

The verb in contemporary English

Theory and description

Edited by

BAS AARTS

*Department of English Language and Literature,
University College London*

and

CHARLES F. MEYER

*Department of English,
The University of Massachusetts at Boston*



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CAMBRIDGE
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Published by the Press Syndicate of the University of Cambridge
The Pitt Building, Trumpington Street, Cambridge CB2 1RP
40 West 20th Street, New York, NY 10011-4211, USA
10 Stamford Road, Oakleigh, Melbourne 3166, Australia

© Cambridge University Press 1995

First published 1995

Printed in Great Britain at the University Press, Cambridge

A catalogue record for this book is available from the British Library

Library of Congress cataloguing in publication data

The verb in contemporary English / [edited by] Bas Aarts and Charles F. Meyer

p. cm.

Includes index.

ISBN 0 521 46039 5 (hardback)

1. English language – Verb I. Aarts, Bas, 1961 – II. Meyer, Charles F.

PE1271.V46 1995

425 – dc20

95–5277 CIP

ISBN 0521 46039 5 hardback

Dedicated to SIDNEY GREENBAUM
by the editors and contributors

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Preface

It is with great pleasure that we dedicate this book to Sidney Greenbaum. In all his work, Sid has stressed the importance not only of understanding the theory behind English grammar, but also the importance of investigating how English is actually used. As a tribute to these interests we have brought together a collection of papers that provide theoretical and descriptive insights into the study of the verb in English.

Sid's work on modern English grammar throughout his career has contributed significantly to the understanding of the structure of the English language. As former students of his, we have benefited from his knowledge of the English language, his instilling in us an appreciation for the complexity of language, and his expert guidance of our work. We hope that this book adequately expresses our gratitude to him.

We would like to offer special thanks to Libby Fay and Laura Melo without whose support this book would not have been possible, and also to Judith Ayling, Kay McKechnie and Joanna West of Cambridge University Press.

August 1994
London and Boston

Bas Aarts
Charles Meyer

I Introduction: theoretical and descriptive approaches to the study of the verb in English¹

BAS AARTS and CHARLES F. MEYER

A verb is a power in all speech,
Rings through prose and verse.
It brings to birth.

Elizabeth Jennings,
Parts of Speech, in Times and Seasons

I Introduction

Verbs are found in virtually all the languages of the world (Lyons 1977: 429, Allerton 1982: 1), and throughout history their semantic and syntactic properties have interested philosophers and grammarians alike. As early as c. 100 BC Dionysius Thrax stressed the importance of the verb (*rhema*) which he defined in his *Téchne grammatiké* as 'a part of speech without case inflection, but inflected for tense, person, and number, signifying an activity or process performed or undergone'. This definition brings out that the very earliest grammarians were interested in both formal and semantic, or 'notional', characterisations of the word classes. Later grammarians, such as Apollonius Dyscolus in the second century AD, became more interested in the distributional (i.e. syntactic) properties of the word classes.² Linguists of all later centuries have been much influenced by the works of these early grammarians, to the extent that, while there might still be disagreement as to whether, for example, pronouns form a separate word class or are simply to be regarded as nouns, no grammarian today would deny that verbs constitute a relatively easily delimitable word class.

While it is true that contemporary linguists and grammarians agree upon the existence of the grammatical class of verb, their approaches to the study of the verb are nevertheless quite varied. Linguists with theoretical orientations have studied the verb from the perspective of X-Bar Theory (Jackendoff 1977), while linguists with both theoretical and descriptive orientations have focussed more on the role of the verb in grammar of English (Huddleston 1976a, 1984, Matthews 1981, Hudson 1990). Descriptive linguists have provided general descriptions of the English verb (Palmer 1987, 1990),

as well as specific descriptions of particular complementation patterns (van Lk 1966) or verb forms, such as the infinitive (Andersson 1985, Mair 1990, Duffley 1992). Finally, semantically oriented linguists have been concerned with topics such as the valency of verbs (Allerton 1982), the particular semantic roles that verbs determine in a clause (Fillmore 1968, Schlesinger 1994 and this volume), and the manner in which verbs express tense and aspect (Comrie 1976, 1985, Declerck 1991).

We take the view in this book that an adequate understanding of the verb in contemporary English is best achieved if theoretical treatments of the verb are accompanied by studies that describe its usage. To provide this view of the English verb, we have divided the book into two parts. Part 1, 'Theoretical approaches to the study of the English verb', contains chapters that provide differing theoretical perspectives on the syntax and semantics of the English verb. Part 2, 'Descriptive approaches to the study of the English verb', contains chapters in which analyses of computer corpora are conducted to trace the development of certain verb forms in English, to study various types of verb complementation, and to detail the usage of verbs in different varieties and genres of English. In the remainder of this chapter, we provide an overview of issues that have played a role in theoretical and descriptive treatments of the verb, and detail how these studies relate to the topics explored in this book.

2 Theoretical approaches to the study of the English verb

In this section we deal with a number of issues that have been important in theoretical work dealing with the verb. More specifically, we discuss the terminological problems of classifying verbs and verb-related elements, the 'determining' properties of verbs, verb complementation, the semantics and pragmatics of verbs and verbal combinations, and the notions of tense, aspect, voice and modality.

2.1 Problems in the classification of verbs and verb-related elements

Because the verb has been so widely discussed, its treatment within the grammar of English has raised a number of questions about classifications of the verb and verb-related elements. These questions range from whether the function of verb complementation ought to be kept distinct

from the function of verbs as predicators within the clause, to whether the categories of *complementiser* and *Comp* really exist.

In X-Bar Theory, a distinction is made between *complements* and *adjuncts* in the Verb Phrase (Jackendoff 1977). Complements are more closely related to the verb than adjuncts. More specifically, complements are obligatory and analysed as sisters of the head verb, while adjuncts are optional and analysed as sisters of V'. Matthews (1981: 123-141) uses the term adjunct in a different sense. He distinguishes adjuncts from *peripheral elements*. The former are more closely related to the verb than the latter, but less closely than complements. Yet another approach is found in the work of Huddleston who subdivides adjuncts into *modifiers* and *peripheral dependents* (1984: 223-225). We encounter terminological confusion in the area of complementation as well. As Ransom (1986: 29, note) observes, the term *complement* has been used in many different senses to indicate not just constituents that are regarded as complements of verbs, such as direct objects, but nominal clauses functioning as the subject of a clause as well.

To clarify the confusion of how verbs and verb complements ought to be classified within the grammar of English, Charles F. Meyer ('Grammatical relations in English') argues that there need to be two distinct levels of grammatical relations: *general functions* and *clause functions*. Individual verbs, for instance, impose syntactic and semantic constraints on the constituents they can take, a general function of verbs characterised by the notion of 'verb complementation'. In addition, independent of the constraints it imposes on other constituents in the clause, the verb has the function of 'predicator', a clause function indicating a particular relationship between the verb and other clause functions, such as subject, object, adverbial, and complement.

Most contemporary theories of syntax maintain that there is a word class called *complementiser* containing words such as *that*, *if*, *whether*, and *for* and that these words are included within an abstract functional category called *Comp*. This category introduces clauses that complement a preceding verb. However, as Richard Hudson argues in 'Competence without Comp?', the existence of this category has never been satisfactorily established. The class of complementisers is very heterogeneous, with some complementisers behaving like interrogative pronouns while others behave like subordinating conjunctions or prepositions. Because complementisers do not form a unified word class, it is questionable whether the abstract category *Comp* is warranted.

2.2 The 'determining' properties of verbs

For linguists of all persuasions, verbs, more than any other word class, can generally be characterised as 'determining' elements. There are a number of ways in which this can be said to be the case.

Firstly, verbs are said to 'govern' the dependent elements that follow them (or precede them, depending on whether we are dealing with a head-first language or a head-last language). This government relation is morphologically visible in many languages, for example on Noun Phrases through different case forms (e.g. German direct objects require a special form of the Noun Phrase: e.g. *Ich sah den Mann*, 'I saw the man', with objective case on the definite article of the direct object, but not **Ich sah der Mann*, with nominative case on the definite article). In English the reflex of verb-government is visible only on pronouns.

Secondly, and this really concerns a two-way dependency, verbs agree with their subjects (and in some languages with their objects) in one or more features such as number, person and gender. It should be borne in mind, however, that neither agreement nor government are notions that exclusively concern verbs. Other elements, such as for example nouns, can also trigger agreement (with adjectives), and prepositions, like verbs, are also said to govern their objects.

The third way in which verbs can be said to be determining elements is also not exclusively, but nevertheless most markedly, a verbal property, and that is that they are instrumental in licensing the presence of what Tesnière (1953, 1959) (working in the field of dependency grammar) has called the *actants* ('performers') of a proposition.³ By analogy to chemistry the term *valency* has been used to refer to the number of performers (*valents*) a verb takes (cf. Allerton 1982: 2). Consider in this connexion a simple sentence such as (1) below, the performers of which are *Sandra*, *Martin* and *a joke*:

- (1) Sandra told Martin a joke.

In valency theory terms the verb *give* is *trivalent* in that it takes three dependents, corresponding to the functional categories of subject, indirect object and direct object respectively.

The relationship between the verb and its performers in a sentence like (1) is not viewed in the same way by all linguists. Thus, while for dependency grammarians (and some others, e.g. Huddleston 1984: 180) the subject is one of the verb's complements, this is not the case for many other linguists. For those working in the generative tradition a distinction is made between *subcategorisation* and *selectional restriction*, to characterise the relationships the verb enters into with other elements. Subcategorisation refers to the idea that a head (noun, verb, adjective or preposition) syntactically requires the presence

of a constituent of a particular type (e.g. the adjective *fond* requires a following *of*-phrase). Selectional restrictions (in Chomsky 1965) concern the compatibility of semantic features. For example, in English sentences containing the verb *dream* both the subject and the verb must share the feature [+animate]. If the subject lacks this feature unacceptability results (**The CD was dreaming*). Where Verb Phrases are involved, subcategorisation operates only on postverbal arguments (the so-called *internal arguments*), whereas selectional restrictions operate on both internal and *external arguments* (i.e. subjects). As noted, the syntactic treatment of selectional restrictions in terms of features outlined here is that of Chomsky (1965). Anomalous sentences like the one with the dreaming CD cited above are now sometimes argued to be pragmatically, not grammatically, deviant (Horrocks 1987: 36). Alternatively, selectional restrictions can be handled in terms of thematic roles (agent, patient, experiencer etc.), as will be explained presently.

Chomsky has recently replaced the term subcategorisation and now uses *c-selection* (categorical selection; Chomsky 1986a: 86). A further notion, *s-selection* (semantic selection), has also gained currency and concerns the idea that verbs are lexically marked with regard to the thematic roles they assign to their internal and external arguments. The earlier selectional restrictions on arguments can then be handled in terms of a combination of the meaning of their predicates and the s-selectional properties of those predicates (for example if an argument has the thematic role of experiencer it must be [+animate]). It has also been proposed that we can dispense with c-selection because the c-selectional properties of lexical items can be predicted from their s-selectional properties. (See Chomsky and Lasnik 1993; for textbook discussion see Radford 1988: 378ff, Cowper 1992: 57ff.) Thematic roles are relevant to the generativists' view that subjects are not complements of verbs. The reason for this is that it is thought that it is not the verb alone that determines the thematic properties of its subject, but the Verb Phrase of which it is a part (see Marantz 1984, Chomsky 1986a: 59f; and Rothstein 1983 for a diverging view).⁴

To define grammatical functions (GFs) such as subject or object, it has been customary to associate particular thematic (or semantic) roles with particular GFs. For instance, subjects are typically agents, direct objects patients, indirect objects benefactives, and so forth. In the case of the object, however, this type of analysis is problematic. As I. M. Schlesinger demonstrates in 'On the semantics of the object', because objects in English can take almost any semantic role, it is not possible to discuss constraints on objects in terms of semantic roles. Instead, Schlesinger argues that other semantic considerations must be taken into account to distinguish direct objects from indirect objects and objects of prepositions. For instance, while direct objects express the semantic notions of 'Completion' or 'Feat', objects of prepositions do

not. In addition, indirect objects are subject to processing constraints, such as the 'Recoverability Constraint', which stipulates that prepositions associated with indirect objects must be immediately recoverable or a verb is blocked from being ditransitive, and the 'Garden-path Constraint' which accounts for the unacceptability of the double-object construction in certain cases.

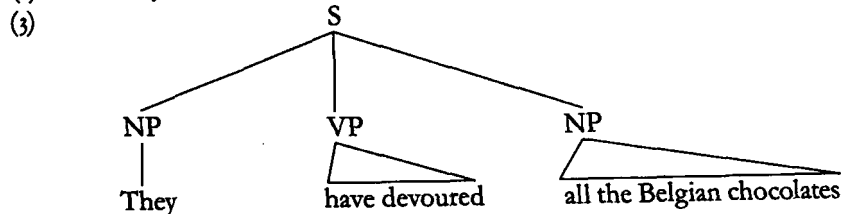
2.3 Verb complementation

Of the different types of relationships between verbs and their arguments those between the verb and its internal arguments have always received the most attention. These relationships are studied under the general heading of *verb complementation*, a notion which is closely related to the concept of subcategorisation which was discussed in the previous section. Verb complementation is a term that should be used with some caution because, as Matthews (1981: 142-143) notes, there is considerable variance in how this notion is applied. In transformational-generative grammar, as we have seen, verb complements are obligatory constituents following verbs and are distinct from adjuncts, which are optional. In more descriptively-oriented grammars verb complements are given a more semantically based characterisation as elements that are 'required to complete the meaning of the verb' (Quirk et al. 1985: 65). Verb complementation is part of the more general notion of complementation, a grammatical relation that stands in opposition to other grammatical relations, such as e.g. apposition, modification, parataxis and coordination. For general discussion see Matthews (1981: 223f), and for a discussion of the complementation-apposition gradient see Meyer (1992: 51f).

The differences between grammarians in approaches to verb complementation concern a number of areas which we will now briefly review.

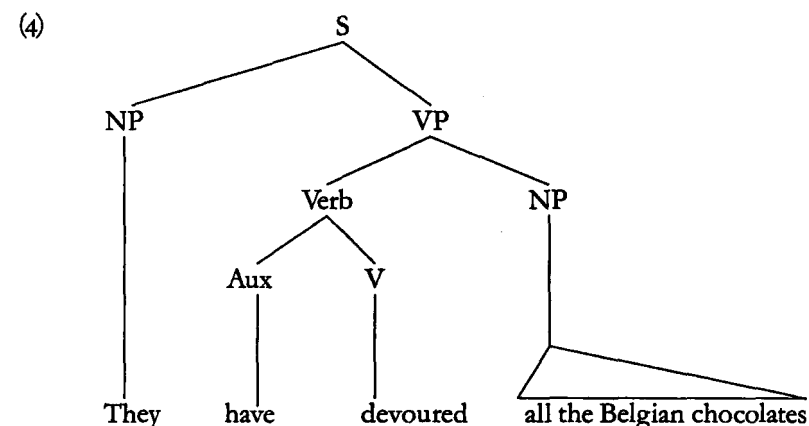
Consider first the Verb Phrase. For descriptive grammarians Verb Phrases often consist only of verbs (cf. Quirk et al. 1985: 61-62). A sentence like (2) below, is analysed as in (3) by Quirk et al.:

- (2) They have devoured all the Belgian chocolates.



Within the VP a distinction is made between auxiliary verbs (*have*) and main verbs (*devour*), but no further structure is assigned. Notice that the direct object NP is immediately dominated by the S-node. Despite the lack of structure inside the VP, Quirk et al. do suggest that in VPs containing auxiliary verbs the various verb sequences are 'telescoped' into each other (1985: 151). This notion is not made precise, but the suggestion is that the verbs in some sense select each other from left-to-right. Nevertheless, the overall picture is one in which 'the verb phrase operates as the V element in a clause' (1985: 61). The rationale behind Quirk et al.'s treatment seems to be the same as that advocated in Palmer (1987), namely the idea that a complex verb sequence like *may have been devoured* is a 'form' of the verbal paradigm in much the same way as the different elements of the Latin and Greek conjugation classes.

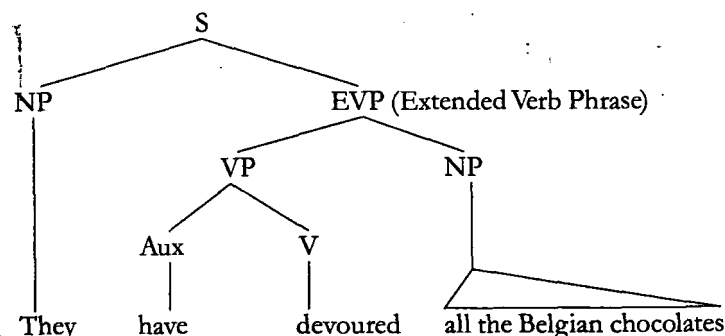
Since the early days of transformational grammar the VP has been a phrase which not only contains verbs, but also verbal complements. (2) is analysed as in (4) in Chomsky (1957: 26, 39).



Notice that (4) is similar to (3) in regarding the verb sequence *have devoured* as a verb form.⁵ The reason for taking complements to be part of VP is that there is a close relationship between the head verb and its complements, as we have seen. Further reasons are discussed in Aarts (1993). In current versions of generative theory verbal complements are generally still analysed as sister constituents of the verb inside VP (though see Chomsky and Lasnik 1993 for some recent discussion of this issue).

A position which is intermediate between that of Quirk et al. and generative linguists is Huddleston's. He would analyse (2) as in (5) (1984: 112):

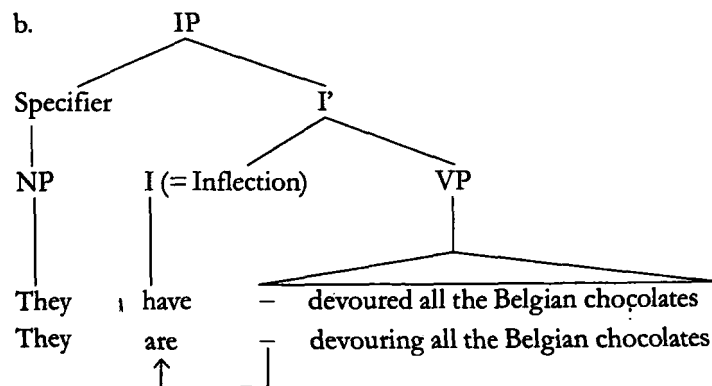
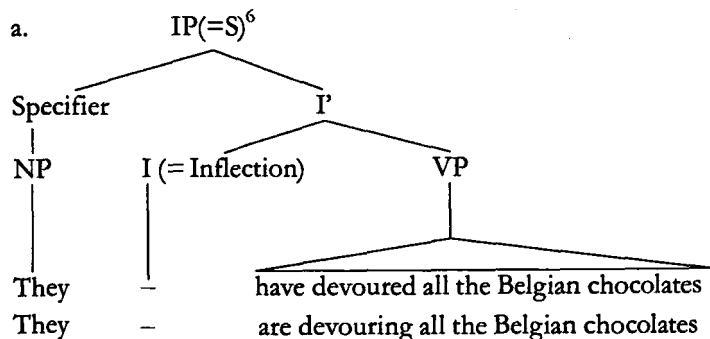
(5)



The VP is treated essentially as a verb form, as in the Quirk et al. framework, whereas the posited EVP-node is reminiscent of the Chomskyan VP.

The problem of how to treat auxiliary verbs in English is a complex matter. There seems never to have been agreement among grammarians on their analysis. The *Syntactic structures* analysis in (4) above was modified in the *Aspects* model and has undergone various changes in the course of time. In the recent literature, (2) and structures involving the progressive auxiliary *be* have the D-Structure in (6a) and the S-Structure in (6b).

(6)



Under this view the aspectual auxiliaries originate in VP and are moved into the I-node to acquire tense features. This movement does not take place (and possible aspectual auxiliaries therefore remain inside VP) if the sentence contains a modal verb. Modals are base-generated in the I-position preventing possible aspectual verbs from moving up.⁷ Under the so-called *Split INFL Hypothesis* there have been proposals to 'open up' the inflectional node into a Tense Phrase (TP), Agreement Phrase (AgrP, possibly itself split up) and a Negative Phrase (NegP). For discussion, see Pollock (1989) and Chomsky (1991, 1992).

Space limitations prevent us from outlining all the different approaches to the analysis of constructions involving auxiliary verbs. However, we can give an idea of the complexity of the areas of controversy by listing some of the questions that have been investigated:

- Is there a separate Aux-node, as in Chomsky (1957, 1965)? And, if so, is this node dominated by a 'Verb' (Chomsky 1957: 26, 39; see (4) above) or by 'S' (Chomsky 1965: 68)?
- Are modal auxiliaries to be treated as essentially the same as all the other auxiliaries (i.e. are they all dominated by Aux), or should we regard modals as different and posit a separate node 'M', as in e.g. Jackendoff (1972: 106)?
- Alternatively, if we do treat the modals as different from other auxiliaries, are they perhaps dominated, not by 'M', but by an inflectional category 'INFL' (or 'T' for short), as in Chomsky (1986b: 72; see (6) above)?
- Are auxiliaries main verbs, as in Ross (1969), Huddleston (1974, 1976a, 1976b), Emonds (1976), Pullum and Wilson (1977) and Warner (1993)?
- Alternatively, do we regard auxiliaries as in some sense modifying the main verb + complement sequence, as in Jackendoff (1977), i.e. are auxiliaries to be treated as Specifiers of the VP in the X'-theoretical sense?
- Or are auxiliary + main verb sequences perhaps to be analysed as complex verb forms, as in Palmer (1979, 1987, 1990) and Quirk et al. (1985); see (3) above?
- Do auxiliary verbs, or a subset of them, move from VP to another position in the sentence in which they occur in order to acquire tense features (cf. (6) above), or, conversely, does tense 'hop' onto the auxiliaries? See Pollock (1989), Chomsky (1986b, 1991, 1992).

The representations in (3), (4) and (5) concerned straightforward direct object NPs. There has also been a great deal of debate over the question how we should treat such sentences as (7) below:

- (7) Oswald believed the outcome to be a disaster.

The problem concerns the functional status of the postverbal NP. Is it to be regarded as a direct object or as the subject of a complement clause? In a spir-

ited debate on this issue in the early seventies the main protagonists were Chomsky, who favoured the latter position (Chomsky 1973), and Postal who upheld the former (Postal 1974). Postal defended a rule of Raising-to-Object in which the subject of a Deep Structure complement clause was raised to the matrix clause object position. This rule accounted for the intuition that the postverbal NP in sentences like (7) functions at the same time as the direct object of *believe* in the matrix clause and as the subject of *to be* in the subordinate clause. Numerous papers have been published both for and against the rule. Among these the most important are Bresnan (1976), Lightfoot (1976) and Bach (1977).

In the eighties attention turned to structures like (8), which is semantically closely related to (7):

- (8) Oswald believed the outcome a disaster.

Again the problem is the status of the postverbal NP. Traditionally it is analysed as a direct object and the predicative phrase following it as a complement or attribute of the object. (See Matthews 1981: 184f, Aarts and Aarts 1982: 141-142, Huddleston 1984: 194f, Wekker and Haegeman 1985: 79; Quirk et al. 1985: 1195f, Burton-Roberts 1986: 81f, and Brown and Miller 1991: 333. See also the theoretical proposals of Williams 1980 which are very much in line with this view.) More recent analyses, foreshadowed by Otto Jespersen in the early part of the century, treat the string *the outcome a disaster* as a clausal unit, a so-called *Small Clause*. (See Stowell 1981, Chomsky 1981. For a discussion of the properties of Small Clauses and the reasons for positing their existence, see Aarts 1992.) The chief rationale behind this analysis is the view that the postverbal NP in (8) is not thematically related to the preceding verb. (Oswald did not believe 'the outcome', he believed 'that the outcome was a disaster'.)

Related to what we have in (8) are constructions like (9) and (10):

- (9) He drank the beer cold.
(10) She burnished the gold smooth.

The sentences in (9) and (10) differ from (8) in that the NPs *the beer* and *the gold* clearly *do* have a thematic relationship with the preceding verb. APs such as *cold* and *smooth* have been analysed in various ways in the literature: as object attributes, as complements of the matrix verb or as predicates of adjunct Small Clauses with an empty subject.

Consider also (11):

- (11) He cycled home delighted with the progress he had made that day.

This sentence involves an Adjective Phrase that is predicated, not of a direct object, but of a subject, namely *he*. Constructions like (9), (10) and (11) are discussed in the chapter by Bas Aarts ('Secondary predicates in English').

The domain of verb complementation is vast. Areas we have not touched upon are ditransitive complementation (Larson 1988, 1990, Jackendoff 1990), and the analysis of constructions involving multi-word verbs (Bolinger 1971, Fraser 1974, Dixon 1982, Kayne 1984, Aarts 1989).

2.4 The semantics and pragmatics of verbs and verbal constructions

In the previous section, we mainly discussed distributional (i.e. syntactic) aspects of the English verbal system. We might equally well explore the semantic and pragmatic aspects of verbs and verbal constructions. There have been a number of recent books that have approached the study of verbs from a functional or semantic perspective. Among these are Mair (1990), Dixon (1991) and Duffley (1992). In these works the view taken is that if we want to fully understand the behaviour and usage of verbs and verbal combinations we must first and foremost study the relevant functional and semantic properties of the constructions in question. To give a concrete example, consider the following pair of sentences quoted in Duffley (1992: 48):

- (12) '... suffering as usual', but hoped, he told Arthur, 'to find this place agree with me better than Naples'.
(13) I measured the tail of the dead rat, and found it to be two yards long.

In his book Duffley's concern is explaining the differences between the use of the bare infinitive and the use of the *to*-infinitive in the various structures in which one or the other type (or both) may occur. His general hypothesis is that in constructions with the bare infinitive the time stretch denoted by it is always coextensive with that denoted by the verb that precedes it, whereas in structures containing a *to*-infinitive this verb form always signals a time period which is subsequent to that of the main verb. Thus, the difference between the two verbs *find* in (9) and (10) can be explained as follows: in (9) the combination of *find* with the bare infinitive *agree* denotes direct experience and because the agreeing takes place at the same time as the finding the bare infinitive is appropriate. In (10) *find*, used with *to be*, signals the discovery of a fact. 'Knowledge of this fact being the result of the finding, the *to* infinitive is required in order to evoke it in the subsequence of the event of discovering denoted by the main verb' (ibid.). Theoretically minded linguists subscribing to the notion of autonomous syntax would be content to observe that the lexicon lists two verbs (or senses of the verb) *find*, one taking a complement con-

aining a bare infinitive, the other taking a complement with a *to*-infinitive. The semantics of the two different constructions would be mostly neglected by these linguists.

For a lexical semantic approach to the study of the verb in English see Levin (1993).

2.5 Tense, aspect, voice and modality

Straddling the fields of syntax, semantics and morphology are the grammatical categories of tense, aspect, voice and modality. Grammarians have concerned themselves with such questions as 'Are the present perfect and the simple past semantically (i.e. truth-conditionally) equivalent and do they differ only pragmatically?' (Smith 1981), and, similarly, 'Do expressions involving *be going to* and *will* differ in meaning only at the pragmatic level?' (Haegeman 1989). Also: 'How many tenses are there in English?' (Lyons 1977: 677f), 'Is the English present perfect best regarded as an aspectual phenomenon or is it a manifestation of the category of tense?' (ibid.: 715-716). Rodney Huddleston addresses this last question in 'The English perfect as a secondary past tense'. In this chapter, Huddleston argues that English has two past tenses: a primary past tense and a secondary past tense. He then provides evidence demonstrating that the perfect in English should be regarded as a secondary past tense rather than an aspect. To defend this analysis, he points to problems in Comrie's (1976) analysis of the perfective as an aspect and to Declerck's (1991) claim that the perfective is a simple tense.

English has been traditionally thought to contain two voices: the active and the passive. However, there are certain constructions that appear to have characteristics of both voices. One such construction, the *mediopassive*, is the topic of Andrew Rosta's "How does this sentence interpret?" The semantics of English mediopassives. Working within the theoretical framework of Word Grammar, Rosta discusses the semantic characteristics of mediopassives exemplified by verbs such as *read* in the construction *The book reads well*. He discusses the semantic roles of subjects of mediopassives, the words that tend to collocate with mediopassives, and the aspect of verbs that are mediopassives.

The topics of mood and modality have spawned a vast literature in recent years. In particular, the meaning of modal verbs in English has been extensively discussed in terms of their 'Root' and 'Epistemic' senses (see Coates 1983, Palmer 1986, 1990). However, for certain modals in English, the Root/Epistemic distinction is problematic. As Jennifer Coates demonstrates in 'The expression of Root and Epistemic Possibility in English', the distinction is particularly problematic when applied to modals such as *must*, *may*, and *can* when they express possibility. For these modals, the distinction is not only

weaker but often involves merger and in the case of modals expressing Root Possibility, Epistemic meanings can often develop.

3 Descriptive approaches to the study of the English verb

Descriptive approaches to the study of English grammar have a long tradition, a tradition that includes the works of nineteenth and early twentieth century grammarians such as Sweet (1891-1898), Jespersen (1909-1949), Poutsma (1926-1929), Curme (1931) and Kruisinga (1931-1932). Each of these authors based their discussions of English grammar on (primarily) literary texts of English, and the information and examples that they obtained from these texts were the result of years of detailed and time-consuming analysis. This tradition gave way in the middle part of the twentieth century to more theoretically oriented studies of language, but has seen a resurgence in recent years as a result of increased interest in corpus linguistics.

Corpus linguistics has grown in prominence because of advances in computer technology, and these advances have affected descriptive approaches to the study of English in two regards. First of all, the computer has made it easier to create computer corpora: large collections of spoken and written English made available in computer-readable form. The first computer corpus, the Brown Corpus (Kučera and Francis 1967), was created in 1961 and contains various types of edited written American English, such as journalistic English, fiction, government documents, and technical English. This corpus spawned the creation of a number of other corpora, including the Lancaster-Oslo-Bergen Corpus of edited written British English (Garside, Leech, and Sampson 1987) and the London-Lund Corpus of spoken British English (Svartvik and Quirk 1980, Svartvik 1990. See Edwards and Lampert 1993: 263-306 for a discussion of the many corpora that are currently available, also Aijmer and Altenberg 1991, Svartvik 1992, and Oostdijk and de Haan 1994 for current research in corpus linguistics). The analysis of these corpora has been made easier by the development of sophisticated taggers, parsers, and text analysis programs. The tagger and parser developed at the University of Nijmegen, for instance, can automatically assign a range of sophisticated word-class and syntactic tags to a corpus (see Oostdijk 1988), and text analysis programs such as the ICE Corpus Utility Program can automate the analysis of tagged and parsed corpora (see Quinn 1993).

Although not based on a particular corpus, Quirk et al.'s (1985) *A Comprehensive Grammar of the English Language* is the first descriptive grammar of English to have drawn on the analyses of computer corpora, and the

approach to the description of English taken in this grammar has greatly influenced current research in corpus linguistics. Specifically, Quirk et al. (1985) have demonstrated that it is important to base one's description of English on real linguistic examples taken from actual usage; to study both speech and writing, as well as the differing genres occurring in each, because language usage varies by mode and genre; and to consider the frequency of particular grammatical constructions as an important way of determining which constructions are central to English and which are peripheral. These assumptions are embodied in all the chapters in this part of the book, which use various corpora to study verb complements, verb collocations, historical aspects of the use of zero and *that* complementisers, the development of certain verb complements, and the use in speech of particular types of verbs and comment clauses.

3.1 Verb complementation

Because verb complementation is such a wide-ranging topic in English, a linguistic corpus is an excellent resource for studying the various kinds of verb complements that exist. And indeed, many studies have taken this approach. Andersson (1985) analysed verb complements in two kinds of written prose in American and British English: imaginative prose and informative prose. He found a continuum of dependency in this corpus, ranging from verb complements that were not heavily dependent on the verb to those that were. More recently, Mair (1990) and Altenberg (1993) have investigated verb complements in different corpora of British English. Mair studied infinitival complements in the Survey of English Usage Corpus of spoken and written British English, while Altenberg analysed verb complements in the London-Lund Corpus of spoken British English.

While corpora have enabled the description of the many constructions that realise the relation of verb complementation, a more traditional issue within descriptive linguistics has been the general classification of these realisations. Jespersen (1969: 20–22), for instance, posits three types of verb complements: *direct objects*, *indirect objects*, and *predicatives*. Quirk et al. (1985: 54) maintain Jespersen's categories of direct and indirect object but posit two types of predicatives: *subject complements* and *object complements*. In addition, Quirk et al. (1985: 56) classify verbs in terms of the complements that they take: a *monotransitive* verb, for instance, takes a single complement (a direct object); a *ditransitive* verb takes two objects (a direct and indirect object), while a *complex transitive* verb takes a direct object and an object complement. *Copular* verbs link subjects with subject complements, while *intransitive* verbs take no complements at all. Matthews (1981: 114–117) takes issue with Quirk et al.'s (1985) notion that

the verb is solely responsible for determining the type of predicative a clause contains. He notes, for instance, that in clauses containing a subject predicative (subject complement in Quirk et al.'s terminology), the subject rather than the verb determines the predicative. In one of the examples that he cites, *All animals are equal*, the subject *animals* determines the predicative *equal*, not the copula *are*. In 'Find and want: a corpus-based case study in verb complementation' Jan Aarts and Flor Aarts discuss further limitations of classifying verbs as monotransitive, ditransitive etc. In this chapter, Aarts and Aarts demonstrate how *microscopic* and *macroscopic* analyses of corpora are necessary in order to obtain significant generalisations about language. Microscopic analyses, they contend, allow one to deal with the nuances of language use; macroscopic analyses involve a more general and abstract analysis of corpora. They combine both of these approaches to study two verbs in English: *find* and *want*. Their analysis leads them to conclude that while syntactic notions such as monotransitive, ditransitive etc. are useful for general statements about *find* and *want*, for more accurate information about these verbs the actual categories realizing the complements of these verbs must be studied.

A further problem with categories such as monotransitive, ditransitive, object, and complement is that some constituents cannot be clearly classified into only one of the categories. For instance, certain verbs, as Matthews (1981: 125–126) notes, permit 'latent' objects. Consequently, it is difficult to determine whether the verb *finish* ought to be simply classified as monotransitive in (14), even though no object appears in (14a), or whether it ought to be considered intransitive in (14a) and monotransitive in (14b).

- (14) a. I didn't finish.
b. I didn't finish the job. (adapted from Matthews 1981: 126)

While Quirk et al. (1985) in general restrict subject and object complements to the form classes of Adjective Phrase, Noun Phrase and clause, they acknowledge that many Prepositional Phrases, such as *in good health* in example (15), are semantically similar to complements.

- (15) She is young and *in good health*. (Quirk et al. 1985: 732, emphasis in original)

To explain instances of indeterminacy in examples such as (14) and (15), Quirk et al. (1985: 90–91) draw upon the notions of 'gradience' and 'multiple analysis', concepts which have been posited to explain the fact that grammatical categories do not always have clear boundaries (for more on this notion, see Bolinger 1961 and Matthews 1981: 17–21). The notion of gradience as applied to subject and object complements is discussed in detail by Geoffrey Leech and Lu Li in 'Indeterminacy between Noun Phrases and Adjective Phrases

as complements of the English verb'. Leech and Li note that while both subject and object complements can be either Noun Phrases or Adjective Phrases, there is a gradient between the two form classes, with some nominal complements having adjectival characteristics.

3.2 Verb collocations

Closely related to verb complements are verb collocations: particular verbs that tend to cooccur regularly with other types of constituents (including complements).

Firth (1957) posited the notion of collocation to account for the general fact that there are numerous groups of words that regularly cooccur, and this notion has been used to study the cooccurrence of many different types of constituents. Greenbaum (1970, 1974) employed elicitation tests to investigate the collocation of intensifiers and verbs in constructions of the type *I badly need a drink*. Kjellmer (1990, 1991) has written on the problem of defining collocations, and on the general patterns of collocations existing in various computer corpora of English. Others have investigated more specific patterns of collocations. Kennedy (1991) investigated the words that cooccurred with the prepositions *between* and *through* in the Lancaster–Oslo–Bergen Corpus. Renouf and Sinclair (1991) used sections of the Birmingham Corpus (Renouf 1984) to study the types of nouns that occurred in constructions of the type *an + ? + of* or *be + ? + to*.

An important issue in the study of collocations is how they ought to be defined. Kjellmer (1991: 112–115) classifies collocations according to the degree to which the two units of the collocation are 'fixed'. Some collocations, such as *bubonic plague*, are highly fixed because one of the units is highly suggestive of the other. Other collocations, by contrast, are less fixed. For instance, while the units in the phrase *classical music* quite frequently cooccur, both also occur individually and 'enjoy lexemic status' (Kjellmer 1991: 114). In 'Having a look at the expanded predicate', John Algeo discusses constructions of various fixity ('expanded predicates'), idiomatic units such as *have a look* that contain a general verb followed by a relatively more specific Noun Phrase. He demonstrates that these straddle the boundary between grammar and lexis in the sense that they contain a verb – a central element of the English clause – in a construction whose units combine to yield a specific lexical meaning.

Despite the fact that verbs and adverbs are frequently occurring, very closely related, form classes in English, there have been relatively few studies attempting to describe verb-adverb collocations in English. The most detailed treatment of the topic can be found in Greenbaum (1970, 1974). In Greenbaum (1974), for instance, speakers of American English were given

incomplete sentences such as *I badly . . .* and *I entirely . . .* and were asked to complete them with words of their choice. Greenbaum compared the results of these experiments with results of experiments he had conducted earlier with British informants (Greenbaum 1970), and found remarkable similarities. When asked to supply the missing words in a sequence such as *I badly . . .*, both British and American informants chose verbs in the semantic categories of wanting and needing.

Because Greenbaum used only elicitation tests to study verb-adverb collocations, his results are limited to informant preferences. Stig Johansson in "This scheme is badly needed": some aspects of verb-adverb combinations' focusses on actual occurrences of verb-adverb combinations. He makes general observations about them, noting, for instance, that the positioning of the adverb in relation to the verb depends very much on the individual adverb. To illustrate this general point in detail, he analyses the occurrence of the adverb *badly* in the Lancaster–Oslo–Bergen Corpus and in quotations from the *Oxford English Dictionary*.

3.3 Historical studies of verbs

Reference grammars of English such as Jespersen (1909–1949) provide a wealth of information on the historical development of English. However, such grammars are not based on corpora that have been systematically compiled to include equal proportions of a range of different text types representing various periods of English. Consequently, it is possible to obtain only an approximate sense of how particular grammatical categories have evolved over the history of the English language.

With the compilation of historical corpora such as the Helsinki Corpus, it is now possible to systematically study the development of English. The Helsinki Corpus is approximately 1.5 million words in length and is comprised of samples of various types of English (such as sermons, private letters, and biographies) from Old English through the early eighteenth century. (For more information on the Helsinki Corpus, see Rissanen 1992 and Kytö 1993.) This corpus has enabled the diachronic study of various grammatical categories in English. Kytö (1991), for instance, studied the development of modal auxiliaries such as *can* and *could* in the Helsinki Corpus and in a corpus of colonial American English that she compiled. These corpora contained texts from various periods of English in different registers, as well as ethnographic information about writers. Consequently, she was able to study what she terms 'socio-historical variation', i.e. the effects of sociolinguistic variables on the development of English. For instance, to study the ways in which participant relationships influence language change, Kytö studied texts in the genre of private correspondence. She found that more colloquial

uses of *can* in early British and American English predominated in 'intimate down' situations, situations in which the person to whom a letter is written is in an 'inferior position' to the author of the letter (Kytö 1991: 233).

Because the Helsinki Corpus contains text samples extending only to the early eighteenth century, it is not possible to study grammatical categories from Old English through the present. To enable such studies to be conducted, Biber et al. (1993) discuss the development of a historical corpus called ARCHER (A Representative Corpus of English Historical Registers) representing three periods from 1750–1990. To illustrate the kind of comprehensive study that ARCHER permits, Edward Finegan and Douglas Biber describe the evolution of complementisers in 'That and zero complementisers in Late Modern English: exploring ARCHER from 1650–1990'. In particular, they are interested in the alternation of *that* with zero (*I believe that/ϕ the instructor is wrong*), and demonstrate that certain genres (such as sermons and medicine) have since the mid-seventeenth century favoured *that* over zero, while other genres (such as letters) which formerly favoured zero have now reversed and also prefer *that* over zero.

While the Helsinki Corpus and ARCHER cover the periods of Old, Middle, Early Modern, and Contemporary English, it is also possible to study the evolution of English over a shorter period of time. This is precisely the tack taken by Christian Mair in 'Changing patterns of complementation, and concomitant grammaticalisation, of the verb *help* in present-day British English'. Mair compares the Lancaster–Oslo–Bergen Corpus, containing samples of British English published in 1961, with a comparable modern corpus that he is compiling to demonstrate that the verb *help* has undergone a process of grammaticalisation in the last thirty years. That is, *help* has changed from a distinct lexical item to a grammaticalised semi-auxiliary or infinitival conjunction.

3.4 Verbs in speech

Although speech (rather than writing) has always been regarded as the primary mode of communication, linguists have only recently begun to conduct empirical analyses of spoken language. Most of the early research in this area has been conducted within the paradigm of 'conversation analysis'. This research has focussed on such topics as turn-taking in face-to-face-conversations (Sacks, Schegloff, and Jefferson 1974), speech repairs (Schegloff, Jefferson, and Sacks 1977), and the structure of various types of conversations, such as the openings of telephone calls (Schegloff 1979). While work in the area of conversation analysis has provided important insights into the structure of conversational exchanges, it has not focussed in any great detail,

as Levinson (1983: 366) observes, on 'ways in which conversational organisation interacts with sentence and utterance structure'.

The linguistic structure of speech has been treated in greater detail by studies based on computer corpora of spoken language: the London–Lund Corpus of spoken British English (Svartvik 1990) and the Lancaster/IBM Spoken English Corpus (Knowles 1993).⁸ These corpora have been compared with written corpora to study the differences between speech and writing, and they have been analysed individually to isolate specific linguistic characteristics of spoken language.

The most comprehensive study of corpora to describe the differences between speech and writing is Biber's 1988 comparison of the spoken London–Lund Corpus with the written Lancaster–Oslo–Bergen Corpus and a separate collection of personal and professional letters. To compare speech and writing, Biber (1988: 121–169) posited various dimensions (e.g. 'narrative versus non-narrative concerns', 'abstract versus non-abstract information') and concluded that 'there is no linguistic or situational characterisation of speech and writing that is true of all spoken and written genres' (Biber 1988: 36). For instance, even though romantic fiction is a written genre and face-to-face conversation a spoken one, both 'deal with active, human participants and concrete topics' (Biber 1988: 154) and therefore contain a high proportion of information that is non-abstract.

Biber's 1988 study is important because it demonstrates that the spoken/written dichotomy is misleading, and that it is more important to study the linguistic structures that typify different spoken and written genres than to posit an absolute difference between speech and writing. This line of inquiry is pursued by Jan Svartvik and Olof Ekedahl in 'Verbs in public and private speaking'. They analyse the usage of verbs in various corpora of speech and writing to ultimately arrive at an understanding of the differences between two very different genres of spoken English: public speaking, which consists of planned monologues that are informative and presented by professionals, and private speaking, which consists of unplanned dialogues involving many different types of speakers. Svartvik and Ekedahl confirm Biber's 1988 notion that the spoken/written dichotomy is misleading: they found that public speaking and private speaking are linguistically more different than public speaking and writing.

One striking characteristic of private speaking that Svartvik and Ekedahl observed was the high frequency of verbs such as *know*, *think*, and *mean*. The high frequency of these verbs in speech has also been noted by Anna-Brita Stenström (1990), who in addition observes that certain high frequency lexical items in speech either do not appear, or appear quite infrequently in written corpora, such as the Lancaster–Oslo–Bergen Corpus. In 'Some remarks on comment clauses' Stenström follows up on this research by investigating

'comment clauses' in the London-Lund Corpus – constructions of the form *you know, I think, I mean* and *you see* which contain the frequently occurring words mentioned above. She demonstrates the difficulty of describing comment clauses in purely grammatical and semantic terms, and provides a detailed description of their functions in speech.

Notes

1. We thank And Rosta for comments.
2. The historical facts are derived from Robins (1990: 34f).
3. Matthews (1981: 124) translates Tesnière's term as *participant*.
4. We observed above that the nature of the third 'determining property' of verbs is also not exclusively verbal. In many frameworks (especially X-bar theory; cf. Chomsky 1970, Jackendoff 1977) the determining properties of lexical elements are generalised cross-categorially.
5. In *Lectures on government and binding* Chomsky still entertains the possibility that the Aux-V sequence is a verbal complex. See Chomsky (1981: 140 fn. 28).
6. The sentential node is regarded in current GB-theory as the maximal projection of the functional category 'I' (=Inflection). The I'(I-bar)-level is intermediate between IP and I.
7. It has been argued that subjects too originate from inside VP at D-Structure (from the VP-Specifier position) and are then moved to the Specifier-of-IP position.
8. Other corpora of spoken English are currently under development. The International Corpus of English (Greenbaum 1992) will contain samples of spoken English from numerous regional varieties of English, such as American English, Australian English, and Indian English. The Corpus of Spoken American English (Chafe, Du Bois and Thompson 1991) will consist of various kinds of spoken American English, such as face-to-face conversations, speeches, and broadcast discussions and interviews.

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