be used as different parts of speech, were regularly seen as having one function more 'basic' than the other: 'punch' was at bottom always a verb, except on those occasions when it 'acted' as a noun; or, within the noun class, abstract nouns could be used as common nouns or proper nouns, but not vice versa.[52]) The basis of the implied priorities here (statistical? semantic? logical? etymological?) was never made explicit; and it is worth noting that an identical naturalistic implication lies behind such familiar terms as 'functional shift' or 'partial conversion', terms which without further qualification are not very helpful, as they too assume the existence of a 'basic' form from which the other is derived. This assumption of course needs to be justified, but it is doubtful whether it can be: is 'yesterday' a noun being used as an adverb, or an adverb being used as a noun? A statistical approach might again be feasible: if a word occurs more as a noun than an adverb, let us say, and this is statistically significant, then it is in this linguistically rather trivial sense 'basic'. The unfortunate point here is that for many pairs of homophones, frequency of occurrence is likely to be similar or indefinable; under which circumstances, the inadequacy of the approach should be clear.

Nor is it necessary to classify words into their homophonous

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[51]) E.g. L. Tipping, *A Higher English Grammar* (London: Macmillan, 1927). 'Interjections... are of no grammatical importance and are akin to the cries uttered by the lower animals', p. 195.

[52]) Cf. J. C. Nesfield, *English Grammar Past and Present* (London: Macmillan, 1898) p. 10, 11.

potentialities, e.g. those words which only ever belong to a single class (noun only, adjective only, etc., e.g. 'icy'), and those which belong to groups of classes of different kinds, e.g. noun and adjective (e.g. 'German'), noun and verb ('walk'), adjective and verb ('dry'), noun and adjective and verb ('faint'), and so on.[53] Gleason[54] considers this classification bad because it is uncontrollable, with too many possible combinations, and because the repetition of criteria for each class set up would be too uneconomic (one would have to give the rules for plural formation each time a noun appeared, for example). There are other objections: it circularly takes for granted the prior establishment of the word classes of major interest; it ignores the problem of words occurring in a different class from normal once only (as in some idioms, e.g. 'he is *friends* with me', 'I feel *faint*'); and it is wholly performance orientated – one notes unanticipated extensions in usage all the time (e.g. 'German' as a verb) which would require a continuous reshuffling of membership.

These approaches raise more problems than they solve, which suggests that in a synchronic study to worry over homophones is generally wasted effort. The only way one is ever made aware of homophones, after all, is by noting their occurrence in two or more structurally dissimilar contexts. This fact may be described without reference to their phonetic identity, or to their semantic relationship, if this exists (as with noun-verb pairs like 'cut-cut', for example) – which is not to say that such correspondences are of no interest, only that they are better discussed in a context other than word classes, where the historical basis of the relationship has usually confused synchronic study.[55] What is relevant is to ensure that the criteria for distinguishing groups of homophones are explicit and non-overlapping: there are always clear contextual differences and paradigmatic relations to differentiate them. In short, homophones are a pseudo-problem in word classification, due to one's forgetting that the relevant issue is not in the words themselves, but in the criteria of their use. As these criteria do not

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[53] Cf. Robins, 1964, p. 229.

[54] Gleason, 1965, p. 124.

[55] This confusion is often extreme, e.g. Nesfield, op. cit., p. 118–121, where 'a' is referred to as both indefinite article and preposition (as in 'He has gone a hunting', where 'a' is a form of 'on' (cf. § 230)).

overlap in homophones of different classes, by definition, there is never any confusion.

6. Apart from this matter of homophones, it is sometimes assumed that the word classes of English are fairly discrete. There are a number of important cases which suggest, however, that this is not the case; that there is a more genuine kind of 'overlapping' or shading-off between classes, and no clear-cut dividing line. If syntactic and other criteria show some words to be clearly class X, for example, and others class Y, then it is the case that there are usually other words which share some of the characteristics of X and some of Y, forming a kind of 'bridge' class, assignable to neither. Moreover, it is typically the case that there is not one such class, but a number of partially-overlapping sub-classes. The situation, in fact, strongly resembles gradience phenomena, and suggests that the description of word classes in English might be usefully approached by displaying the serial relationship existing between single words or word-groups.[56] As the examples below indicate, it seems premature to be talking about 'classes' of words in relation to these bridge areas: what is primarily needed is facts about the function of the words in question, a survey of their distributional properties. This has already been begun for the class of prepositions in English, which, when extended to cover the complex prepositions (Preposition$_1$-Noun-Preposition$_2$, e.g. 'on account of'), displays a range of structures, at one pole there being structures nearest in type to what one has traditionally called prepositions (e.g. 'in lieu of'), at the other pole, structures which are closer to complex nominal groups than single prepositions (e.g. 'at the end of').[57] A similar situation exists between and within many of the other major word classes, however, and this has not been comparably studied.

As an example of shading-off between major classes, one might cite the boundary-line between adjective and adverb in English.[58] One first needs to define a set of criteria which will characterise

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[56] Cf. R. Quirk, 'Descriptive statement and serial relationship', *Language* 41 (1965) 205–217.

[57] Cf. Quirk and Mulholland, op. cit.

[58] Assuming for the moment that these are distinct classes, and that adverbs are not 'positional variants' of adjectives.

these classes adequately for present purposes. 'Central' adjectives, then, may be defined as all words which satisfy all of the following criteria:

1) ability to form adverb by adding '-ly'
2) ability to inflect for degree (without '-ly' suffix) within nominal group functioning as subject (i.e. to exclude 'We seem to be more inside than outside', etc.)
3) ability to take intensifiers,[59]) especially 'very', within nominal group functioning as subject
4) ability to occur in the slot 'a/the $\sim$ Noun' (where 'Noun' stands for any of the central class of nouns)
5) ability to occur in predicative position after the sub-class of verbs including 'be', 'seem' and 'become'

In this way, adjectives like 'clear', 'interesting', 'red', 'regular', 'quick', 'nice', etc. would be positive in respect of these criteria and may be defined as central. One may now plot degrees of distributional divergence from this central class for words whose status as adjective is (however slightly) unclear.

	1	2	3	4	5
asleep	—	—	—	—	+
alike	—	?+ [60])	—	—	+
one, two, etc.	—	—	—	+	+
inside, downstairs	—	—	—	+	+
top, bottom	—	—	+	+	+
old, young, fast, big, poorly, small	—	+	+	+	+
hard, kindly, low	?+	+	+	+	+

With the more marked degrees of deviation from the central pattern, one can hardly use the term 'adjective' to refer to them and retain any reasonably homogeneous definition for it (cf. the internal heterogeneity of the traditional adverb class). There remain two alternatives: either one finds that such words satisfy a list of predetermined criteria for some other word class fully, or they do not approximate to any other class, and consequently have to be set up as a class on their own (or a set of classes). The most frequently voiced suggestion has been that (apart from the numerals) they

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[59]) Cf. G. Kirchner, *Gradadverbien* (Halle: Max Niemeyer Verlag, 1955), esp. Alphabetische Liste der Intensivadverbien, pp. 13–86.

[60]) 'Two more-alike people I've yet to see', etc.

are better taken as adverbs; but even if one restricts oneself to
three criteria, it is not at all clear (with the exception of 'asleep')
that they are distributionally more alike:

    (1)   ability to occur immediately before or after verb, viz.
         Subject (Adverb) Verb (Adverb)

    (2)   ability to take intensifier without preceding determiner

    (3)   ability to occur initially (mobility criterion) in sentence.

Adverbs like 'gradually', 'usually', 'clearly', 'sadly', 'slowly', etc.
would be positive in respect of these criteria and would be defined
as central.

	1	2	3
asleep	+	+ [61]	+
inside, downstairs	+	−	+
alike	+	+	? −
old, etc.	+	+	−
hard, etc.	+	+	−
top, bottom	−	−	−
one, two, etc.	−	−	−

Hence it seems better to take such words as constituting a pe-
ripheral area between the two classes, with an as yet undetermined
number of sub-classes.

    These words and criteria are only a sample, but already there
is substantial distributional dissimilarity. It would thus seem
premature to take all 'a-' words as a coherent class, whether
labelled adverbs or anything else.[62] What is needed is a detailed
examination of all the structures in which each 'a-' word can occur,
not presupposing identity of distribution on the basis of morpho-
logical similarity; and similarly with the other words whose status
is unclear. The degrees of difference from orthodox adjectives and
adverbs might then be quantified in terms of the number and rank
of criteria applicable and inapplicable, and these words said to be
verifiably 'nearer' to one class than the other. Once descriptive
adequacy is reached, the problem then becomes on a par with
other 'higher-level' problems, such as whether to take two or more
clearly distinct groups of words as separate classes, or as sub-

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[61]) A more restricted but possible usage, e.g. ironically, seeing children
playing, 'Very asleep, aren't they!'; or, 'They seemed very asleep'.

[62]) Cf. N. Francis, op. cit., p. 284.

classes within one major class (e.g. nouns and proper names, auxiliaries and lexical verbs, adjectives and numerals, even adjectives and adverbs): in each case, the descriptive differences are fairly well-known, and the problem is one of evaluating the alternative solutions in terms of the grammar as a whole. Meanwhile, until all the facts have been ascertained, the safest course seems to be to take these words as a series of overlapping 'bridge-classes', and not to force them into either the adjective or adverb class by turning a blind eye to important points of distributional dissimilarity. This solution clearly favours proliferation of word classes to meet the stringent demands of descriptive adequacy. This may involve overanalysis and lack of continuity from the pedagogical viewpoint, but the primary aim of descriptive accuracy can only be attained by allowing the data to suggest the number of classes, and by ignoring the preconceptions imposed by traditional definitions.[63])

Finally, as an example of partial identity of distribution at a quite detailed level within a major class, one could take the problems involved in classifying certain types of 'temporal' noun. An important question is the extent to which there are restrictions on the co-occurrence of such nouns with prepositions, to form temporal adverbial phrases. The following partial sketch is instructive, as it displays the obstacles in the way of calling these nouns a coherent class at a more general level, as well as indicating the extent to which even a few criteria can produce an alarming degree of com-

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[63]) It is an interesting point that linguistic realism sometimes produces a word class which has more relevance to a traditional definition than the traditional classification had! This is the case with the adverb, where the simple rule 'the adverb modifies the verb' can be accepted with very little qualification if one omits the 'exceptions' by handling them independently, i.e. 'the' (as in 'the happier we shall be'), 'not', intensifiers ('very', 'rather', etc.), unstressed 'there', interrogatives, sentence-modifiers ('however', 'frankly', etc.), interjections ('well', etc.), responses ('yes') and the bridge-class words discussed above. Gleason seems in favour of this also (1965, p. 131). It is worth noting that the definition of many of these new classes involves detailed reference to prosodic criteria of juncture, pitch and prominence, e.g. sentence-modifiers have characteristic pitch movements, are usually separate tone-units, and so on: cf. P. F. R. Barnes and D. Crystal (forthcoming), *The analysis of English intonation: critique, theory and description.*

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plexity and overlap. In my idiolect, the possibilities of co-occurrence[64]), which do not seem to be atypically irregular, are as follows:

	in a N or two	in that N	in the $N_{sg.}$ (no postmodification)[65]	in a N (no postmodification)[65]	in $\varnothing$ $N_{pl.}$ (no postmodification)[65]	in $\varnothing$ $N_{sg.}$	$\varnothing$ $N_{pl.}$	on the $N_{sg.}$	on a $N_{sg.}$ (no postmodification)[65]	on $\varnothing$ $N_{pl.}$ (no postmodification)[65]	on $\varnothing$ $N_{sg.}$	at that N	at the $N_{sg.}$	at $\varnothing$ $N_{sg.}$
afternoon	+	+	+	+	−	−	+	+	+	+	−	−	−	−
evening	+	+	+	+	−	−	+	+	?+	?+	−	−	−	−
weekend	+	+	?+	+	−	−	+	+	?+	+	−	+	+	−
night	+	+	+	?+	−	−	?−	+	−	−[66]	−	−	−	+
morning	+	+	+	+	−	−	+	+	−	−[66]	−	−	−	−
Monday...	+	−	−	−	−	−	+	+	+	+	+	−	−	−
January...	?+	+	+	+	−	+	−	−	−	−	−	−	−	−
hour	+	+	+	+	?−	−	−	+	−	−	−	+	+	−
minute	+	+	−	+	+	−	−	+	−	−	−	+	+	−
second	+	+	−	+	+	−	−	+	−	−	−	+	+	−
day	+	+	+	+	−	−	−	+	−	−[66]	−	−	−	−
summer	?+	+	+	?−	?−	+	?+	−	−	−	−	−	−	?+
winter	?+	+	+	?−	?−	+	?+	−	−	−	−	−	−	?+
spring	?+	+	+	?−	−	+	−	−	−	−	−	−	−	?+
autumn	?+	+	+	?−	−	+	−	−	−	−	−	−	−	?+
month	+	+	+	+	+	−	−	−	−	−	−	−	−	−
week	+	+	+	+	+	−	−	−	−	−	−	−	−	−
year	+	+	+	+	+	−	−	−	−	−	−	−	−	−
decade	+	+	−	+	?+	−	−	−	−	−	−	−	−	−
century	+	+	−	+	?−	−	−	−	−	−	−	−	−	−
fortnight	+	+	+	+	−	−	−	−	−	−	−	−	−	−
instant	+	?+	−	+	−	−	−	−	−	−	−	+	−	−
moment	+	?+	−	+	−	−	−	−	−	−	−	+	−	−
lifetime	−	?+	−	+	−	−	−	−	−	−	−	−	−	−
daytime	−	−	+	−	−	+	−	−	−	−	−	−	−	−
nighttime	−	−	+	−	−	+	−	−	−	−	−	−	−	−

[64] Excluding stylistically marked (e.g. humorous, nonce, poetic) uses.
[65] I.e., to exclude 'on a night like this', 'in the decade preceding the revolution', etc.
[66] Except in the restricted sense of 'morning-shifts', etc.

7.   Throughout this paper, I have tried to underline two main points: that much of the terminology used in the discussion of word classes in English has been badly defined and used uncritically; and that the emphasis in word class analysis and definition should lie on the selection and ordering of criteria – which in turn means a great deal more detailed descriptive work than has yet been done. It is important not to let the familiarity of the traditional terms obscure these more important issues: words like 'verb', 'adverb', 'grammatical word', and so on, slip smoothly from the tongue, and for practical economy of reference one has just got to use them and hope for the best. But this should not be allowed to engender a false sense of security: each term has its weaknesses, and its validity must ultimately be assessed in the light of some general linguistic theory. If there is any conclusion at all that would not be premature from this turning-over of largely familiar ground, it is simply that word classes in English are more complex things than is still generally supposed;[67] and that before we can produce a set of satisfactory definitions, we need to examine the distribution of single words much more thoroughly.

University of Reading

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[67] And there is no reason to suppose that English is any less complex than other partially inflected languages: as far as word classes are concerned, problemless or 'regular' hypotheses about little-known languages are always very suspicious!

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