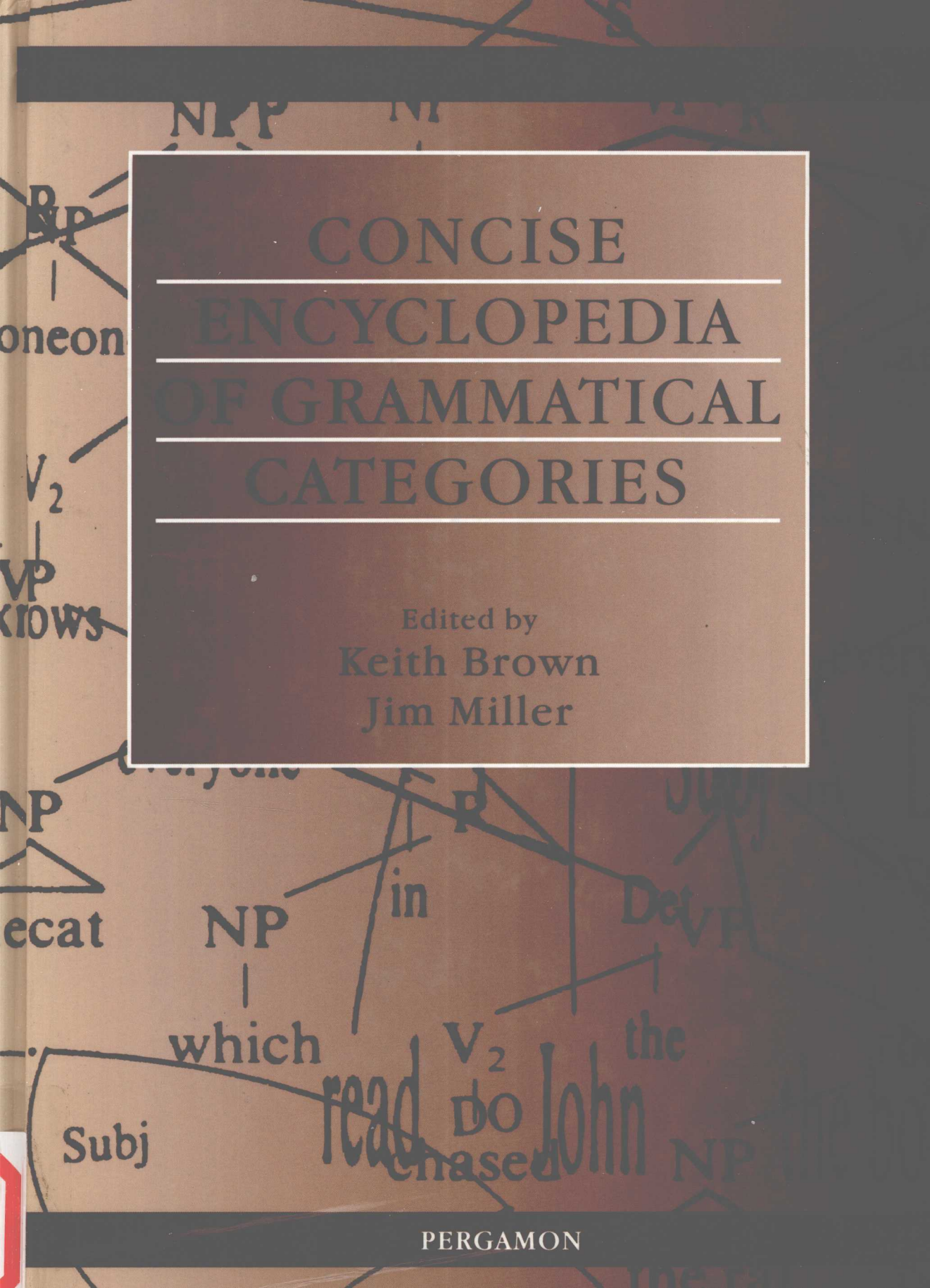

CONCISE ENCYCLOPEDIA OF GRAMMATICAL CATEGORIES

Edited by
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PERGAMON

CONCISE ENCYCLOPEDIA OF GRAMMATICAL CATEGORIES

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Editors' Foreword

This volume is a collection of articles on grammatical categories, that is the categories that have been found useful for the analysis and description of the structure of languages. The notion of category is understood in a wide sense—a class or division in a general scheme of classification. The articles take different views on the criteria for classification, derive from different theoretical viewpoints and approach questions of categorization from a variety of points of view within linguistics and philosophy of language. Most of the articles originally appeared in *The Encyclopedia of Language and Linguistics* (ELL) published in 10 volumes in 1994 by Pergamon Press, Oxford with R. E. Asher as Editor-in-Chief. They have all been revised and updated where necessary by their authors and some have been significantly enlarged and modified. A few of the articles have also appeared in the complementary volume on syntactic theory: Brown K, Miller J (eds.) 1996 *The Concise Encyclopedia of Syntactic Theories*, Pergamon Press, Oxford. There are a number of entirely new articles, specially commissioned for this collection. The glossary is a revised and reduced form of the relevant entries from the glossary that appeared in ELL. We are grateful to all the contributors for their support for the present volume.

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October 1999

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Introduction

1. Categories

One of the senses of 'category' in the Oxford English Dictionary is: 'a class, or division, in any general scheme of classification'. This sense is annotated 'especially in Linguistics'. One of the illustrative quotations is: 'Large form-classes which completely subdivide either the whole lexicon or some important form-class into form-classes of approximately equal size, are called categories. Thus, the English parts of speech (substantive, verb, adjective, and so on) are categories of our language.' (Bloomfield, 1933: 270).

Categorization lies at the heart of all linguistic analysis and has a history as old as the history of language study itself. Indeed without categorization there would be no linguistic analysis. As Trask puts it (*Parts of Speech*): "Every language has thousands of lexical items. If everyone behaved in its own unique way, there would be no syntactic generalizations to be made, and the study of syntax would be an unrewarding discipline, consisting merely of the endless tabulation of miscellaneous observations".

Grammatical categories, that is the parts of speech, the word classes themselves, and the categories traditionally associated with them such as case, mood, tense, aspect and voice, have been a central topic of linguistic analysis since the time of the Alexandrians. They are central to all work on the analysis and description of languages and for the instruction of non-native learners and their teachers. In any teaching grammar of Russian, for example, the pages devoted to case, aspect and tense, modality and voice outnumber the pages devoted to syntactic matters such as the formation of relative, complement or adverbial clauses. This is because Russian has a very rich inflectional morphology, which realizes categories of this kind. But the unequal assignment of space to morphology and syntax is due to the complexity of the systems of the tense, aspect and mood systems themselves and the way in which they are realized by the morphology, rather than to the formal complexity of the inflection system in itself. In contrast, English has rather little inflectional morphology but its tense, aspect and mood systems, and their realization in the syntax, demand equally extensive expositions in reference and teaching grammars.

Grammatical categories occupy an equally central place in semantic and pragmatic analysis, in cognitive science and philosophy, though in these disciplines they are more often referred to as types rather than as categories, as they sometimes are also in linguistic discussions (see, for example, *Aspectual Type(s)*). A simple example such as *The vandal smashed the window* quickly explains the interest. This sentence, more accurately the speaker uttering it, describes and presents a situation as a prototype transitive event. A human Agent, 'the vandal', acts intentionally on an inanimate Patient. (cf. *Functional Relations* for an account of terms like 'agent', 'patient', etc.). There is only one Patient and it is totally affected by the action. The situation could have been presented with only the Patient participant, in a passive construction *The window was smashed* or in the middle construction *The window smashed* (cf. the discussion in *Passive and Related Constructions* and *Voice*). There might have been more than one Patient—*The vandal smashed the windows*—and the Patient might have been non-specific—*The vandal smashed windows*. The original example presents a single event but the event could have been multiplied—*The vandals smashed windows all day, The vandal used to smash windows every Sunday evening*. Equally, the situation could be presented as not reaching a boundary (see *Aspect: Basic Principles*)—*The vandal was smashing the window (when the police arrived and arrested him)*.

The construction of the original example signals that the speaker is making an assertion and presenting the situation as a fact. The speaker could have asked a question—*Did the vandal smash windows?, Who smashed windows?*, presented the situation as merely possible—*The vandal might have smashed the window*, or denied that the situation occurred—*The vandal didn't smash the window*. The original example presents the situation as factual or realis; the introduction of a modal verb, a negative or a change from assertion to question, or a combination of these, makes the situation irrealis to a varying extent (cf., for example, the discussion *in Mood and Modality: Basic Principles* and *Modality*). As has been well documented by Hopper and Thompson (1980), the above-mentioned changes to the original example of a prototypical transitive event lead to changes in the case-marking of the Patient/direct object noun in a wide range of languages (cf. also Tsunoda 1994)

The topics mentioned in the preceding two paragraphs bear directly on concepts of fundamental importance for linguists, philosophers and cognitive scientists. The basic distinction is that between propositional content and proposition. The propositional content attaching to *The vandal smashed the window* is a completed event involving an Agent operating on a Patient: aspect and roles are central. In mapping the general propositional content onto a particular proposition the speaker

decides whether to refer to a specific Agent and Patient, whether to locate the situation in past, present or future time, whether to present the situation as realis or irrealis and to what extent. The speaker also has to choose appropriate lexical items depending on the kinds of referents and the kind of action. At stake are the sorts of information required for successful communication, the essential acts of communication such as referring, predicating, asserting, and questioning, and the total information required for the creation and interpretation of coherent texts. (See, for example, Barwize and Perry 1983).

The number and nature of the categories that are identified depends on the criteria used for their classification—morphological, syntactic, semantic and pragmatic or some combination of these. The inventory can also vary depending on the purpose of the classification: for example whether it is part of a syntactic model, interested in language universals, focussed on historical change or some combination of these.

2. Word, Phrasal and Sentential Categories

Word classes, the 'parts of speech', have a long tradition in Western linguistic scholarship. The modern system derives essentially from Alexandrian grammarians working on Greek. Their taxonomy was based on Aristotelian methods of classification, not originally set up for grammatical purposes. Thrax in c.100 BC identified eight word classes; five of the definitions (taken from Robins (1967: 33–34) are quoted below.

noun 'a part of speech inflected for case, signifying a person or thing';
verb 'a part of speech without case inflection, but inflected for tense, person and number, signifying an activity or process performed or undergone';
participle 'a part of speech sharing the features of the verb and the noun';
preposition 'a part of speech placed before other words in composition and in syntax';
conjunction 'a part of speech binding together the discourse and filling gaps in its interpretation

From a contemporary perspective, the definitions turn out to be surprisingly familiar, with classes of verbs, nouns, prepositions, etc., and also to have unexpected omissions—there is no distinct class of adjective, and inclusions—participles are recognized as a separate class.

As can be seen, Thrax's classification invokes four kinds of criteria: morphological, semantic, syntactic and pragmatic; in the previous section we have seen the relevance of all of these criteria for linguistic categorization. The morphological criteria ('inflected for case', 'without case inflection', etc.) were particularly salient for Thrax, which is perhaps not surprising since Greek is a highly inflected language. It enables a distinction to be drawn between those categories that contain inflected words whose forms are variable, classes like noun and verb, and those that contain invariant words, like preposition and conjunction. This distinction is still used, in English for example, where nouns and verbs have variant forms, but prepositions, articles and conjunctions do not. More particularly the variation can be related to those aspects of word formation that associate particular parts of speech with categories that have always held a central part in grammatical description because of the indispensable role they play in grammatical processes: nouns with case and number, verbs with tense, person and number and so forth. These categories have always been central in syntax: they are the functors or function words of the descriptive grammarians, the 'functional categories' of generative grammar (cf. Freidin 1996, Atkinson 1996) or the 'operators' of a more functionally oriented model like that of Van Valin and La Polla (1997). The primacy, for Thrax, of morphological marking is usually held to be the reason why he distinguishes no class of adjectives, which for him were a subclass of nouns since they inflect for case like nouns, and why he distinguishes a class of participles, which not only inflect for case like nouns, but also for tense like verbs. Contemporary accounts, as we shall see, usually consider syntactic rather than morphological criteria to be primary, and thus characteristically do identify adjectives as a distinct part of speech (cf. *Adjectives*) and consider participles to be a subclass of verbs, though it is interesting to observe the recent postulation of a class of *Converbs*.

Semantic criteria ('signifying a person or thing', etc.) were clearly also salient for Thrax, though in this respect it is relevant to note that he regarded grammar not as a discipline in itself, but as part of the study of literature. Semantic criteria are relevant not only to prototypical semantic properties of the major form classes themselves (verbs signify an activity or process etc.) but also to the morphological categories they are typically associated with—grammatical number and 'more than oneness', grammatical gender and sex, tense, as a grammatical category, and time reference and so forth. Contemporary accounts of word classes usually point out that it is not at all difficult to demonstrate that semantic definitions alone are unsustainable (see, for example *Categories, Linguistic*).Thus, abstract nouns do not 'signify a person or thing', and indeed nouns like *activity* and *process* are used in the definition of verbs; conversely verbs like *think* and *belong* signify neither activities nor processes; and, as every school pupil knows, the gender class of a French or German noun is not generally obvious when they refer to 'things' rather than to 'people'. Semantic criteria do, however, play an important role in comparative and in typological studies, a matter to which we return below.

For Thrax, syntactic criteria are less important. They are called into play to distinguish between invariant words: articles are 'preposed or postposed to nouns', prepositions are 'placed before other words in composition and in syntax'. It is perhaps not surprising that Thrax relied little on syntactic criteria. The Alexandrians identified the sentence as the largest unit of grammatical description, and were able to describe much of its 'functional' structure, the dependencies contracted between the various words in the sentence, through case marking and the grammar of agreement. They did not however have a machinery to describe constituent structure beyond a few obvious properties like obligatory word order: 'placed before other words in composition and in syntax'. Since Greek is a relatively free word order language, this is understandable. A better understanding of constituent structure, and through this of the distributional properties of syntactic categories, comes to the fore in American structuralism and its various successors, including generative grammar (see *Constituent Structure, Grammatical Units*). Nor does Thrax give much attention to pragmatic criteria, though perhaps they emerge in definitions like that of the conjunction as 'binding together the discourse and filling gaps in its interpretation'. Today, pragmatic criteria have come to assume an importance in descriptions of the communicative use of language and we return to this matter also in due course.

Thrax's definitions are interesting for a variety of reasons. First is the very notion of categorization itself, the recognition that a system of description needs a system of categorization and that for the system to have explanatory as well as descriptive value it must make use of appropriate criteria. Second is the range and nature of the criteria employed: some relating to the formal properties of words, others to their semantics. As this volume illustrates, this range of criteria are still to be found today, albeit somewhat reinterpreted and with the balance between them changed. Within a single language syntactic criteria are today paramount, for comparative and typological purposes semantic and functional properties are equally important. Finally it is relevant to note that the general framework of Thrax's part of speech system has proved remarkably robust, as can be attested by the fact that a volume such as this has articles on Nouns, Verbs, Prepositions and so forth.

In the familiar European languages, which tend to be inflected to a greater or lesser degree, words can be assigned to classes on the basis of their internal structure, their morphological properties (that is, how they themselves are composed) and their distribution in phrasal structures (that is, how they are composed into larger structures, their syntactic properties). Consider first the internal structure of words. In general, words from the 'major' classes, typically Noun, Verb and Adjective, are variable in form, though this is by no means true of all languages, and we will return to this issue below. But it is so in English, though to a rather limited extent. Nouns have two forms: *boy*, usually referred to as the 'singular' form, and *boys*, the plural form. The variation corresponds to a variation in the number of 'boys' at issue. Because of this semantic association the category is usually referred to as one of number, with the two terms singular and plural (see *Number and Number Systems*). 'Regular' verbs are often analysed to have five distinct forms: two 'present tense' forms, *walk* and *walks*, a 'past tense' form *walked* and two 'participles' *walking* and *walked*. We should observe that the number of forms recognized is a matter of analysis (and other analyses recognize a larger number of forms): with regular verbs the past tense and past participle forms are identical: they are differentiated because the past tense forms are tensed and by virtue of this property can be used as the only verb in a sentence (*the boy walked*), whereas participles are not tensed and hence are typically found in compound verb forms with a tensed auxiliary (*the boy has walked*). Furthermore, in 'irregular' verbs the past tense form and the past participle forms are often distinct (*the bird sang, the bird has sung*, etc.). The form *walked* frequently, but by no means invariably, is used to describe events that took place 'in the past'; by contrast *walk* is used to describe events that still take place, usually 'habitually'. Because of the association with temporal reference the alternation is usually described as involving the 'past' and 'present' tense forms respectively and the category itself is referred to as tense (cf. *Tense*). In a similar way the other alternations of form can be accounted for, and in each case an alternation established by formal means is named by a typical semantic use.

The external properties of words are generally of two kinds, distributional and functional. The distribution of a word is the set of environments in which it can occur; its function describes the nature of the dependency between the word and others with which it co-occurs. So, for example, in most grammars of English the defining distributional characteristics of the central class of adjectives are that it can follow an article and precede a noun, as in *a **tall** man*, that in a simple sentence is can follow a form of the verb BE, as in *the man is **tall***, and that it can be preceded by intensifying words, as in *very tall, extremely tall* and so on. The function of *tall* in *a tall man* is usually described as 'attributive' (it describes an attribute of *man*) and in *the man is tall* it has a predicative function ('tallness' is predicated of 'the man'); in *very tall*, *very* has the function of 'intensifying' the property of 'tallness'.

It will immediately be clear that even such apparently simple statements as these have further ramifications, of which we explore two: they imply further structure, and structure and function are closely interrelated. Consider first further structures: to say that *tall* follows an article and precedes a noun obviously assumes the prior identification of classes of articles and nouns, but it also assumes that the string *the tall man* is itself a unit within which the appropriate distributional statements can be made. This in turn leads to an identification of the internal structure of this unit, usually identified as a Noun Phrase, in this case having the structure Article + Adjective + Noun, and we can then go on to identify the external distribution of the Noun phrase, as, for example, subject of the sentence or object of the verb. The process is iterative leading to larger and more complex units (see *Constituent Structure, Grammatical Units*). As far as functions are concerned, the

noun can be regarded as the principal constituent of the Noun phrase, and hence the constituent that lends its name to the larger constituent and functions as its 'head' (see *Head and Modifier*). The co-constituents in the example are modifiers; hence tall is said to be an attributive modifier in *the tall man*.

It is clearly the case that internal structure and external distribution are interdependent—consider for example the category of number discussed briefly above. The category is not only relevant for the form of individual words, it also has great importance for other grammatical processes, especially 'agreement', the process that marks the dependence of one item on another, or the co-dependence between items, with matching terms from the same category (cf. *Agreement*). In English the definite article does not vary for number—*the boy, the boys*—though the indefinite article is restricted to singular nouns—*a boy* but not **a boys*. Some of the other determiners do co-vary for number with the nouns they occur with: *this boy: these boys*. To describe agreement patterns like this we need to determine which of the two categories are the controller of the agreement and which the target, and the domain within which agreement occurs. As far as controllers and targets is concerned, the traditional position is that it is the noun, the head of the noun phrase, that controls agreement on the determiner, a dependent within the noun phrase—a singular noun selects a singular determiner, etc. As far as the domain of agreement, again the traditional position is that agreement of the kind illustrated occurs with the phrasal category of the noun phrase. English is notoriously morphologically impoverished, but other European languages have, to a greater or lesser extent, a much richer system of variation in word form. In French articles not only co-vary for number—*le garçon, les garçons,* etc.—but also for gender—*le garçon, la fille*. German has an even more complex system with three genders and also case. In the French examples, number is 'overtly' realized, in that it is marked on the head; gender on the other hand is 'covert' in the sense that there is no head marking, but there is a marker on the dependent. Whether overt or covert, the category is important.

Thus far we have considered mainly word and phrasal categories. Phrases however compose into sentences and categories of the sentence are no less important than phrasal categories, though we do not have the space to do more than mention them. Here too formal, semantic and pragmatic considerations come into play: consider, for example, in simple sentences the relationship between 'interrogative', as a formally defined clause or sentence type, 'question' as a semantic type, and the pragmatic, speech act, category of 'enquiries': *Sentence Types and Clause Subordination* explores some of these relationships. Then too there are issues related to the formation of complex and compound clauses. The general syntactic processes are considered in *Coordination* and *Subordination and Complementation*. Particular types of subordinate clause are explored in more detail in articles on *Relative Clauses*, *Conditionals*, *Concessives*, etc. where the semantics and pragmatics of these constructions are also discussed.

3. Semantic and Pragmatic Criteria

As we have already noted, part of Thrax's definitions of the major parts of speech are semantic (nouns signify 'a person or thing'; verbs signify 'an activity or process performed or undergone' and so on). Similarly, his characterization of the grammatical categories associated with the major parts of speech are semantic, for number, tense, etc., and syntactic for case. We have noted that it is easy to show that in a particular language semantic definitions of this kind are impossible to sustain as a serious basis for identifying word classes. From a strictly formal point of view this is right, but this is not a good reason for jettisoning semantics. Languages are symbolic systems developed and used by human beings for communication. As Slobin (1973) observed many years ago, children cannot learn sequences of symbols without meaning, and adults too have difficulty in remembering and using meaningless concatenations of symbols, such as telephone numbers and PIN numbers. It would be surprising were there no parallels at all between grammatical patterns and semantic patterns in a language and careful analysis, involving the use of prototypes, does indeed bring out these patterns.

Within a particular language, as Lyons (1966, 1977) makes clear, parts of speech or word classes must be defined on the basis of formal criteria: their morphological properties, e.g. whether they inflect or not; their morphosyntactic properties, e.g. whether they agree in number and person with the finite verb in a clause or whether they assign case to nouns; their syntactic properties, e.g., which types of construction they occur in and which slots they occupy in those constructions and so on. As mentioned above, a prototypical adjective such as *tall* has the morphological property that it takes the suffixes *-er* and *-est*, the morphosyntactic property that these suffixes signal comparative and superlative degree (*taller, tallest*) and the syntactic properties of allowing *very* to precede it (*very tall*) and of occurring between Determiner and Noun in a Noun Phrase (*the tall girl*), and occurring in the slot following *is/are/became* (*she is tall*). Other words fail to meet all of these criteria but are nonetheless classified as adjectives, albeit a subclass of adjectives, because they occur in at least one syntactic adjective slot and do not meet the criteria for other word classes. For instance, *major* does not take the suffixes *-er* and *-est* and does not occur after *very* or *is/became*, etc. (or at least did not originally occur in these slots; it has begun to behave more like a central adjective). It does occur in noun phrases, as in *a major eruption*.

On the basis of general formal criteria of this kind analysts of English can establish the large word classes of noun, adjective, verb, preposition and adverb, together with a number of smaller classes, determiners, conjunctions, etc. For each of these classes, in addition to the major criteria that characterize central members of the class, there are minor criteria that justify the recognition of smaller word classes, subsets of nouns, verbs, etc. For example, verbs such as *know*, *report* and *hear*

can be followed by a complement clause, as in *I know that she will write*, *They reported that their house had been burgled* and *We heard that you were leaving*. Other verbs exclude a complement clause, as demonstrated by the unacceptability of **He laughed that he was just joking*, **They rejected that he had stolen the car*. Nouns such as *chair* and *dog* do not occur without an article—*the/a dog barked*, **Dog barked*; nouns such as *wine* can occur with or without an article—*Wine is good for you*, *The wine is corked*; and nouns such as *Ethel* exclude an article in their typical use—**The Ethel summoned the mechanic to repair the photocopier*. In traditional terms *dog* is a common count noun, *wine* is a common mass noun and *Ethel* is a proper noun. The distinction between major and minor criteria will be important when word classes are considered from a typological perspective.

Word classes established on formal criteria can then be examined with respect to their meaning. The traditional description of nouns as denoting persons, places and things turns out to be adequate for prototypical, central nouns, which denote concrete, observable entities. It does not apply to nouns such as *anger*, *property*, or *event*; but *property* and *event* meet the major criteria for nouns—*a property*, *the properties*, *an interesting property*, *invent properties*—and *anger* meets some of the major criteria—*the anger* but not **an anger*, *his savage anger*, and so on. The fact that the major formal criteria for prototypical nouns apply to words such as *anger* justifies the latter being classed as nouns but also suggests that 'ordinary speakers' of English treat *anger* as though it denoted an entity and perhaps have cognitive structures constructed out of different types of entity. Nouns such as *dog* are said to denote first-order entities and nouns such as *anger* and *property* are said to denote second-order entities. (Space does not permit a proper discussion of the linguistic and cognitive issues.) The key point is that a word is classed as noun, verb, etc. on the basis of formal criteria and the terms 'noun', 'verb' and so on are merely labels for classes which could be replaced by neutral labels such as 'Class 1', 'Class 2', etc. That words apparently very diverse in meaning such as *anger* and *dog* share many major formal properties raises deep and interesting questions about the 'ordinary speaker's' conception of the world, about his or her cognitive representation and leads to the unexpected conclusion that the traditional semantic definitions of the parts of speech, while quite unsatisfactory as definitions, nonetheless reflect an important fact about language and cognition.

The need for both formal and semantic criteria becomes quite clear in the comparison of two or more languages. Russian grammars contain statements about nouns in Russian and English grammars about nouns in English. A reliable analysis free from the circularity of assertions such as '*Tree* denotes an entity because it is a noun and *tree* is a noun because it denotes an entity' is only possible if formal criteria are taken as basic. But formal criteria do not allow the English word class labelled 'noun' to be equated to the Russian word class labelled 'noun' for the simple reason that the formal criteria for the English word class are completely different from the formal criteria for the Russian word class. In spite of this, analysts and learners of Russian as a second language find no difficulty in talking of nouns in English and nouns in Russian and in equating the two. The basis for this identification must be partly semantic. If this is true for the cross-language identification of the major categories like noun and verb it is just as true for identifying categories such as *Number and Number Systems*; *Gender*; *Definiteness*; *Possession* and so forth.

Pragmatic criteria also have their place. These are rooted in the acts that speakers (and writers) perform when they produce utterances. There is a large literature on speech acts which cannot be reviewed here; the central ideas are discussed in Lyons (1995: 234–57), and see *Speech Acts and Grammar*; *Speech Act Verbs*; *Indirect Speech Acts*, etc. Certain acts—making statements, asking questions and issuing commands (in the broadest sense)—are central to human communication and are allotted grammatical resources in every language. (See *Sentence Types and Clause Subordination*; *Mood, Clause Types and Speech Acts*.) The way these distinctions are drawn and signalled in the languages of Europe is by no means universal, as *Mood and Modality*: *Further Developments* emphasizes,

Other acts are not so prominent but are no less central to human communication and relate directly to the different parts of speech. Searle (1969) treats reference and predication as propositional acts; speakers and writers refer to entities and predicate properties of them. The idea of reference as an act was adopted and extended by Lyons (1977) and incorporated into a general opposition: denotation and lexical items belong to language systems, reference and speakers go with language behaviour. The notion of reference as an act, and indeed as a collaborative act between speaker and hearer, is now a fundamental tenet of linguistic and psycholinguistic research and has been described in detail by Clark (1992, 1996). In English the class of nouns, established on formal criteria, contains words denoting entities and nouns enter into noun phrases, the units that speakers use when referring to objects. This is not to say that every occurrence of a noun phrase functions as a referring expression, nor that the difference between nouns and other word classes is connected solely with referring; nonetheless the referring function is invested in noun phrases, which can support the function only because they contain nouns.

The notion of predication as an act is prevalent in traditional grammar and is expressed in the formula of 'someone saying something about a person or thing'. Predication has been largely ignored in discussions of speech acts, perhaps because, as Searle (1969: 123) puts it, predication is always part of a larger act, making a statement or asking a question or issuing a command. The latter acts are certainly more prominent in any body of speech or writing. In English verbs signal the performance of a predication. Whether adjectives and adverbs are associated with a speech act is not a question that has received much discussion, though it is clearly the case that in some languages adjectives too act as predicators, an issue to which we return in the final section. It is, however, worthwhile observing that in traditional grammar adjectives, and certain

kinds of adverbs, are labelled 'modifiers', a label which reflects the function of these words in clauses. A parallel can be drawn; just as it is not nouns that refer but speakers using nouns, nor verbs that predicate but speakers using verbs, so it is not adjectives or adverbs that modify but speakers using adjectives or adverbs. Modification can be seen as the act of adding information to that carried by the central word which the speaker uses for a given act of referring, in the case of adjectives, or predicating in the case of adverbs. Explaining the different word classes or parts of speech in terms of speech acts offers a solution to one difficulty with denotation; the class of things is so wide that it can be treated as including events, and even the distinction between first and second order entities is of no help. First-order entities are denoted by nouns, but second-order entities are denoted by both verbs and nouns, and indeed by adjectives.

The speech act explanation also provides a connection between word classes in different languages. On the assumption that basic communicative acts such as referring and predicating are recognized by speakers of different languages (and if they were not, communication between speakers of different languages would be impossible), the words classed as nouns in descriptions of, say, Russian, and the words classed as nouns in descriptions of, say, English, have in common that speakers pick words from those classes when performing an act of referring. Analogous comments apply to verbs, adjectives and adverbs.

Pragmatic considerations also apply to those aspects of sentence structure concerned with the distribution of information within sentences and within texts. Two issues which we do not have the space to explore further are the function of deictic elements, especially pronouns (see for example, *Deixis*; *Switch Reference and Related Phenomena*; *Logophoricity and Long-distance Reflexives*) and of word order (see *Topic and Comment*; *Topic Focus and Word Order*; *Word Order and Linearization*).

4. Grammaticalization

Where do grammatical categories come from? Or, to put it less mysteriously, how do speakers of languages develop structures for expressing case, aspect, tense, mood, and so on and do all languages have the same word classes? The sources of aspect are reviewed briefly in *Aspect: Further Developments* but since aspect offers a particularly clear view of the development of grammatical categories they can usefully be summarized here. Progressives, as in *Susan was reading a newspaper*, regularly derive from locational constructions; the Middle English equivalent of the preceding example would be along the lines of *Susan was on reading a newspaper*. Perfects regularly derive from constructions expressing result; the English Perfect as in *I have tidied my room*, referring to an action that took place perhaps a week earlier, derives from *I have my room tidied*, referring to the present state of the room. (The Perfect is also a possessive—*I have my room* and *The room is tidied* combine to yield *I have my room tidied*.) Perfective constructions, which are used to present an action as having been completed, derive from combinations with verbs corresponding to *finish* or from constructions denoting the thorough performance of an action. For instance the Russian verb *soxnut'* 'dry' has a perfective *vysoxnut'* with the prefix *vy-*. Strictly speaking, the perfective form is another lexical item, because the prefix can be interpreted as having the meaning 'out'; with verbs such as *vyjti* 'go out', there is no doubt at all that 'out' is the meaning carried by the prefix. The same process began in English but has taken a different route. Particles like *out* and *up*, rather than becoming markers of Perfect or Perfective aspect, have combined with verbs to create phrasal verbs denoting an action carried out thoroughly: *The drunk dried out; The river dried up.*

The evolution of tense is in general more opaque than the evolution of aspect but future tense has been studied in detail over a wide range of languages. Expressions of volition and obligation are typical sources; the English *I will return the book next week* contains *will*, which originally was equivalent to 'want to' but acquired the second function of signalling reference to future time. The original meaning persists, however, particularly with first person subjects; in the light of people's book-returning habits, *I will return the book next week* can be interpreted as a mere expression of intention, with no commitment to action, whereas *The parcel will arrive next week* expresses a reference to a specific (in context) future time. The French future tense forms derive from a Late Latin construction expressing obligation: *cantare habeo* 'to-sing I have' became *chanterai*, with *habeo* losing its status of full word and becoming the suffix *-ai*. Movement constructions are another common source of future tense structures. Examples are English, *I'm going to return the book next week*, and French *Je vais passer une semaine à Paris* (I am-going to-spend a week in Paris).

The process of grammaticalization (see *Grammaticalization and Lexicalization* for details of the process) typically affects an independent lexical item with its own lexical content, changing the item to a dependent morpheme. It is assumed that the change takes place via the intermediate stage of a clitic. The change certainly involves a given lexical item losing its syntactic properties and becoming phonologically reduced, as exemplified by the change of Latin *habeo* to the Modern French suffix *-ai* in the above example. That example is relevant to another phenomenon associated with grammaticalization whereby the source item, here *habeo*, continues as an independent lexical item in some syntactic contexts, in possessive structures, while degrading to a suffix in others, the future tense structure. *Habeo* is the source of the independent verb *ai* 'have' as in *J'ai un appartement à Port Grimaud* (I have a flat at Port Grimaud) and of the suffix *-ai* in *je chanterai* 'I will sing'.

Full lexical words do not necessarily degrade all the way to suffixes; in Indo-European it is quite clear that many prepositions and adverbs have their historical origin in nouns. (A convenient overview is given in Miller 1985: 52–84.) Turkish offers particularly clear examples. Consider the sentence in (1):

Mehmet-in evi-si-ne gel-di-m (1)
Mehmet-of house-his-to go-Past-I
I went to Mehmet's house

The possessive structure consists of two nouns. The first denotes the possessor and is in the genitive case, here *Mehmetin*. The second has the appropriate possessive suffix, here *-si* in *evisine*. *-E* is the dative suffix and *n* is a phonological device providing a bridge from one vowel to the other. Noun-like adverbial elements are exemplified in (2):

Topu masa-nın alt-ı-na at-tı (2)
Ball table-of underside-its-to throw-Past+he
He threw the ball under the table

Masanin is the genitive case of *masa* 'table' and *altina* splits into the stem *alt* 'underside',*-ı* 'its' and *-a*, the dative suffix, with *-n* again functioning as a phonological buffer between the two vowels. That is, *Masanin altina* is exactly parallel to *Mehmetin evisine* 'to Mehmet's house', lit. of-Mehmet to-his-house , and is to be analysed as a possessive structure.

In Indo-European languages words that were originally spatial adverbs have given rize to prepositions, verb prefixes and unhappily named 'particles' that combine with verbs as in the above example *dry up*. (There is enough evidence in the shape of various case forms to support the view that these adverbs were nouns.) Homeric Greek offers examples of a single word functioning in different contexts as adverb, preposition and verb prefix. Consider the examples in (3) in which *para* 'beside' has these functions, free adverb in (3a), preposition in (3b) and verb prefix in (3c).

para de plēthōsi trapezai sitou kai kreiōn (3a)
beside Particle are-full tables of-bread and of-meats
beside them are tables laden with bread and meat (*Odyssey* 9: 8–9)

hē sphin para nēusi tetukto (3b)
which to-themselves beside ships was-made
which was made for them beside the ships (*Odyssey* 8: 5)

kai rha hekastō phōti paristamenē phato muthon (3c)
and Particle to-each to-man beside-standing spoke
and standing beside each man she spoke (*Odyssey* 8: 10)

Spatial constructions are the source of many grammatical categories, but, as reported in Heine *et al.* (1991), other sources or relational words such as prepositions are lexical items denoting body parts; sources of aspectual constructions (see *Aspect: Further Developments*) are process verbs such as *come*, *give*, *take*, and *hold* or posture verbs such as *stand* and *sit*. Mental process verbs such as *say* develop into complementizers and articles develop out of quantifiers such as *one* and *many* or from demonstratives such as *this* and *that*. (French *le/la* 'the' developed out of Latin *ille* 'that'.) The work of Heine and his colleagues shows that phenomena known from Indo-European languages are found in the languages of Africa, as well as other phenomena. Heine provides the Ewe examples in (4). (Heine *et al.*'s data is compressed in this discussion.)

epe megbe fa (4a)
his back is-cold

e-kpo xo-a pe megbe nyuie ma a? (4b)
2SG-see house-DEF POSS back nice DEM Q
Do you see that nice back wall of the house?

xo-a megbe le nyuie (4c)
house-DEF back be nice
The place behind the house is nice

e-le xo-a megbe (4d)
3SG-be house-DEF back
He is behind the house

The examples in (4) illustrate the increasingly abstract uses of *megbe* ('back'). The original use is shown in (4a), while (4b) exemplifies the first extension of meaning from the human back to the back part of some object, here a house. A second extension was to denote the place adjacent to the back part of something, hence the translation of (4c) as 'the place behind the house'. This extension is accompanied by the loss of one property of the basic possessive construction in (4b) with

the dropping of the possessive marker *pe*. (4d) shows *megbe* having acquired the function of a relational word. Further extensions of *megbe* are to a temporal meaning equivalent to *after* and then to what Heine calls a quality; the Ewe phrase *remain behind* is equivalent to the English 'be backward'.

5. Typology

The distinction between major and minor criteria for parts of speech/word classes is important for typological work. Typology poses particular problems; adequate research requires data from a large range of languages belonging to a large range of language families from all parts of the world. Such a range of data can only be acquired, in the short term, at the expense of depth and detail; the data-collection and analysis that has been carried out on languages such as Quechua or Dyirbal is almost invisible compared with the vast amount of research on languages such as English, Finnish or Russian. Typological statements once made seem to persist even when proved incorrect by later research.

A good example is offered by Mandarin Chinese, which was, and still is, cited as a language which has no adjectives but just a single class of words that corresponds to the union of verbs and adjectives in English. The sort of data cited in support of this view is exemplified in (5):

Zhèiběn shū hén hǎo (5a)
this book very good
This book is very good

Tā chūqu (5b)
he go-out
He is going out

(5a) and (5b) both consist of a topic noun phrase, *zhèiběn shū* and *tā*, followed by a predicate phrase or verb phrase, *hén hǎo* and *chūqu*. Although the first corresponds to a copula plus adjective phrase in English, *is very good*, and the second to a verb phrase, *is going out*, the Chinese construction is the same in both. The negative versions are also identical—*bu hén hǎo* and *bu chūqu*. The fact that one major syntactic criterion fails to distinguish a formal class of verbs from a formal class of adjectives in Chinese does not mean that there are no formal differences at all. In fact, a closer look at the language, in particular at some minor criteria, reveals that there is not just one class of verbs in Chinese but a great many, and one of the subclasses corresponds in meaning to adjectives in English and deserves the label of 'stative verb'. Both stative and dynamic Chinese verbs occur as modifiers in noun phrases, as in (6a,b); the stative verb in (6a) combines directly with the head noun *shū* whereas the dynamic verb in (6b) can only combine by means of the particle *de*.

hǎo shū (6a)
good book
a good book

lái de rén (6b)
come Particle people
the people who are coming'

Stative verbs in Chinese do not occur with the same set of complements as dynamic verbs but they can take the aspectual suffixes *-zhe* (roughly equivalent to the English Progressive) and *-le*, which marks completed action. The occurrence of -le forces a change of interpretation; stative verbs denote either a process or a new state. For instance, *Tāhǎo le* is interpreted as 'He is good now' or 'He has become good'. With *-zhe* some stative verbs become causative; *rè* corresponds to *hot* but *Tāng rèzhe ne* (soup hot-*zhe* intensifier) has the interpretation 'The soup is heating' or 'The soup is being heated'. (For details see Heine *et al.* 1977, Chapters VI and VII.) The upshot of the above is that although Chinese does not have a word class of adjectives as sharply distinguished from the class of dynamic verbs by formal criteria as are adjectives and verbs in English, nonetheless the words corresponding to English adjectives are distinguished by various formal properties from the words corresponding to dynamic verbs in English. The proposition that Chinese does not have separate classes of verbs and adjectives turns out to have a grain of truth but to be very misleading.

Many languages are said to have no clear distinction between a class of verbs and a class of prepositions. Again Chinese is one of these languages and again the data are far from clear-cut. The data that give rise to the claim are exemplified in (7).

Tā xiàng běi (7a)
he go north
He is going north

Tā xiàng tāmen shuō (7b)
he go-to them say
He is saying to them

Hagège (1975) argues that there is a separate class of prepositions in Chinese but fails to demonstrate more than that a change is in progress whereby some forms have developed which function as prepositions and have no formal connection with verbs. This had already been argued by Cartier (1970), who shows that many forms are ambivalent between verb and preposition. A number of West African languages also have no clear cut distinction between a class of verbs and a class of prepositions. Lord (1973: 276) cites the example in (8); wa is identical in form with a verb base that takes tense and aspect and occurs in other major syntactic structures in which full verbs occur (see further in *Serial Verbs*).

mo mu iwe wa ile (8)
I take book come house
I brought a book to the house'

Finally in this discussion of the typology of word classes we turn to a language which has been cited as a language with only one class of words. The language is Nootka, and it has been of general interest since Hockett (1958) presented the examples in (9).

mamo·kma· qo·ʔas'i (9a)
he-is-working the-man
The man is working

qo·ʔasma mamo·kʔ (9b)
He-is-a-man the-working
The worker is a man'

Hockett stated that Nootka had two classes of words, inflected and uninflected but as with Chinese and its alleged lack of a separate formal class of adjectives, closer examination of Nootka data reveals formal criteria that distinguish other classes of words. However that may be, (9a,b) raise two crucial points. The first is that even Nootka distinguishes clearly between the referential part of the clause and the predicational part, the latter being marked by *ma*. The second is that discussions of word classes/parts of speech must draw a firm distinction between lexical items and the slots in syntactic constructions which the lexical items occupy. There are many lexical items in English which occur in both verb and noun slots: *They manned the ship: They shipped the men.* With respect to these lexical items, as lexemes, English is not unlike Nootka. English is unlike Nootka in having many sets of lexical items such as *give* and *gift*, *concede* and *concession*, with one item occurring in verb slots and the other occurring in noun slots. The problem is that we use terms like 'noun' and 'verb' for either the lexical item or the syntactic slot or for a combination of the two. No harm results in the analysis of languages such as English but great care is required in the analysis of languages such as Nootka.

6. Grammatical Categories and Syntactic Theory

The way grammatical categories are exploited in particular syntactic theories is explored in more detail in the *Concise Encyclopedia of Syntactic Theories* (Brown and Miller 1996), a companion to this volume. We can however demonstrate the prominent position they occupy by mentioning all too briefly how they are treated in two rather different syntactic theories: 'Role and Reference Grammar' (see Van Valin 1996; Van Valin and La Polla 1997) and in the 'Principles and Parameters' (cf. Freidin 1996) and 'Minimalist' (cf. Atkinson 1996) approaches of Generative Grammar.

Role and Reference grammar declares that it has a 'communication-and-cognition' perspective on grammar (Van Valin and LaPolla 1997: 11), that is it is interested to describe and explain not only the formal syntactic patterns of a language, but also the way these reflect speakers' cognitive abilities and communicative potentialities. It is presented as a version of 'universal grammar', that is it aims to produce a descriptive and explanatory account of any human language (rather than being guided by a concern for some particular language, Greek say, or even some family of languages, perhaps the familiar Indo-European languages). It is therefore interesting and instructive to observe that it deals with the familiar lexical and phrasal categories associated with nouns, verbs and the like, with familiar grammatical categories like tense, number, negation and so on, and that the criteria involved in establishing these categories are morphological, syntactic, semantic and pragmatic. The theory centrally involves three levels of structure: clause structure, semantic structure and focus structure. Clause structure involves a 'layered' account of constituency, producing a constituent structure analysis tree involving the usual phrasal categories though in a much 'flatter' configuration than is typically found in generative grammar. Each layer is associated with one or more 'operator' projections, the operators having scope over constituents in that layer. Thus the innermost layer is the 'nucleus' consisting of just the predicator and it is associated with aspect and 'narrow scope' negation: the 'core', consisting of the predicator and its arguments is characterized by deontic modality and 'wide scope' negation:

the 'clause', consisting of the core and initial and final positions within the sentence is associated with epistemic modality, evidentials, tense and illocutionary force. Semantic structure is a representation of the aspectual type of the verb and of the participants associated with it, agent, patient and the like: what we have referred to earlier as the 'propositional content' of the clause. Focus structure deals with the distribution of information within the clause for particular communicative effects and the consequences this has for word order.

Freidin (1996: 119), writing on the 'Principles and Parameters' model of generative grammar, quotes Chomsky's view that the main task of linguistic theory is 'to develop an account of linguistic universals that, on the one hand, will not be falsified by the actual diversity of languages and, on the other, will be sufficiently rich and explicit to account for the rapidity and uniformity of language learning and the remarkable complexity and range of the generative grammars that are the product of learning'. This focus is strikingly different from that of Role and Reference Grammar, yet once more we find ourselves dealing once again with the same range of categories. In the model Freidin is expounding, we find a distinction drawn between lexical categories (as in other accounts, the familiar major parts of speech, noun verb and so on: the 'contentive' categories that have semantic sense properties) and functional categories (the grammatical categories of tense, person, gender, number case and the like). In this theory the major lexical categories project phrasal categories (noun phrase, verb phrase and the like) with a complex internal structure including a 'specifier' node, which is the locus for certain grammatical categories, determiners in the noun phrase, intensifiers in the adjective phrase and so on. A few crucial functional categories themselves head projections: notably I (for inflection) and C (for complementizer). I is a complex category accounting for tense, modality and negation, and C accounts for sentence mood (interrogative and the like) in main and subordinate clauses. Developments of the theory lead to more functional categories heading projections, but the distinction between lexical and functional categories is retained, not least because the 'parameters' of this model are 'the loci of possible grammatical variation in individual grammars and specify the range of this variation' (Atkinson 1994: 2941) 'with parameterization being restricted to the properties of functional categories' (Atkinson 1994: 2942). More recent work in generative grammar within the 'Minimalist' program develops these insights (see Atkinson 1996) in ways we do not have space to explore here. Returning to the point made at the start of this introduction, we conclude with the observation that the centrality of grammatical categories is demonstrated by their longevity, their application in typology, cognitive science and philosophy as well as grammar, and their essential role in state-of-the-art formal models.

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