Pandora Könyvek 8.

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ISSUES IN THE SYNTAX AND SEMANTICS OF INFINITIVES AND GERUNDS IN ENGLISH

Líceum Kiadó
Eger, 2007

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INTRODUCTION

0.1 The purpose of this study

The purpose of the present work is to give a principled and descriptively adequate account of infinitival and gerundive verb complementation in English. Nonfinite constructions are a particularly interesting and exciting area of English grammar both for descriptive and for theoretical reasons. The study of the syntax of nonfinites in English and other languages has been a productive field of linguistic research, even though the problem of how to account for their semantics and distribution still remains a serious challenge for generative grammar.

The study of the syntax and semantics of English nonfinite complements, as any similar inquiry into the form and meaning of linguistic structures, is, at the same time, an inquiry into the relationship between form and meaning in language in general, which still constitutes one of the most recalcitrant problems of linguistic theory. The general issue of the syntax—semantics interface, that is, the problem of how exactly meaning is related to form and how this relation is to be represented in grammatical theory, is an area of linguistic theory where a number of open questions still call for reasoned answers.

0.2 The major issues

The three major issues in the grammar of nonfinite complements in English are (a) their syntactic category and constituent structure, (b) semantic interpretation, and (c) distribution. These fundamental issues are mutually and closely related, and none has conclusively been settled thus far. The task of providing a principled account for the semantics and distribution of nonfinites in English poses particularly difficult problems. This constitutes the focus of the present work.

The issues will be taken up in the order in which they are listed in the previous paragraph. Chapter 1 discusses the constituent structure and syntactic category of English infinitives and gerunds within the framework of Government and Binding Theory (as developed in Chomsky 1981, 1982, 1986), and X-bar Theory (cf. Chomsky 1970 and Jackendoff 1977). After reviewing the major competing hypotheses, and weighing the arguments, on the syntax of English infinitival and gerundive complements, I will conclude that both infinitives and gerunds are essentially clausal in constituent

structure, with the proviso that Poss-*ing* gerunds are clauses embedded in noun phrases.

Chapter 2 is a critical survey of proposals on the semantics and distribution of English infinitives and gerunds, which shows (a) that the apparently systematic distribution of nonfinite complements cannot be accounted for in purely syntactic terms, (b) that their distribution is semantically motivated, and (c) that a more general theory is called for, since none of the existing proposals is able to account for all the relevant facts. The general outlines of such a theory are presented and discussed in detail in Chapter 3, and its application to nonfinite complementation is worked out in Chapter 4.

0.3 Finite and infinitival complements

English consistently distinguishes between finite and nonfinite complements, which often mutually exclude each other as complements on verbs.

(1) a. I tried to bribe the jailer.
b. *I tried that I bribe the jailer.

(2) a. I wanted John to bribe the jailer.
b. *I wanted that John bribes the jailer.

When either a finite or a nonfinite complement may occur in the context of a matrix verb, they are grammatically as well as semantically contrasted.

(3) a. I know (that) the world is round.
b. I know the world to be round.

Although either a finite or an infinitival complement may occur with the matrix verb *know*, the two correspond to different readings. The finite clause complement on *know* expresses the speaker's commitment to the truth of the proposition it expresses, while the reading that the infinitival complement receives does not contain a representation of such a commitment. This observation allows us to formulate a generalization with respect to the contrastive distribution of finite and nonfinite complements on *know*. This generalization formulated in semantic terms will predict that the finite complement will consistently be associated with a factive presupposition and that the infinitival complement will not. Given this generalization, the tendency for certain predicates not to take finite complements may be ex-

plained by assuming that such predicates, as *want*, for example, are inherently nonfactive (and are marked as such in the lexicon). These considerations suggest, in general, that the distribution of finite vs. infinitival complements in the context of matrix verbs is predictable in semantic terms.

0.4 Infinitives and gerunds: some familiar differences

An equally consistent distinction is made in English between infinitival and gerundive complements. They too appear to contrast as complements on matrix predicates. However, the restrictions on their occurrence are still not well understood. It is often claimed that such restrictions are basically arbitrary and no principle can or need be formulated to account for them. On the null hypothesis, such restrictions on complement selection will have to be specified individually for each verb in the lexicon as idiosyncratic information on the syntactic environments in which it occurs. It is equally clear, however, that there are far too many examples in English of a semantic contrast between infinitival and gerundive complements to ignore. For instance, Kiparsky and Kiparsky (1971:360) observe that the infinitives in the following sentences are nonfactive and the gerunds are factive, that is, the truth of the proposition expressed by the gerundive complements is presupposed while the infinitival complements do not presuppose the truth of the proposition they express.

(4) a. They reported the enemy to have suffered a decisive defeat.
b. They reported the enemy's having suffered a decisive defeat.

(5) a. I remembered him to be bald (so I was surprised to see him with long hair).
b. I remembered his being bald (so I brought along a wig and disguised him).

Appealing as the Kiparskys' account is for certain of the restrictions on the distribution of infinitives and gerunds, it fails to capture anything about the contrast between the infinitive and the gerund in sentences like the following.

(6) a. I decided to go.
b. I decided on going.

(7) a. I forced John to do it.
b. I forced John into doing it. (Cf. Kiparsky and Kiparsky 1971:357.)

Not only do the Kiparskys have no explanation for the apparent contrast between these complements, but they actually deny that there is any contrast between them at all. The fact that an explanation for the difference in complementation in such examples is just not available in terms of the factive–nonfactive distinction forces the Kiparskys to conclude that gerundive complements on prepositions, as in the examples above, are the result of a transformation that "automatically"—whatever that should mean—converts infinitives to gerunds "after prepositions."[1] They also add that such converted "infinitival gerunds should not be confused with the factive gerunds, with which they have in common nothing but their surface form" (ibid., 357).

0.5 The distribution of infinitives and gerunds

These and similar considerations clearly show, I think, that we have an issue here. The occurrence of infinitival and gerundive complements is either systematic and thus predictable in terms of some general principles or it is basically idiosyncratic. Since it is not possible to argue in favor of the null hypothesis directly, the only way to settle the issue is by constructing and testing empirical hypotheses against the null hypothesis. It is only by evaluating the success or failure of such hypotheses that the problem at issue may be settled one way or another.

0.6 Preliminary characterization of the hypotheses

What the present study will attempt, therefore, is to formulate a set of hypotheses which will basically argue that the distribution of infinitives and gerunds in English is in general predictable in terms of a small number of general principles. The validity of those principles and the descriptive adequacy of the hypotheses in general, will be supported by theory-internal arguments as well as empirical evidence. Some of the evidence will come

[1] *Wh*-infinitives embedded under prepositions testify to the incorrectness of the claim that such infinitive-to-gerund conversions are automatic, cf. *He asked me about who to visit* (cf. Koster and May 1982:128).

from theory-independent considerations lending, I believe, considerable support to the hypotheses that will be developed.

0.6.1 On the general hypothesis of implicit interpropositional contrasts

It is believed that the formulation of the general hypothesis on implicit interpropositional contrasts will shed some new light on a few general problems of syntactic structure and semantic interpretation by clarifying some insufficiently explicated and rather poorly understood aspects of the latter. Without overestimating what the present work is worth, it is perhaps appropriate (and instructive) to point out here that one of the two most comprehensive descriptive grammars of English, Quirk et al. 1985, contains altogether less than ten pages (of a total of over 1700 pages) on the semantics of nonfinite complements, and, furthermore, the few sections that discuss the topic overlap a great deal, often repeating each other's content. The most recent of comprehensive grammars of English, Huddleston and Pullum 2002, offers a similarly succinct discussion of the semantics of nonfinites, amounting to approximately five consecutive pages (1240–1244) and some additional brief remarks made elsewhere, which, beyond a discernible attempt to relate some general aspects of the meaning of nonfinites to "historically motivated tendencies and associations" (ibid., 1241) add little to what Quirk et al. (1985) have to say about the matter.

0.6.2 The specific hypothesis on the contrastive properties of nonfinites

The specific hypothesis on implicit contrasts expressed by infinitives and gerunds that will be developed in Chapter 4 will also receive strong support from a general hypothesis of implicit interpropositional relations developed in Chapter 3. The specific hypothesis will be based on the principles of the general hypothesis in that the principles that will be formulated to account for the distribution of infinitives and gerunds in English will exploit the possibilities offered by the hypothesis of implicit interpropositional contrasts. This basically means that the principles that account for the distribution of infinitives and gerunds in English will be formulated in terms of the categories and principles of the general hypothesis on implicit interpropositional contrasts.

It will be argued that sentences are associated with particular implicit contrastive interpropositional interpretations, and that gerundive complements are contrastive constituents of sentences in that in the implicit

contrastive interpropositional interpretation assigned to a sentence, the eventuality described in a gerundive complement will be contrasted with its implicit alternatives. Infinitival complements, on the other hand, correspond to constants in implicit contrastive interpropositional interpretations, with the result that the proposition expressed in the matrix sentence will implicitly be contrasted with its negation (or opposite). It will be shown that the hypotheses make the right theoretical predictions and that their empirical predictions are also borne out by the facts.

The semantic framework assumed will be based on Jackendoff's conceptual semantics (cf. Jackendoff 1983, 1990), Rooth's 'alternative semantics' (cf. Rooth 1985, 1992), Gergely's theory of sentence comprehension and mental representations (cf. Gergely 1992, 1995), and some ideas proposed in Chomsky 1981, and Chomsky and Lasnik 1977, which are believed to be compatible with one another in their general principles.

1 THE CONSTITUENT STRUCTURE OF INFINITIVES AND GERUNDS

1.1 Introduction

Although several possibilities of mapping from syntactic categories into semantic categories are conceivable between the two pairs of syntactic and semantic categories in a grammar of nonfinites in English, notably VP (verb phrase) or IP (sentence) (and perhaps PP, see p. 16), on the one hand, and Property or Proposition on the other (see section 1.3), it is difficult to formulate a theory of the semantics of English nonfinites without regard to the theory of their syntax (and also, probably, conversely). As a general governing principle in grammatical theory, the assumption seems well motivated that the form of the syntactic and semantic components of the grammar will be constrained by the requirement that the syntax—semantics interface should facilitate a maximally smooth communication between the two components. In view of these considerations, a good way to start the discussion of infinitives and gerunds in English is by considering the arguments that suggest one or the other of the assumptions on their constituency and syntactic category.

Therefore I will first discuss briefly some of the major issues in the syntax of nonfinite complements in English that have emerged since the publication of Rosenbaum 1967, the first major work on nonfinite complementation in a generative framework. In the discussion of the syntactic issues I will primarily focus on reviewing the major arguments in favor of their clausal structure, which thereafter I will assume for the rest of the present work.

1.2 Competing hypotheses on constituent structure

Two major classes of competing hypotheses have been proposed on the syntactic category and constituent structure of nonfinite constructions in English in generative grammar and frameworks sympathetic to it. Chierchia (1984) argues that English infinitives and gerunds are verb phrases, while in Chomsky 1981, and much other work inspired by GB, either both infinitives and gerunds, or at least the former, are analyzed as embedded sentences. Koster and May (1982) address the issue directly in an influential article, where they provide a detailed comparison of the predictions the VP hypothesis and the clausal hypothesis make, and they conclude that infinitives

—and as the analysis, they claim, extends readily to gerunds, they too—are sentences in English. Not all hypotheses treat infinitives and gerunds uniformly, though. In Chomsky 1981, for example, infinitives are sentences, and gerunds are NPs, although Chomsky leaves open the possibility that gerunds "might be analyzed as containing a clause internal to the NP" (p. 223, fn. 10). In the lexicalist framework of Maxwell (1984), which might be characterized as intermediate in a sense between the VP hypothesis and the clausal hypothesis, infinitives and gerunds are likewise treated differently. Maxwell claims, quite surprisingly perhaps, that gerunds but not infinitives are sentences in English, the latter taken to be VPs.

An intriguing but extremely problematic proposal is put forth by Duffley and Tremblay (1994:570), who argue that "the best way to describe the syntactic role of the *to*-infinitive seems to be to analyze it as a prepositional phrase having an adverbial function with respect to the main verb." In what follows, I will briefly consider (and eventually refute) the arguments for the PP hypothesis, concluding that the PP hypothesis on the constituent structure of *to*-infinitives must be rejected on the grounds that it is untenable.

First of all, Duffley and Tremblay (1994) argue, following Emonds (1976), that gerunds but not *to*-infinitives are NPs. The significance of the NP status of gerunds for their hypothesis is to confirm that gerunds and *to*-infinitives are different syntactic categories. This would lend indirect support to Duffley and Tremblay's (1994) claim that *to*-infinitives are PPs in the function of adverbials, in contrast to gerunds, which, being NPs, have the function of direct object complements on the matrix verb.

In support of their proposal that *to*-infinitives are PPs, Duffley and Tremblay (1994:570) argue, incorrectly, that the *to* particle of the infinitive is parallel to a P in a PP in that both may be used as 'pro-forms' to represent the XP they head in sentences like

(8) a. He crawled through the tunnel.
b. Then his brother crawled through too.

(9) a. He tried to open the door.
c. Then I tried to as well.

The argument fails simply because *through* is an AdvP in (8b) and not a P. A preposition cannot behave in ways claimed by Duffley and Tremblay (1994), cf.

(10) a. John put the vase on the table.
b. *Mary put the vase on too.

(11) a. John sat on a chair.
b. *Mary sat on too.

Duffley and Tremblay (1994) suggest a parallelism in structure between the following examples.

(12) a. She longed for peace and quiet.
b. She longed to be quiet.

They suggest that the occurrence of an infinitival complement on prepositional verbs, such as *long for*, which subcategorize for PPs, is not exceptional since the *to* particle is in fact a P. But then what about the many non-prepositional verbs like *want*, *like*, *try*, etc. which take infinitival complements? It would be extremely dubious to assume that they are characterized by two subcategorization frames: one with a direct object NP and another with a PP (of a unique sort which may contain exclusively the preposition *to* and no other prepositions), let alone the other part of the claim that this PP is an (obligatory) adverbial.

It would be equally problematic to assume that there are PPs in English of the form $[_{PP}\ [_{P}\ \text{to}]\ [_{\alpha}\ \ldots]]$, where α can only be a naked infinitive. Notice that we would still have infinitives, but all would be naked, *to*-infinitives having been eliminated from the grammar by being converted to PPs.[1] If, on the other hand, α is a clause, then an important generalization will again be lost, since on this assumption the lexical entries for all non-prepositional verbs of the *want* type will have to be restructured so that they can take PP complements of this very special kind. These (and a few others

[1] To avoid misunderstanding, half of this otherwise undesirable consequence is correct—all infinitives are indeed naked, since the 'infinitive particle' *to*, unlike other verb inflections, is not attached to the verb as a bound morpheme. Since infinitival *to* is not part of the morphological structure of an infinitive, *to*-infinitives are not morphological alternants of verbs. What remains problematic is all the rest that follows from the assumption, where, perhaps the main point is that nothing at all is gained by the entirely unmotivated move of introducing a second preposition *to* in English grammar, which would be exceptional in taking exclusively ('naked') infinitives as complements, and would have nothing at all in common with its homonym except its phonological form.

which I will consider later in section 2.4.2 of Chapter 2) are highly undesirable consequences, therefore the hypothesis is rejected.

1.3 Constituent structure and semantic interpretation

Parallel to the problem of constituency in syntax we have the property versus proposition dilemma in semantics. Syntactically nonfinite expressions may be VPs or clauses, and semantically they may correspond either to properties or to propositions. Chierchia (1984:215–16) observes that in principle there can be, and in fact there are, four different views on this matter.

Nonfinite complements might be analyzed syntactically as VPs and semantically they might correspond to properties. This is Chierchia's (1984) own view as well as the general assumption in standard Montague Grammar, on which Chierchia's 'VP = P(roperty)' hypothesis is based. As a variant of this, nonfinite complements could be VPs which semantically correspond to open propositions. Alternatively, nonfinite constructions might be syntactically clausal, and semantically they may be associated with properties. Finally, as in Chomsky 1981, Koster and May 1982 and much other GB-based work, nonfinite complements can be analyzed as clauses which correspond to propositions in semantic structure.

I will argue, following Koster and May (1982), within the framework proposed by Chomsky (1981), that nonfinite complements are sentences and that semantically they are associated with propositions.

1.4 Morpho-syntactic categories of sentential complements

A sentential complement may be one of two morpho-syntactic types: (a) finite, and (b) nonfinite. The term *finite* is commonly understood to refer to the following properties of an English sentence: it is marked for the categories of mood, tense, number, and person. There is person and number concord between the VP and the subject of a finite clause.

The term *nonfinite* will be used, following accepted practice, to refer to the form of a sentence or clause which is not marked for the above categories, though it will be marked for voice and aspect. In the present work I shall be concerned primarily with nonfinite complement sentences in English.

Thus, there are two ways in which one English sentence may be embedded in another: finite and nonfinite, and we may distinguish four types of nonfinite sentential complements:

1. *to*-infinitival clauses,
2. naked infinitival clauses,
3. gerundial clauses,
4. -*ed* participial clauses.

Attention will be focused on *to*-infinitival and gerundive complement clauses. I will say nothing about type 4 complements (though they are frequently inadequately treated in standard reference grammars, such as, e.g., Quirk et al. 1985).

As the list of nonfinite complements above suggests, all -*ing* complements will be termed 'gerund'. This is more or less in line with traditional usage. If one takes categorial, structural, as well as functional criteria into consideration, the following -*ing* forms may be distinguished (cf. Chomsky 1970, Williams 1975, Quirk et al. 1985, Abney 1987, Pullum and Zwicky 1991, and Laczkó 1995):

Progressive -*ing*:	Brown is painting his daughter.
Premodifier -*ing*:	the silently painting man
Postmodifier -*ing*:	The man driving the bus is Norton's best friend.
Absolute -*ing*:	Brown painting his daughter that day, I decided to go for a walk.
	With me singing madrigals, everyone will be amused.
	Having died, they were no further use to us.
Adverbial -*ing*:	John decided to leave, thinking the party was over.
Acc-*ing*:	I watched Brown painting his daughter.
PRO-*ing*:	I enjoyed reading *The Bald Soprano*.
Poss-*ing*:	I dislike Brown's painting his daughter.
Action nominal:	his looking up of the information
(*Ing-of*)	John's singing of the Marseillaise
Verbal noun:	Brown's deft painting of his daughter
Deverbal noun:	Brown's paintings of his daughter

Since in this work I will be concerned with various types of nonfinite complements on verbs, only the following -*ing* constructions will be relevant to the discussion: Acc-*ing*, Poss-*ing*, and (argumental) PRO-*ing*. Therefore progressive -*ing*, pre- or postmodifying -*ing*, absolute (Nom- or Acc-) -*ing*,

adverbial -*ing*, which are commonly called the 'present participle', will not be discussed. Noun phrases with a head noun in -*ing* will also be excluded from the investigation as irrelevant. This class includes action nominals in -*ing*, Abney's (1987) "*Ing-of*",[2] verbal nouns, and deverbal nouns. The head of all these nominal structures is lexically derived by -*ing*, hence -*ing* does not project its own functional category in any of them.

1.5 The sentential structure of nonfinite complements

The assumption that English nonfinite complements in general are sentences is well supported by theoretical as well as empirical arguments. Greenbaum (1980) and Quirk et al. (1985) present some relevant arguments informally. The essence of their arguments can be summarized like this: the constructions under discussion are regarded as sentences because their internal structure can be analyzed into the same constituents as independent sentences. Huddleston and Pullum (2002) also assume that all English nonfinites are clauses, though their arguments, as well as some of their structural conclusions, are at odds both with standard assumptions in syntactic theory and with some of the theoretical and empirical conclusions of the present work. Their central argument and some of its consequences will be discussed separately (see section 1.13). A more formal discussion of the subject within a generative framework is offered by Koster and May (1982). Their arguments will be summarized below.

Koster and May (1982) argue that infinitive complements on verbs, and that in fact all infinitives, are sentential. They assert, also, that the analysis extends readily to gerundial complements. In this type of analysis the complementizer and subject which are absent from superficial structure are represented by lexically empty categories.

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[2] Abney classes *Ing-of* constructions with gerunds in spite of the fact that they have nothing in common with Acc-*ing* or Poss-*ing* gerunds except their superficial morphological form. In addition to the inability of the -*ing* form in *Ing-of* constructions to Case-mark its object, for example, phonological evidence also testifies to the categorial difference. As Laczkó (1995:250–51) shows, *Ing-of* -*ing*, like derivative -*ing* and unlike gerundial -*ing*, does not display an alternation between a velar and an alveolar realization, cf.

(i) the enemy's destroying the city
(ii) the enemy's destroyin' the city
(iii) the enemy's destroying of the city
(iv) * the enemy's destroyin' of the city
(v) * singing outside the buildin'

In this approach, which will be adopted in the present work, "there are two types of clausal complements, finite and non-finite, symmetrical with respect to internal phrase-structure" (ibid., 116). It will be assumed in general in what will be referred to as the clausal hypothesis that in infinitival and gerundial complements that lack a surface subject and complementizer "the missing constituents . . . are in fact categorically present, but devoid of terminal elements" (ibid., 117).

The arguments center around three aspects of infinitive complements. First, it is demonstrated that infinitives not only have parallel phrase structure with finite clauses, but they also share the important syntactic property with finite clauses that a number of syntactic processes that affect the latter also affect the former. Second, it is shown that "infinitives (and gerunds) must have subjects at some level of representation" (ibid., 136). Third, it is pointed out that certain properties of the semantic component and of X' syntax provide further arguments for the claim that infinitives and gerunds are clauses.

1.6 Syntactic processes affecting both finite and nonfinite clauses

The following syntactic processes all affect finite as well as nonfinite clauses but never VPs. Therefore these syntactic operations can be used to distinguish between VPs and clauses.

1.6.1 Pseudo-clefting

Clauses but not VPs may occur in the focus of a pseudo-cleft (cf. ibid., 132):

(13) a. What he suspected was that Bill saw Monument Valley.
b. * What he suspected that Bill was saw Monument Valley.

(14) a. What he wanted was for Bill to see Monument Valley.
b. * What he wanted for Bill was to see Monument Valley.
(15) What he wanted was to visit Monument Valley.

Koster and May (1982:132) note that only *for-to* infinitival complements may be pseudo-clefted, that is, pseudo-clefting of an infinitive complement is restricted to matrix verbs that allow or require C(OMP) in their clause complement to be filled by the complementizer *for*. This group

of verbs may be identified semantically as the subclass of "subject-oriented" (see Maxwell 1984) emotive verbs (see Kiparsky and Kiparsky 1971, Maxwell 1984, and also Quirk et al. 1985), which describe the opinion or emotional attitude of the person denoted by the subject. The class includes *want, like, hate, prefer*, etc. but not *believe, know, try*, or *condescend*, for example, which seem to belong in the class of "epistemic" verbs that are characterized by Chomsky and Lasnik (1977:475) as selecting a Ø complementizer. Verbs of the latter group do not select the complementizer *for* and they do not allow pseudo-clefting of their infinitival complements, as is demonstrated by the following examples.

(16) * What John believes is him to have seen Monument Valley.
(17) * What John tried was to see Monument Valley.
(18) * What the manager condescended was to have lunch with us in the canteen.

1.6.2 Extraposition from NP

Although infinitives do not normally extrapose, infinitival clauses, as well as finite clauses, with filled C, can be extraposed (cf. Koster and May 1982:133).

(19) a. A book which we didn't like appeared.
b. A book appeared which we didn't like.

(20) a. A book on which to work appeared.
b. A book appeared on which to work.

1.6.3 Finite and infinitival clauses conjoined

A universal constraint on coordination requires that the coordinated constituents be of the same syntactic category. Therefore we do not expect to find VPs coordinated with clauses. But, as Koster and May observe, infinitives do have the ability to conjoin with finite clauses, which furnishes us with a further argument in favor of the sentential status of infinitival complements. Consider the following examples:

(21) To write a novel and for the world to give it critical acclaim is John's dream.

(22) John expected to write a novel but that it would be a critical disaster.

However, acceptability judgments with regard to such sentences do not seem to be unanimously positive. Quirk et al. (1985:947), for example, assert quite the contrary, saying that "the members of coordinate constructions tend to be parallel both in their structure and in their meaning" therefore "it is scarcely acceptable for different types of nonfinite clause to be coordinated, or for finite dependent clauses to be coordinated with nonfinite clauses, even where there is a strong semantic affinity between the two clauses." They assert that "it seems impossible, for example, to coordinate a nominal infinitive with an *-ing* clause:

(23) * George likes *going to the races* and *to bet on the horses*." (ibid.)

But they, too, admit that "occasional examples such as the following occur" (ibid.):

(24) The empress, *nearing her death* and *surrounded by doctors and necromancers,* was no longer in control of her ministers.

(25) The curfew bell rang at sunset every evening, *to warn the citizens that it was time for bed*, and *so that secret defensive measures could be taken by the army.*

1.6.4 WH-movement

Now consider the following examples:

(26) a. I wonder [$_{CP}$ [$_{C}$ what] to do].
b. a topic [$_{CP}$ [$_{C}$ on which] to work]

The only way to account for the existence and structure of such sentences on the VP-hypothesis is to assume that not only finite clauses but VPs too are introduced by C(OMP), which would raise serious problems. In addition, on this assumption we would also have to allow VPs 'to function as relative clauses' within NPs. As Koster and May (1982:133) observe,

Wh-movement is "a typical S'-rule moving WH-phrases to COMP."[3] The fact that it appears to apply in 'subjectless' infinitival complements is interpreted by Koster and May, following Chomsky (1980) and Williams (1980), as direct evidence that infinitives are sentential.

As I have already suggested above, certain distributional properties of infinitives (and *-ing* participles) also point to their sentential status. It is noted in Chomsky and Lasnik 1977 that infinitives pattern with finite clauses in that they occur as restrictive relatives:

(27) a. I found a poem to memorize.
b. I thought up a topic for you to work on.
c. I found a topic on which to write my term paper.
d. There is a man to fix the sink at the front door.
e. If you find anyone to fix the sink, let me know.

As the following sentences show, *-ing* participles also pattern with finite clauses in that they occur as restrictive relatives in NPs:

(28) a. I found a sentence requiring careful analysis.
b. There is a man selling cherries at the front door.
c. If you find anyone carrying a large umbrella, call me.

Such participial relatives are more restricted in occurrence than their infinitival counterparts. Participial relatives occur only with a null subject which is always coreferential with the NP which they modify. So the participial counterparts of (27a–c) do not exist:

(29) a. *I found a poem memorizing.
b. *I thought up a topic you working on.
c. *I found a topic on which writing my term paper.

[3] In the original formulation of Government and Binding (GB) theory, S was the category of sentences, S' was assumed to be the category (label) of embedded complement clauses, and complementizers were labeled COMP. In more recent work, sentences are taken to be inflection phrases, IPs, or tense phrases, TPs, a clause is analyzed as a complementizer phrase, CP, and a complementizer is simply represented as C. The notation adopted in the present work is this: a sentence is an IP, a clause is a CP, and the position of a complementizer is represented as C.

1.6.5 Topicalization

As Koster and May (1982:129), in agreement with Jackendoff (1977), observe, sentences may be topicalized under certain restrictions, but VPs may never undergo topicalization:

(30) a. That you were coming tomorrow, no one ever expected Bill to find out.
b. *Coming tomorrow, no one ever expected Bill to find out that you were.

1.6.6 Clausal subjects

Similarly, clauses but not VPs may occur in subject position:

(31) a. That Gödel proved the continuum hypothesis was his greatest achievement.
b. For Gödel to prove the continuum hypothesis would have been his greatest achievement.
c. To prove the continuum hypothesis would have been Gödel's greatest achievement.
(Cf. Koster and May 1982:129–30.)
d. (Gödel) proving the continuum hypothesis was a great achievement.

1.6.7 The complementizer *om* in Dutch

Assuming that only embedded clauses but not VPs may be introduced by complementizers, the presence of a complementizer may be taken as evidence that the constituent it precedes is a clause. Dutch *om*, like English *for*, is not a singular category but a phonological entity that corresponds to two different grammatical categories: preposition and complementizer. The former may take an NP complement, the latter introduces a clause.

The parallel between the complementizers *for* and *om* introducing infinitival complements extends to both being optional (in certain dialects of the respective languages (cf. Koster and May 1982, and Chomsky and Lasnik 1977).

(32) a. Would you like for Agnes to reply?
b. Would you like Agnes to reply?

(33)	a.	John	probeerde	om	het	boek	te lezen.
		John	tried	C(omp)	the	book	to read
		'John tried to read the book'					
	b.	John	probeerde	——	het	boek	te lezen.
		'John tried to read the book'					

Assuming that complementizers but not prepositions may be optional (cf. Chomsky and Lasnik 1977), the absence of *for* and *om* in the respective examples is evidence to their status as complementizers (as opposed to prepositions),[4] and the presence of these complementizers in the respective examples is evidence that the infinitives that follow them are sentences. Furthermore, because of the parallelism in structure between the (a) and (b) examples in (32) and (33), the same observations count as evidence that the infinitives in the (b) examples are also sentences.

1.6.8 Subject-oriented adverbs in object-control structures

An argument similar to the one constructed from the presence of complementizers (see section 1.6.7) can be constructed from the presence of subjects. If embedded sentences are assumed to have a structure like

(34) $[_{CP}\ [_{IP}$ NP Infl VP$]]$

then the presence of subjects in infinitives and gerunds can be taken as evidence that they are embedded sentences.

Koster and May (1982:136) observe that certain adverbs, such as *intentionally* and *carefully*, are regularly interpreted as predicated of the subject of the sentence in which they occur. This is the case in

(35) John married Mary intentionally.

But in examples like the following the property expressed by the adverb is understood as predicated of the surface object NP.

(36) a. John forced Bill to hit Harry intentionally.
b. I persuaded Bill to carefully cut the cake.

The only way to accommodate these facts in the VP hypothesis is to formulate some (ad hoc) rule that says that such subject-oriented adverbs

[4] For additional empirical evidence that the preposition *om* is distinct from its complementizer homonym in Dutch see Koster and May 1982.

express properties predicated of the subject except after verbs like *force, persuade, ask*, etc. This amounts to saying that such adverbs are sometimes subject-oriented and sometimes object-oriented, the consequence of which is that an otherwise interesting empirical generalizations is lost.

This apparent irregularity is easily explained, however, if these examples are assumed to have the following structures:

(37) a. John forced $Bill_2$ [PRO_2 to hit Harry intentionally].
b. I persuaded $Bill_2$ [PRO_2 to carefully cut the cake].
(ibid., 136)

If the infinitives are assumed to have a (phonetically unrealized) subject, the regularity of the behavior of subject-oriented adverbs is restored, and the generalization can be maintained. The adverbs will be construed as expressing a property predicated of the embedded subject, and under control by the matrix object with which it is coreferential, the property is eventually predicated of the matrix object.

Since without assuming PRO (the phonetically empty subject NP controlled by the matrix object) in the embedded infinitives we would lose an explanation for the regularity of subject-oriented adverbs in English, and since the assumption of PRO in otherwise 'subjectless' infinitives helps restore the generalization, it may be taken as evidence that all infinitives have subjects, hence all are sentential.

1.6.9 C-commanded predicates

Koster and May (1982) show that a further argument may be constructed in favor of the sentential hypothesis on the constituency of infinitives and gerunds assuming Williams' (1980) condition on predication, which requires that predicates be c-commanded by an argument with which they are co-indexed. What the argument directly shows is, again, that infinitives and gerunds have subjects, and therefore it provides indirect evidence that infinitives and gerunds are sentences. Consider the following example (cf. Koster and May 1982:136):

(38) *John* ate the meat *nude*.

Given a reading of (38) on which *nude* is predicated of *John*, the predicate *nude* is co-indexed with the subject NP, its c-commanding argument.

Now consider the following examples (ibid.):

(39) a. [PRO eating the meat *nude*] is a little obscene.
b. [PRO killing the giant *by himself*] made David famous.

The complement clause in (39a) must be construed as having an unspecified subject in order for there to be an argument of which *nude* is predicated, simply because there is no other c-commanding NP for the predicate to be coindexed with. In (39b) the NP *David* controls PRO, thus the adverb *by himself* is predicated of this NP, since *David* does not c-command *by himself*. Similarly, *nude* is predicated ('via PRO') of *David*, the controller NP for PRO in (40), once again because *David* does not c-command *nude*:

(40) [PRO eating the meat *nude*] made David famous.

Summarizing, a c-commanding condition on predication, if correct, provides evidence that "subjectless" English infinitives and gerunds have phonetically null subjects, therefore they are sentences.

1.6.10 Bound anaphora

A further argument that supports the hypothesis that both infinitives and gerunds are sentences in English derives from considerations of the binding relation that holds between anaphors and their antecedents. These considerations again directly show that infinitives and gerunds have subjects, and that therefore they are sentences.

Assuming Chomsky's (1981) principles of Binding Theory, Koster and May (1982) show that phonetically unrealized subjects must be postulated in the syntactic representation of "subjectless" infinitives and gerunds, otherwise many infinitives and gerunds that contain reflexive pronouns (i.e., anaphors) will be incorrectly ruled out as ungrammatical on the grounds that they violate Principle A of Binding Theory.

Given that binding is a coreference relation between an anaphor (a reflexive or a reciprocal) and a coindexed antecedent that c-commands it, it must satisfy the following conditions[5]:

[5] The principles of Binding Theory are given in the form in which they appear in Koster and May 1982. For alternative formulations see, e.g., Chomsky 1981, 1982, and Haegeman 1991.

(41) Binding Theory

a. Anaphors must be bound in their governing category.
b. Pronouns must be free in their governing category.
c. All other NPs must be free in all governing categories.

(42) Governing Category

α is the governing category for ß if and only if α is the minimal category containing ß and a governor of ß, where α = NP or S. (See Chomsky 1981:188)

Now consider the following examples (cf. Koster and May 1982:137)

(43) a. John said [it was difficult *to shave himself*].
b. Mary said [that *shaving herself* was a pain in the neck].
c. *Helping oneself* would be difficult.

All these grammatical examples constitute violations of Principle A of the Binding Theory if the italicized nonfinites are analyzed as VPs. Furthermore, (43c) poses the additional problem of a VP appearing in subject position, already noted (see section 1.6.5 above). If, however, the examples are assigned the structures indicated below, none of the violations will arise, nor will we have to swallow VP subjects any longer (cf. ibid.).

(44) a. $John_2$ said [it was difficult [PRO_2 to shave $himself_2$]].
b. $Mary_2$ said [that [PRO_2 shaving $herself_2$] was a pain in the neck].
c. [PRO_2 helping $oneself_2$] would be difficult.

In (44a–b), the reflexives no longer have their antecedents outside their governing categories, since *himself* as well as *herself* is now a clause-mate with its antecedent (PRO) which binds it.

In (44c), without the postulation of an empty subject (PRO) the reflexive *oneself* would not have an antecedent at all.

To summarize, the consideration of anaphoric binding suggest that we must postulate intermediate (empty) subjects in "subjectless" infinitives and gerunds, thereby providing further support for the hypothesis that these complements are sentences.

1.6.11 Floated quantifiers

It has been observed (cf. Koster and May 1982, quoting D. Pesetsky, personal communication) that a quantifier may be floated off its NP in a superordinate clause and land in an infinitival complement, producing a fairly acceptable sentence:

(45) a. ?The men promised the women to all come to the party.
b. ?The men persuaded the women to all come to the party.

Such floated quantifiers, as Koster and May (1982) observe, may be construed as anaphors with respect to the Binding Theory. Assuming that this is correct, given the semantic interpretations of these examples, the antecedent of *all* in (45a) is the subject NP *the men*, and in (45b) *all* is bound by the object NP *the women*. The solution, once more, is to postulate an empty subject in the embedded sentences.

(46) a. The men_2 promised the women [PRO_2 to all_2 come to the party].
b. The men persuaded the $women_2$ [PRO_2 to all_2 come to the party]. (ibid., 137)

Now both *all*s will be bound by the respective PROs. Furthermore, each will be construed with the NP which it was floated off, the construal based upon, and mediated by, the relation that holds between PRO and its controlling NP *the men* in (45a), and PRO and its controlling NP *the women* in (45b), given that *promise* and *persuade* are marked as subject-control and object-control, respectively.

These observations, *ceteris paribus*, allow us to make the generalization that floated quantifiers are interpreted as floated off the NP controlling the embedded subject.

1.6.12 Split-antecedent phenomena

Koster and May (1982:138) observe a very important difference between personal pronouns like *they* and anaphors like *each other*: the former may have split antecedents but the latter requires a unary antecedent. The personal pronoun *they* may be construed in (47a) as coreferring to John and Mary, but *each other* in (47b) cannot be interpreted as coreferential with the NPs *John* and *Mary*, as the ungrammaticality of the example shows.

(47) a. *John* told *Mary* that *they* had to leave.
b. **John* talked with *Mary* about *each other*.

The verb *propose* has the remarkable property that it allows its subject and prepositional object arguments to jointly determine the reference of the understood subject of the complement (split-control):

(48) *John* proposed to *Mary* to go to the movies.

On the most natural reading of (48), it means that 'John suggested to Mary that *they* go to the movies'. In other words, the understood subject in (48) behaves like *they* in (47): both are coreferential with two distinct NPs, that is, both have split antecedents. Now consider (49) with *each other* in the complement, which requires a unary antecedent:

(49) *John* proposed to *Mary* to help *each other*.

The fact that (49) is grammatical, that *John* and *Mary* cannot be the direct split antecedents for *each other*, and third, that *each other* requires the presence of a unary antecedent show that it has the following structure:

(50) $John_i$ proposed to $Mary_j$ [PRO_{ij} to help $each\ other_{ij}$].

These considerations again show that we must postulate a phonetically empty category as the subject of nonfinite complements in English, which entails that they are clauses.

1.7 The problem of 'VP-complementizers'

As noted by Riemsdijk and Williams (1986:135), the existence of sentences like (51) creates serious problems for the VP hypothesis, on which it is claimed that all infinitives are base-generated in their surface form, that is as VPs, and as such they obviously do not contain PRO subjects.

(51) John wonders what PRO to do.

On the VP-hypothesis, in order for the grammar to generate the structure of such sentences, VPs must be assumed to contain a C position (into which the *wh*-word is moved from its base-generated θ-position). If, however, VPs are of the structure

(52) $[_{VP}\ [_{C} \ldots] \ldots]$

then some rather artificial mechanism is necessary to bar such a C position from the VPs of finite clauses, or, at least the C of finite VPs must somehow be prevented from being filled, in order to block the generation of ungrammatical structures like

(53) * John [$_C$ who$_i$] saw e$_i$

This problem does not arise at all on the clausal hypothesis.

1.8 The structure at LF and CS

Logical Form (LF) is the level of representation where predicates are paired up with their arguments in propositional representations, and Conceptual Structure (CS) is a level of representation beyond LF where linguistic expressions are brought into correspondence with mental representations. On the simplest assumption, the syntactic counterpart of a proposition is a sentence. If predicate-argument structures correspond to syntactic representations in such a way that every predicate and each argument of every predicate is represented as a constituent in syntactic structure, then the mapping of syntactic representation onto Logical Form (which in turn is brought into correspondence with Conceptual Structure) is straightforward. This is the case on the clausal hypothesis, where there is a one-to-one correspondence between logical and syntactic subjects, and logical and syntactic predicates, with the consequence that there is no predicate without a corresponding subject either in logical or in syntactic representation. For concreteness, consider the following example (cf. Koster and May 1982):

(54) John$_2$ wants [PRO$_2$ to try [PRO$_2$ to date Mary]].

Every verb in (54) has a corresponding subject, so subject—predicate relations can directly be read off the syntactic representation. This is, I believe, a desirable consequence if the 'simpler the better' principle applies to the syntax—semantics interface.

Under the VP-hypothesis the single subject in (54) would be related to three different verbs, and the verb in (55) would not be related to any subject at all.

(55) [$_{IP}$ PRO to leave now] is impossible for John.

The subject-predicate pairing would only be reconstructed at the level of logical representation, where the crucial point to notice is that it *would* be reconstructed at *some level* of representation. In other words, the clausal nature of infinitives

and gerunds *would be* recognized at the level of logical representation, but there only. It is a corollary of the VP-hypothesis that semantic structures are derived independently of syntactic structures (cf. Chierchia 1984).

To summarize, there is overwhelming evidence that nonfinite complements have subjects at some level of representation. The arguments discussed in the preceding sections also suggest that the appropriate level of representation of the clausal structure of nonfinite complements is S-structure.

1.9 The constituent structure of gerunds

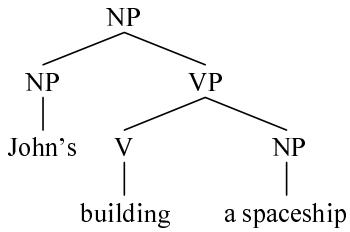
As we have seen in the preceding sections a number of observations suggest that not only infinitives but also gerunds have a clausal structure in English. Although I believe that in general it is correct to assume a clausal structure for gerunds, we must note a few problems in this respect, since the evidence is not conclusive.

One of these problems concerns the topmost node dominating a gerundive complement. Assuming the principles of X' Syntax (cf. Jackendoff 1977) and Government-Binding Theory (cf. Chomsky 1981, 1982, 1986), on which embedded clause complements are normally analyzed either as IP or as CP, the possibilities include IP, CP, and NP (dominating IP).

Jackendoff's (1977) proposal is that gerunds (Chomsky's 1970 'gerundive nominals') have the internal structure of sentences, but at the maximal level of projection, which is level X''' in Jackendoff 1977, they are NPs. This is a most problematic option, however: if basic principles of X-bar Theory are to be observed, we cannot simply stick an NP node at the top of a complement clause, or else the X-bar theoretic principle is violated which requires that all phrases be endocentric. There are at least two reasons that (56b) cannot be the structure of (56a) below. First, the topmost NP lacks a head, and second, V cannot project an NP (cf. Abney 1987).

(56) a. John's building a spaceship

b.



(cf. Abney 1987:17)

In sections 1.9.1 through 1.9.5 I will briefly review the arguments for and against the NP/DP[6] analysis of gerunds, and I will eventually conclude that they are essentially sentential in structure: Acc-*ing* and PRO-*ing* gerunds are CPs, and Poss-*ing* gerunds are IPs embedded in DPs.

1.9.1 Why gerunds are noun phrases

The principal motivation for the assumption that gerunds, but not infinitives or *that*-clauses, are dominated by an NP/DP node at the level of X^{max} derive from their external syntactic properties, and include the following (cf. Horn 1975, Jackendoff 1977, and Abney 1987):

Gerunds, but not *that*-clauses or infinitives, occur in all NP positions, namely, they can be (a) the subject of questions, (b) the subject of relative clauses, (c) the subject of infinitival clauses, (d) the subject of a sentence following a sentence-initial adverb, (e) the object of prepositions, and (f) the focus of clefts:

(57) a. What would John's leaving/*that John left/*for John to leave reveal about him?
b. a man who John's leaving/*that John left/*for John to leave would irritate
c. It would be disgraceful for John's leaving/*that John left/*for John to leave to bother us.
d. Perhaps John's smoking stogies/??that John smokes stogies/??(for John) to smoke stogies would bother you.
e. I learned about John's smoking stogies/*John smokes stogies/*(for John) to smoke stogies.
f. It's John's smoking stogies/*that John smokes stogies/*for John to smoke stogies that I can't abide/that I can't believe/that I won't permit.

Another nominal property of gerunds is that they may not contain sentence adverbial PPs:

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[6] The slashed category labels appear because NPs are analyzed as DPs in Abney 1987. The traditional label NP, which I will continue to use throughout, except in the discussion of Abney's analysis of Poss-*ing* gerunds, corresponds to Abney's DP and is to be understood as its synonym.

(58) *John's to our delight/in his haste/for some reason leaving so early didn't distress Sue.

Note, however, that nominal relative clauses, also called 'free relatives', may also occur in all the positions illustrated in (57) above, although they cannot be derived from NPs, as Jackendoff (1977) shows. Consider the following examples (cf. Jackendoff 1977 and Abney 1987):

(59) a. What would what the FBI found out reveal about John?
b. a man to whom what you found out would be a nuisance
c. It would be disgraceful for what you found out to be revealed.
d. Perhaps what John found out would upset you.
e. I heard about what you did.
f. It's what you have in your head that counts.

Chomsky (1986) too raises the possibility that gerunds may be NPs, but he finally appears to conclude that gerunds are CPs, that is, they have a C position. This raises the problem that gerunds, as contrasted with finite and infinitival clauses, do not appear ever to be introduced by complementizers, at least not by *wh*-complementizers, as is shown by the following paradigm (cf. Chomsky 1986:84):

(60) a. I remembered that he read the book.
b. I remembered his reading the book.
c. I remembered why he read the book.
d. *I remembered why his reading the book.

On the assumption that gerunds as well as infinitives are CPs, the problem of constituency would practically reduce to the exceptional character of gerunds that they do not occur with *wh*-complementizers. I will consider the arguments for the sentential status of gerunds in the following section.

1.9.2 Why gerunds are sentences

As we saw in the previous section, some distributional properties of gerunds suggest that they are noun phrases. Let us now consider aspects of their internal structure that they share with ordinary sentences, *that*-clauses, and infinitival clauses, which would favor a sentential analysis. The reasons that

gerunds ought to be analyzed as sentences include the following (cf. Jackendoff 1977 and Abney 1987):

We find both English aspectual auxiliaries in gerunds, as in ordinary sentences:

(61) a. Byrne having been refusing the offer just when Nixon arrived
b. Byrne's having been refusing the offer just when Nixon arrived

Gerunds may contain the same range of adverbs as ordinary sentences:

(62) a. John sarcastically criticizing the book
b. John's sarcastically criticizing the book
c. John criticizing the book too often
d. John's criticizing the book too often
e. John refusing the offer in a suspicious manner
f. John's refusing the offer in a suspicious manner

Transformations, such as Extraposition, Subject Raising, Tough Movement, Dative Movement, and Particle Movement, which otherwise apply in finite and infinitival clauses, also apply in gerunds:

Extraposition and Subject Raising:

(63) a. That John will win being certain
b. It(s) being certain that John will win
c. John('s) being certain to win

Tough Movement:

(64) a. It(s) being easy to please John
b. John('s) being easy to please

Dative Movement:

(65) a. John('s) giving a book to Bill
b. John('s) giving Bill a book

Particle Movement:

(66) a. John('s) looking up the information
b. John('s) looking the information up
c. *John's looking of the information up

V+*ing* assigns Case to its argument:

(67) a. John destroyed the spaceship.
b. John('s) destroying the spaceship
c. *John's destruction the spaceship

It takes adverbs rather than adjectives:

(68) a. Horace('s) carefully describing the bank vault to Max
b. *Horace's careful describing the bank vault to Max

ECM is possible in tensed Ss and gerunds but not in noun phrases:

(69) a. John believed Bill to be Caesar Augustus.
b. John('s) believing Bill to be Caesar Augustus
c. *John's belief Bill to be Caesar Augustus

Object-control constructions occur in gerunds and tensed sentences but not in noun phrases:

(70) a. I persuaded John to leave.
b. me/my persuading John to leave
c. *my persuasion of John to leave

Gerunds may contain secondary predicates with a resultative meaning. This is not possible in noun phrases:

(71) a. We painted the house red.
b. us/our painting the house red
c. *our painting of the house red

Gerunds and tensed sentences may contain concealed questions, noun phrases cannot:

(72) a. I considered sabotage.
b. me/my considering sabotage
c. *my consideration of sabotage

Finally, Abney (1987) points out that noun phrases *may* contain subjects, but their presence is not obligatory. Ordinary sentences, infinitives,

and gerunds, on the other hand, *require* the presence of a subject. The observations suggest that gerunds must be analyzed as sentences.

1.9.3 Differences between Acc-*ing* gerunds and Poss-*ing* gerunds

The arguments that we reviewed in the previous section all appear to suggest a uniform clausal analysis of gerunds. In this section I will discuss some properties of Poss-*ing* gerunds that distinguish them from Acc-*ing* gerunds (cf. Horn 1975, Williams 1975, Reuland 1983, Abney 1987, and Webelhuth 1995).

Extraction is possible from Acc-*ing* but not from Poss-*ing*

(73) a. We remember him describing Rome.
b. the city we remember him describing
c. What do you remember him describing?

(74) a. We remember his describing Rome.
b. *the city we remember his describing
c. *What do you remember his describing?

In subject position of a tensed sentence, conjoined Acc-*ing* gerunds behave differently from conjoined Poss-*ing* gerunds: the former take singular agreement (like conjoined *that*-clauses and infinitives, and unlike conjoined NPs), while the latter induce plural agreement on the verb (like conjoined NPs):

(75) a. John playing the piano and Fred singing a song *were/was terrifying.
b. John's coming and Mary's leaving bother/*bothers me.

Acc-*ing* gerunds cannot but Poss-*ing* gerunds can be coordinated with other NPs:

(76) a. *Kennedy having made a big mistake and the recent unrests have left the country shaken.
b. Kennedy's having made a big mistake and the recent unrests have left the country shaken.

Acc-*ing* constructions occur in argument, as well as adjunct positions; Poss-*ing* gerunds occur only as arguments:

(77) a. John being a spy, Bill thought it wise to avoid him.
b. *John's being a spy, Bill thought it wise to avoid him.

Acc-*ing* gerunds may take sentence-adverbials in adjunct positions (though not in argument positions); Poss-*ing* gerunds do not allow sentence-adverbials:

(78) a. John probably being a spy, Bill thought it wise to avoid him.
b. *I was worried about John probably being a spy.
c. *I was grateful for John's fortunately knowing the answer.

Although in general both Acc-*ing* and Poss-*ing* gerunds permit pleonastic subjects, only Acc-*ing* permits *there*:

(79) a. I was worried about it being too obvious that Charlie was lying.
b. I was worried about its being too obvious that Charlie was lying.
c. I approve of there being a literacy exam for political candidates.
d. *I approve of there's being a literacy exam for political candidates.

Acc-*ing* gerunds but not Poss-*ing* gerunds occur as complements on perceptual matrix verbs:

(80) a. I can't hear John playing the piano.
b. *I can't hear John's playing the piano.

Finally, it is, I think, in order for me to point to a non-argument concerning the status of Acc-*ing* and Poss-*ing* gerunds. Horn (1975) argues that Acc-*ing* gerunds do not occur in the focus of cleft sentences. He gives the following example (also cited by Reuland, who appears to adopt Horn's position on this matter):

(81) *It was John kissing Mary that upset everyone.

Horn's generalization is not entirely correct. Acceptability judgments concerning clefts and pseudo-clefts seem to show considerable variation.

There are many speakers for whom clefted Acc-*ing* gerunds are just as acceptable as clefted Poss-*ing* gerunds, as the following examples show:

(82) a. It was the moon rising over the mountain that we saw. (Akmajian 1977)
b. It's Fred losing that I can't stand the thought of. (Bresnan 1982)

In view of these data, Horn's generalization cannot be maintained. At least for a group of speakers, Acc-*ing* gerunds and Poss-*ing* gerunds do not differ as potential cleft foci.

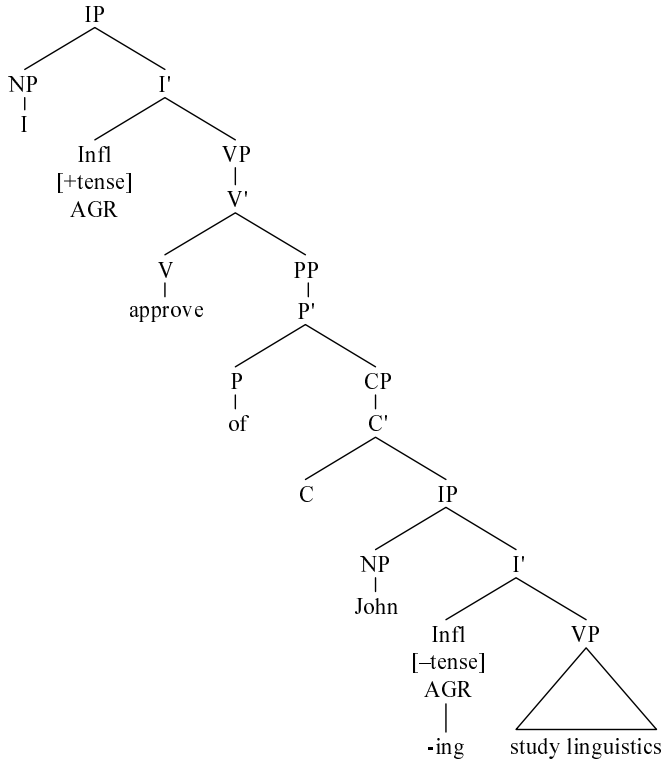
The arguments presented in this section appear to support an account on which Acc-*ing* gerunds and Poss-*ing* gerunds are different categories. In view of the nominal properties of the Poss-*ing* construction presented in this section and section 1.9.1, and the clausal properties of the Acc-*ing* construction discussed in this section and section 1.9.2, the proper analysis seems to be that Acc-*ing* gerunds are clauses and Poss-*ing* gerunds are noun phrases.

1.9.4 Why Acc-*ing* gerunds are sentences

Reuland (1983) shows that at least some gerunds (what he calls NP-*ing* constructions, to be distinguished from Poss-*ing* gerunds) must be analyzed as CPs with an empty C position. On his account, -*ing* is Infl, which contains AGR, a nominal element which transmits Case to the subject. AGR transmits nominative Case to the subject in tensed clauses, where Infl is marked [+tense]. In NP-*ing* constructions, which on his account are tenseless finite clauses, -*ing* realizes the nominal element AGR in Infl. The finiteness of such tensless clauses consists in Infl transmitting its Case (which it receives from the matrix verb or preposition) to the subject of the complement clause. PRO in 'subjectless' gerunds escapes government and Case-marking, because, by assumption, Affix Hopping may apply either in the syntax, disallowing -*ing* to transmit Case to the subject, thus licensing PRO, or in PF, allowing Case to be transmitted to an overt subject, which it governs prior to the application of Affix Hopping. Thus, when Affix Hopping takes place in the syntax, gerunds with PRO subjects are derived, when it applies in PF, gerunds with overt subjects are derived. In either case, a gerund is a CP. On these assumptions, the structure of (83a) is (83b):

(83) a. I approve of John studying linguistics.

b.



Johnson (1988) also comes to a similar conclusion from quite different assumptions. His arguments derive from the assumption that clauses introduced by a temporal preposition contain an empty operator (*Op*), which moves to C. This is based on the observation (credited to Geis 1970) that sentences containing temporal prepositions introducing a clause are ambiguous with respect to the interpretation of the temporal preposition. Thus, (84) has the two interpretations in (85):

(84) Liz left before you said she had.

(85) a. 'Liz left before the time of your saying that she left'
b. 'Liz left before the time which you said she had left at'

The ambiguity is accounted for if (84) contains *Op* (a phonologically null *when*), which may move from either the *said*-clause or the one embedded in it, yielding the two different representations in (86), which correspond to the interpretations in (85):

(86) a. Liz left [$_{PP}$ before [$_{CP}$ Op_i [$_{IP}$ you said [$_{CP}$ she had] t_i]]]
b. Liz left [$_{PP}$ before [$_{CP}$ Op_i [$_{IP}$ you said [$_{CP}$ she had t_i]]]]

On the simplest assumption, gerunds introduced by temporal prepositions have the same structure:[7]

(87) Liz left [after [$_{CP}$ Op_i [PRO saying [she wouldn't] t_i]]]

On Johnson's account, phonetically overt subjects of gerunds are Case-marked (and governed) by some X^0 category outside the gerund. Consider, for example, (88a), which has the structure in (88b):

(88) a. I remember him telling the story.
b. I remember [$_{IP}$ him telling the story]

In (88b) *remember* governs (and Case-marks) the embedded subject across S. The null subject of gerunds, on the other hand, is protected from government by a verb or preposition in the matrix clause thus:

(89) I remember [$_{CP}$ [$_{IP}$ PRO telling the story]]

The matrix verb in (89) is prevented (by CP) from governing the subject inside IP, so PRO may occur. On Johnson's account, then, gerunds with overt subjects are bare IPs, and gerunds with phonetically null subjects are CPs. Whichever account is assumed (Reuland's or Johnson's), Acc-*ing* gerunds are sentences, and least PRO-*ing* constructions are CPs.

Finally, Abney notes that "Acc-*ing* has the distribution of a noun phrase but no other noun phrase properties" (1987:173). This is sufficient for him, but not for me, to class Acc-*ing* gerunds with noun phrases.

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[7] Such temporal gerunds do not display the scope ambiguity we saw in the finite clauses, and, second, they may not contain overt subjects, as the examples below show, but these observations are irrelevant to the point being made about their internal structure:

(i) * Liz left [after [$_{CP}$ Op_i [PRO saying [she wouldn't t_i]]]]
(ii) * Liz left after him saying that she wouldn't.

Therefore my conclusion is that Acc-*ing* gerunds and PRO-*ing* gerunds are sentences (either with a uniform CP structure, as Reuland argues, or with the option that some gerunds project only up to IP, as Johnson claims; I leave this issue open here).

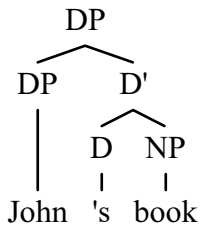
1.9.5 The Poss-*ing* gryphon

As Abney notes, "the English Poss-*ing* construction is not simply a noun phrase with sentential properties, but has a decidedly gryphon-like structure. Its "forequarters" (i.e., its external distribution and its subject) are that of a noun phrase, while its "hindquarters" (its complement structure) are that of a verb phrase" (1987:165).

On Abney's account, noun phrases are DPs, headed by a D(eterminer). In a noun phrase, D projects its own functional category (DP) and takes an NP complement, the projection of N.[8] For the purposes of the present discussion I will assume his proposal (suggested to him by Richard Larson) on which possessive *'s* is D.[9] On these assumptions, a possessive noun phrase like (90a) has the structure in (90 b) (cf. Abney 1987:79):

(90) a. John's book

b.



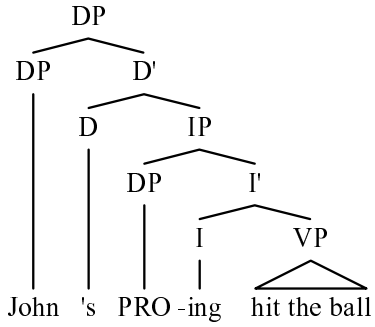
[8] In Abney's analysis, N projects a single level only, so N' = NP, a maximal projection. I will not discuss this nonstandard X-bar theoretic assumption here.

[9] This is not Abney's final analysis of possessive noun phrases. I prefer his *'s*-as-D account to his *'s*-as-case-marker analysis because I find the idea unattractive that *'s* is a postpositional Case-marker (K). I cannot discuss my reservations about it in detail here; suffice it to say that it would be a most peculiar category in English (the only one, and a very special one, of its kind), and, second, this account does not generalize to languages like Hungarian (as Abney claims), where there are no postpositional Case-markers, since Hungarian postpositions assign both Case and theta-role to their arguments (which K does not do).

When the analysis is extended to Poss-*ing* gerunds like (91a), they can be assigned the structure in (91b):

(91) a. John's hitting the ball

b.



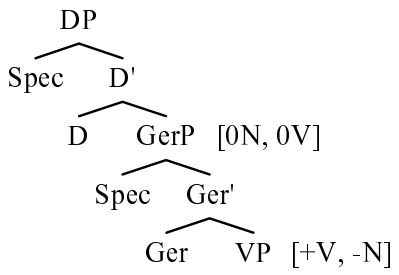
On this analysis, -*ing* is Infl, which is a natural assumption, and *'s* is D, which assigns Case and the Possessor theta-role to the external subject in [Spec, DP]. D takes IP as complement, and D and -*ing* occupy two distinct functional-element positions, as is natural to assume. The structural parallel with Acc-*ing* and PRO-*ing* gerunds is obvious: -*ing* is Infl in all, and all three are essentially clausal. The nominal distribution of Poss-*ing* is predicted—IP is embedded in DP, with the subject occupying an operator position in [Spec, DP]. As Abney notes, "in effect, this analysis involves the embedding of a PRO-*ing* structure under a noun-phrase specifier" (1987:200).[10]

[10] D in this structure corresponds to C in CP gerunds, and DP corresponds to CP. In fact, another option would be to extend the CP analysis to Poss-*ing* gerunds, with *'s* generated in C position. On these assumptions, Acc-*ing* and Poss-*ing* would still be assigned different structures, as apparently desired. The structure of Poss-*ing* gerunds would still be reminiscent of the structure of Hungarian possessive DPs (a chief motivation for Abney's DP analysis of noun phrases and Poss-*ing* gerunds): the subject would occupy the operator position in [Spec, CP], which would then correspond to the position of Dative/Genitive possessors (*Jánosnak* [John's] in *Jánosnak a kalapja*, ['John's hat']) in Hungarian DPs (and not to the position of nominative possessors, as Abney assumes, cf. *János* [John] in *János kalapja* [John's hat]). Note in this respect that -NAK [*'s*] on Genitive possessors is not regarded as a true Case-inflection in Hungarian, but a marker of an operator position, where the possessor may move (cf. Szabolcsi and Laczkó 1992). I must leave it at that, since to pursue this idea any farther would lead us too far afield.

Borgonovo's (1994) solution to the categorial problem posed by gerunds is to assume the existence of mixed or unspecified categories in grammar. Given a feature system for the characterization of syntactic categories, such as that proposed by Chomsky (1970), categories may be identified as feature complexes. What Borgonovo proposes is the possibility that mixed categories, such as the English gerund, be unspecified for certain categorial features.

Mixed categories are categories that seem to behave like a major category up to a certain level of projection, and a different functional category beyond that level (cf. Borgonovo 1994:21). Borgonovo argues that the puzzling behavior of gerunds (that they sometimes behave as CPs and sometimes as NPs) may be resolved by assuming that there are projections in grammar that are underspecified for syntactic category status. Borgonovo assumes that *-ing* projects a syntactically underspecified functional category termed GerP. GerP, then, sometimes behaves as an NP, like in Poss-*ing* structures, sometimes as a CP, like in Acc-*ing* gerunds. The structure assigned by Borgonovo to Poss-*ing* gerunds is this (cf. 1994:26):

(92)



(92) is essentially an Abney-style structure, except that GerP replaces IP (in Abney's D—IP analysis), and Ger, a radically underspecified (non)category replaces Infl. Otherwise the two analyses make the same predictions and either account is consistent with Chomsky's (1986) framework.

I will not explore this problem any further here. It will be recognized that the issue of the categorial status of gerunds has not yet been resolved conclusively. For the purposes of this study I will adopt Abney's D—IP analysis of Poss-*ing* gerunds.

This concludes our discussion of the issues concerning the constituency of infinitives and gerunds.

1.10 Syntactic subcategories of infinitival complementation

Syntactically, matrix verbs that take infinitival complements fall into various subcategories. Some are control verbs, others are exceptional case marking (ECM) verbs. Some verbs are ECM only (e.g. *believe*), some are either control or ECM verbs (e.g. *expect, intend*). Some control verbs are subject control (e.g. *try, promise*), some are object control (e.g. *persuade*); some are obligatory subject control (e.g. *try, refuse*), some are obligatory object control verbs (e.g. *force, tell, persuade*).

Some verbs are exclusively obligatory subject control (e.g., *try, condescend, dare, endeavor, fail, manage, proceed, refuse*) in that they do not allow a lexical subject in their complement clause:

(93) a. Sheila tried to bribe the jailor.
b. *Sheila tried John to bribe the jailor.

A related subclass of verbs may take infinitival complements either with lexical subjects or with subject-controlled PRO (e.g. *want, prefer, hate, like, hope, desire, love*).

(94) a. Sheila wanted John to bribe the jailor.
b. Sheila wanted to bribe the jailor.

Some are obligatory ECM verbs (e.g. *believe, assume, know, perceive, find, prove, understand, imagine*) in that they do not allow a subject-controlled PRO as subject of the complement clause:

(95) a. John believed Sheila to have bribed the jailor.
b. *John believed to have bribed the jailor.

Some are exclusively obligatory object-control verbs (*force, tell, persuade, allow, coax, help, order*) in that they subcategorize for an NP object which controls PRO in the complement clause, and passivization in the complement is disallowed:

(96) a. John forced Sheila to bribe the jailor.
b. *John forced to bribe the jailor.
c. *John forced the jailor to be bribed by Sheila.

Some are either control or ECM verbs (e.g. *expect, intend*), in that they may take a complement with either a lexical subject or a subject-controlled PRO, and they allow passivization in the complement:

(97) a. Mary expects John to fail the examination.
b. Mary expects to fail the examination.
c. Mary expects the examination to be failed by John.

1.11 Infinitival complement clauses in Quirk et al. 1985

1.11.1 "Subjectless" *to*-infinitive clauses in subject-control structures

Accurately, there is no such thing as a subjectless infinitive clause. The expression only means that such clauses have no overt lexical subjects, but they have 'underlying' or 'understood' subjects represented as PRO, the phonetically null pronominal anaphor. The verbs that are listed below subcategorize for a single complement, which may be nominal or clausal, therefore they are termed 'monotransitive' in Quirk et al. 1985. The PRO subject of infinitive clauses in subject-control structures is controlled by, i.e., is coreferential with, the subject of the matrix sentence. Subject-control verbs that take "subjectless" *to*-infinitive clause complements are listed below in semantic classes (cf. Quirk et al. 1985:1187):[11]

(i) Emotive verbs: *dread, hate, like, loathe, love, prefer.*
(ii) Aspectual verbs: *begin, cease, commence, continue, start.*
(iii) Retrospective verbs: *forget, remember, regret.*
(iv) *choose, hope, intend, mean, need, plan, propose, want, wish.*
(v) *deign, disdain, help, scorn, venture.*
(vi) *ask, beg, decline, demand, offer, promise, refuse, swear, undertake, vow.*
(vii) *affect, claim, profess.*

[11] Classes (i–iii) are labeled ('emotive', 'aspectual', and 'retrospective', respectively), the rest are not. Quirk et al. do not explicitly label any of the verb classes that are listed below. The first three are easy to tag on an inferential basis, but I was unable to locate the semantic labels of classes (iv–viii). (The verbs in class (ix), called "miscellaneous" by Quirk et al., do not seem to constitute a semantically coherent group.)

(viii) *afford, attempt, contrive, endeavour, fail, learn, manage, neglect, omit, try.*

The following prepositional verbs also belong to the same category. The prepositions are deleted before *to*-infinitival clauses.

(i) Emotive verbs: *long for, ache for, aim for, aspire to, burn for, burst for, (not) care for, clamour for, itch for, yearn for.*
(iii) Retrospective verbs: *bother about, condescend to, delight in, hesitate about.*
(vi) *agree to/on/about, assent to, consent to.*
(vii) *pretend to.*
(viii) *strive for, seek for.*
(ix) *arrange for, decide on, resolve on, prepare for, serve for.*

1.11.2 Infinitival clause complements with lexical subject

The following verbs (called 'monotransitive' in Quirk et al. 1985) take *to*-infinitival clause complements with a lexical subject. They are relatively few in number: *(can't) bear*, *desire, hate, like, love, prefer, want, wish.*

These verbs mainly denote 'liking' or 'wanting'. A feature that distinguishes these from apparently similar constructions with *believe*-type verbs (called 'complex- transitive' in Quirk et al. 1985) is that the NP that is the subject of the embedded clause cannot be passivized and made the subject of the passive matrix sentence. Cf.

(98) a. They don't like the house to be left empty.
b. *The house isn't liked to be left empty (by them).

A *for* complementizer may introduce the embedded clause chiefly in American English dialects (especially freely in Ozark English (cf. Chomsky and Lasnik 1977):

(99) Jack prefers *for* his wife to drive the truck.

(Quirk et al. 1985:1193)

1.11.3 Infinitival complements on ECM verbs

These constructions are labeled 'complex transitive' by Quirk et al. (1985). An important distinguishing feature of these constructions, which distinguishes them from monotransitive constructions, is the ability of the embedded subject to become the subject of a passive matrix sentence, cf.

(100) a. They knew him to be spy.
b. He was known to be a spy.

(cf. Quirk et al. 1985:1203)

Numerous verbs belong here. They are listed below in semantic classes.

1. Speech-act verbs (= Factual[12] public verbs):[13] *announce, declare, proclaim, pronounce, report, repute* (especially passive), *rumour* (passive only), *say* (passive only), *tip* (especially BrE).
2. Factual private verbs,[14] expressing belief,[15] etc.: *assume, believe, conceive* (formal), *consider, expect, feel, find, imagine, know, presume, reckon, see* (passive only), *suppose, take, think* (especially passive), *understand.*

Quirk et al. (1985:1204) point out in connection with the verbs in 1. and 2. that "the nonfinite construction following these verbs can often be replaced by a *that*-clause with an indicative verb." They incorrectly also claim, however, that the alternative constructions are equivalent in meaning. Thus it is claimed that

(101) a. The police reported that the traffic was heavy.
= b. The police reported the traffic to be heavy.

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[12] Factual verbs take finite sentential complements whose verb is in the indicative mood. Factual verbs introduce "factual or propositional information" (cf. Quirk et al. 1985:1180).

[13] Cf. Quirk et al. (1985:1204).

[14] Private factual verbs express "intellectual states such as belief and intellectual acts such as discovery. These states and acts are 'private' in the sense that they are not observable: a person may be observed to *assert that God exists*, but not to *believe that God exists*. Belief in this sense is 'private'" (Quirk et al. 1985:1181).

[15] These are Maxwell's (1984) epistemic verbs. See also section 1.6.1.

and that

(102) a. John believed that the stranger was a policeman.
= b. John believed the stranger to be a policeman.

However, the a. and b. examples in (101-102) above are not equivalent in meaning. The finite clause complements in the a. examples are ambiguous as between a factive and a nonfactive reading. The b. examples on the other hand are unambiguously nonfactive. For a more detailed discussion of factivity see pp. 51ff later in this section, and section 2.4.6

3. Verbs of intention: *intend, mean.*
4. Causative verbs:[16] *appoint, cause, drive, elect, force,*[17] *get* (no passive), *lead, name, prompt, vote.*
5. Verbs with a modal character, expressing such concepts as enablement, permission, and compulsion: *allow, authorize, compel, constrain, enable, entitle, equip, fit, oblige, permit, require.*
6. Verbs of influencing:[18] *assist, bother, bribe, condemn, dare, defy, encourage, help, induce, inspire, press, summon.*

(For all these classes cf. Quirk et al. 1985:1203.)

7. Multi-word verbs: *count on . . . to, depend on . . . to, rely on . . . to, make . . . out to, keep on at . . . to.*

For example:

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[16] In group 4 of causative verbs the infinitival clause identifies the resultant state (cf. Quirk et al. 1985:1204). This group is actually split into two in Quirk et al. (1985:1203). *Appoint, elect, name,* and *vote* are classed separately because they also occur with NP 'object complements'.

[17] *Force*-type verbs in classes 4–8 seem to be misplaced: they are object-control verbs, or in Quirk et al.'s terminology: ditransitive. Note the sharp contrast in grammaticality among the following examples:

(i) John will force you to leave early.
(ii) * For you to leave early will be forced by John.
(iii) * What John forced was for you to leave early.
(iv) * John forced there to be three men at the party. (Cf. Akmajian and Heny 1975:319)
(v) He forced her to kiss her mother's cheek.
(vi) * He forced her mother's cheek to be kissed by her.

[18] A common factor of verbs of influencing seems to be that "the nonfinite clause has a purposive meaning" (Quirk et al. 1985:1204).

(103) I am *depending on* you to give us your full support.
(104) They *made* him *out* to be a monster of depravity.
(105) Why do you *keep on at* me to work harder?

(Cf. Quirk et al. 1985:1205, note [a].)

Groups 1–7 are heterogeneous. The verbs in these groups do not all uniformly meet each criterion of complex transitive complementation. Not each of them, for example, occurs in ECM structures; the verbs in groups 1–3 do, but those in groups 4–7 do not. The verbs in the latter groups are also different in that they do not take lexical NPs as objects. Compare:

(106) a. They believed him to be a fool.
b. They believed it/the story.

(107) a. He forced them to sing.
b. *He forced it/the action.

Thus sentences like (106a), and also (101b) and (102b), are ECM structures:

(108) They believed [$_{CP}$ him to be a fool]

But sentences like (107a) are object-control structures, whose S-structure representation is like this:

(109) He forced them$_1$ [$_{CP}$ PRO$_1$ to sing]

The following members of groups 1–7 definitely belong to this latter category: *force, encourage, bribe, compel, oblige, help.*

Let me make a short digression here and return to the interpretation of (101-102) above with the matrix verbs *report* and *believe*. I will take up factivity later in more detail (see section 2.4.6), but I think it is appropriate to make a few preliminary comments here.

Although the Kiparskys' (Kiparsky and Kiparsky 1971) argumentation and conclusions are in general correct, they incorrectly claim that only nonfactive predicates, such as *believe* and *suppose*, occur in structures like (108) and (110), traditionally known by the name of 'accusative-with-infinitive' (cf. Kiparsky and Kiparsky 1971:348):

(110) I suppose there to have been a mistake somewhere.

Evidence to the contrary is available in their own paper (cf. Kiparsky and Kiparsky 1971:360):

(111) They reported the enemy to have suffered a decisive defeat.

(110) and (111) have essentially the same structure in relevant respects, but only the verb of the former, *suppose*, is nonfactive; *report* is unmarked for factivity. In fact, both nonfactive verbs and verbs unmarked for factivity occur in this structure, as (111) shows.

The data just cited indicate, in addition, that another generalization that the Kiparskys make is incorrect. They claim that "simple *that*-clauses are ambiguous, and constitute the point of overlap (neutralization) of the factive and non-factive paradigms" (Kiparsky and Kiparsky 1971:356). The Kiparskys suggest that

(112) a. the accusative-with-infinitive construction is restricted to nonfactive predicates (cf. ibid., 348),
b. gerundive complements occur freely with factive but only marginally with nonfactive predicates (cf. ibid., 347),
c. gerundive complements have a factive reading and infinitival complements have a nonfactive reading with matrix predicates unmarked for factivity (cf. ibid., 360),
d. *that*-clauses are ambiguous as between a factive and a nonfactive reading (cf. ibid., 356).

Generalizations (112b) and (112c) are correct. We have just determined the fallacy of (112a). The fallacy of (112d) is again so obvious that the reader is bewildered: I am either irremediably misinterpreting it or there is indeed a mistake and the statement must be repaired. The problem is that the context of the paper does not seem to support any other alternative interpretation on which the generalization would be tenable. The paper does contain several counterexamples to it, though. Contrary to the claim (112d) then, *that*-clauses are unambiguously factive in the context of factive predicates such as *regret*:

(113) a. I regret that John is ill. (ibid., 356)
b. I regret that it is raining. (ibid., 348)
c. I regret that I agreed to the proposal.

And gerundive clause complements on factive predicates are obviously also factive:

(114) a. I regret John's being ill. (ibid., 356)
b. I regret having agreed to the proposal. (ibid., 347)

But *that*-clause complements are ambiguous as between a factive and a nonfactive reading only when they occur as complements on verbs unmarked for factivity, such as *report*, or on nonfactive verbs like *believe*:

(115) a. They reported that the enemy suffered a decisive defeat.
b. I believe that John is ill. (ibid., 356)

I believe, contra the Kiparskys, that the complement in (115b) is not unambiguously nonfactive but that it is ambiguous as between a factive and a nonfactive reading. This is evidenced by the fact that *it*-pronominalization and *so*-pronominalization of the complement clause yield different readings:

(116) a. I believe that John is ill and Mary believes it too.
b. I believe that John is ill and Mary believes so too.

The complement in (116a) is factive, in (116b) it is nonfactive.

The matrix verb *believe* is always nonfactive in accusative-with-infinitive constructions, and does not take gerundive complements. This latter property is illustrated in Kiparsky and Kiparsky (1971:347) by the following example, among others:

(117) * I believe having agreed to the proposal.

The point to be made about it is that it is indeed ungrammatical, but not only because the complement is gerundive, but also because it is a subject-control structure, in which *believe* never occurs, not even with an infinitival complement, cf.

(118) * I believe to have agreed to the proposal.

1.11.4 Infinitival complements in object-control structures

Object-control structures are termed 'ditransitive' by Quirk et al. (1985). The post-verbal NP in object-control structures is in construction with the matrix verb, and controls the PRO subject of the complement clause. Quirk et al. appropriately class many constructions involving matrix performative verbs[19] in this category. In speech act-theoretical terms, many (though not all) sentences in which the matrix verb takes an NP object and a *to*-infinitival clause complement are in fact indirect directives,[20] where the matrix subject is the speaker of the reported speech act, and the (indirect) object is the hearer or addressee of the reported or indirect speech act. The matrix (indirect) object may be passivized, but the embedded object of the nonfinite clause complement cannot, cf.

(119) a. I told/advised/persuaded Mark to see a doctor.
b. Mark was told/advised/persuaded to see a doctor.
c. *I told/advised/persuaded the doctor to be seen by Mark.

The following verbs belong to this category: *advise, ask, beg, beseech, challenge, command, counsel, detail, direct, enjoin, entreat, exhort, forbid, implore, incite, instruct, invite, order, persuade, pray, remind, request, recommend, teach, tell, urge.*

Quirk et al. (1985:1215) incorrectly claim, on the other hand, that the class of 'ditransitive' verbs is in effect coextensive with the class of speech-act verbs, and includes these exclusively. We have already encountered some inconsistency in classification (cf. section 1.11.3 above), which is causally connected to the overgeneralization (or unwarranted reduction) we have just observed in the reduction of the class of ditransitive structures to indirect directives. Several of the verbs classified as 'complex-transitive', a class that otherwise consistently contains ECM verbs, should in fact be reclassified with object-control verbs, such as *persuade* (which is correctly classified as 'ditransitive'). The verbs classified as ditransitive are, without exception, object-control verbs. Therefore, such ill-classed verbs as, e.g., *force, encourage, compel, bribe*, etc., ought to be reclassified from complex-transitive into ditransitive, since they invariably occur in object-control structures.

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[19] On performative verbs and the performative—constative distinction see Austin 1962, Austin 1971 (in Searle 1971, 13–22), Szabolcsi 1983, and Czeglédi 1993a.

[20] On indirect directives, a subclass of indirect speech acts, see Searle 1975, Davison 1975, Csató and Pléh 1987–88, and Czeglédi 1993b.

Note that an important distinguishing feature of object-control (= 'ditransitive') structures is revealed by passivization, which, when applied to the complement, yields nonsynonymous or ungrammatical results. Cf.

(120) a. We asked/forced/compelled/persuaded the students to attend the lecture.
b. The students were asked/forced/compelled/persuaded to attend the lecture.
c. * We asked/forced/compelled/persuaded the lecture to be attended by the students.

1.11.5 Naked infinitival clause complements

The few verbs that belong in this category are all Exceptional Case-marking verbs:

1. Verbs of coercive meaning: *have, let, make*, *bid.*
2. Perceptual verbs: *feel, hear*, *notice*, *observe*, *overhear*, *see*, *watch.*
3. Verbs which optionally take naked and *to*-infinitival complements: *help*, *know.* (Cf. Quirk et al. 1985:1205.)

As far as the verb *know* is concerned, it may take naked infinitival complements, especially in British English, and especially in the perfective aspect. Cf.

(121) I have known John (to) give better speeches than that.

As regards the verb *help*, *to*-infinitival complementation is characteristic in British English, and naked infinitival complementation in American English (cf. Quirk et al. 1985:1206).

1.12 Gerundive complement clauses in Quirk et al. 1985

1.12.1 "Subjectless" gerundive complements

The matrix verbs in this category subcategorize for a single clausal object, therefore they are appropriately termed monotransitive by Quirk et al. (1985). In this pattern of complementation, the PRO subject of the

embedded sentence is usually coreferential with, that is, controlled by, the subject of the matrix sentence. There are, however, matrix verbs whose subject is coreferential not with the subject but with the object of the embedded sentence. These verbs will be marked with a superscript [2] in the list below.

1. Emotive verbs: *(can't) bear, begrudge, detest, dislike, dread, enjoy, (not) fancy, hate, like, loathe, love, (not) mind, miss,* [*prefer*],[21] *regret, relish, resent, (can't) stand.*
2. Aspectual verbs: [*begin*],[22] *cease, commence, continue, quit, resume, start, stop.*
3. *admit, avoid, confess, consider, deny, deserve*[2], *discourage, envisage, escape, forget, (can't) help, imagine, involve, justify, need*[2], *permit, propose, recall, recommend, remember, repent, require, risk, save, try, want*[2] (dialectal).
4. Prepositional verbs: *bank on, count on, decide on, delight in, play at, resort to, see about, shrink from.*
5. Phrasal verbs: *break off, give up, leave off, put off, take up.*
6. Phrasal-prepositional verbs: *do away with, get around to, go in for, look forward to.*

1.12.2 Gerundive complements with lexical subjects

Matrix (monotransitive) verbs that take gerundive clause complements with overt subject are a subclass of subject-control verbs, which take gerundive clause complements without a lexical subject.

1. Emotive verbs: *(can't) bear, begrudge*, *detest*, *dislike*, *dread*, *(not) fancy*, *hate*, *like*, *loathe*, *love*, *(not) mind*, *miss*, *regret*, *relish*, *resent*, *(can't) stand*.
2. Aspectual verbs: *start.*
3. *discourage, envisage, forget, (can't) help, imagine, involve, justify, need*, *permit*, *recall, recommend, remember, risk*, *save*, *want*.

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[21] The verb *prefer* is incorrectly omitted from this list (cf. Quirk et al. 1985:1190), but it is listed, correctly, with verbs that allow either a *to*-infinitive or a gerundive complement (cf. Quirk et al. 1985:1187).

[22] The verb *begin* is incorrectly omitted from this list (cf. Quirk et al. 1985:1190), but it is listed, correctly, with verbs that allow either a *to*-infinitive or a gerundive complement (cf. Quirk et al. 1985:1187).

1.12.3 Gerundive complements on ECM verbs

Structures in which an ECM matrix verb takes a clausal complement are termed 'complex transitive' in Quirk et al. 1985. Their verb lists follow, in semantic subclasses.

1. Perceptual verbs: *feel, hear, notice, observe, overhear, perceive, see, smell, spot, spy, watch.*
2. Verbs of encounter: *catch, discover, find, leave.*
3. Verbs of coercive meaning: *have, get.*
4. Prepositional verbs: *come across, come upon, listen to, look at.* (Quirk et al. 1985:1206–7)

Quirk et al. (1985:1206-7) list the following as the major differences between this and the monotransitive construction:

1. The postverbal NP cannot stand in the genitive:

(122) a. I saw him lying on the beech.
b. *I saw his lying on the beech.

2. The truth of the proposition expressed in the sentence entails the truth of the proposition expressed in a corresponding sentence where the matrix verb takes the embedded subject NP as its only object. Thus, (123a) entails (123b), but (124a) does not entail (124b).

(123) a. I saw him lying on the beech.
b. I saw him.

(124) a. I hate my friends leaving early.
b. I hate my friends.

3. The postverbal NP can regularly passivize:

(125) a. We could hear the rain splashing on the roof.
b. The rain could be heard splashing on the roof.

(126) a. The teacher caught them smoking in the playground.
b. They were caught smoking in the playground.

But complex-transitive prepositional verbs and complex-transitive *have* do not passivize. Cf.

(127) The guards had been seen/spotted/?watched/*looked at searching the building.

(128) a. She had us working day after day.
b. * We were had working day after day.

1.13 The treatment of nonfinite complements in Huddleston and Pullum 2002

We will conclude this chapter with a brief critical review of the treatment of nonfinite complements in Huddleston and Pullum 2002 (henceforth: HP[23]). Two outstanding features make HP a superior comprehensive grammar of English. One is its remarkable clarity of expression. Even more importantly, HP is truly exceptional in that it breaks with the long tradition of "description without argumentation." Even though the goal of HP is "to describe the grammatical principles of Present-day English rather than to defend or illustrate a theory of grammar," (p. 18) the authors make it clear that it is impossible to describe English without a theory of grammar because "to bring together the principles that all sentences conform to … means developing a theory" (p. 19). As developing a theory naturally involves careful argumentation, it is only to be celebrated that "a significant amount of space is devoted here to arguing carefully that a particular analysis we have decided to adopt, within the framework of the theory we assume, is the right analysis" (p. 19). In what follows we will discuss some of HP's central arguments for their analysis of English nonfinites.

1.13.1 The presence of *for*—begging the question

HP claim that "*to*-infinitivals with overt subject require the subordinator *for*" (p. 1178). The claim is repeated in a slightly different form, saying that "*to*-infinitivals containing a subject are always introduced by the subordinator *for*" (ibid.), which is incidentally more accurate, since HP do not recognize non-overt subjects in infinitives. So, infinitives that are

[23] For convenience, with plural subject–verb agreement *HP* denotes the authors; otherwise it always refers to the work.

sometimes characterized as apparently subjectless in the present work are analyzed as truly subjectless in HP.

HP would like to argue that an NP followed by a nonfinite VP constitute what they call a clause (equivalent in conventional generative terminology to a sentence) if and only if the NP + VP sequence is introduced by the complementizer *for*. Otherwise such an NP is in construction with the matrix verb, and is not the subject of the infinitive. Interestingly, the nonfinite VP which has no subject associated with it in such expressions is still recognized as a clause: one without a subject. HP assume that subjects are not obligatory constituents of sentence structure in what they call "specific non-canonical constructions such as non-finites and imperatives" (p. 238). The apparently unnecessary exception that this rather unusual assumption makes for nonfinites has far too many peculiar consequences for us to even attempt to discuss in any detail here. We will continue to focus on what appear to be the chief arguments HP present in defense of their analysis of infinitives.

The purpose of the analysis of HP's arguments here and in subsequent sections is twofold. One is to determine how adequate HP's account of the empirical facts is. Whatever the conclusion of that analysis, it will be directly relevant for HP's assumption about the exceptional non-obligatoriness of subjects in nonfinite clauses—the assumption will be either justified or refuted, depending on the adequacy or otherwise of their account.

A general claim HP make is that all nonfinites are clauses—some with, some others without a subject, as in the following examples.[24]

(129) a. They arranged for the performance to begin at six.
b. They expected the performance to begin at six.
c. They intended (for) the performance to begin at six.

HP observe that "*for* is required after *arrange*, excluded after *expect*, and optional after *intend*" (1179). The absence of the complementizer *for* in the *expect*-sentence is taken by HP as evidence that "the infinitival clause has no subject" and that the post-verbal NP *the performance* is not the

[24] An odd, though expected, consequence of the general claim in conjunction with the assumption that subjects are not obligatory constituents of infinitives is that sentences like

(i) She may like it.

are biclausal, [like it] being a (subjectless) clausal complement on *may* (cf. HP, p. 215). I will not discuss this issue here.

subject of the infinitival clause but the object of the matrix clause (1179). HP also claim that (129c) has two different structures depending on the presence vs. absence of the complementizer: when the complementizer is present, the nonfinite complement has a subject (*the performance*), when it is absent, it does not, because the NP *the performance* is the object of the matrix verb, not the subject of the infinitive.

Clearly, the presence or absence of the complementizer *for* is considered crucial in determining the constituent membership of the post-verbal NP. Interestingly, the same condition is not taken to be decisive about the category of the infinitive: it may still be a clause, even though it contains neither a subject nor a complementizer, both otherwise standard constituents of clause structure, as in (129a). It is interesting to point, in passing, to a conclusion HP do not draw from the absence of a complementizer in (129b): they do not conclude that *expect* has no nonfinite clause complement in (129b). The conclusion that is thus forced upon HP, though not discussed in any detail at all, is that *expect* in (129b) takes two separate complements: an NP, which is its object, and a nonfinite clause, which contains no subject. Similar conclusions follow for the structure of the *intend* sentence(s): when *for* is present, *intend* takes a single complement: an infinitival clause that has a subject and is introduced by a complementizer. When *for* is absent, the same verb takes two complements: an NP object and a subjectless nonfinite clause. Among other things, this raises some well-known general issues in connection with the semantic interpretation of nonfinites discussed above (cf. section 1.8).

To summarize, before we move on, two conclusions are drawn by HP from the occurrence or otherwise of the complementizer *for*. From the presence of *for* HP infer that the post-verbal NP is the subject of the infinitival clause. From the absence of *for* HP infer that the post-verbal NP is not in construction with the infinitive, although the infinitival VP still constitutes a (subjectless) clause.

Even if we disregard the circularity of the argument for the moment, a missing premise is still required for the first conclusion to follow. The missing premise is that only clauses are introduced by complementizers. This premise is required because without this assumption nothing at all can be directly inferred about the syntactic category of the string of words following the complementizer *for* in (129a) and (129c), or about the constituent membership of the post-verbal NP. It is only with this required assumption, apparently rejected by HP, that one can infer that the material following *for* is a clause. If this is not assumed the argument does not go

through. We return to an additional problem with this argument directly, but let us first consider the second conclusion HP would like to draw.

The second conclusion HP (incorrectly) draw is this: when the complementizer *for* is not present, it is evidence that the post-verbal NP is not in construction with the infinitive. Notice, incidentally, that this conclusion remains invalid even if the missing premise mentioned above is adopted. The necessary, albeit false, assumption for this conclusion to be valid is that clauses must always contain a (non-null) complementizer. Without that premise, apparently rejected by HP, nothing at all can be inferred from the absence of *for* about the constituent membership of an NP followed by an infinitive. Crucially, two things do not follow from the absence of *for*: it does not entail that the NP VP sequence is not a clause, nor does it follow that the NP is not the subject of the nonfinite clause. As is well known, complementizers are in general optional elements of clause structure. Therefore nothing is entailed by their absence.

Let us now return to a final problem with these arguments indicated above. It has to do with the category of *for* in the examples under discussion. HP assume that it is a complementizer. Notice, however, that this assumption is absolutely without any justification, unless it is independently shown that the structure of the material following *for* is sentential. If, for example, it is not shown without any reference to *for* that *the performance to begin at six* is a clause in (129a), then there is no justification at all for taking *for* to be a complementizer, rather than a preposition. The only way to derive the non-prepositional status of *for* in such examples is by jointly assuming that only clauses may be introduced be a complementizer and that the material following *for* is a clause. The latter, however, must be demonstrated independently. Note in this connection that, regardless of whether the clausal structure of the material following *for* is assumed or demonstrated, the argument based on the presence of *for* is circular. It is also clear that this alone is sufficient to render invalid the argument based on the absence of *for*, since the latter is derivative on the former. Finally, note an empirical fact incorrectly predicted by HP. It is claimed that *for* is excluded in *expect*-sentences. This is not true, as the example below shows.

(130) For the performance to begin at six was expected.

It is instructive that HP seem to feel the need to present "several pieces of evidence showing that [the post-verbal NP in *for*-less examples like (129b) above] syntactically belongs in the matrix clause" and that the NP and the nonfinite VP "do not combine to form a single constituent (a

clause) but are separate complements of *expect*" (p. 1179). We now turn to the evidence HP present.

1.13.2 Passivization

Consider HP's data first (HP's [24i, ii, iii] respectively, p. 1179):

(131) a. It was arranged for the performance to begin at six.
b. *It was expected the performance to begin at six.
c. The performance was expected to begin at six.

HP take the contrast between (131a) and (131b) in conjunction with the absence of *for* in the latter to be evidence that the post-verbal NP *the performance* does not form a constituent (a clause) with the nonfinite VP that follows it in (129b). The argument is that (131b), which involves extraposition of a clausal subject without a complementizer, is ungrammatical because the material extraposed is not a clause, since it is not introduced by *for*.

First, note that the in-situ counterpart of (131b) is equally ungrammatical:

(132) * The performance to begin at six was expected.

Second, note that with the complementizer added, the sentence becomes immaculate, cf. (130) above, repeated here as:

(133) For the performance to begin at six was expected.

Finally, observe the following contrasts:

(134) a. That John will come is likely/expected.
b. It is likely/expected that John will come.

(135) a. *John will come is likely/expected.
b. *It is likely/expected John will come.

Assuming, quite obviously, that *John will come* is a sentence in (134)–(135), two important conclusions may be drawn from the last two pairs of examples. First, the clausehood of the matrix subject is totally independent of the presence or absence of a complementizer, with or without extraposi-

tion. Second, regardless of whether or not the subject clause is extraposed, the complementizer is obligatory. Similar conclusions can be drawn from the contrast between (130), (131b). What the ungrammaticality of the latter shows is not that the string *the performance to begin at six* is not a clause in (129b), (131b), and (132), contrary to what HP would like to derive, but that a complementizer is obligatory in infinitival subject clauses with a lexical subject.

Now consider the following contrast.

(136) a. They wanted the performance to begin at six.
b. *The performance was wanted to begin at six.

HP correctly observe that "passivisation doesn't provide a necessary condition for objects", and, therefore, they conclude, incorrectly, that (129b) and (136a) must be assigned the same structure, in which the post-verbal NP is the object of the matrix verb, the residue of the complement being a subjectless infinitival clause (p. 1179). Part of the argument is that the contrast between (131c) and (136b) is not, in itself, conclusive evidence that they have different structures. This is correct. But notice that this alone is absolutely no evidence that they have the same structure, as HP would like to assume. If there is independent evidence either way, it cannot be ignored. The relevant facts, curiously ignored by HP, are represented by the following examples.

(137) a. They arranged for the students to attend the lecture.
b. They arranged for the lecture to be attended by the students.
c. *They arranged the lecture to be attended by the students.
d. *They arranged the students to attend the lecture.

(138) a. They expected the students to attend the lecture.
b. They expected the lecture to be attended by the students.

(139) a. They intended (for) the students to attend the lecture.
b. They intended for the lecture to be attended by the students.
c. They intended the lecture to be attended by the students.

(140) a. They wanted (for) the students to attend the lecture.
b. They wanted for the lecture to be attended by the students.
c. They wanted the lecture to be attended by the students.

Several structural properties are clear from these examples. One is that the post-verbal NP and the nonfinite VP that follows it can be freely passivized (with two irrelevant exceptions, to which we will return directly). This is strong evidence that the NP and the infinitive that follows it form a clausal constituent in all of them, contrary to HP's ill-derived conclusion. Secondly, it is also clear from the examples in (137), (139), and (140) that the passivizablity of the material following the matrix verb is independent of the presence or absence of the complementizer *for*. In structures where *for* is optional, passivization is possible either with or without it, cf. (139) and (140). Where *for* is obligatory, both the active and the passive *for*-less structures are ungrammatical, cf. (137). This clearly shows that the presence or absence of *for* is totally independent of the clausehood or otherwise of the material that follows it. It may be required, as in (137), it may be optional, as in (139) and (140), or it may be forbidden, as in (138), but this has nothing to do with the category or constituent structure of NP *to*-VP sequences. It is required, optional, or forbidden for independent reasons. Therefore, crucially, its absence is no evidence at all for the non-clausehood of the post-verbal NP *to*-VP sequence. It is puzzling that in the relevant context HP make no reference to data of the kind just discussed, though similar facts and their parallelism with passive finite clauses are not only observed but taken as evidence for constituent structure elsewhere (cf. p. 1183).

HP (incorrectly) assign the same structure to *want*-sentences like (140) and *expect*-sentences like (138a) or (129b). They also claim that the latter have the same structure as *persuade*-sentences like

(141) a. They persuaded the students to attend the lecture.
b. *They persuaded the lecture to be attended by the students.

As the contrast between (138b) and (141b) clearly shows, that is not correct. HP's general conclusion is that "there is no construction where the sequence NP + *to*-infinitival, with no preceding *for*, behaves as a subordinate clause, a single constituent" (1181). As we have seen, this conclusion is quite clearly both invalid and false.

1.13.3 Cases overlooked

HP seem to have overlooked some important empirical facts, including, interestingly, some cases that they otherwise discuss. One of theses is *there*-infinitives in sentences like

(142) It's essential for there to be no misunderstanding on this point. (p. 1183)

(143) I intended there to be more time for discussion. (p. 1232)

(144) We mustn't allow there to be any repetition of this behaviour. (p. 1234)

(142) is quoted as evidence that, because "NPs following *for* [in such sentences] are the same as those which occur as subject of finite main clauses," including, importantly, "dummy *there*," which "occurs freely here," *for* must be analyzed as a complementizer (pp. 1182–83). This is correct. In a slightly simplified paraphrase, the argument is that if the presence of *there* is treated as independent evidence that *there to be no misunderstanding on this point* is a clause in (142), then the *for* that introduces it must be a complementizer. What does this argument tell us about the constituent structure of infinitives and the category of *for* that may introduce them? Before drawing the fairly obvious conclusion, consider some important empirical facts that HP overlook. Clauses like the one just discussed occur freely as complements without *for*, as the following examples, as well as (143) and (144) above, show.

(145) They expect there to be no misunderstanding on this point.

(146) They want there to be no misunderstanding on this point.

As the argument suggests and these *for*-less data show, the clausehood (or otherwise) of infinitives is independent of the presence of *for*. In addition, the argument quite clearly, and correctly, implies that for us to conclude anything about the category of *for* in sentences like (142) and, in general, in sentences where *for* "introduces" infinitives, we must first establish the constituent structure and category of the material that follows it. Therefore, any attempt to reverse the argument by inferring anything about the constituent structure of infinitives from the presence or absence of *for* leads

to circularity. Nevertheless, the presence or absence of *for* plays a central role in HP's account of infinitives.

As we have just seen, the ignorance of the circularity of arguments that center around the presence or absence of *for* in infinitival complements is inseparably related to the insufficient amount of attention HP pay to infinitives (and gerunds) with expletive subjects. As is well known, pleonastic *there* is obligatory in the infinitives above, as well as in gerunds and finite clauses of essentially the same structure, which is the chief motivation for the general requirement that sentence must have subjects (first proposed in Chomsky 1981 and later identified as the Extended Projection Principle in Chomsky 1982). This requirement is not adopted by HP, who assume instead that nonfinite clauses may occur without a subject.

In addition to the resulting descriptive inadequacies and inconsistencies we have noted above, which are more or less directly related to this unmotivated assumption HP adopt, we finally note a problem the assumption creates for the analysis gerunds. If, in absence of the requirement that sentences have subjects, the central argument in the analysis of nonfinites is that an NP preceding a nonfinite VP is a constituent of the matrix clause unless it is preceded by a complementizer, the analysis of gerunds becomes extremely troublesome, as they are never introduced by a complementizer.

1.13.4 "A shoulder on which for you to weep"

Although nonfinite relative clauses are not the focus of the present work, we make a final brief note of a descriptive point. Apparently because it is incorrectly assumed that infinitival relative clauses never contain *for,* HP claim that they "cannot contain an overt subject" (1264). This is factually not correct, as the expression chosen for the title of this section and some more examples below demonstrate.

(147) As Smither has no record on this issue on which for you to squeal like a spoiled child pointing a finger…

(148) a permanent and invariable general basis on which for you to act in future

(149) something for writers to reflect on

(150) It will make our community a safer and healthier place in which for us to live, and a more conducive environment for college students to learn.

(151) That is a useful point at which for us to conclude.

2 THE SEMANTICS AND DISTRIBUTION OF INFINITIVES AND GERUNDS

2.1 Introduction

After a survey of the major arguments in favor of the clausal structure of nonfinite complements in English, I will discuss some general questions of both theoretical and descriptive interest concerning the problem of how to account for their semantics and distribution and I will consider some concrete proposals. The critical survey of the proposals will be followed by the presentation of a general hypothesis on the implicit interpropositional aspects of the semantic interpretation of sentences and I will explore some of its consequences and predictions. Finally, I will develop an alternative hypothesis on the distribution of nonfinite complements in English, in which I will draw upon the elements of the general hypothesis. Theoretical as well as empirical arguments and evidence will be provided in favor of the hypotheses as we proceed.

2.2 The nature of complement selection

A fundamental question that calls for an answer is whether the restrictions on the occurrence of nonfinite complements are to be formulated in terms of idiosyncratic (syntactic or semantic) properties of matrix predicates or it can be accounted for in terms of some general principles. If the null hypothesis is rejected and it is assumed that the account of the occurrence of infinitival and gerundive complements can be reduced to some general principles, the next problem that arises is whether those principles can be formulated in syntactic, semantic, or perhaps pragmatic terms, or a combination thereof.

It seems that no syntactic theory has been able to formulate the principles that would account for the distribution of nonfinite complements that was both observationally and descriptively adequate. Standard syntactic machinery does not appear to be appropriate for the explication of the factors that govern the distribution of infinitives and gerunds in English. One is forced to conclude that the distribution of nonfinite complements, or complement selection in general, cannot be accounted for in purely syntactic terms. This conclusion is motivated both by empirical and by theoretical considerations.

It is now clear that the apparently systematic distribution of clausal complements cannot adequately be accounted for in exclusively syntactic

terms. Grimshaw (1979) has shown that the principles that account for complement selection in English are in part semantic. Grimshaw assumes two independent levels of characterization: a syntactic level, where subcategorizational requirements are specified, and a semantic level, where selectional requirements are specified. She points out that a syntactic description of complementation in terms of subcategorizational restrictions, which are stated in terms of syntactic categories, is not sufficient in an account of complement selection, because "complement selection is not predictable on the basis of syntactic characteristics of predicates. For example, there is no syntactic reason that *wonder* and *inquire* should not allow *that*-complements, or why *believe* should not allow interrogative complements. Whatever the degree of predictability that may exist, it is to be found in the semantic, and not the syntactic, domain" (ibid., 318).

Grimshaw (1979) successfully demonstrates that the distribution of embedded exclamatives, a subclass of sentential complements, is fairly consistently predictable on semantic grounds. She shows that nonfactive predicates do not allow inherently factive complements, that exclamations are inherently factive, therefore exclamations are never embedded under nonfactive predicates. This has a very important consequence with respect to the theory: the selectional mechanism that is otherwise assumed in an idiosyncratic treatment of the distribution of exclamations with respect to factive and nonfactive predicates is no longer necessary, because "the semantic and pragmatic characteristics of exclamations and of the factive/nonfactive distinction automatically guarantee that the ill-formed combinations will not be generated" (ibid., 323).

Jackendoff (1983) derives two arguments from general theoretical assumptions and from considerations of language acquisition that show that, in addition to the system of syntactic rules, we need a set of semantic well-formedness rules to account for existing patterns of complementation in language in general and for the distribution of nonfinite complements in particular, and that in fact it may turn out that some of the observed syntactic regularities are predictable from certain semantic well-formedness rules. He points out that a theory of language with a close syntax—semantics mapping is superior to one in which this is lacking, because a theory with an impoverished semantic component cannot predict that "many apparently syntactic constraints follow from semantic constraints, so that once a language learner has learned the meaning of the construction in question, the observed syntactic distribution will follow automatically" (ibid., 13).

He argues that if we work on the reasonable assumption that language is a "relatively efficient and accurate encoding of the information it conveys" it is only natural to "look for systematicity in the relationship between syntax and semantics," which, however, "is not to say that *every* aspect of syntax should be explainable in semantic terms" (ibid., 14). For example, there is no semantic reason that *draw*, unlike many other transitive verbs such as *say, mention, write,* etc., should not take eventive *that*-clause complements in English, as the equivalents of these in Hungarian all do, in sentences like

(152) a. *John drew that Mary is/was wearing a hat.
b. János lerajzolta/azt rajzolta, hogy Mária kalapban van/volt.

Jackendoff's theory indeed predicts that the semantic structure that corresponds to (152) is well-formed, yet the sentence is ungrammatical in English (cf. ibid., 232).

2.3 Some familiar restrictions on complement selection

It is well known that the occurrence of infinitival and gerundive complements in English is subject to various restrictions. Certain matrix verbs select infinitives, others take only gerunds, yet others allow either.

(153) a. John wants to go to Paris.
b. *John wants going to Paris.

(154) a. *I enjoy to sing.
b. I enjoy singing.

(155) a. Sheila tried to bribe the jailor.
b. Sheila tried bribing the jailor.

Several arguments have been suggested in the literature that such apparently arbitrary restrictions are not entirely unpredictable. Most of these arguments are formulated in terms of semantic constraints that matrix predicates appear to impose upon their complements.[1]

[1] For a brief discussion of some of the major hypotheses see Czeglédi 1994 and works cited there.

2.4 Critical review of proposals

Quite a few interesting observations have been made in the literature that suggest that in a significant number of cases the occurrence of nonfinite complements in English is predictable from certain semantic properties of matrix predicates (see, for instance, Lees 1960, Vendler 1968, Kiparsky and Kiparsky 1971, Menzel 1975, Klein 1982, Andersson 1985, and Wierzbicka 1988). I cannot catalog all existing proposals in detail here, but it is useful to discuss some of the most prominent hypotheses.

The proposals that will be considered below vary in explanatory value from the vacuous to some true generalizations.[2] Some are more, others are less restricted in scope, and occasionally they make contradictory predictions, as we will see below, and none, it seems, achieves the desired degree of generality, therefore each leaves some of the data unaccounted for. All this suggests that if there *are* more general principles that govern the distribution of nonfinite complements in English, we have not found them yet.

Let us now consider some of these observations and proposals in a little more detail.

2.4.1 The 'volition' vs. 'possibility' dichotomy

Consider the following examples:

(156) a. Did you think to ask Brown?
b. Did you think of asking Brown?

(157) a. I decided to go.
b. I decided on going.

The Kiparskys' explanation for the occurrence of gerundive complements on prepositional verbs in sentences like (156b) and (157b) as opposed to the choice of the infinitive in their non-prepositional counterparts in (156a) and (157a) is that "after prepositions, infinitives are automatically converted to gerunds . . ." (Kiparsky and Kiparsky 1971:357). Wierzbicka (1988:32), however, points out that the choice of complement in such examples is not arbitrary because "*decide ON* doesn't mean the same as

[2] A conspicuous example of a vacuous explanation is Wierzbicka's (1988:29) 'prediction' to the effect that infinitival clause complements on volitional matrix verbs (such as *want* or *decide*) express 'wanting'.

decide TO. *Decide on* implies that a number of possibilities have been considered ('gone through' in a person's mind) and that the subject decided to 'stop' on one of these possibilities. *Decide to* doesn't imply any such series of possibilities." In her analysis, infinitival complements imply wanting and gerundive complements imply possibility. Thus, the explication of the meanings of (156a–b) in Wierzbicka's terms is like this:

(156a') did you (at some point) think this:'I want this: I will ask Brown'and did you do it because of that?

(156b') (when you were thinking of doing different things) did you think of (the possibility of) asking Brown? (cf. Wierzbicka 1988:30)

But compare (158), (159), and (160),

(158) a. I remembered to ask Brown.
b. I remembered asking Brown.

(159) a. I regret to ask Brown.
b. I regret asking Brown.

(160) a. I regret to tell you that John stole it.
b. I regret telling you that John stole it.

where a similar 'wanting' versus 'possibility' interpretation of the respective complements does not seem to be plausible.

2.4.2 Relative temporal deixis

It is often claimed that infinitives express posteriority and that gerunds express anteriority relative to the point in time expressed by the tense of the matrix predicate. Quirk et al.'s (1985) view on the meaning of sentences like (158), (159), and (160) is that *-ing* complements on retrospective verbs, such as *remember* and *regret*, express anteriority and infinitival complements on this subclass of verbs express posteriority. In other words, gerundive complements suggest that the action described in the complement sentence happened before, whereas infinitival complements express that it happened (or will happen) after, the point in time expressed by the tense of the matrix verb. Compare also the following examples (Quirk et al. 1985:1193):

(161) a. I forgot to go to the bank.
b. I forgot (about) going to the bank.

Quirk et al. claim that the meanings corresponding to the examples in (161) are, respectively

(162) a. I forgot that I was to go to the bank, and therefore did not do so.
b. I forgot that I went to the bank/. . . that I should have gone . . .

As regards the contrast in relative temporal deixis between infinitives and gerunds, Wierzbicka (1988) proposes a slightly different account. She claims that infinitives express "futurity" and gerunds express simultaneity or "sameness of time".

In Wierzbicka's theory, contrary to Wood (1956), Bolinger (1968) and Quirk et al. (1985), the elements of thinking, wanting and future are always present in the meaning of volitional infinitival complements. She claims that infinitival clauses imply "future orientation" and "sequence of times," as opposed to gerundive complements, which imply simultaneity, "sameness of time," or "present (contemporary, simultaneous) orientation." It is these semantic contrasts, she argues, that are responsible for the grammatical differences between the (a) and (b) examples in (163–166) below.

(163) a. He tried to fry the mushrooms.
b. He tried frying the mushrooms.

(164) a. I have kept this old jacket to give to a jumble sale.
b. I keep this old jacket for working in the garden.

(165) a. You will need a spanner to tighten that nut.
b. A spanner is used for tightening nuts.

(166) a. John wants to go.
b. *John wants going.

She extends the 'future orientation versus sameness of time' semantic contrast to the analysis of causative structures. It is asserted that (167) describes two consecutive actions, whereas the gerundive complement in

(168) refers to an activity that occurred simultaneously with that expressed by the matrix verb.

(167) He got her to do the dishes.
(168) He got them talking.

The same is said to apply to aspectual verbs like *begin* in (169).

(169) a. He began to open all the cupboards.
b. He began opening all the cupboards.

Duffley and Tremblay (1994) subscribe, in part, to Wierzbicka's (1988) hypothesis that infinitives are 'forward-pointing' complements. It is argued that this semantic property of *to*-infinitives is derived from their status as PPs introduced by the preposition *to*, which expresses a 'before–after' relationship between the action expressed by the matrix verb and the event expressed by the complement on the 'preposition'.[3] A gerundive complement, on the other hand, "does not stand in a temporal relation with respect to the main verb at all," as Duffley and Tremblay (1994:571) argue. They admit, however, that a gerundive complement on *try* does express simultaneity (thus supporting Wierzbicka's (1988) hypothesis), but the 'sameness of time' meaning is derived from a semantic shift in the meaning of *try* from 'make an effort' to 'test, try out', the latter of which is present every time the verb takes an ordinary NP or a gerund. The argument is that "in order to test the effect of some action one must necessarily carry this action out," therefore "the *try* + *-ing* construction implies realization of the *-ing*'s event at the same time as the trying" (cf. Duffley and Tremblay 1994:572).

Duffley and Tremblay (1994) argue that the 'performance' component of the potentiality–performance hypothesis is untenable since neither of its standard claims is borne out empirically. Examples like

(170) All the journalists tried to make friends with him; all succeeded; but they found him disappointing as a news source.

[3] For discussion and criticism of the proposal that *to*-infinitives are PPs see section 1.2 above.

show that infinitival complements do not imply that the event expressed in the complement is/was not performed. And sentences like

(171) a. He postponed calling a meeting as long as he could.
b. She is considering buying a car.

show that gerundive complements do not imply the performance of the action described in the complement (cf. Duffley and Tremblay 1994:568).

As regards the idea that infinitives express potentiality, Duffley and Tremblay adopt the weaker claim that an infinitive leaves open the question of whether or not the action it describes is/was/has been performed, and they derive this meaning of infinitives from their status as PPs, and from their adverbial function. Rather than recapitulate the arguments which refute the PP-adverbial hypothesis of infinitives,[4] I will point out one more defect in Duffley and Tremblay's (1994) argumentation.

Their discussion focuses on the following 'verbs of effort': *try, attempt, struggle, strive, labor,* and *endeavor*. They extend their analysis of complements on *try* to sentences like the following:

(172) a. He struggled desperately to understand why I should know his name.
b. The men and the women of the play strive wholeheartedly to fulfill this duty.
c. She labored mightily not to sound too eager.
d. Pozzati and I endeavored earnestly to record our impressions without the prejudice that the anxiety of our time so easily provokes.

They point out in connection with these examples that "none of the four verbs . . . can be used with a noun direct object, conclusive evidence that the infinitive is not direct object in these constructions" (Duffley and Tremblay 1994:573). This observation, however, which is intended as a major argument, ruthlessly backfires: not only do these verbs not take NP objects, but, with the exception of *endeavor* (and perhaps *strive*), none even subcategorizes for a complement at all. This means that the infinitives that occur with *struggle* and *labor* are adjuncts, which further means that these verbs are simply irrelevant to the discussion.

[4] See section 1.2 above.

2.4.3 Potentiality vs. performance

Sentences like (173a-b) constitute a problem for accounts formulated in terms of a contrast in temporal deixis relative to that expressed in the matrix clause. It is difficult to explain in terms of relative time reference why the infinitive is preferred in (173a) and the gerund in (173b) below. Quirk et al. (1985:1191-2) suggest that the infinitive is favored in (173a) but the gerund in (173b) because the former is associated with potentiality and the latter with performance.

(173) a. He started to speak, but stopped because she objected.
b. He started speaking, and kept on for more than an hour.

In their account in terms of potentiality vs. performance, Quirk et al. (1985) subscribe to Bolinger's (1968:123-5) view, who argues that infinitival complements express "something projected," hypothetical or potential as opposed to gerundive clauses, which express something reified, "something actually done" (cf. Bolinger 1968:123-25). It is instructive in this respect that Wood (1956) appears to believe that the reverse is the case: the gerundive complement is the abstract form, which may suggest intention, and the infinitival complement expresses reification. The verb *think*, Wood says, means 'did it occur to you?' in sentences like (156a) and that it means 'have the intention' in ones like (156b) (1956:15). And this is his comment on the contrast between infinitival and gerundive complements on the verb *like* when it occurs in sentences like (174) and (175) below: "When *like* and (*do*) *not like* take the gerund they suggest enjoyment or repugnance respectively . . . But with the infinitive it suggests rather desire, preference or choice, and in the negative reluctance . . ." (ibid.). Compare

(174) a. I like to sing.
b. I like singing.

(175) I like to read in bed but I don't like having meals in bed.

2.4.4 Aspectual contrasts

While Wierzbicka (1988) argues that the semantic contrast between infinitival and gerundive complements of aspectual verbs is also essentially a contrast in relative time reference, Quirk et al. (1985) point to an aspectual

difference between them. In (169b) the plural noun suggests the repetition of the action,[5] which is the reason that the *-ing* complement in (169b), repeated below for convenience, they claim, is preferred to the infinitive.

(169) a. He began to open all the cupboards.
b. He began opening all the cupboards.

Compare also

(176) a. I heard them shoot at him.
b. I heard them shooting at him.

where the *-ing* clause complement in (176b) expresses the repetition of shots. In general, infinitives of momentary verbs express a single event, while their *-ing* forms express repeated events, similarly to the progressive aspect of finite clauses.

Aspectual differences between infinitives and gerunds are, however, no simple matter at all. It is in general incorrect, I believe, to associate gerunds directly with the progressive aspect of finite clauses, expressed by a morphologically similar form of the verb.

A good way to explore the aspectual character of nonfinite complements is to study their interaction with matrix verbs that are lexically aspectual in nature in that they constitute lexicalizations of various components of the internal temporal constituency of events. This is precisely what Freed (1979) carried out in her book (and her dissertation, cf. Freed 1976). The twelve matrix verbs that Freed (1979) examined in detail (*begin, start, continue, keep, resume, repeat, stop, quit, cease, finish, end,* and *complete*)[6] may be considered such lexicalizations since they can refer to aspectual components of events by virtue of their lexical meaning.

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[5] Cf. also the following example (Freed 1979:13), where the perfective-iterative aspect of the event is expressed by the plural suffix on the noun.

(i) She will be good at discovering answers.

This, Freed (ibid., 12) claims, is because "English lacks a specific set of formally marked aspectual categories ... [therefore] aspectual meaning is carried by the interaction of various linguistic features whose function is not primarily aspectual."

[6] Other aspectual verbs not analyzed in Freed 1979 and listed in an appendix in Freed 1976:309 include bring about, close, commence, conclude, curtail, discontinue, finish up, half, interrupt, keep on, maintain, open, pause, persist, recur, sustain, and terminate.

A consideration of the interaction of embedded infinitivals and gerunds with aspectual matrix verbs may be revealing since (a) the embedding of events[7] as nonfinite complements on aspectual matrix verbs appears to be subject to various restrictions that may be formulated in terms of the aspectual subcategories that they represent (states, e.g., are never embedded as gerunds on aspectuals), and (b) there appear to be systematic semantic contrasts, at least partly of an aspectual nature, between infinitives and gerunds embedded as complements on aspectual matrix predicates (or "aspectualizers," as Freed (1979/1976) prefers to call them).

Given a morpho-syntactic subclassification of sentential complements into finites and nonfinites, the following generalization can be made with respect to the complementation of aspectualizers: only nonfinite clauses but never *that*-clauses may be embedded as complements on aspectual matrix verbs. Cf.

(177) a. Even his greatest admirers are beginning to wonder if he is too old for the job.
b. *Even his greatest admirers are beginning that they wonder if he is too old for the job.

(178) a. She began learning English five years ago.
b. *She began that she was learning English five years ago.

(179) a. Although they were obviously getting angry, he continued to stare at them.
b. *Although they were obviously getting angry, he continued that he stared at them.

(180) a. He continued writing his diaries until he died.
b. *He continued that he was writing his diaries until he died.

(181) a. Can I borrow that book when you've finished reading it?
b. *Can I borrow that book when you've finished that you are reading it?

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[7] The term 'event' is used here and in subsequent paragraphs as a hyperonym comprising actions, states, as well as what may be called events in a narrower sense of the term, unless otherwise indicated.

Some further important generalizations can be made about the distribution and semantics of nonfinite complements in English within the framework of ontological and aspectual categories developed by Vendler (1967) and adopted in Freed 1979. Freed recognizes the following aspectual subcategories of events: activities, accomplishments, achievements, states, and series. She adopts four of Vendler's (1967) categories and supplements the system with the category of series. The *complements* in the following examples will illustrate the above subcategories, respectively.

(182) a. Ivan stopped blushing.
b. Cathy stopped writing the letter.
c. The American team started reaching the summit this morning.
d. He began to understand the problem.
e. My mother stopped losing her glasses.

In addition to these basic subcategories of events, Freed (1979) develops a system of temporal subcomponents of events. In general, events can be analyzed as constituted of the following temporal segments: onset, nucleus, and coda. It is these segments of the internal temporal structure of events that the various aspectualizers may refer to. The onset of an event is "the temporal segment which takes place PRIOR to the initial temporal part of the nucleus" (cf. Freed 1979:31).[8] The coda of an event is the final element of its temporal structure which constitutes its "right-hand time boundary," and whose realization is required for the event to be "considered completed after the end of the nucleus" (cf. ibid., 35). Any two of these components may be absent in the internal temporal structure of events, with only one of the segments realized. The nucleus may further be subdivided into an initial, a middle, and a final stage. The matrix verb *begin*, for instance, refers to the initial stage of the nucleus in the following example (an important difference between this verb and a close, but not equivalent, synonym *start*, as we shall see below).

(183) Goldie began sneezing when you opened the window.

[8] It is important to note that the onset is not an event that occurs prior to another event, but it is the initial *part* of an event.

The nuclear activity of an event may be interrupted, as in (184a), may be resumed after an interruption, as in (184b), and may be maintained without interruption, as in (184c).

(184) a. Ken stopped talking when Joan walked in.
b. Ken continued talking after Joan left.
c. Ken kept talking when Joan walked in.

The system of categories briefly outlined in the preceding paragraphs enables us to make the following generalizations with regard to the semantics and distribution of infinitival and gerundive complements in English.

States do not in general occur with aspectual matrix verbs, and they are never embedded as gerundive complements on aspectualizers. Cf.

(185) *Pat started to own/owning a car at 4:00.

States are embedded only as infinitives on aspectuals, hence, if ever, they occur exclusively with aspectual matrix verbs that may take infinitival complements (*start, begin, continue*, and *cease*), and never with verbs that take only gerundive complements (*stop, quit, keep*, and *finish*). Therefore anything that occurs as complement on one of the 'gerundial' aspectualizers is not a state, cf., e.g.

(186) a. *They kept being married.
b. *Pat kept owning a car.

(187) Ivan stopped blushing.

Every aspectual matrix verb that takes infinitives (*start, begin, continue*, and *cease*) also takes gerunds, but states are never embedded as gerundive complements either on these matrix verbs or on aspectual verbs that occur with gerunds only. Consider the following examples (cf. Freed 1979:151).

(188) a. Nora started to know right from wrong when she was three.
b. ?Nora started knowing right from wrong when she was three.

(189) a. Nora began to know right from wrong when she was three.
b. ?Nora began knowing right from wrong when she was three.

(190) a. Nora continued to know right from wrong (despite her association with common criminals).
b. ?Nora continued knowing right from wrong (despite her association with common criminals).

(191) a. Nora ceased to know right from wrong after years of poverty.
b. ?Nora ceased knowing right from wrong after years of poverty.

(192) ?Nora stopped knowing right from wrong after years of poverty.

(193) *Nora kept knowing right from wrong (despite her association with common criminals).

(194) *Nora finished knowing right from wrong after years of poverty.

(195) *Nora resumed knowing right from wrong after years of poverty.

(196) a. She started to be a woman.
b. *She started being a woman.

(197) a. She began to be a woman.
b. *She began being a woman.

As was pointed out above, one or two of the temporal segments of an embedded event may be absent in its internal temporal structure. There are events that have only onsets but no nucleus or coda. This happens when an event is interrupted during or after the onset and before the nucleus, e.g.:

(198) a. He started to sneeze (but he did not sneeze).
b. He started to open the can (but he did not open the can).

As the examples above show, *start* may refer to the realization of a temporal segment of the event described in its complement and allow the simultaneous negation of the occurrence of the (rest of) the event without leading to a contradictory assertion. This is possible only if the event segment(s) designated by the verb in the negation and the segment (of the same event) referred to by the matrix verb do not coincide. This latter segment of the embedded event is the onset. The recognition of the onset as a segment in the temporal structure of events is useful in that it allows us to capture a subtle difference between *start* and *begin*, which are traditionally considered to be complete synonyms. This distinction will also be relevant to the semantics of infinitives and gerunds as complements on aspectualizers.

Although both *start* and *begin* "indicate some kind of initiating (inchoative) action" (cf. Freed 1979:69), *begin* is more restricted in the contexts in which it may occur than *start*. As Freed (1979:71) points out, "*start* refers to the onset of an event" in its complement, while "*begin* refers to the initial temporal segment of the nucleus of an event" in its complement. Therefore the two matrix verbs are associated with different implications. Consider the following examples (cf. Freed 1979:69–70):

(199) a. Barbara began to study for her exams last week.
b. Barbara began studying for her exams last week.

(200) a. Barbara started to study for her exams last week.
b. Barbara started studying for her exams last week.

(201) a. Barbara began to study for her exams.
b. Barbara began studying for her exams.

(202) a. Barbara was studying for her exams last week.
b. Barbara did some studying for her exams last week.

(203) Barbara did some studying.

Both the infinitival and gerundive examples with *begin* in (199) imply (202a–b) and (203), but only one of the *start* examples, (200b), with the gerundive complement, will have similar implications. It is possible for *start*

with an infinitival complement to refer only to the onset of the complement event, but this is not possible with the matrix verb *begin*. The latter necessarily implies that the nucleus of the embedded event was also performed (partially or fully). (201a–b) (without the time adverbial) imply (203). Because (200a) does not necessarily imply (202a–b) or (203), one can truthfully, and correctly, report (204a) but not (204b), especially, as Freed (1979:71) notes, with contrastive stress on *started*:

(204) a. Barbara started to study for her exams last week but then she didn't do any studying.
b. ?Barbara began to study for her exams last week but then she didn't do any studying.

Compare also:

(205) a. Henry started to sneeze but quickly regained his composure without actually sneezing.
b. Henry began to sneeze but quickly regained his composure after sneezing only once.
c. ?*Henry began to sneeze but quickly regained his composure without actually sneezing.

That starting to do something (onset) in general occurs prior to beginning to do something (nucleus) is particularly conspicuous in the following pair of examples:

(206) a. Carter started to speak but was interrupted before he began.
b. ?Carter began to speak but was interrupted before he started.

These are general implicational differences between *start* and *begin* when they take infinitival complements. If, on the other hand, the complement is gerundive, the "temporal distinction between *begin* and *start* disappears" (cf. Freed 1979:72):

(207) a. She started to sneeze but then she didn't sneeze.
b. ?She began to sneeze but then she didn't sneeze.
c. *She started sneezing but then she didn't sneeze.
d. *She began sneezing but then she didn't sneeze.

Now consider the following examples:

(208) a. Barry started to yawn.
b. Barry started yawning.
c. Barry began to yawn.
d. Barry began yawning.

(209) Barry started to yawn but then he didn't yawn.
(210) Barry was yawning.
(211) Barry yawned.

Freed (1979:73) observes that only (208a) may have as a consequence (209), again with "**contrastive stress on *started***" (bold mine). (208b), in contrast to (208a), has as consequences (210) and (211). It is tempting, but not quite correct, I believe, to conclude from the observed consequence relations that "the *V-ing* form of the complement is syntactically and semantically related to the *be*-prog operator which carries with it progressive aspect" (ibid., 73). Notice that (211) is not progressive, though it is claimed by Freed to be a consequence of both (208b) and (208d). Freed correctly claims that both matrix verbs in (208b) and (208d) refer to the nucleus of the complement event, but this is no argument that that event is progressive. The meaning of these sentences involving gerundive complements is more appropriately captured in terms of strong vs. weak implicativeness, a distinction proposed by Klein (1982) (see following section).

We observe as a final difference between *start* and *begin* that only *start* but not *begin* may take a complement with a non-coreferential subject (cf. Freed 1979:79):

(212) a. Joe started me thinking about the problem.
b. *Joe began me thinking about the problem.

This is because *start* is causative, *begin* is not.

Let us now consider one of Freed's (1979) most interesting generalizations about infinitival and gerundive complements. Freed (1979:74) suggests that there is a general contrast between infinitival and gerundive complements on *begin* and *start* such that the infinitive is generic and the gerund is specific in that the latter refers to a single event that is durative. It is instructive that Freed does not make it quite clear what she means by the generic meaning of infinitives. The most explicit characterization of the notion is given in a footnote (n. 5, p. 87), which cryptically says about the term that it "was suggested [to Freed] by John Lawyer (personal commu-

nication)," and that "it is used here as in his dissertation," and, finally, that "in cases of verbal generics, 'generic' refers to the repetition of an activity."

This characterization of the notion is clearly inadequate, since it is fairly obvious that an infinitive does not necessarily express the repetition of the event it describes. In fact, Freed repeatedly argues that it is the gerundive form that may turn a single event into a series of repeated events. This characterization of the notion also contradicts Freed's account of the meaning of the sentences in (208) above.

Freed (1979:73) claims that both (208b) *Barry started yawning* and (208d) *Barry began yawning* imply (210) *Barry was yawning*, which in turn "may imply, *Barry yawned repeatedly*." She further claims that (208c) *Barry began to yawn* "implies only that *Barry yawned at least once*," which clearly either runs directly counter to her characterization of 'genericness' (which is probably not the appropriate interpretation of Freed's proposal) or it is not quite clear how such an account of the meaning of these sentences is compatible with Freed's notion of 'genericness'.

An alternative way to interpret Freed's notion of 'generic' would be to regard it as an analog of Jackendoff's (1983) notion of type.[9] That Freed's (1979) generic events are not entirely unrelated to Jackendoff's event types is suggested by her characterization of the difference between infinitives and gerunds as a difference between "a SERIES of single events (of the same type) . . ." on the one hand, and "a SINGLE EVENT occurring . . . at a GIVEN TIME" on the other (cf. ibid., 74). Such an interpretation of Freed's distinction between the generic reading of "event or events" (ibid.) associated with infinitival complements and the single (durative) event reading associated with gerunds might be supported by her account of the meaning of (213a–b) (cf., ibid., 89).

(213) a. Carol continued talking even though we asked her to be quiet.
b. Carol continued to talk even though we asked her to be quiet.

Freed (1979:93) claims that the generalizations in terms of generic-repeated/specific-durative made about *begin* and *start* apply to the infinitival and gerundive complements on *continue* as well, and that, in fact, they apply generally to nonfinite complements on aspectuals. She claims that from

[9] See Jackendoff (1983) for a distinction between types and tokens, and the role this distinction plays in the semantics of sentences.

(213a) "we understand that *at a given time* Carol was asked to be quiet, but ignored this and continued the activity (of talking)," while in (213b) "the 'talking' is not necessarily understood as a single ongoing activity" (ibid., 93). She suggests that from (213b) we may gather "that even though Carol was asked to be (or to keep) quiet, she talked at various times (and perhaps to various people) throughout some unspecified period of time."

A third interpretation of Freed's (1979) generic–specific distinction and of her accounts for the difference in the meaning of these and similar sentences in terms of this distinction is also possible within the framework of the hypothesis being developed in the present work.

The interpretation of Freed's reading of gerunds as complements expressing single events is fairly straightforward: gerundive complements describe particular events as contrasted with other events in a relevant set of events that they evoke or introduce. Thus the gerund focuses attention upon the event that it describes. This is confirmed by Freed's intuition and account for the meaning of sentences like the following (cf. ibid., 17).

(214) They just started eating.

Freed (1979:17) claims that "**sentences** such as *They just started eating* may be interpreted as imperfective precisely because **it is the complement event that is being described**, and it is this form and not the aspectualizer that is in the progressive" (bold mine). Whether or not *eating* in this example is in the progressive is an open question. But this is irrelevant. What is interesting about the example is that, on Freed's account, it is the *sentence* as a whole that describes the event expressed in the *complement*. This suggests that, informally, the gerundive complement dominates the meaning of the whole sentence (even aspectually, according to Freed). It is precisely this property of gerunds that is captured explicitly on the hypothesis developed in the present work, and it is exactly this kind of relative informational prominence expressed by gerundive complements that the hypothesis on the contrastivity of gerunds predicts.

As regards Freed's notion of genericness associated with infinitives, there is some kind of givenness about it that is tacitly present in all of her characterizations of infinitives (see above). This is most conspicuously present in her account of the meaning of (213). It is, again, precisely this kind of givenness that can be captured and made explicit on the hypothesis we are developing. Infinitival complements lead to noncontrastive readings, such that their interpretation is taken as given or constant for the interpretation of sentences in which they occur as complements. It is

therefore expected that infinitives are more natural, or even required, in contexts where the event they describe is already given (cf. (215), (216), (217), and (218)), and that gerunds occur when an embedded event 'unactivated' by the context is contrastive (cf. (219)). This is exactly the case in Freed's examples below, involving the matrix verbs *continue, begin*, and *start* (cf. ibid., 93, 94, 153).

(215) She told him not to visit her anymore. At first he ignored her and continued to visit/?visiting anyway. Finally the visits stopped. (ibid., 93)

(216) The economy is terrible. Inflation is out of control and from all indications, things are going to continue to get/?getting worse. (ibid., 93)

(217) The band began to play at 9:00. They continued to play/?playing until 1 A.M. stopping for 5-minute breaks every half hour. (ibid., 94)

(218) I had hardly slept for two nights, but the excitement of the move plus my nervous energy kept me going. By the third day I began to feel/?feeling drugged and every time I sat down I started to fall asleep/?falling asleep. (ibid., 153)

(219) While the man held the gun on her, she continued ?to count/counting out hundred-dollar bills. (ibid., 93)

A further example of Freed's own words in the text (involving the matrix verb *cease*) and a subsequent comment on her own usage also nicely illustrate the point.

(220) a. So that *to fall asleep, to visit* . . . are all understood as entire events that occur (or **cease to occur**) repeatedly over a period of time. (ibid., 153, bold mine)

b. Notice that in this sentence it would have been strange to say *cease occurring*. (ibid., 162, n. 4)

Indeed, it would have been strange since the event of occurring had already been introduced in the sentence immediately before the parenthetical note, in which the infinitival complement on *cease* is thus expected.

2.4.5 Implication

In addition to differences in aspect, relative temporal deixis, and the potentiality vs. performance dichotomy, semantic contrasts of a different kind have also been noted in the literature. Dixon (1984) (quoted in Wierzbicka 1988:85) argues that a semantic difference in implication underlies the grammatical difference between the nonfinite complements in sentences like (221a and b).

(221) a. Mary began to hit John.
b. Mary began hitting John.

In his analysis, (221b) implies that the action described in the complement clause did actually happen, while (221a) has no such implication. Klein's (1982) findings also seem to confirm a similar hypothesis formulated in terms of strong versus weak pragmatic implicativeness (a refinement of the implicative–nonimplicative distinction introduced by Karttunen 1971). He argues that, for matrix verbs which allow either type of complement, gerundive complements are associated with stronger pragmatic implicativeness than infinitival complement clauses as regards the realization of the event described in the complement.

The implicative–nonimplicative distinction was introduced by Karttunen (1971). Examples of implicative verbs are *manage*, *remember*, *bother*, *dare*, *venture*, etc. Nonimplicative verbs include, for example, *hope*, *decide*, *plan*, *intend*, etc. A feature common to implicative and factive verbs is that both imply that if the proposition expressed in the matrix clause is true, then the proposition expressed in the complement is also true. A difference between the two, however, is that the implication with respect to the complements of implicative verbs is sensitive to negation, but the proposition implied by complements on factive verbs is a presupposition, which, by definition, is insensitive to negation.

Thus, (222a) but not (222b) implies (223).

(222) a. John managed to close the door.
b. John didn't manage to close the door.

(223) John closed the door.

Factive presuppositions, like presuppositions in general, are not sensitive to negation, as shown by the following factive finite complements, both of which are associated with the same presupposition 'she was married'.

(224) a. I knew she was married.
b. I didn't know she was married.

2.4.6 Factivity

Kiparsky and Kiparsky (1971) claim that the occurrence of infinitival and gerundive complements is predictable in terms of semantic features of matrix predicates. And where the matrix predicate is unmarked semantically, infinitives and gerunds will be associated with different interpretations.

The factive–nonfactive distinction enables us to make the following generalizations with respect to the occurrence and interpretation of infinitival and gerundive complements (cf. Kiparsky and Kiparsky 1971).

Factive predicates take gerundive complements freely, nonfactives do not (cf. ibid., 347).

(225) a. Everyone ignored Joan's being completely drunk. (factive)
b. *Everyone supposed Joan's being completely drunk. (nonfactive)

Nonfactives and verbs lexically unmarked for factivity do but factives do not allow ECM complements ('accusative-with-infinitive', in traditional terms).

(226) a. I believe Mary to have been the one who did it. (nonfactive) (ibid., 348)
b. *I resent Mary to have been the one who did it. (factive) (ibid.)

(227) a. I remembered him to be bald. (lexically unmarked, nonfactive reading) (ibid., 360)
b. *I forgot him to be bald. (lexically factive) (ibid.)

Some verbs are unmarked for factivity and allow either infinitival or gerundive complements. The reading is nonfactive with infinitives, and it is factive with gerunds.

(228) a. They reported the enemy to have suffered a decisive defeat. (nonfactive) (ibid., 360)

b. They reported the enemy's having suffered a decisive defeat. (factive) (ibid.)

(229) a. I remembered him to be bald. (nonfactive) (= (227a))
b. I remembered his being bald. (factive)

Note that *remember* is unmarked for factivity, but *forget* is marked as factive, therefore it does not occur with an infinitival complement. Cf.

(230) a. I forgot that he was bald.
b. I forgot his being bald.
c. *I forgot him to be bald. (= 227b)

In general, both factive and nonfactive complement clauses are pronominalized by *it*, but only nonfactive complements are pronominalized by *so*:

(231) a. John supposed that Bill had done it, and Mary supposed it/so, too. (nonfactive)
b. John regretted that Bill had done it, and Mary regretted it/*so, too. (factive)

2.4.7 Factive presupposition and the finite–nonfinite contrast

Certain matrix verbs, such as *know*, take finite as well as nonfinite clauses as complements. The finite *that*-clause complement on *know* yields a factive reading while the infinitival complement is associated with a nonfactive reading.

(232) a. I know that this is the case. (factive)
b. I know this to be the case. (nonfactive)

Hungarian *tud* ('know') is similar. With the expletive *úgy* ('so'), the complement is nonfactive, without the expletive it is factive (cf. Kiefer 1983). Cf. the Hungarian equivalents of (232a–b):

(233) a. Tudom, hogy ez a helyzet.
b. Úgy tudom, hogy ez a helyzet.

2.4.8 Presupposition in perceptual reports: finite vs. nonfinite clauses

Both the following sentences are perceptual reports, and both have sentential complements that describe events, but only the *that*-clause complement in the second is committed to the truth of the proposition it expresses:

(234) Jack saw his mother wearing her new grey dress.
(235) Jack saw that his mother was wearing her new grey dress.

The complement in (235) is associated with the factive presupposition that the proposition it expresses is true. The complement in (234) is not associated with such a presupposition. Negation does not affect the presupposition associated with the complement in (235), as usual, cf.

(236) Jack did not see that his mother was wearing her new grey dress.

The *that*-clause complement in (236) is associated with the same presupposition as the complement in (235), that is, the complement is factive in both.

The complement in (235) not only describes an event but also expresses a fact. That is to say that it is not only a perceptual report but at the same time it is also a cognitive report. It does not only inform the listener about what the person denoted by the matrix subject has seen but also of what has been going on in his mind. (234) is only a perceptual report in contrast with (235), which also gives information about the mental state of the person denoted by the matrix subject. The reported mental state is that the perceiver regards the event perceived as a fact. Consider the following examples.

(237) Jack saw his mother wearing her new grey dress, but thought it was his sister in an old white robe.

(238) * Jack saw that his mother was wearing her new grey dress, but thought it was his sister in an old white robe.

(234) allows a contradictory extension "but . . ." (cf. (237), because (234) says nothing of Jack's mental state. The extension "but . . ." in (238), on the other hand, describes a mental state that is incompatible with the mental state expressed in (235). The incompatibility lies in the fact that the extension in (238) expresses a proposition that is equivalent to the denial of

the factive presupposition associated with the *that*-clause complement in (235). Thus, the factive presupposition associated with the first conjunct in (238) and the proposition expressed in the second conjunct are contradictory, therefore (238) is bad.

(234) is a neutral epistemic perceptual report and is distinct from (235), which is a positive epistemic perceptual report in the sense of Barwise (1981). (234) does not carry information regarding the mental processing of perceived data. It directly reports a perceptual event. (235), on the other hand, informs us not only of a perceived state of affairs but also of the mental state of the perceiver, that is, of how the perceived data was processed mentally by the perceiver denoted by the matrix subject.

2.5 Quirk et al. on semantic contrasts between infinitives and gerunds

Quirk et al. (1985) have in general very little to say about the contrast between infinitival and *-ing* complements. There is only one short section (16.40, pp. 1191–93) in which they specifically address the issue. The very brief discussion in that section, however, is restricted exclusively to subject-control structures, a subtype of monotransitive complementation in which the complement lacks an overt subject, where they recognize three categories of semantic contrast between infinitival and *-ing* complements:

1. potentiality vs. actual performance,
2. aspect, and
3. relative temporal deixis.

These three categories are not entirely distinct in Quirk et al.'s system, which we may rightly characterize as tentative, and it seems that these semantic distinctions are deemed marginal in the sense that apart from a few specific contexts, which I will consider in detail below, "there is little appreciable difference between the two constructions" (1985:1192). The major semantic contrast between infinitives and gerunds that Quirk et al. recognize is the potentiality vs. performance distinction, which "becomes extended into the past" in the context of the three "retrospective verbs" *forget, remember*, and *regret*, where the infinitive expresses posteriority and the gerund anteriority relative to the time of the state denoted by the matrix verb (ibid., 1193). The aspectual meaning of gerundive complements is also considered marginal by Quirk et al., as it is restricted to the expression of "multiple activities" with momentary and inchoative verbs, and even here

the gerund expresses the repetition of the events only by "association . . . with the progressive aspect" (ibid., 1192).

In general, Quirk et al. subscribe to Bolinger's (1968) view that the infinitive is associated with a hypothetical meaning and the gerund with a reification meaning when they claim that the infinitive "gives a sense of mere 'potentiality' for action," while the gerund "gives a sense of actual 'performance' of the action itself" (Quirk et al. 1985:1191). The scare quotes betray the key terms they embrace as almost hopelessly uncertain. Consider the examples below, which are intended by the authors to illustrate the contrast of meaning they believe is present, and which they attribute to the semantics of the respective complement types (cf. Quirk et al. 1985:1191).

(239) a. She hoped to learn French.
b. She enjoyed learning French.

The argument, which can be factored out though it is not at all developed explicitly, seems to run as follows. The infinitive occurs in "hypothetical and nonfactual contexts" because it expresses potentiality, as for example in

(240) Would you like to see my stamp collection?

and in (239a) above, and the gerund occurs in contexts where it refers to "something which definitely happens or has happened," for example in (239b) above and (241b) below.

(241) a. ?Brian loathed to live in the country.
b. Brian loathed living in the country.

Note, however, the existence of sentences like the following, which Quirk et al. also recognize but for which they offer no explanation:

(242) a. Brian would loathe to live in the country.
b. Brian would loathe living in the country.

It is instructive to carefully analyze the authors' explanation of the meaning contrast between (241a) and (241b). By carefully avoiding having to incorrectly deny the availability of an actual performance reading for (241a) the authors resort to the (rather ad hoc) notion of choice exercised by the person denoted by the subject and claim that the infinitival complement

in (241a) "implies that Brian could exercise choice about where to live, whereas *living* [in (241b)] presupposes that he [Brian] actually did live in the country, and probably had no choice in the matter" (ibid., 1192).

Notice that this explanation denies neither the actual performance reading nor the 'exercise of choice' reading for *either* of the examples. Notice also that (241b) and (242b) contain precisely the same complement. It might be argued that the gerundive complement in (241b) implies the actual occurrence of the event it describes but the gerundive complement in (242b) is quite clearly not associated with anything like a factive presupposition or implication. This kind of argumentation amounts to saying no more than that the infinitive expresses potentiality in contexts implying potentiality, such as *hoped* in (239a) or *would like* in (240), and that the gerund expresses actual performance in contexts that imply or presuppose actual performance, such as *enjoyed* in (239b). We are led to conclude, then, that this argumentation is as hopelessly circular as Wierzbicka's (1988) claim that the infinitive expresses wanting in volitional contexts.

Let us now consider some more of Quirk et al.'s (1985:1991) examples, which are intended by the authors to demonstrate the potentiality vs. actual performance semantic contrast between infinitival and gerundive complements.

(243) a. Sheila tried to bribe the jailor.
b. Sheila tried bribing the jailor.

The authors argue that (243b) "implies that she [Sheila] actually did bribe the jailor" but that (243a) implies that she did not. A similar semantic contrast is observed in the following examples

(244) a. I hate the children to quarrel.
b. I hate the children quarrelling. (cf. ibid., 1195)

where it is claimed that the infinitive "focuses on the children's 'potential' for quarrelling," while the gerund "emphasizes their 'performance'—the point being that they do quarrel, rather often in fact" (ibid., 1195).

If the 'performance' implication of the gerundive complement means that the action expressed by the complement "definitely happens or has happened," and if it is indeed the gerundial clause that is solely responsible for this implication, as is apparently claimed by Quirk et al. (1985:1191–92), then we would expect this implication to be constantly associated with gerundive complements irrespective of the contexts in which they occur.

That this prediction is not borne out, however, is *almost* openly admitted by the authors themselves in a subtly abstruse statement which says that "with other verbs, the difference is more subtle, and may be overruled or neutralized by the meaning of the verb of the main clause." What this "more subtle" difference is is never explained explicitly. In fact, what is apparently overruled or neutralized is not some subtle meaning expressed by the gerundive complement but the same performance implication that the authors claim it expresses 'in appropriate contexts', that is, in contexts where it is not "overruled by the meaning of the main verb" (ibid., 1191). Quirk et al. mention the following examples,

(245) a. He escaped being branded as a traitor.
b. He avoided being branded as a traitor.

where "the negative meaning of *avoid* and *escape* cancels out the sense of 'performance'" (ibid., 1191). Notice that syntactic negation also 'cancels out' this actual performance reading, as is obvious in the negative counterparts of (243a–b),

(246) a. Sheila did not try to bribe the jailor.
b. Sheila did not try bribing the jailor.

neither of which implies that 'Sheila did actually bribe the jailor'.[10]

We may conclude, then, that either the performance implication of gerunds, if understood literally, is subject to contextual variation, which amounts to denying the empirical generalization that gerunds as such carry such performance implications, or the 'performance' meaning of gerunds must be understood in some 'subtly' nonliteral sense, which, however, is left unexplained.

As was indicated above, the potentiality vs. performance distinction is assumed by Quirk et al. to extend into the past in the context of the retrospective verbs *forget, remember*, and *regret*, "so that there is a temporal (as well as in part modal) difference between the two constructions" such that "the infinitive . . . indicates that the action or event takes place after (and as a result of) the mental process denoted by the verb has begun," while the gerund "refers to a preceding event or occasion coming to mind at the

[10] My thanks are due to Ádám Nádasdy, personal communication, for pointing out this flaw in Quirk et al.'s argument about *avoid* and its gerundive complement.

time indicated by the main verb" (ibid., 1193). Their examples and the corresponding glosses are as follows (cf. ibid.):

(247) a. I remembered to fill out the form. ['I remembered that I was to fill out the form and then did so']
b. I remembered filling out the form. ['I remembered that I had filled out the form']

(248) a. I regret to tell you that John stole it. ['I regret that I am about to tell you that John stole it']
b. I regret telling you that John stole it. ['I regret that I told you that John stole it' or '. . . that I am now telling you . . .']

See also (161) on p. 73 above.

Quirk et al. make some very tentative remarks about nonfinite complements on aspectual and "other" verbs denying in general that there is any "observable difference in meaning between the constructions" (ibid., 1192). For them, the examples in the following sets of sentences all mean the same, respectively:

(249) a. Do you prefer to cook for yourself, or to eat in a restaurant?
b. Do you prefer cooking for yourself, or eating in a restaurant? (ibid., 1192)

(250) a. Lucy started to write while in hospital.
b. Lucy started writing while in hospital.

(251) a. Lucy continued to write while in hospital.
b. Lucy continued writing while in hospital.

(252) a. Lucy ceased to write while in hospital.
b. Lucy ceased writing while in hospital. (ibid., 1192)

(253) a. She started to eat.
b. She started eating. (ibid., 239)

(254) a. She likes to talk.
b. She likes talking. (ibid.)

The few cases where Quirk et al. recognize an aspectual contrast between infinitival and gerundive complements include the following examples with perceptual and emotive matrix verbs:

(255) a. I saw/heard them shoot at him.
b. I saw/heard them shooting at him. (ibid., 238)

(256) a. I hate the clock to chime.
b. I hate the clock chiming. (ibid., 1195)

where the gerund expresses the repetition of the action expressed by the complement, whereas the infinitive expresses a single action. The naked infinitive complement in the following example expresses the completion of the action, while the corresponding gerundive complement does not:

(257) a. I watched them climb the tower.
b. I watched them climbing the tower. (ibid., 238)

(258) a. Tim watched Bill mend the lamp.
b. Tim watched Bill mending the lamp. (ibid., 1206)

3 IMPLICIT INTERPROPOSITIONAL CONTRASTS

3.1 Introduction

As we have seen in the discussion of proposals that seek to explain the distribution of nonfinite complements in English on semantic or pragmatic grounds, choice between infinitival and gerundive clause complements often appears to be predictable in terms of aspectual differences, contrasts in relative temporal deixis, presupposition and implication, or the potentiality–performance dichotomy expressed by the respective clause types. It was also observed, however, that some of the alternative hypotheses that have been presented either make empirically discordant predictions or fall short of offering a complete account of the relevant set of facts. Furthermore, none is formulated in such syntactic, semantic or pragmatic categories and principles that achieve the desired degree of generality. Few of the generalizations may be viewed as principles of a grammar that can be regarded as a psychologically relevant model of the native speaker's language competence.

In what follows I will present an alternative, and perhaps more general, hypothesis as an attempt to account for the interpretation and distribution of infinitival and gerundive clause complements in English. It is hoped that the theories that will be proposed will not only make the right empirical predictions with respect to English (and in certain respects beyond the facts of English), but will also have some explanatory value. This second, more ambitious, goal will hopefully be reached by succeeding in our attempt to reduce the observed phenomena to a small set of very simple principles.

The general hypothesis that I will develop in the sections that follow will be supported both by arguments derived from theoretical considerations and by empirical evidence. Some of the empirical evidence to be presented will be independent (and therefore of great value) in that it comes from totally unrelated, but surprisingly relevant, areas of English.

3.2 General principles

No grammar of a language is complete without an account of how its speakers understand its sentences constructed by themselves and others. The ultimate goal of any semantic theory is to construct a model of the native speaker's knowledge of meaning, or semantic competence. A fundamental

task dictated by this goal is to formulate the general principles that bring into correspondence (units of) syntactic structure with (units of) semantic structure.

Since basically any theory of meaning in natural language seeks to establish, among other things, the principles that map units of syntactic structure onto units of meaning, it is crucial that an adequate model of the native speaker's knowledge of meaning account for the way locutions of varying complexity identify the semantic or ontological entities to which they correspond.

In set-theoretic terms, to identify an entity presupposes a set in which that entity is a member and implies distinguishing this member from any and all other members of the same set. From this it follows that the identification of an element in a set implies the contrasts that distinguish the particular element from all other members of that set. The set itself will be identified by the property or properties that are shared by all its members.

Assuming a theory of language (in the spirit of Chomsky 1981, and Jackendoff 1983, 1990), which has a level of mental representation beyond LF, at which linguistic expressions are "paired with entities of mental representation" (cf. Chomsky 1981:324), one way to bring units of syntactic structure into correspondence with units of semantic structure is to view elements of semantic structure as set theoretical entities. A relation that holds between a linguistic expression and the semantic entity to which it corresponds may then be regarded as identification. Thus, a linguistic expression identifies the semantic entity, or set of entities, with which it is brought into correspondence by the principles of semantic theory.

Another important and well-motivated assumption that will be adopted in the present work has to do with the nature of the language faculty of humans. Given that linguistic competence is embedded in a system of other cognitive capacities, "it is reasonable to suppose that the design of language should facilitate the perceptual [and interpretational] strategies that are used by the hearer" (cf. Chomsky and Lasnik 1977:434, and see also Jackendoff 1983 for the development of a very similar conclusion).

We may proceed on the reasonable assumption that sentences describe eventualities, that is, they correspond to eventualities in a domain D of semantic entities at the level CS of Conceptual Structure, where linguistic expressions are paired with units of mental representation. Further, we may regard eventualities as set-theoretic entities, that is, elements in sets. Given these assumptions, we may say that to describe a particular eventuality is to identify it in a relevant set of eventualities in the domain D of CS. Since a particular eventuality E_i a sentence describes is

identified through the contrasts that hold between E_i and all other eventualities in the relevant set *R*, sentences must contain some information with regard to the relevant set *R*, a subset of which they identify.

Since any individual entity may be regarded as a set with only one member, that is a unit set, we can always conveniently refer to the target of identification as a set, which may have one or more than one member. In set-theoretic terms, to identify a subset *A* of entities (with one or more than one member) presupposes a set *R* of which the target of identification is a subset, and it implies distinguishing the member or members of this subset *A* from any and all other members of *R*. From this it follows that the identification of *A* in *R* implies the contrasts between each element of *A* and all other members of *R*, that is, members in the complement set C*A* of *A* with respect to *R*. The relevant set *R* itself will be designated by the property or properties that are shared by all its members.

In conceptual terms, the successful identification of a subset *A* of entities in a relevant set *R* presupposes the recognition of the relevant set *R* a subset *A* of which is identified, and entails the recognition of contrasts between the elements in *A* and the elements in the complement set C*A* of the subset *A* with respect to the relevant set *R*.

If the elements of semantic structure to which linguistic expressions correspond are viewed as set-theoretical entities, it is clear that the understanding of implied contrasts between the member(s) of a subset of a relevant set of semantic entities and all other members of the relevant set is vital for the understanding of the meaning of linguistic expressions. Given that the understanding of implied contrasts presupposes the recognition of a relevant set a subset of which is being identified, it follows that the proper designation of the relevant set is crucial.

It is reasonable to conclude, then, that the understanding of implicit contrasts is an important part of understanding the meaning of sentences because implied contrasts simply *are* an important aspect of the meaning of sentences.

In general, to understand the meaning of a sentence is to understand, among other things, the implied contrasts that are expressed at various levels of syntactic and semantic structure. A sentence either implies (a) a contrast directly between the proposition it expresses and the negation of that proposition, or (b) a contrast between the proposition it expresses and a set of (potential) conflicting propositions.

One is prompted to ask: How do sentences express all this? Relevant sets and contrasts in those sets are rarely spelled out explicitly. Rather, relevant sets and contrasts in those sets are *implied*. Even though such

implications are hardly ever made explicit, we clearly understand them, or if we do not, we desire that they be spelled out.

To capture this aspect of the meaning of sentences, we will say that they *evoke*, or introduce, relevant sets. A relevant set *R* is designated by the property or properties that all its members have in common, and a sentence may somehow indicate what these properties are. The relevant set *R* a sentence evokes is therefore characteristic of the kind of implied contrasts it expresses, and, in general, it is characteristic of the meaning of the sentence.

3.3 The nature of contrast

The notion of contrast is a fairly old notion, yet, as Hedberg (1990:165) puts it, it is "notoriously resistant to precise characterization." A very early application of the notion in western philosophy can be found in the teachings of Gorgias (5th century BC), the ancient Greek nihilist and founder of rhetoric, who, while laboring on the existence–non-existence dichotomy, was led to conclude that nothing exists, and that even if we assume that entities exist, they are not knowable, and that even if we assume that they are knowable, knowledge about them cannot be communicated (cf. Capelle 1961:343–353).[1] The idea of contrast, more specifically, the idea of contrastive pairs of concepts, such as 'health vs. illness', 'good vs. mean', 'true vs. false', etc., were central to his philosophy and method of argumentation as well as to the philosophy and methodology of Sophists in general in the pre-Socratic philosophy of ancient Athens. I believe it is basically correct, though admittedly grossly oversimplified and somewhat anachronistic, to interpret the central role played by contrasts in pre-Socratic philosophy as a reflection of the conviction that the cognition, knowledge, or understanding of any entity or concept presupposes the understanding of how that entity or concept is contrasted with others.

To return, after this short historical digression, to the nature of meaning expressed in our sentences, I can only agree with Bolinger (1961a:87) (also quoted in Hedberg 1990:167) that "in a broad sense every semantic peak is contrastive" and that in sentences like "*Let's have a picnic*, coming as a suggestion out of the blue, [although] there is no specific contrast with *dinner party*, but there is a contrast between picnicking and anything else the group might do." Any and every content-bearing

[1] My thanks are due to Kornél Steiger, both for his ideas that he shared with me during and after a course of lectures on ancient Greek Philosophy he gave at EKTF in 1991 and for lending me the book in the cross-reference.

expression carries with it a contrast with the meaning of other expressions that might occur in its place in the sentence. Let us call such expressions (and their meanings) alternatives. The denotation of an expression may be regarded as a conceptual entity to which the expression corresponds in Conceptual Structure. Such entities in CS constitute sets from which they are selected by virtue of being identified by a linguistic expression. Non-selected members of those sets constitute the alternatives to a member (or subset) that is selected.

The foregoing discussion allows us to give the following very simple definition of contrast (modeled after Rooth 1992):[2]

(259) *Contrast*
[α] is contrasted with [β] iff
a. [α] ε R & [β] ε R, and
b. [α] ≠ [β].
Where [α] is the semantic representation of a linguistic expression α, [β] is a semantic representation of the same type as [α], and R is a relevant set of semantic entities.

If [β] corresponds to a linguistic expression β, then [α] is explicitly contrasted with [β], if not, then implicit contrast is derived thus:

(260) *Implicit contrast*
[α] is implicitly contrasted with [β] iff
a. [α] ε R & [β] ε R, and
b. [α] ≠ [β].
Where [α] is the semantic representation of a linguistic expression α, [β] is the semantic representation of an (implicit) alternative to α, and R is a relevant set of semantic entities.

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[2] Rooth uses the term *contrast* in two distinct senses, without a definition of the term in either sense. In the technical sense, the notion is introduced (and then eliminated as redundant) in the characterization of the meaning of sentences like

(i) An $[\text{American}]_F$ farmer was talking to a $[\text{Canadian}]_F$ farmer ...

which involves what we may call explicit binary contrast between two focused expressions. In the nontechnical sense, he uses the term in a number of places informally to characterize the relation that holds between a focused expression and its implicit alternatives.

A particular expression in a sentence, as well as its meaning, is thus contrasted with its alternatives by virtue of both being a set mate of the latter and being distinct from them. Let us refer to the position of such an expression in a sentence as a locus of contrast. A sentence may contain several loci of contrast. In fact, as Bolinger (1961a) points out, every 'semantic peak' in a sentence, that is every meaningful expression, is a locus of contrast, because each such expression is associated with a set of alternatives.

Frequently, in Bolinger's example above (see p. 101), for instance, a set of alternatives associated with a particular locus of contrast is a large, often unlimited set. Since contrast, by definition, may involve only a pair of elements at a time, a large, sometimes infinitely large, set of alternatives would be extremely difficult to process. Although I will not discuss the process whereby the set of alternatives associated with a particular locus of contrast is reduced to a smaller relevant set,[3] I will show that the process whereby the set of alternatives to a *sentence* is reduced to a smaller relevant set can be explicitly characterized.

It is reasonable to hypothesize that the smaller the size of the set of alternatives, the clearer contrast becomes. Ideally, the number of alternatives is reduced to a pair, in which case an element is contrasted with just one alternative. Doubleton relevant sets may be rare, but they are certainly the ideal, and they are certainly the easiest to process. This appears to explain why several researchers (Bolinger 1961a, Chafe 1976, Lambrecht 1985, quoted in Hedberg 1990:166ff, and also É. Kiss 1996) regard the limited or closed nature of a set of alternatives as a defining feature of contrastiveness. If the set of alternatives is too large, any clearly perceivable contrast is lost to our intuition.

Our main interest at present lies in understanding the fundamental nature of contrast, and in how the most interesting types of contrast are expressed in sentences involving nonfinite complements, and, in particular, how complement selection, that is the selection of one or the other of the complement types in question, contributes to this aspect of the meaning of sentences.

Most sentences are such that they involve several instances (or loci) of contrast; in general, there are as many loci of contrast as there are

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[3] The process whereby sets of alternatives associated with particular loci of contrast in complex expressions are reduced to smaller relevant subsets is probably pragmatic in nature, therefore it need not concern us here. For a discussion of a similar problem (and an analogous conclusion), see Rooth 1992.

meaningful expressions in a sentence. Let us consider the following example:

(261) We might have a picnic.

The loci of contrast are as follows: *we, might, have, a picnic*, ignoring for the moment more complex 'phrasal' loci such as *have a picnic* and *might have a picnic*, which are also obviously constituents that may receive a contrastive interpretation.[4] Even such a short and incomplete list of possible loci of contrast shows that there are just too many of them in a relatively simple sentence for the sentence to be meaningful in a sense yet to be clarified. Our short list contains four items, which constitute four loci of contrast, each with its own relevant set of alternatives. In addition, the sentence as a whole also constitutes an instance of contrast with its own alternatives.

Let us regard the meaning of a sentence as a complex conceptual entity, a mental representation in CS. Let us, further, continue to assume that the mental representations one of which the sentence identifies by virtue of its semantic interpretation constitute a set *M* in CS. By adapting the basic underlying idea from Rooth's (1985, 1992) alternative semantics to suit the present framework, let us assume that linguistic expressions are associated with two semantic values—an ordinary semantic value, represented as $[\alpha]^{o}$, and a contrastive semantic value, represented as $[\alpha]^{c}$[5]. $[\alpha]^{o}$ is the mental

[4] I am also ignoring the fact that *have a picnic* is a more natural locus of contrast than *have*, since the former is a complex predicate in which *have* does not really count as a 'content-bearing expression'.

[5] My notion of 'contrastive semantic value' corresponds to Rooth's 'focus semantic value', with the important difference that on my assumptions the contrastive semantic value of an expression is its default interpretation, which may be either preserved or fixed, whereas in Rooth's theory it is introduced by focusing. This seemingly insignificant difference between Rooth's theory and my hypothesis will be important, however in the characterization of the uncertainty of the propositional meaning of sentences (see the discussion below). Rooth's (1985) theory predicts, incorrectly, I believe, that the meaning a nonfocused complex expression, e.g. a sentence, is maximally certain in that it corresponds to a unit set of semantic objects, whereas the hypothesis being developed in the present work seems to make the correct prediction that such sentences are, in fact, maximally uncertain as far as their particular propositional interpretation is concerned in that they may be contrastively related to a multitude of alternative propositions, which,

representation to which an expression α corresponds in CS; $[\alpha]^c$ is a set of alternative mental representations of the same type as $[\alpha]^o$, from which $[\alpha]^o$ is drawn. If α is a sentence S, then $M = [\alpha]^c$, that is, the set of alternatives that correspond to S.

Given that every expression in the sentence represents a locus of contrast, the number of alternatives in *M* will be a function of the number of the loci of contrast in the sentence and the number of alternatives in each set associated with every locus of contrast. It is small wonder that *M* can easily be incredibly large and systematically inhomogeneous, as we will see directly. The size and heterogeneity of *M* will directly characterize the uncertainty of the meaning of the sentence before it is given a particular interpretation. In the remainder of this section I will explicate the notion of 'uncertainty', and I will take up the notion of a 'particular interpretation' again in subsequent sections.

To illustrate the kind of uncertainty that is meant, which is essentially the same as that briefly alluded to by Szabolcsi (1980), let us consider (261) and its alternatives in (263). Let us assume a very simple case in which each locus of contrast within the sentence comprises as few as two elements. What we are assuming, then, is that every expression is chosen from a set containing only two members, that is, there is only one alternative with which each expression is contrasted. Let us assume, for concreteness, that the pairs of alternatives associated with the loci of contrast are as follows:

(262) a. we—they
b. might—will
c. have—pack
d. a picnic—dinner

On these assumptions, the following set of 16 different alternatives emerges for the sentence as a whole, one of which, (263a), the sentence identifies, and with all of which it is contrasted.

(263) a. We might have a picnic.
b. We might have dinner.
c. We might pack a picnic.
d. We might pack dinner.
e. They might have a picnic.

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furthermore, constitute an inhomogeneous set. (See also p. 123 for further discussion.)

f. They might have dinner.
g. They might pack a picnic.
h. They might pack dinner.
i. We will have a picnic.
j. We will have dinner.
k. We will pack a picnic.
l. We will pack dinner.
m. They will have a picnic.
n. They will have dinner.
o. They will pack a picnic.
p. They will pack dinner.

If the number of alternative expressions in each slot increases to three, the total number of different sentence-alternatives jumps to 81. With four possibilities for each locus, the number of alternatives is 256, and if there are five loci of contrast, each with four alternatives, then the total number of variations will be 1024. It is easy to see that the number of alternatives with which even a relatively simple sentence may be contrasted can be extremely large. Notice also that each maximal projection, such as the VP in our example, also constitutes a locus of contrast. If the VP in our example is considered an additional locus of contrast, this increases the number of alternatives by four.

Let us assume now that the focus of contrast in (261) is the VP *have a picnic*. As Bolinger (1961a) points out, the set of alternatives to *have a picnic* is an unlimited set. *They* is another locus of contrast, with another unlimited set of alternatives. From these it follows that the sentence as a whole is implicitly contrasted with an unlimited set of alternative sentences. In this unlimited set of alternatives, there are sentences like

(264) John has bought a car.
(265) My mother cooked a wonderful meal last week.
etc.

Why is it that, intuitively, (261) is not felt to be contrasted with sentences like (264) or (265)? Quite clearly, this is because (264) and (265) are irrelevant in some sense.

This suggests that the set of alternatives to a sentence must meet some relevancy requirement. But, as Szabolcsi (1980) notes, requirements of relevancy are in general conversational, that is, pragmatic requirements (cf. Grice 1975), which must be accounted for in pragmatic, not in grammatical

theory. Note, however, that the kind of relevancy we are considering now is not a requirement of an utterance, or of participants in a speech situation, but this relevancy requirement is a requirement of potential elements in a set of alternatives that correspond to loci of contrast.

To continue the line of reasoning, the question arises as to what exactly it means in interpretive theoretical terms for certain members of sets of alternatives to a sentence to be discarded as irrelevant? (Notice that an extreme case of this is to discard *all* alternatives in a set as irrelevant, which is not possible, though, as we will see below.) It is perhaps in order to point here to a hypothesis which is already suggested by the foregoing discussion, and will be confirmed below. The preceding discussion suggests that we must postulate a mental process that eliminates irrelevant alternatives. I will tentatively suggest that some of it may grammaticize in language, and I will show that some of it is grammaticized in English.

What the function of this process is is to eliminate as many sentence alternatives (or rather classes of alternatives, as we will see directly) as possible, reducing the size of the set of alternatives to a small, homogeneous class, which ideally contains only one member, which is thus contrasted with the particular sentence. (The sense in which this class is homogeneous will be explicated directly. Suffice it to point out at this stage that it is intimately related to the nature of the process.)

Let us first consider the nature of the process of eliminating alternatives. The result of eliminating all alternatives to an expression in a sentence is that the information expressed by that expression is taken as given or fixed. As regards the meaning of the sentence, an element of its meaning that is fixed is a constant. Constants in the semantic interpretation of a sentence are elements of meaning that are not contrasted with relevant alternatives. A contrastive interpretation is assigned to elements that are not thus fixed in a sentence. The elimination of alternatives is thus the process which changes a potentially contrastive element (or a locus of contrast) into a constant. The elimination of alternatives thus fixes a locus of contrast, that is, changes it into a constant.

Given the intrinsic nature of contrast, that is, that it may involve only two elements at a time, if a sentence contains more than one locus of contrast, some of those loci must be fixed for the interpretation of the sentence. More specifically, if a sentence contains n loci of contrast, exactly $n-1$ loci must be fixed for an ideal interpretation of the sentence. The locus that is not fixed is left open. If all loci are left open, then the meaning of the sentence is uncertain in the sense discussed above.

As we saw in our example above, each locus of contrast in a sentence introduces multiple alternatives to the sentence. The number of sentence alternatives will be proportionate to the number of alternatives associated with each locus of contrast, and to the number of loci of contrast in the sentence, as was pointed out above. Therefore, with the fixing of a locus of contrast, a whole subset of sentence-alternatives is eliminated, with the significant consequence that not only will the set of alternatives to the sentence thus be reduced in size, but it will also become increasingly homogeneous, therefore it will become increasingly relevant to the interpretation of the sentence. It will be more relevant, because, ideally, the set of alternatives will contain only members associated with a single locus that is left open. The subset of sentence-alternatives that thus 'remains' is precisely what we intuitively call the relevant set of alternatives associated with a sentence.

Thus, it seems that there are two requirements that sentences must in general satisfy. One of these requirements is quantitative. A sentence meets this requirement if the number of alternatives associated with it is relatively small. The second requirement is a condition on relevancy. The alternatives to the sentence must constitute a maximally homogeneous set. Since the set of alternatives to a sentence is a set which contains homogeneous subsets, the satisfaction of the relevancy condition consists in selecting one of these subsets (through the elimination of all other subsets).

The satisfaction of these two conditions goes 'hand in hand', since the process of eliminating irrelevant sentence-alternatives does not eliminate one alternative at a time, but it eliminates subsets of alternatives at a time. This is because the elimination of sentence alternatives is achieved by fixing loci of contrast in the sentence, each indirectly (via its locus-related alternatives) associated with a range of sentence alternatives that it potentially introduces in case it is left open. Thus, the reduction of the set of alternatives to the sentence (by fixing loci of contrast) automatically ensures that the relevancy condition is also met, since every time a locus of contrast is fixed a subset of irrelevant sentence alternatives is eliminated.

The process of fixing loci of contrast in sentences is relevant for grammatical theory, since certain aspects of grammatical structure appear to contribute systematically to the contrastive aspect of the meaning of sentences. Ignoring matters of detail for the moment, their contribution lies in their capacity of functioning as 'fixers' of contrastive loci. I will discuss some of these grammatical categories separately.

The discussion of the relevant grammatical categories will shed some new light on their nature by pointing out that they are fixers of loci of

contrast. More importantly, it will be shown that infinitives and gerunds are, in fact, also fixers of contrastive loci in English, and that, moreover, they are 'complementary fixers' in that infinitives fix themselves, while gerunds fix basically everything else except themselves in sentences. Thus, the semantically, and often also syntactically, mysterious complementary distribution of infinitives and gerunds receives a principled explanation.

Since for each different contrastive interpretation of a sentence a different subpart of the sentence needs to be fixed (and a different subpart needs to be left open), it is crucial for the understanding of the contrastive aspect of the meaning of the sentence which parts are to be understood as fixed and which part is to be understood as open. This signaling of fixing and openness of expressions may grammaticize in language in various ways. In Hungarian, for example, this principle seems to be the governing principle determining sentence structure. The Hungarian sentence is communicatively structured in that fixed and open expressions occupy well-defined structural positions. The Topic position normally contains fixed material, and there is a special pre-verbal position, which is called the Focus, which may, in general, be optionally filled by a constituent which is always left open and which fixes everything else in the sentence. If this position is not filled, the meaning of the sentence will be uncertain in the relevant sense. To take a different language, *ga*-marking of subjects in Japanese is said to have a similar function when the predicate of the sentence is stative (cf. Hedberg 1990:25ff).

(266) a. Hito wa doobuto de aru.
'Man is an animal.'
b. Hito ga doobuto de aru.
'It is man that is an animal.'
c. John ga gakusei desu.
'It is John that is a student.'

And, naturally, all focusing devices in language (such as, for example, focus movement in Hungarian, clefting and pseudo-clefting in English) are such fixing devices. They will mark the constituent that fixes everything else in the sentence.

3.4 The psychology of interpropositional relations

Psychological observations and evidence from experiments on interpreting and understanding sentences lend particularly strong empirical as well as

theoretical support to the hypothesis I am developing. Furthermore, the observations I will discuss below support not only the specific hypothesis on the interpretation of sentences with infinitival and gerundive complements, but also the general hypothesis on the role of implicit contrasts in determining an important aspect of sentence meanings in general.

Gergely's (1992, 1995) experimental findings confirm, first of all, the general hypothesis that there are two important aspects of the meanings of sentences: (a) the propositional meaning and (b) the logical-communicative meaning. This latter, Gergely shows, is intimately tied up with what he calls the "interpropositional relations" into which sentences enter with other sentences, or propositions expressed in other sentences. For reasons to be clarified in the discussion that follows, we may, in addition, recognize (c) the contrastive interpropositional meaning of a sentence as a third aspect of its meaning.

Very importantly, Gergely (1995) also shows that the propositional meaning of a sentence is uncertain in a very special way: it is only an uncertain basis for several possible interpretations which it allows (see also Szabolcsi 1980). These more particular interpretations, according to Gergely, correspond to conceptual models in the mind, which are constructed on the basis of (a) the propositional meaning of the sentence, (b) the logical-communicative information expressed in the sentence, and (c) elements of the "pragmatic knowledge of the world," which have to do with, for example, "expected typical consequences," which are stored in "script structures" and "lexical stereotypes" (Gergely 1995:57). We will not be concerned with the role of pragmatic knowledge in assigning semantic interpretations to sentences, but a careful examination of the "logical interpretation" of sentences will be instructive.

By the propositional meaning of a sentence we will mean the predicate-argument structure and thematic structure expressed in the sentence. By the logical-communicative meaning of a sentence we will mean, provisionally, the topic-focus structure expressed in the sentence. Importantly, we will recognize both these structures as aspects of the meaning of a sentence, and we will assume that both aspects of meaning are encoded in sentences one way or another. In addition, we will assume that in the mental model of the meaning of a sentence a third aspect of its meaning will also be represented, which we will call, adopting Gergely's (1995) term, its interpropositional meaning, which will be used in a slightly modified sense. By the interpropositional meaning of a sentence, we will mean the contrastive relationships a sentence bears to a relevant set of implicit propositions that the sentence evokes. We note that it is this aspect

of the meaning of a sentence that is left 'uncertain', that is, is not specified, either in the propositional or in the thematic structure of the sentence. One of our main interests will be to carefully examine the interaction between the logical-communicative structure of a sentence on the one hand and its contrastive interpropositional meaning on the other.

First, we will consider the important question of how Gergely's observations and findings are relevant to the issues we are primarily concerned with. For this, I will review the most important elements of Gergely's findings and observations that are relevant for the present discussion.

Gergely considers the meaning of sentences from the perspective of the hearer, and therefore discusses the role of the logical-communicative meaning of sentences encoded in topic—focus structure in Hungarian in determining or contributing to how the hearer reconstructs the "representational structure" (Gergely 1995:43) of the meaning of sentences, which contains not only a representation of the propositional meaning of a sentence but also a representation of the way in which this propositional meaning is "integrated" in a larger "information structure" or "discourse structure" having been constructed by a hearer in a communicative situation (Gergely 1995:43). Our perspective will be slightly different from Gergely's in that we will be interested not in the pragmatic aspects of how hearers understand sentences but in how the aspects of meaning that interest us are encoded in sentences.

We will diverge from Gergely (1995, 1992) slightly in an additional respect. We will follow him in recognizing the integrative aspect of the meaning of sentences, but we will be concerned with a slightly different sort of contextual integration. We will focus not on the manner in which propositional meanings are integrated into the context of other propositions in a communicative situation, but on the particular sort of (contrastive) interpropositional relations that hold between a proposition expressed in a sentence, on the one hand, and a set of implicit propositions with which that particular proposition is contrasted, on the other. We are justified by Gergely's findings both in our recognition of the fact that the proposition expressed in a sentence corresponds to various specific interpretations of that proposition and in assuming that a sentence that expresses a proposition will systematically evoke a set of implicit propositions (which is divided into homogeneous subsets such that the members of the same subset make more natural contrastive pairs than pairs of members across subsets). Sentences may then be characterized by how specifically they are associated with a particular propositional interpretation. The specific propositional

interpretation associated with a sentence will be identified by virtue of the contrast between the proposition expressed in the sentence, on the one hand, and a subset of the set of implicit propositions that the sentence evokes, on the other.

The exciting question that this raises is whether there is anything in the structure of sentences that encodes a specific propositional interpretation. To put it another way, we will be interested in whether the specification of particular propositional interpretations, and thus the contrast with nonidentical implicit propositions, may in any way grammaticize in language in general, and how, if at all, it is realized in English in particular. Most specifically, we will be interested to know whether such an approach to the meaning and structure of sentences offers some explanation for the distribution of infinitives and gerunds in English.

Gergely assumes that propositions, which are expressed by simple sentences, are units of information that are integrated in a larger "information structure" in a speaker's mind (Gergely 1995:43), and as such they are characterized by what we may call in Gergely's spirit the integrative relations that hold between a proposition and the information structure of which it is a part. Gergely further assumes that a hearer will be successful in understanding a sentence if, for every sentence, the hearer (a) can construct a representation of the proposition expressed in the sentence, and (b) he can integrate this propositional representation into the larger information structure called the "discourse interpretational structure" (cf. Gergely 1992:210). The goal of the hearer is to reconstruct the "original information structure," which is the information structure in the speaker's mind (cf. Gergely 1995:43).

I will adopt Gergely's assumption that propositions are not isolated units of information but they constitute integral parts of a complex information structure. I will further assume that among the propositions as elements of a complex information structure are subsets of propositions with which a proposition stated in a sentence is implicitly contrasted. I will assume, further, that the contrastive interpropositional relations that hold between a stated proposition and a subset of implicit propositions is characteristic of the meaning of a sentence, and more specifically, of the particular interpretation of the proposition it expresses (which, as I will show, is otherwise systematically uncertain in an interesting way). I will also show that sentences are systematically associated with sets of implicit propositions and that, importantly, these sets are organized into subsets, whose role and significance is discussed in detail in section 3.3 It is important to bear in mind that our primary concern is not to characterize

what hearers do. We are concerned with the meaning of sentences and our goal is to sort out how a particular aspect of that meaning is expressed.

It follows form Gergely's assumptions we have just considered that, for each sentence, the hearer will have two tasks, which Gergely calls (a) the task (IP) of "identifying the propositional unit" of information, and the task (IT) of "integrating the propositional unit into the discourse structure" (Gergely 1995:43).

It is particularly instructive to consider Gergely's account of IT, especially in regard to his explanation of its first aspect. Gergely divides IT into two parts. One of the tasks of the hearer in IT is to identify in his complex information structure (CIS) the element about which the sentence gives new information. In order for the hearer to succeed in identifying that element in his CIS, he first needs to identify the element in the sentence. The hearer will do this, Gergely argues, on the basis of information encoded in the topic—focus articulation of the sentence. Having identified the topic of the sentence, the hearer will search in his model of CIS for the "corresponding representation" of that element. If such an element is not found, the hearer will "construct it" by inference and he will attach the new information to it (Gergely 1995:44). Let us call this, again in Gergely's spirit, the task of topic identification (TI), by which we will mean the tasks of (a) identifying the topic of the sentence and (b) identifying the corresponding representation in CIS.

Topic identification is performed on the basis of information that is expressed within the sentence, on the basis of which, importantly, the "interpropositional" or "textual" topic can even be constructed if it is not found in CIS, and, subsequently, the CIS can be supplemented by it. To clarify these matters, we will carefully consider Gergely's characterization of the kind of information that identifies the topic of a sentence and of the ways in which this kind of information is expressed in language.

Gergely (1995:44) observes that "the information that is necessary for the identification of the topic—focus articulation of a sentence is generally expressed in languages by contextual signals, various prosodic signals (e.g., emphatic (focus) stress, pause relations), and specific word order signals (e.g., topicalizing structures). Hungarian is particularly clear in expressing topic—focus articulation by variations of word order on the level of sentence grammar." Notice that all these kinds of "signals" are, in fact, implicitly contrastive in nature.

As far as the prosodic devices of stress and pause, and the device of the linear arrangement of constituents are concerned, their implicit contrastive character is fairly easy to see. The 'same sentence', which is

understood here as a structure of constituents expressing the same proposition, may be pronounced with different stress placement, pausing, and arrangement of constituents. These are 'variations on the same theme'. These variants constitute the implicit context in CIS in relation to which a particular variant gains its identity, with reference to which a particular variant is identified as such. This, I believe, is the most interesting sense in which TI is an IT-type task in Gergely's account.

I will now consider the second aspect of Gergely's IT task. He assumes that, in performing the second task in IT, hearers identify, or rather actively (re)construct, the essentially semantic interpropositional relations that characterize a particular proposition (in the speaker's CIS). He experimentally proves that hearers are able to (and that they indeed do) make inferences and recognize, or reconstruct, the "implicit inferential chain" that the speaker encodes in a sentence. Gergely (1992, 1995) shows (using complex sentences involving a subordinate adversative clause) that (a) a proposition expressed in a sentence is typically associated with (an infinite) set of (causal) consequences that can be inferred as implicit propositions from the proposition expressed in the sentence, and that (b) the focus of a sentence is the constituent "on which the intended implicit inference is based," whereby focusing a particular constituent has the effect of "considerably reducing the number of possible implicit inferences" to a much smaller subset of the (potentially infinite) set of (causal) inferences otherwise associated with the proposition expressed in the sentence, which will greatly simplify the hearer's task of reconstructing the particular "implicit inferential chain" that is associated with the particular (adversative) clause (Gergely 1995:45).

Let us now consider some of Gergely's examples to illustrate what is most relevant to our main concern (cf. Gergely 1995:45).

(267) a. Ugyan Józsi bácsi A LÁNY-Á-T
Although Joe Uncle the daughter-his-ACC
dicsérte meg a kitűnő ebéd-ért,
praised Perf the excellent lunch-for
valójában a fi-a főzött
in fact the son-his cooked
'Although it was his daughter that Uncle Joe praised for the excellent lunch, it was in fact his son who had cooked it.'

b. ?Ugyan Józsi bácsi A LÁNYÁT dicsérte meg a kitűnő ebédért, az mégsem örült.
'Although it was his daughter that Uncle Joe praised for the excellent lunch, she was still not pleased.'

Notice, first of all, that (267a) is far superior in acceptability to (267b). Gergely's account for this is more than instructive: "By focusing the object, the speaker makes an implicit reference to a set of entities that could equally have become the object of the action, but they did not. Thereby the speaker suggests that the content of his second clause will refer back to the elements of the implicit contrastive set . . ." (Gergely 1995:46). By contrast, (267b) is far less acceptable than (267a) because the second clause in (267b) is related not to the inference based on the object in focus (as in (267a)) but to the verb, which is not the focus of the subclause.

Notice that Gergely's hypothesis is not only consistent with the hypothesis I am developing, but it has so many elements in common with it that there is a (not uninteresting) sense in which we are, *mutatis mutandis*, saying the same thing, as far as the general hypothesis is concerned. The remarkable elements that the two hypotheses share are these: Both Gergely and I postulate that (a) the proposition expressed in a sentence is 'uncertain' in the specific sense that it is subject to particular interpretations; (b) a proposition expressed in a sentence is typically and characteristically associated with a set of implicit propositions; and (c) a sentence grammatically expresses which specific subset of the set of implicit propositions it is associated with on a particular interpretation of the proposition that it expresses, which subset is thus characteristic of that particular interpretation.

Where we differ concerns the particular nature of the set of implicit propositions, the class and type of data we examine, and the focus of attention. Since Gergely discusses (the problem of understanding) the meaning of complex (Hungarian) sentences containing an adversative clause (whose main verb is a potentially causative verb, such as *wash*), he focuses on the class of implicit propositions that is characterized by being causally inferable from the proposition expressed by the subclause. I make a weaker claim. Although I go along with Gergely's assumption that such inferential relations that hold between the proposition expressed in a sentence and its implicit propositions typically associated with it do constitute an important part of the characterization of the meaning of sentences, for the purposes of the hypothesis I am developing I make the (considerably) weaker claim that speakers recognize the (typical and characteristic) contrastive relations that

hold between the proposition expressed by a sentence and a set of implicit propositions the sentence is associated with. The ability to recognize implicit contrasts, that is, typical and characteristic differences of a particular sort, is probably one of the simplest cognitive capacities in humans, which plays a fundamental role in perceptual as well as linguistic processes in the mind. The ability to recognize implicit contrasts crucially underlies all kinds of perceptual acts of recognition.[6]

3.4.1 Topic activation

Gergely (1995:50) argues that an important component in the process of interpreting sentence meanings is "constructing active expectations and predictive hypotheses . . . with respect to the expected content of the following propositional unit" on the basis of information provided in a particular sentence. A particular kind of this process of predictive hypothesis construction is foregrounding, which is the activation of a meaning representation (in CIS) of the constituent of the sentence or clause that is likely to recur in the following sentence or clause. Gergely claims that the constituent in the (first) clause that is thus activated is the topic of the clause. Let us consider the following example to illustrate Gergely's Topic Activation Hypothesis (TAH):

(268) Ugyan az estélyen a herceget
Although the party-at the duke-ACC
bemutatta a báró a . . .
introduced the baron the . . .
'Although the baron introduced the duke to the . . . at the party . . .'

Gergely's experimental data confirm the hypothesis that the meaning representation of the topic of (268), *herceget*, is indeed activated. His data furthermore confirm what we may call in Gergely's spirit the 'classical' hypothesis that topic activation (TA) is concentrated at the clause boundary, that is, at the end of (the clause elliptically represented in) (268). On Gergely's hypothesis, TA is performed on the basis of (a) information on the interpropositional relation of the first clause to the second (expressed, for

[6] I wish to express my gratitude to Ágnes Ludányi, who has generously shared her ideas (and time) with me in countless discussions we have had on perception and many related matters of cognition and human psychology in general.

instance, by a concessive conjunction as in (268)) and (b) the topic—focus articulation of the sentence. Since both kinds of information are available to the hearer long before the clause boundary, it is somewhat surprising that TA will not happen until the hearer has heard the entire clause, that is, that TA will occur at the end of the clause. Gergely's explanation for this is that "the function of topic foregrounding is to facilitate the integrative processing of the f o l l o w i n g clause, therefore the optimal position to initiate the activation process is at the clause boundary" (Gergely 1995:54).

There is, however, an alternative way to explain why TA occurs at the clause boundary. This explanation is based on the hypothesis that what is in fact activated in TA is not exclusively the topic, but all noncontrastive (fixed) constituents of the clause, which include any unstressed post-focal constituents as well. From this it follows that TA (which we now understand to mean 'activation of noncontrastive constituents') will not be complete until all noncontrastive constituents have been identified as such (which presupposes the identification of the focus), some of which may occur anywhere between the focus and the clause boundary. The hypothesis is supported by the following arguments. Consider the following example (cf. Gergely 1995:45):

(269) Ugyan Józsi bácsi a lány-á-t
Although Joe Uncle the daughter-his-ACC
MEG-DICSÉRTE a kitűnő ebéd-ért,
Perf-praised the excellent lunch-for
az még-sem örült.
that still-not was pleased
'Although Uncle Joe COMPLIMENTED his daughter on the excellent lunch, she was still not pleased.'

Gergely argues that *a lányát* ('his daughter') is anticipatorily activated in (269) because (a) it is in topic position in the sentence, and because (b) the hearer expects the following clause to contain a statement about Uncle Joe's daughter which expresses something contrary to the implicit proposition inferred on the basis of the verb *megdicsérte* ('complimented') in focus. Such an implicit inference can be, for example, the proposition that 'Uncle Joe's daughter was pleased about the compliment' (which may be based on the premise that 'People are generally pleased when they are complimented'). It is this inference that the main clause denies. The interpretation scenario we have just outlined can be characterized as a maximally efficient and successful act of interpretation

based on a maximally efficient predictive hypothesis. The sentence, in turn, may be characterized as one that maximally facilitates such an interpretation, and one that is therefore maximally acceptable, in contrast to the following example, for instance,

(270) ? Ugyan Józsi bácsi a lány-á-t
Although Joe Uncle the daughter-his-ACC
MEG-DICSÉRTE a kitűnő ebédért,
Perf-praised the excellent lunch-for
valójában a fi-a főzött.
in fact the son-his cooked
'Although Uncle Joe COMPLIMENTED his daughter on the excellent lunch, it was in fact his son who had cooked it.'

which may be criticized in the relevant respects, and which does indeed sound awkward (cf. Gergely 1995:45).

Note, however, that the following sentences are just as good as (269):

(271) a. Ugyan Józsi bácsi MEG-DICSÉRTE
Although Joe Uncle Perf-praised
a lány-á-t a kitűnő ebéd-ért,
the daughter-his-ACC the excellent lunch-for
az még-sem örült.
that still-not was pleased
'Although Uncle Joe COMPLIMENTED his daughter on the excellent lunch, she was still not pleased.'

b. Ugyan Józsi bácsi a lány-á-t
Although Joe Uncle the daughter-his-ACC
MEG-DICSÉRTE a kitűnő ebéd-ért,
Perf-praised the excellent lunch-for
az ehetetlen volt.
that uneatable was
'Although Uncle Joe COMPLIMENTED his daughter on the excellent lunch, it was uneatable.'

Both examples in (271a–b) show that a post-focal element is just as likely to recur in the second clause as the topic. Given TAH, this post-focal element must also be activated. Thus, we may conclude from these examples that the hearer will need to activate not only the topic of the first clause but

all noncontrastive constituents in it, if his goal is to optimize the interpretation process, as Gergely argues, by constructing hypotheses that effectively predict which constituents of the first clause are to be expected to recur, pronominally or otherwise, in the second clause.

A further argument for the claim that all noncontrastive elements must be activated is that such constituents may, in general, be topicalized freely (provided they are referring or generic expressions, or sentence adverbials), and topicalization does not appear to affect the activation level of such constituents (compare (269) and (271a)). Whether the level of activation of *a lányát* ('his daughter') indeed does not differ significantly in (269) and (271a) could be determined on the basis of data that might be gained from experiments similar to those conducted by Gergely. Since such experimental data are not available, our argument can be supported only by the observations that we have made above.

Even though we may not have experimental data of the sort just described, we do have some equally valuable experimentally confirmed evidence, provided by Gergely, to support our argument. Consider these examples (Gergely 1995:57, 58):

(272) a. Nagyapa EL-MOSTA a tányérok-at a
'Grandpa up-washed the plates-ACC the
tegnapi házibuli . . .
yesterday party
'Grandpa did wash up the plates [after] the party yesterday . . .'

b. Nagyapa a TÁNYÉROKAT mosta el a
Grandpa the plates-ACC washed up the
tegnapi házibuli . . .
yesterday party
'It was the plates that Grandpa washed up [after] the party yesterday . . .'

(273) a. Ugyan nagyapa EL-MOSTA a tányérok-at
Although Grandpa up-washed the plates-ACC
a tegnapi házibuli . . .
the yesterday party
'Although Grandpa did wash up the plates [after] the party yesterday . . .'

b. Ugyan nagyapa a TÁNYÉROK-AT
Although Grandpa the plates-ACC
mosta el a tegnapi házibuli . . .
washed up the yesterday party
'Although it was the plates that Grandpa washed up [after] the party yesterday . . .'

Gergely's experiments show, confirming his hypothesis, that the conceptual representation of *koszos* 'dirty' is activated in (272b) and in (273a) but not in (272a) or in (273b). Let us consider his line of reasoning, which runs roughly as follows. The conceptual representation of *dirty* is activated in (272b) because (a) the hearer foregrounds the "elements in the contrastive set" (of cups, saucers, etc.) introduced by the focus *tányérokat* ('plates'), and (b) because he knows, "on the basis of his pragmatic knowledge," about the elements of this contrastive set that they constitute "potential objects of *washing up*" and that they "typically possess the property KOSZOS ['dirty']" (ibid., 58, italics mine). The conceptual representation of *dirty* is activated (that is, foregrounded in the conceptual representation of the plates) in (273a) because the adversative conjunction suggests that the second clause will state the opposite ('dirty') of the implicit consequence ('clean') inferred on the basis of the focused constituent *elmosta* ('washed up') in the first clause, "elmosta → TISZTA," (washed up → CLEAN) (ibid., 58).

On the other hand, *dirty* is not activated in (272a) because "the implicit inference elmosta → TISZTA," which can be drawn on the basis of the focused verb *elmosta* ('washed'), produces TISZTA, which is thus foregrounded "in the mental representation of "*tányérok*" ('plates') (ibid., 58, italics mine). Finally, *dirty* is not activated in (273b), though *clean*, I think, is, because the predicate *elmosta* ('washed') "is not in focus position" in the subclause and therefore the implicit consequence that the second clause is expected to deny is not based on the act of washing up but "is related to the c o n t r a s t i v e c h o i c e" (ibid., 58).

Although Gergely's conclusions are in general correct, his explanation and arguments appear to be a little too complicated. Explanations of language phenomena often do get complicated for the simple reason that language is a complicated system to account for, but, as I will show directly, a more straightforward explanation for TA may be constructed. What crucially causes Gergely's explanations to be unduly complicated is the fact that they are formulated in terms of the topic—focus distinction with regard to the logical-communicative structure of the clauses

in question. If, however, we recognize a more general logical distinction between sentence constituents, or rather, a simpler and more fundamental distinction in the way constituents contribute to the logical-communicative aspect of the meanings of sentences, then we can develop a more straightforward account of the relevant facts. The general theory of implicit interpropositional contrasts I am developing offers a simpler and more direct explanation of TA phenomena, which I will discuss in the paragraphs that follow.

First of all, notice that what is activated in each of the examples in (272a–273b) is the conceptual representation of a noncontrastive constituent (or a representation intrinsically related to it). The implicit propositions that correspond to the relevant clauses invariably activate the conceptual representation associated with a noncontrastive constituent. I will now spell out these implicit propositions explicitly for each of the examples in (272a–273b) *in italics, underlining* the constituent whose conceptual representation is activated.

In (272a)	*the plates are clean*,
in (272b)	*everything else* (that is, cups, cutlery, etc.)*, the plates excepted, is dirty, because it was not washed*,
in (273a)	*the plates are dirty*, and
in (273b)	*despite Grandpa's not having washed the cups etc., they (too) were clean.*

A basis for a further argument against Gergely's (1995) TA in its *literal* interpretation (which is similar to an argument we have developed previously) is provided by Gergely's own examples. Recall that it was argued (by Gergely) that the meaning representation of a constituent is activated only if the constituent is the topic of the sentence (*a herceget* in (268) and *a lányát* in (269)) because TA "is selective" in that it activates only the topic of a sentence. Now notice that the constituent whose conceptual representation Gergely argues is activated in the relevant clauses in (272a–273b) is *not the topic* in any of the examples. The topic of the relevant clauses of those examples is invariably *nagyapa* ('Grandpa'), whose conceptual representation, Gergely too would probably agree, *is* activated, but neither of the mental representations (CLEAN, DIRTY) that Gergely argues are activated in (272a–273b) is in any way related to *nagyapa*.

Gergely (1992:215) observes that (274b) sounds awkward in contrast to (274a), which is fine, and that the awkwardness of (274b) turns on the

"implicit consequence proposition" inferred by the speaker, which is "'the daughter is happy'."

(274) a. Though Daddy *praised* his daughter for the excellent dinner, she was still not happy.
b. ?Though Daddy *praised* his daughter for the excellent dinner, it was, in fact, his son who prepared it.

The hearer's expectation to the effect that the following clause will deny the inferred implicit proposition 'the daughter is happy' is met in (274a) but not in (274b). Where the explanation of these facts in terms of the TAH, interpreted literally, runs aground is in the claim that the inferred implicit proposition 'the daughter is happy' "contains the *topic NP* of the initial subordinate clause, which . . . serves as the antecedent for the anaphoric pronoun 'she' in the second clause" (cf. Gergely 1992:215). On the usual interpretation of the topic, which Gergely seems to adopt, the topic of the subordinate clauses in (274a–b) is simply not the NP *his daughter*, but the NP *Daddy*. The former is a post-focal item, which is indeed just as noncontrastive as the topic. Therefore the conclusion is correct, even though it is based on a false premise. This, however, may easily be repaired on the hypothesis of implicit contrasts I am developing, and thus the conclusion is rescued, salvaging the general argument.

Although the evidence we have provided thus far should suffice for us to have successfully proved that TA activates not only the mental representation of the topic of a sentence but in fact the meaning representations of all of its noncontrastive constituents, we cannot be content until we have provided some further *positive* evidence that the mental representations of all noncontrastive constituents in Gergely's examples are activated. What is at stake here is that if we succeed, we will not only be able to simplify Gergely's theory (to the benefit of the theory, I believe), by drawing upon his own results, but we can shed some new light on the topic—focus distinction by showing that it is in fact an actualization of a more fundamental 'logical' (and psychological) distinction between contrastive and noncontrastive constituents, or more accurately, a distinction between the contrastive and noncontrastive interpretation of sentence constituents.

Furthermore, if we succeed, we will also have proved that the contribution of the focus to the (logical-communicative aspect of) the meaning of a sentence must (and can) be reinterpreted in more primitive terms. This will enable us to circumvent the difficulties involved in interpreting focus either in terms of exhaustive listing, or in terms of

identification by exclusion, or in terms of the ability of a constituent in focus to introduce a (contrastive) set, or in terms of its ability to express new information, the explanatory power of which is seriously undermined by the existence of countless exceptions to each. Implicit in all these focus interpretations is the idea that the focused constituent introduces some kind of a contrastive set, which, as we have seen above, is not without its problems (see p. 101).[7] The source of the major difficulty with these definitions dissolves, however, nor will the apparent exceptions have to be regarded as exceptions any longer, if the contribution of focusing is not taken to be its role to *introduce* relevant contrastive sets whereby the interpretation of a constituent will be *rendered* contrastive, but basically to *preserve* a contrastive interpretation for a constituent, which is the interpretation that any meaningful constituent receives *by default*. Ironically, perhaps, what focusing does is not render a constituent contrastive, but *render everything else noncontrastive* by *preserving the default contrastive interpretation* of a constituent, which is not the same thing. The constituent that receives a contrastive interpretation will be 'parasitically contrastive', so to speak, as a result of all other constituents having been deprived of their contrastive reading *for the purposes of the interpretation of the proposition*

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[7] É. Kiss (1996) points out that focusing is in general incorrectly regarded as a uniform phenomenon, and argues that two different types of focus must consistently be distinguished — the Focus Operator and Information Focus. An important difference between the two is that only the former introduces a relevant set of alternatives, the latter merely expressing new information. Rooth (1985) claims that the chief contribution of focusing to sentence meaning is the introduction of a relevant set of alternatives. As É. Kiss points out, such a theory cannot adequately account for the semantics of Hungarian sentences containing a postverbal emphatic constituent. Consider the following question—answer pair (cf. É. Kiss 1996:3):

(i) a. Ki-vel találkoztál tegnap a színházban?
whom-with met-you yesterday the theatre-in
'Who did you meet in the theatre yesterday?'
b. Találkoztam a színházban MARIVAL.
met-I the theatre-in Mary-with
'I met MARY in the theatre.'

É. Kiss claims that in (ib) "*MARIVAL* 'with Mary' does not introduce a set any more than e.g. *a színházban* 'in the theatre'" (1996:3). This is a very important observation, with which I agree, and which receives a principled explanation on the present hypothesis.

expressed in the sentence. The process of rendering a constituent noncontrastive has been called 'fixing', and (the reading of) a constituent that has thus lost its contrastive interpretation has been characterized as 'fixed' or 'constant' (cf. section 3.3). By a (particular) interpretation of a proposition expressed in a sentence we will mean the implicit contrastive interpropositional identification of that proposition. This identification is implicit and interpropositional in that the proposition in question will be contrastively identified in its relation (which is a relation of contrast) to the implicit propositions that it evokes by virtue of the contrastive nature of its constituents. Given that a proposition may in principle evoke an enormously large set of implicit propositions (precisely p^n of them, where n is the number of constituents in the sentence, and p is the number of members in the implicit set associated with each constituent), and that it cannot be interpreted as contrasted with all of them at the same time (since it would be equivalent to having multiple interpretations, which is in contradiction with the sense of interpretation given above), the subset of implicit propositions (ideally reduced to a unit set) with which the proposition will thus be contrasted (that is with respect to which it will be contrastively identified) will be characteristic of the interpretation of the proposition expressed in the sentence. If focusing is interpreted along these lines, the conflicting interpretations in terms of exhaustive listing, identification by exclusion, etc. will no longer be in conflict, but they may be regarded as secondary complementary interpretations, which will no longer have to be expected to have a definitive, that is mutually exclusive, force.

After this digression into the significance of the exercise of making creative use of Gergely's own data, let us consider the specific examples. What we are going to do first is determine the kind of main clauses that may complete the sentence fragments in (273a–b), so that the additions meet the requirement that each complete sentence 'sounds good'.

(275) a. Ugyan nagyapa EL-MOSTA a tányérok-at
Although Grandpa up-washed the plates-ACC
a tegnapi házibuli után, *azok* mégis
the yesterday party after they still
koszosak maradtak.
dirty remained
'Although Grandpa did wash up the plates after the party yesterday, they still remained dirty.'

b. Ugyan nagyapa a TÁNYÉROK-AT
Although Grandpa the plates-ACC
mosta el a tegnapi házibuli után,
washed up the yesterday party after
mégis a csészék lettek tiszták
still the cups became clean
(valamiféle titokzatos *mosogatás* eredményeként).
'Although it was the plates that Grandpa washed up after the party yesterday, what became clean was the cups (as a result of some mysterious *washing-up*).'

As the italicized expressions in the second clause show, the representation of an unstressed (post-focal) constituent of the first clause must be activated (in addition to the representations of CLEAN and DIRTY).

Let us now consider two of Gergely's 'good' examples, the first of which has been discussed above, and which is repeated here for convenience.

(269) Ugyan Józsi bácsi a lány-á-t
Although Joe Uncle the daughter-his-ACC
MEG-DICSÉRTE a kitűnő ebéd-ért,
Perf-praised the excellent lunch-for
az még-sem örült.
that still-not was pleased
'Although Uncle Joe COMPLIMENTED his daughter on the excellent lunch, she was still not pleased.'

(276) Ugyan Józsi bácsi a LÁNY-Á-T
Although Joe Uncle the daughter-his-ACC
dicsérte meg a kitűnő ebédért,
praised Perf the excellent lunch-for
valójában a fi-a főzött.
in fact the son-his cooked
'Although it was his daughter that Uncle Joe complimented on the excellent lunch, it was in fact his son who had cooked it.

According to Gergely's (1995) TAH, and the selective nature of TA, it ought to be the topic that is activated in both examples. It is indeed the topic *a lányát* that is activated in (269), but not in (276), where what is activated

is not the representation of the topic *Józsi bácsi* but that of *főzött*, which is implied by a noncontrastive constituent in the subclause. Notice again, however, that both activated representations share the feature that they correspond to a noncontrastive constituent in the first clause.

These considerations make it possible for us to rectify Gergely's generalization concerning TA, which says that "the activation process" of "topic foregrounding," which is concentrated at clause boundaries "is selective": the meaning representation of a constituent "is activated only if that constituent is the topic of the clause" (cf. Gergely 1995:52, 53). Activation is indeed selective, but, as we have seen, the constituent whose meaning representation is activated is not always the topic of the clause, though it is always a noncontrastive constituent, which, obviously, may include the topic, but which may also include post-focal constituents.

Finally, we may reformulate Gergely's notion of the 'conceptual representation of a sentence" by eliminating pragmatic elements from it (such as the meaning intended by the speaker or the reconstruction of the speaker's CIS by the hearer), and thereby we can convert it into a clausal semantic notion:

(277) *The conceptual representation of a sentence* (CRS)
The conceptual representation of a sentence is a mental model that corresponds to a particular interpretation of the proposition expressed in the sentence.

Thus, CRS is defined in terms of the notion of 'a particular interpretation of the proposition expressed in a sentence', which we may further define as follows:

(278) *Particular interpretation of the proposition expressed in a sentence* (IP)
A particular interpretation of the proposition expressed in a sentence is the contrastive interpropositional relation that holds between the proposition expressed in the sentence and a subset of the set of implicit propositions that the sentence evokes.

The definition of IP in (278) is a clausal semantic definition that captures exclusively the semantic aspect of the notion 'interpretation of a proposition'. A pragmatic interpretation of a proposition will, in addition, recognize the *contextual* interpropositional relations that hold between a

particular proposition and another proposition or other propositions expressed or implied by the clauses or sentences that constitute the context in discourse.

IP has been defined above in terms of the notion of 'evoking a set of implicit propositions', which we define as follows:

(279) A sentence evokes a set of implicit propositions (with p^n members, where n represents the number of constituents in the sentence and p the number of members in the implicit contrastive set associated with each constituent)[8] by virtue of the contrastive nature of its constituents.

Finally, we will define the notion 'contrastivity of constituents', in terms of which the notion 'evoke a set of implicit proposition' has been defined above.

(280) *Contrastivity of constituents*
Every meaningful constituent of a sentence is contrastive in that it is associated with an implicit set of mental representations relevant to the mental representation of that constituent.

By exploiting and reinterpreting Gergely's observations and generalizations we can distinguish between two kinds of integration of a proposition—proper textual integration (PTI), and implicit interpropositional integration (III). A sentence and the proposition it expresses will be integrated by virtue of PTI in the context of other sentences and propositions in the actual text or discourse. The proposition expressed in a sentence is integrated contrastively in the system of implicit propositions that it evokes by virtue of the contrastive nature of the constituents of the sentence. The pragmatic correlate of III is the attempt on the part of the hearer to reconstruct the implicit propositional contrast (IPC) associated with a sentence.

[8] Provided that p is constant for each constituent. If it is not, the formula is A x B x C x D x ..., where A, B, C, D ... represent, respectively, the number of members in each implicit contrastive set (and x reads 'times').

To optimize the process of reconstructing the IPC associated with a sentence, the hearer will look for (phonological, syntactic or semantic) information in the sentence concerning the contrastivity or otherwise of each constituent in order to determine which constituents are fixed for the purposes of the interpretation of the proposition. Corresponding to the semantic notion of fixing is the pragmatic notion of fixing, which consists in the ability of the hearer to identify the constituents of a sentence whose interpretation is to be taken as constant for the purposes of IP or III.

In principle, either a contrastive or a fixed constituent may be marked as such. As we have seen, languages employ both alternatives. Focusing, which may be syntactic, phonological, or both, marks a constituent as contrastive. Topicalization normally marks a fixed constituent. Morphological devices either mark a contrastive constituent, such as, for example, *ga*-marking in Japanese (see Hedberg 1990, and Szabolcsi and Laczkó 1992:220), or a fixed constituent, such as *wa*-marking in Japanese.[9] It appears, as I have argued above, that the morphological contrast displayed by the two nonfinite clause types we have examined encodes a similar contrast—that between fixed infinitives and contrastive gerunds.

Pragmatically speaking, activation and the fixed or contrastive interpretation of sentence constituents are related to each other in nontrivial but rather straightforward ways. As I have shown above, meaning representations of fixed constituents (and their implications) are activated.

Let us briefly summarize the assets of the contrastivity hypothesis we have been developing. First of all, it explicitly characterizes the contribution of constituents otherwise known as the topic and the focus to the meaning of the sentence. Secondly, it explicitly characterizes the aspect of the meaning of the sentence that is accounted for in terms of its contrastive and fixed constituents. Third, it accounts for the logical-communicative aspect of the meaning of sentences in explicit categories, thus eliminating the difficulties that the notoriously evasive distinction between the categories of old vs. new information has caused. One of these difficulties is, for example, that the topic does not always seem to express old information, and that the focus only too often does not express new information. Fourth, for an account of the logical-communicative aspect of the meaning of a sentence in terms of fixed vs. contrastive elements we are no longer forced to require of the elements thus identified that they respectively be contiguous constituents of the sentence. An analysis of logical-communicative sentence structure in

[9] Although the function of *wa*-marking is not completely unproblematic (cf. Hedberg 1990).

terms of the topic—focus articulation divides sentences into two contiguous constituents, which leads to unnecessary complications in assigning (interpropositional) interpretations to propositions expressed in sentences. Most of these difficulties do not arise on the hypothesis that is proposed in this work. Fifth, and last, the controversial old/given vs. new distinction has been reduced to a very primitive cognitive notion of contrast, which underlies all kinds of perceptual processes of identification and recognition.

It is perhaps not irrelevant to point out here that the fixed vs. contrastive distinction in the meaning representations of propositional interpretations and in the interpretations of propositional constituents is probably appropriately regarded as a manifestation of the cognitive-perceptual process known as organization. Perceptual organization is understood as the active and creative process of imposing a particular structure upon perceptual stimuli. Perhaps the simplest of these is a structure that consists of the two elements of figure and ground. Roughly, the figure is the entity recognized in its relation to the ground, which constitutes the 'background' for the figure.[10] Given, for example, a set of two objects A and B, *ceteris paribus*, it will be due to the active and creative contribution of the mind which object, A or B, is perceived as the figure in relation to the other as the ground. Either A may be perceived as the figure in relation to B as the ground, or B may be perceived as the figure in relation to A as the ground. Some sort of marking either of fixed or of contrastive sentence constituents (or of both) may be regarded as a linguistically specific way of encoding a figure and ground structure that is assigned to the mental representation of sentences. Mental representations thus assigned to sentences will give rise to what we have called the particular interpretation of a proposition expressed by a sentence, which will thus constitute the figure identified in relation to the ground represented by the set of implicit contrastive propositions a sentence evokes.

Alternatively, the identification of a particular interpretation of a proposition in relation to the set of implicit propositions that it evokes may be understood as the psychological correlate of closure,[11] which is, very simply, the creative perceptual process whereby perceptual representations

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[10] For communicatively relevant aspects of the figure and ground principle see, for example, Nelson, Pearson, and Spitzberg 1992.

[11] Cf. Gergely (1995), who refers to experiments conducted in defense of what he calls 'the classic model of sentence interpretation', which supply data indicating the presence of perceptual closure at clause boundaries.

are supplemented by information not directly represented in the stimuli.[12] The preceding paragraphs may be read as observations that may lend some support to a psychological interpretation along these lines of the contribution of fixed and contrastive sentence constituents to the logical-communicative interpretation of sentences.

The strategy of argumentation that we have employed in the preceding paragraphs is very similar in its essential features to (though completely independent from) the way in which some support is derived for the device of filters proposed in Chomsky and Lasnik 1977. It is recognized in Chomsky and Lasnik 1977 that sentence-initial complementizers play an important role in sentence processing. It is natural to conclude then that whatever mechanisms will govern the behavior of complementizers in grammar, they will interact with perceptual principles in meaningful ways. Granting that the assumption referred to in section 3.4 above is reasonable and is motivated by natural hypotheses about the system of cognitive capacities, even though we may still know very little about these, it is equally natural to expect that such extremely simple but perceptually very important aspects of meaning as implicit contrasts will be represented in sentences one way or another, depending, primarily, on the settings of certain universal parameters of language, such as "configurational" for English and "logical-communicative" for Hungarian, as regards the constituent structure of sentences (but not of phrases, where both languages are highly configurational, as is now well known (cf. Kiefer 1992, É. Kiss 1987, and much other work on Hungarian in a generative framework).

3.5 Devices for the expression of implicit contrasts

Having clarified the nature of implicit contrastive meanings of linguistic expressions and the role that the understanding of implied contrasts plays in understanding the meaning of linguistic expressions, the question that apparently calls for an answer is what specific devices, if any, are there in language to express these aspects of meaning. In particular, is there anything in the syntactic or phonological form of English sentences that can be shown to contribute systematically to this aspect of their meaning?

There is evidence that there *are* such grammatical devices in English, as well as in other languages. The evidence that will be presented directly will support the conclusion that the ability to understand implied contrasts

[12] On active and creative organizational processes involved in perception see Juhász and Pethő 1983.

expressed by sentences, and the knowledge of how such implied contrasts are expressed are part of the knowledge of a language, and therefore must be accounted for in a grammar of a language. Furthermore, the recognition and explanation of these aspects of meaning will enable us to capture hitherto unexplained regularities in English.

3.5.1 Focusing as a device in NL for the expression of implicit contrasts

One well-known device in natural language for the expression of implied contrasts is focusing. Although there are still a few unresolved questions in connection with focusing, and there is no unanimous agreement on a number of important issues in connection with focus phenomena (such as, e.g., the question of how many types of focus must be recognized, and what interpretations focused constituents are associated with), all theories of focus I am familiar with assign semantic interpretations formulated in terms of some notion of contrast to at least some kinds of focused constituents.

3.5.2 Types of focus

Semantically, two types of focus are recognized in recent linguistic and logical theories, which we may call, following Ruzsa (1988–89:584–87), strong, or contrastive, and weak, or informational, focus. If focus is understood semantically as an identificational operator, contrastive focus may be defined as exhaustive listing, exhaustive identification, or exclusive identification, and weak focus may be interpreted as nonexhaustive identification (cf. É. Kiss 1987, 1992, 1996, É. Kiss and Szabolcsi 1992, Szabolcsi 1980, 1985, Kenesei 1983 (quoted in É. Kiss 1987:40, 97), Kenesei 1989, Ruzsa 1988–89, and Huck and Na 1990).

3.5.3 Contrastive focus

In what appears to be emerging as a consensus on the interpretation of the most conspicuous type of focus, contrastive focus (CF) expresses the exhaustive or exclusive identification of a subset of entities in a relevant set that the focused expression introduces.[13] It is easiest to illustrate the phenomenon on Hungarian material, since the contrastive focus

[13] For a detailed discussion of the role of focusing as a device that introduces a set of alternatives see Rooth 1985 and 1992.

interpretation of an expression is syntactically transparent in this language, because a constituent expressing exhaustive identification must obligatorily move to preverbal position in Hungarian (cf. (281a) below). A constituent that is assigned a CF interpretation does not have to move in English, it may remain in situ (cf. (281b) below). However, the contrastive interpretation may be made transparent in English by clefting, that is, by paraphrasing the sentence so that the focused expression is the predicate of a superordinate clause (cf. (281c) below).[14]

(281) a. János EGY KABÁTOT lopott el.
b. John stole A COAT.
c. It was a coat that John stole.

3.5.4 Informational focus

Weak or informational focus (IF), on the other hand, represented in italics in the examples that follow, does not express exhaustive identification. It is similar in this respect to the contrastive topic (CT),[15] which also expresses nonexhaustive identification of the subset of a set of entities that the expression in CT position introduces.

(282) a. János ellopott *egy kabátot*. (IF)
b. John stole *a coat*. (IF)
c. *It was *a coat* that John stole. (on the intended IF reading)

(283) a. [$_{CT}$ *János*], (az) ELLOPOTT EGY KABÁTOT.
b. 'As for John, he stole a coat.'

The asterisk on (282c) above indicates that it is not synonymous with (282a), that is, it is ungrammatical on the intended reading (cf. É. Kiss 1996:6).

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[14] Following accepted practice, the focused constituents will be represented by capitalization throughout.

[15] Kenesei (1989) proposes to replace the term 'contrastive topic' with the term 'contrafocus', as, he cogently argues, the latter more appropriately reflects the many properties that such constituents share with the focus. Although I recognize his arguments, for expository purposes I will stick here to the original, and perhaps more conservative, term.

Terminology is somewhat misleading here. In most theories of focus, 'contrastive' in the term 'contrastive focus' means that the focus introduces a set and exhaustively identifies a subset of that set. Exhaustive identification implies the negation of the property expressed by the remainder of the sentence for the elements in the complement set.

But 'contrastive' in the term 'contrastive topic' does not mean this. A CT also introduces a relevant set, and it also identifies a subset of that relevant set, but a CT identifies the subset of the relevant set nonexhaustively, that is, without the implication that the property expressed by the remainder of the sentence is negated for all the elements in the complement set.

Furthermore, it has also been pointed out that even an expression in CF position does not always express exhaustive identification (cf. Ruzsa 1989, É. Kiss 1992, and Szabolcsi 1992). Kenesei (1989) argues, contra Szabolcsi (1980, 1985), that it never does. On his hypothesis, the function of the CF is to exclusively identify the subset of a relevant set (cf. (284a-b) below, where *JÁNOS/John* may only be associated with exclusive, but not exhaustive, identification).

(284) a. [$_{FP}$ JÁNOS] kapta a könyvet.
b. 'It was John who got the book.'

It appears, then, that the CT is not contrastive in a way the CF is; that is, what is contrastive about the CT is not that it exhaustively identifies a subset of a relevant set. Furthermore, even a CF is not always contrastive (in the conventional technical sense that it exhaustively identifies a subset of a relevant set it evokes).

In É. Kiss 1996, the defining feature of contrastivity is the closed nature of the set that is introduced. So what is contrastive about a CF in her theory is that it introduces a closed set. An important consequence of this hypothesis is that exhaustivity of identification of a subset of a relevant set is independent of contrastivity: an expression in CF position may express exhaustive identification without expressing contrast. This happens when the set that the expression in focus introduces is an open set. This is the case, she argues, in (285) below, where *Tolsztoj* introduces an open set of writers (ibid., 16).

(285) a. A Háború és békét [$_{FP}$ TOLSZTOJ írta]
b. 'It was Tolstoy who wrote *War and Peace*.'

However, the focus interpretations proposed by Szabolcsi (1980, 1985), Ruzsa (1989), and É. Kiss and Szabolcsi (1992) seem to suggest otherwise. In their theories, the defining feature of contrastivity is exhaustiveness of identification of a subset of a relevant set. On this interpretation, what is contrastive about the contrastive focus is that it exhaustively identifies a subset of individuals in the relevant set introduced by the expression in focus, without the requirement that the relevant set be a closed set. Contrastivity is possible in any set, even in an open set.

Let us consider the interpretation of the CT once more. Neither class of hypotheses discussed above seems to require either of the defining features of CF for CT. The CT nonexhaustively identifies a subset of a closed or open relevant set.

These considerations suggest that neither exhaustiveness of identification, nor the requirement that the relevant set introduced be a closed set is inherent to the notion of contrast in the interpretation of linguistic expressions that are in some sense contrastive. In principle, the notion of contrastivity may be made independent both of the exhaustivity of identification and of the closed nature of the set that is introduced by an expression that receives contrastive interpretation. For the contrastive reading of an expression, we need not require either that it introduce a closed set, or that it exhaustively identify a subset of that set.

If the notion of contrastivity is exempted from both these criteria, then we will have found a new notion of contrast which can be applied uniformly and unproblematically in the characterization of both 'contrastive' constituents: the CT and the CF. All that is required for contrastivity on this interpretation is that a (closed or open) relevant set be introduced, and a subset of that set be identified (exhaustively or nonexhaustively).

Thus, there are two types of contrast: (a) that between the assertion of a property about a subset of individuals in a relevant (closed or open) set and the negation of the same property for all members in the complement set, and (b) contrast between the assertion of a property about a subset of entities in a relevant (closed or open) set and absence of this assertion with respect to other members of the relevant set (without the implication that the property is negated for the elements in the complement set). We may call the first type of contrast 'strong', and the second type of contrast 'weak'. I will henceforth apply the notion of contrast in this weak sense.

What I wish to point out, finally, is that the recognition of these functions of focus lends empirical support to the hypothesis about implied contrasts I am developing. I will now turn to the task of determining whether

or not there is any further empirical evidence in English that implied contrasts are systematically expressed in grammar.

It appears that focusing is not the only device in language for the expression of implied contrasts. The tendency to express implied contrasts is also characteristic of certain grammatical categories and structures that express specific contrasts *by virtue of their grammatical properties*. Czeglédi (1994) provides independent empirical evidence from the behavior of adverbials in English that shows that different syntactic and semantic subclasses of adverbials are systematically associated with specific contrastive implications. This confirms the general hypothesis that certain grammatical categories are associated with specific implications, thereby contributing systematically to the focus—presupposition structure of sentences, which may be represented in terms of contrastive identification at the level of Conceptual Structure.

3.6 Contrastive implications of place adverbials

Quirk et al. (1985:480–81) observe a very interesting systematic contrast between the position adverbial and other adverbials in how they contribute to the meaning of sentences. They note that "sentences which superficially differ only in so far as one has a position adverbial and the other a direction, goal, or source adverbial . . . involve a considerable difference in the meaning of the verb concerned, triggered by the different prepositions," which may be observed in examples like the following:

(286) He is travelling in Yorkshire.
(287) He is travelling to Leeds (*or* from Halifax)." (The original numbers are [1] and [2], respectively, cf. ibid.)

Even more interesting from the present perspective is the observation that "sentence (286) [1] seems to give equal weight to what he is doing (travelling) and where he is doing it (in Yorkshire), whereas sentence (287) [2] seems to give weight only to the direction: 'Where is he travelling to/from?' 'Where is he going (to)?' 'Where is he coming from?' This is confirmed both by the plausibility of the paraphrases (*go, come*) and by the absence of an acceptable question" (ibid., 481):

(288) * What is he doing from Halifax? Travelling?
(289) What is he doing in Yorkshire? Travelling?

This means in terms of the implicit contrasts expressed that an important aspect of the meaning of (286) is the contrast implied between 'is travelling in Yorkshire', or probably more accurately 'travel in Yorkshire', on the one hand and 'doing/do something else' on the other, that is, some or any other activity he might be engaged in. By the same token, an important aspect of the meaning of (287) is the contrast implied between 'to Leeds/from Halifax' and some or any other place he could be traveling to/from. Thus, the position adverbial seems to be special among place adverbials in that it signals a different implicit set: the goal or source adverbial in (287) appears to evoke an implicit set of goals or sources, with the agent and activity expressed in the sentence being kept constant, whereas the position adverbial in (286) does not appear to signal an implicit set of possible positions but a set of activities (with or without the position being kept constant). It is significant in this respect that the activity cannot even be elicited in (287) by a question keeping the agent and the place constant (cf. the ungrammaticality of the question in (288) above), but it can in (286), with or without the place kept constant (cf. the grammatical question in (289)).

The implied contrasts expressed in (286) and (287) above can be made explicit by spelling out one or more members of the relevant sets evoked by the adverbials something like this:

(290) He is traveling in Yorkshire (as opposed to sleeping at home; lying in hospital (in Yorkshire); etc.)

(291) He is traveling to Leeds (*or* from Halifax) (as opposed to Manchester; etc.)

3.7 Contrastive implications of sentence adjuncts and VP adjuncts

Quite surprisingly, one might say, the grammar of adverbials furnishes us with additional relevant evidence. Quirk et al. (1985:519) observe that if two spatial adjuncts of the same semantic class co-occur in a clause but at different levels of syntactic structure, so that one is a sentence adjunct, the other a predication adjunct, then the predication adjunct will be more prominent than the sentence adjunct, the latter expressing information which is understood as relatively given. For example, of the two position adjuncts in

(292) Many people eat in restaurants in London. (ibid., 519)

the sentence adjunct may be expressed with a closed-class adverb "indicating that it is relatively 'given'," and when this happens, that is a closed-class adverb occurs as sentence adjunct, the order of adjuncts may be reversed (ibid., 519), as in:

(293) Many people eat here/there in restaurants.

The point here is that if both sentence and predication adjunct of the same semantic class are present in a clause, the former tends to be understood as 'given' relative to the predication adjunct, and the latter evokes a set of similar conditions with which itself is implicitly contrasted, while the rest of the components of meaning expressed in the sentence, including the contribution of the sentence adjunct, are kept constant. This implicit contrast may be spelled out like this:

(294) Many people eat in restaurants in London. vs. 'Many people eat at home in London'/etc.

This is confirmed by Quirk et al.'s (1985:519–20) observation that only the sentence adjunct can be fronted:

(295) a. In London, many people eat in restaurants.
b. *In restaurants, many people eat in London.

These facts show that certain classes of adverbials differ systematically as to what kind of implicational sets they trigger in sentences and thus they provide independent evidence from an area of English grammar totally unrelated to nonfinite sentence embedding which supports the general hypothesis that certain types of implied contrasts *are* systematically expressed in English by specific grammatical devices and that the indication of particular types of implied contrasts *is* an important aspect of both syntactic and semantic structure.

3.8 Interaction of adverbials and focusing

Further support for the hypothesis is derived from the observation of a regularity in the behavior of adverbials with respect to focusing. Sentence adverbials and focusing interact in interesting ways. As is now to be expected from the foregoing discussion, the action expressed in (286) can be

the focus of a quasi pseudo-cleft (with *do* proform), but a similar focusing of the action in (287) leads to ungrammaticality, cf.

(296) What he is doing in Yorkshire is traveling.
(297) * What he is doing to Leeds is traveling.

This shows that the position adverbial can be separated from the rest of the predication, so that it is the part of the meaning that is assumed to be given (cf. the correct quasi-pseudo-cleft (296) above), but the goal adverbial cannot (cf. (297)). The goal adverbial can be separated from the predication only if the predication (without the goal adverbial) is part of what is assumed as given, cf.

(298) Where he is traveling is to Yorkshire.

It seems to show, again, that goal adverbials highlight themselves in implicit contrasts with other goal adverbials, but position adverbials seem to highlight the activity (with or without the position assumed as given).

4 THE CONTRASTIVE CHARACTER OF INFINITIVES AND GERUNDS

4.1 Introduction

I will now turn to the task of exploring how the general theory of implicit interpropositional contrasts outlined in the previous chapter may be further developed and exploited in an account for the distribution and semantics of English infinitival and gerundive complements. We will be interested to see how the proposed implicational generalizations that were formulated in the previous chapter may be extended to nonfinite sentential complements.

In addition to offering an explanation for some notoriously inexplicable phenomena in nonfinite complement selection, I will also point to some parallels between the semantics of focusing and the semantics of complementation, thereby relating the two apparently unrelated phenomena in a unified account, which, I believe, lends considerable support to the plausibility of the specific hypothesis that will be developed in the sections that follow. The hypothesis that I will present and explore in some detail in this chapter offers a framework in which we can describe some hitherto unexplored aspects of the contribution of infinitives and gerunds to sentence meaning. Specifically, I will show, for example, that the distribution and semantics of nonfinite complements interact with focus phenomena and the presuppositional structure of English sentences.

The specific form the general hypothesis will now take is that infinitival and gerundive complement clauses differ as to what kind of implicit contrasts they express.

4.2 Implicit contrasts expressed by infinitives and gerunds

The implicational generalizations and principles that we formulated in Chapter 3 extend easily to infinitival and gerundive complementation. If two otherwise identical sentences differ in that one has an infinitival complement and the other a gerundive complement, then the two sentences will correspond to different semantic interpretations that represent the difference in contrastive implications associated with the respective complements, because infinitives and gerunds evoke different relevant sets. In the sentence with an infinitival complement, the complement will evoke a doubleton set of operators that assert or deny the proposition expressed in the sentence, and the sentence will identify one or the other of these operators, or,

alternatively, it will evoke a doubleton set of propositions which count as opposites of each other in the relevant sense that the identification of one is equivalent precisely to the exclusion or denial of the other. In either case, what is remarkable in general about an infinitive is that it keeps the semantic representations that correspond to the matrix subject and the complement clause constant for the interpretation of the sentence. Briefly, infinitival complements trigger implicit contrasts between the proposition expressed in the matrix clause and its negation or opposite.

In intuitive terms, this suggests that sentences with infinitival complements are interpreted as though they were answers to Yes-No questions, which invariably imply a contrast with their implicit negatives, which is the reason that a Yes-No question can always be converted into an alternative question by spelling out its implied negation (cf. Quirk et al. 1985:239). It is not surprising, therefore, that the semantic representation of sentences with infinitival complements will indeed share the similarities just discussed with the semantic representation of Yes-No questions, formulated in similar terms by Huck and Na (1990:59).

By way of an illustration of the ideas just proposed, the contrast implied by (299a) can be spelled out as (299b).

(299) a. John likes to sing.
b. John likes to sing *vs.* John doesn't like/hates to sing.

It appears then that, in the unmarked case, infinitival complements render the meaning of the matrix verb more prominent than that of the complement clause while gerundive clause complements seem to serve to highlight the embedded activity or event in a way similar in effect to focusing.

A gerundive complement evokes a relevant set of eventualities in which the eventuality described in the complement is identified, thus contrasting it with other eventualities in the relevant set. Gerundive complements are also different from infinitives in that they keep the event or state expressed by the matrix verb and the entity denoted by the matrix subject constant for the interpretation of the sentence. Thus, the contrast implied in (300a) may be spelled out as (300b).

(300) a. John likes singing.
b. John likes singing as opposed to jogging/drawing/etc.

Summarizing, it appears that the opposition between infinitival and gerundive complements is a device in English for signaling which constitu-

ent of the sentence receives a contrastive interpretation in the unmarked case. Infinitives render the interpretation of the matrix verb contrastive (keeping basically everything else in the sentence constant), while gerundive clause complements are themselves carriers of contrastive interpretation with respect to the eventuality they identify.

Having outlined the general principles on which the hypothesis is based, in the sections that follow I will turn to the discussion of some arguments in its favor, and make some refinements as we proceed. Most of the arguments that will be presented are empirical in nature, since they derive from observations that suggest that infinitives and gerunds occur in different syntactic and semantic environments, and they react differently to certain operations on sentences.

4.3 Clefting and pseudo-clefting

Given that gerunds are themselves carriers of contrast with eventualities in the relevant set they evoke, and that infinitives render the reading of the matrix verb contrastive, the hypothesis predicts that gerunds can but infinitives cannot easily occur in the focus of a cleft sentence. This prediction is borne out, thus lending empirical support to the hypothesis (cf. also Chierchia 1984:414).

(301) a. *It is to write papers that Mary likes and John hates.
b. It is writing papers that Mary likes and John hates.

In Czeglédi 1994 I incorrectly claimed that gerunds are in general barred from the focus of pseudo-clefts in sentences like (302b). Now I realize that infinitives and gerunds are equally acceptable in the focus of a pseudo-cleft. In fact, one of my informants reported that she preferred (302b) with the gerund in focus to (302a) with the infinitive in focus. Acceptability judgments seem to vary here more than I previously suspected. Therefore the asterisk is now removed from (302b).

(302) a. What Mary wants is to write papers.
b. What Mary likes is writing papers.

What remains for us to explain is why infinitives but not gerunds are barred from the focus of clefts. The reasons for this restriction are still not quite clear. The chief obstacle to a better understanding of the principles that constrain the occurrence of infinitives in the focus of clefts is that we

still know very little about the semantics of clefts and pseudo-clefts in general. Although the relevant facts are still poorly understood, and the evidence is far from being conclusive, some observed differences between clefting and pseudo-clefting may suggest the lines along which a tentative explanation could be formulated. It may be, for instance, that the distributional restrictions can be accounted for in terms of the difference in surface linear structure between clefts and pseudo-clefts. This is precisely what Hedberg essentially (1990) proposes.

Hedberg (1990) suspects that the constraints on the mutual substitutability of constituents in the focus of clefts and pseudo-clefts is perhaps related to the difference in linear order between the two constructions. What she calls the clefted constituent (the complement clauses *to write/writing papers* in (301) above) precedes what she calls the cleft clause in clefts (the relative clause *that Mary likes and John hates* in (301)), but the relative order of these constituents is the reverse in pseudo-clefts (the relative clauses *What Mary likes* and *What Mary wants* precede the focused nonfinite complements in the pseudo-clefts in (302) above).

She notes that Predicate NPs and adjectival predicates are more easily pseudo-clefted than clefted (cf. Hedberg 1990:84):

(303) a. What John is is the football coach.
b. ??It's the football coach that John is.

(304) a. What John is is happy.
b. ??It's happy that John is.

The reasons that such predicative expressions are in general excluded from the focus of a cleft sentence but allowed in the focus of a pseudo-cleft are twofold, as Hedberg suggests. On the one hand, by the Referentiality Condition (or Predicate Constraint, cf. Hedberg 1990:86ff) the focus of a cleft sentence must be a referential (as opposed to predicative) expression, and, on the other hand, the Given before New principle may be violated, in fact overridden by the First Things First principle,[1] only if the sentence topic is activated.[2]

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[1] The First Things First Principle requires that the 'most important' information must precede the 'less important' information. For more details see Hedberg 1990:38ff.

[2] The meaning of an expression is activated if it has already been introduced earlier in the discourse and is still in the foreground of the hearer's discourse representation.

Hedberg (1990:85) observes, quoting Gundel (1977) and Halvorsen (1978), that what she calls "negative polarity items" and "quantificational expressions" are more acceptable in pseudo-clefts than in clefts, cf.

(305) a. What we don't need is any eggs.
b. *It's any eggs that we don't need.

(306) a. What John couldn't find was any problems to put on his midterm exam.
b. *It was any problems to put on his midterm exam that John couldn't find.

(307) a. What your generalization proves is precisely nothing.
b. ?It's precisely nothing that your generalization proves.

Furthermore, she argues that the inverted pseudo-clefts (see (308) below) that correspond to the (a) examples in (305–307) above "seem neither better nor worse than their cleft counterparts," which must mean, of course, that these inverted pseudo-clefts are worse than their noninverted pseudo-cleft counterparts. She concludes form these observations that "the difference in relative order of clefted constituent and cleft clause is responsible for the divergence, rather than some inherent difference between clefts and (inverted or non-inverted) pseudo-clefts" (cf. Hedberg 1990:85).

(308) a. Any eggs is what we don't need.
b. Any problems to put on his midterm exam was what John couldn't find.
c. Precisely nothing is what your generalization proves. (cf. ibid., 86)

A similar solution is proposed by McCawley (1988). The clefted constituent is final in pseudo-clefts, but it is medial in clefts. The relative clause, on the other hand, is initial in pseudo-clefts and final in clefts.[3] On

[3] The discussion here is restricted to what Collins (1991) calls basic pseudo-clefts such as

(i) What Tom offered Sue was a sherry

and ordinary clefts such as

(ii) It was a sherry that Tom offered Sue.

McCawley's (1988:61) hypothesis clefting is subject to a general "internal S constraint" which pseudo-clefts satisfy but clefts do not.[4] Such a constraint restricts the occurrence of a clause in the focus of a cleft, where it occupies sentence-medial position, but not in a pseudo-cleft, where it is in sentence-final position. This constraint would correctly account for the ungrammaticality of the (a) examples and the grammaticality of the (b) examples in the following sentences, which exemplify complementation by a finite *that*-clause and an infinitival clause (cf. McCawley 1988:60, 61).

(309) a. ??It's that he wants to quit school that Fred told us.
b. What Fred told us is that he wants to quit school.

(310) a. ??It's to submit her manuscript to *Fortune* that Alice intends.
b. What Alice intends is to submit her manuscript to *Fortune*.

(311) a. *It's for people to play radios on buses that I hate.
b. What I hate is for people to play radios on buses.

Although McCawley admits that the constraint must be formulated more accurately so that it does not exclude gerundive clauses form the focus of clefts, like in the following example,

(312) It was John's insulting Mary that offended Roger the most. (McCawley 1988:73, n. 6)

he does not offer a modification that would accommodate the grammaticality of (312).

Some further relevant and quite interesting differences between clefts and pseudo-clefts include the following. Pseudo-clefts are good discourse-openers, clefts are not. Cf.

I will not be concerned with any other type of clefts or pseudo-clefts, such as, for example, reversed pseudo-clefts like

(iii) That's what Tom offered Sue.

[4] The fact that clauses occur in the focus of pseudo-clefts but may not be the complement in clefts is confirmed by Collins' (1991) corpus-based findings, although he formulates no rule to account for this regularity.

(313) a. What I'm looking for is a present suitable for a 6-year-old.
b. ?It's a present suitable for a 6-year-old that I'm looking for. (Cf. Collins 1991:100.)

One can use (313a) to initiate an exchange in a store but (313b) does not qualify as such, which is what is indicated by "?" in the example rather than grammatical unacceptability. Similarly, (314a) sounds good as an introductory remark to begin a lecture but (314b) does not.

(314) a. What I would like to talk about today is conversational implicature.
b. ?It's conversational implicature that I would like to talk about today. (Cf. Gundel 1985:97–98, quoted in Collins 1991:104)

Not unrelated to the property of their being appropriate discourse openers is the following feature of pseudo-clefts, in contrast to clefts: the relative clause of pseudo-clefts typically contains some new information; the relative clause of clefts contains entirely given information or information recoverable from the situational or linguistic context (sometimes distinguished as context and cotext, respectively). Consider the following example which specifically illustrates the point.

(315) a. A: How am I going to get this spot out of the rug?
b. B: What my mother uses is vinegar.
c. ?It's vinegar that my mother always uses.

As Collins (1991:102) points out, two items are not recoverable in speaker B's response in (315b): *my mother* and *always*. These two items carry new information here.

The fact that the relative clause of pseudo-clefts typically contains some new information is confirmed by Huddleston (1984). If we assume, with Huddleston, that (316) is said "after some energetic exercise," only (316a) but not (316b) is an appropriate utterance precisely because of the feature of the pseudo-cleft that its relative clause contains the desirable amount of new information. As Huddleston (1984:466) puts it, "that I need something is not given in the sense of having been mentioned or established," and "I would be unlikely to say *It's a long cool drink that I need* if it were not given that I need something."

(316) a. What I need now is a long cool drink.
b. It's a long cool drink that I need.

In general, the cleft is inappropriate in situations where the relative clause is supposed to contain information that is not entirely given or recoverable, and where the relative clause has the function of backgrounding the focus. This partially explains why a pseudo-cleft is preferred in such contexts: the relative clause in a pseudo-cleft is initial (theme), and contains some new information, which backgrounds and leads in crescendo fashion to the focus.

A further property of pseudo-clefts observed by Collins (1991), and one which is very relevant to the present discussion, is that pseudo-clefts typically contain at least two tone units, the relative clause being one, the focus of the pseudo-cleft being the other, which implies, importantly, that the relative clause of pseudo-clefts will normally contain a prosodic nucleus. Moreover, this prosodic nucleus of the relative is typically "mildly contrastive" (cf. Collins 1991:118). A typical cleft, on the other hand, will normally constitute a single tone unit with the prosodic nucleus represented by the focal item in its syntactic focus. Consider the following example, where capitalization indicates prosodic nuclei.

(317) a. A: Do you LIKE Latin?
B: Yes I DO quite.
b. What APPEALS to me about it is that you have a long string of ENGLISH that you make into about THREE well thought out WORDS. (Cf. Collins 1991:120.)

These distinctive prosodic properties of pseudo-clefts and clefts are consistent with the predominant tendency that "material in the relative clause of the pseudo-cleft is rarely directly retrievable from prior co-text," but "material in the relative clause of the cleft *is* generally directly retrievable . . ." (cf. Collins 1991:109).

Finally, we may observe that pseudo-clefts commonly take finite clauses as focus, but this is very uncommon with clefts, and that infinitival clauses may occur in the focus of pseudo-clefts relatively freely, but they cannot be clefted even with a *do* pro-form. Consider the following examples (cf. Collins 1991:128).

(318) a. What happened was that Tom fainted in the heat.
b. *It was that Tom fainted in the heat that happened.

(319) a. What I was trying to do was to draw a line through there.
b. *It was to draw a line through there that I was trying to do.

Let us summarize the main differences between pseudo-clefts and clefts.

(320) Main differences between pseudo-clefts and clefts

	Pseudo-clefts	**Clefts**
a.	Focus is final.	Focus is medial.
b.	Relative clause is initial.	Relative clause is final.
c.	Satisfies Internal S Constraint.	Does not satisfy Internal S Constraint.
d.	Appropriate as discourse-opener.	Inappropriate as discourse-opener.
e.	Relative clause contains some new information.	Relative clause contains entirely presupposed information.
f.	Relative clause is separate tone unit and contains a prosodic nucleus.	Relative clause is not separate tone unit and does not contain prosodic nucleus.
g.	Finite or infinitival clause is common in focus.	Finite or infinitival clause is exceptional as focus.

The foregoing discussion shows that these properties are interrelated in interesting ways. Note especially properties e. and f. Let us paraphrase these properties in terms of the theory of implicit contrasts. It appears, then, that the principal difference between pseudo-clefts and clefts is that the relative (or cleft) clause of the former contains nonfixed (or contrastive) constituents, but the relative clause of clefts is entirely fixed (cf. also section 3.3). A gerund fixes everything else in the sentence (cf. also section 4.2), which is precisely what the focus of a cleft sentence does, so the occurrence of gerunds in this position is expected. Infinitives, on the other hand, occur in the context of contrastive (nonfixed) constituents. The relative clause of a pseudo-cleft, as we have seen, typically contains contrastive constituents, so

the occurrence of an infinitive as focus is again expected. This is consistent with the tendency that infinitives are in general noncontrastive constituents. Secondly, this also explains why pseudo-clefts are more uncertain (in the now familiar sense) than clefts, which are not uncertain (cf., for instance, the discourse-opening function of pseudo-clefts above).

4.3.1 Specificational and predicational clefts and pseudo-clefts

Hedberg (1990) recognizes a distinction between the "specificational" and the "predicational" readings of an expression in the focus of clefts as well as pseudo-clefts. She derives the distinction from what she argues is a parallel difference between the readings of predicates in copular sentences such as the following (cf. Hedberg 1990:56):[5]

(321) a. That woman is Mayor of Cambridge. (predicational)
b. That (woman) is the Mayor of Cambridge. (specificational)

Hedberg argues that many copular sentences and pseudo-clefts are systematically ambiguous as between a specificational reading and a predicational reading, but in fact she fails to prove her point about pseudo-clefts.

For concreteness, she argues, for instance, that both examples in (322) below are pseudo-clefts, and that (a) is specificational, and (b) is predicational.

(322) a. What John$_i$ is is a nuisance to himself$_i$.
b. What John$_i$ is is a nuisance to him$_i$.

At first sight, it might seem appropriate to characterize (322a) as specificational and (322b) as predicational. On these readings, (322a) would seem to mean (roughly) that the entity 'a nuisance to himself' and the entity 'John' are identical with each other, and the meaning assigned to (322b) is (roughly) a characterization of 'whatever John is' by attributing to it the property 'a nuisance'. On closer inspection, however, it turns out that only

[5] Hedberg (1990) argues that clefts and pseudo-clefts are essentially copular in structure, i.e., that the verb *be* in clefts and pseudo-clefts is a copula and that cleft pronouns are referential. Whether this claim is tenable is irrelevant to our discussion at the moment.

the second interpretation is correct, and, furthermore, that in fact both examples are predicational. The appropriate interpretation of (322a) is not one on which two individuals are asserted to be identical, but a different one on which the property 'a nuisance to himself' is predicated of the individual 'John'.

The expression *a nuisance to him* is indeed predicational in (322b), but not because (322b) represents this special type of pseudo-cleft, but because the expression is simply the predicate in (322b). Contrary to Hedberg's claim that both (322a) and (322b) are pseudo-cleft sentences, the fact is that only (322a) is a pseudo-cleft sentence; (322b) is an example of an 'ordinary' copular structure with a ('free') relative clause as subject. This is shown by the fact that only (322a) but not (322b) is related in meaning to

(323) John is a nuisance to himself.

In order to appreciate the significance of this, notice that the only reading of (322b) that is relevant now is the reading on which *John* and *him* are coreferential. On this reading, however, (322b) cannot be related to anything like

(324) * John$_i$ is a nuisance to him$_i$.

since (324) is simply ungrammatical, violating Principle B of the Binding Theory (cf. Chomsky 1981, 1982, Haegeman 1991, and see p. 29 of this work). Pronominals are free in their binding domain, which means in this particular case that the pronoun *him* can only have disjoint reference. On the intended coreferential reading, the pronominal expression must be an anaphor, in this case a reflexive pronoun.

Hedberg (1990:89) claims that in principle both types of foci, that is, both the focus of a cleft and the focus of a pseudo-cleft allow either a specificational or a predicational reading. She concludes that there is nothing inherently specificational about the focus of a cleft sentence, and there is nothing inherently predicational about the focus of a pseudo-cleft, although she admits that in general clefts favor a specificational focus.

As we have seen, the data on which the claim concerning pseudo-clefts is based are dubious. In fact, the consideration of these data and Hedberg's arguments appear to support a conclusion that the typical reading of the foci of clefts is specificational and that (contrary to Hedberg's claims) the focus of a pseudo-cleft typically receives a predicational reading. If this is correct, it lends some support to the hypothesis developed in the present

work on the semantics of infinitives and gerunds. The tendency for clefts to favor a specificational reading for their foci is consistent with the contrastive interpretation associated with gerunds.

This conclusion is confirmed by Hedberg's Predicate Constraint, which excludes predicate NPs and APs from the focus of cleft sentences (cf. ibid., 86, 87):

(325) a. *It's the football coach that John is.
b. *It's very unhappy that John is.

Such predicative expressions, she observes (ibid., 89), occur more freely as foci of pseudo-clefts, cf.

(326) a. What John is is the football coach.
b. What Bill is is tall.

A further class of observations that supports the conclusion we have drawn concerns *th*-clefts. By a careful analysis of *th*-clefts Hedberg successfully shows that the focus of clefts, though not of pseudo-clefts, may be associated with either a specificational or a predicational reading. *Th*-cleft pronouns (such as demonstratives like *this, that, these, those*, and personal pronouns like *they, we*) have the significant, and in fact heuristic, feature that they are marked for number. What is heuristic about them is that number agreement, or lack thereof, between the cleft pronoun and the clefted constituent can be used to distinguish the predicational reading from the specificational reading of a clefted expression. On the predicational reading, the pronoun displays number agreement with the expression in focus; on the specificational reading, there is no number concord between the pronoun and the clefted expression. Thus, the invariant third person singular pronouns in the *th*-clefts below are indicative of a specificational reading of their foci (cf. Hedberg 1990:109):

(327) a. This is not language teaching problems that we're talking about.
b. This is Ford and Kissinger we're dealing with, not two boy scouts.
c. That was Mom and me that, and other people who laughed about 'glossy balls.'
d. That was two chicken dinners I ordered, not two shrimp boats.

On the predicational reading, on the other hand, the cleft (*th*-) pronoun will agree in number with the focus of the cleft, so if the latter is plural, so is the former (cf. Hedberg 1990:110):

(328) a. They're just fanatics who are holding him.
b. But these are students who are rioting.
c. Thus they have to be surface segments that they're talking about.
d. They were English hands that dragged him up to the tree of shame.
e. We are erstwhile friends and neighbors who are fighting with each other.
f. These aren't floor samples that you're saving on, but the best seats in the house.
g. These are serious charges that you're making.
h. Those are real eyeglasses that Mickey is wearing.
i. Those are my cigarettes you got there, buddy.

To summarize, the analysis of constraints (such as Hedberg's Predicate Constraint) on the sort of foci that clefts and pseudo-clefts may have, and a careful examination of the relevant data suggest that there are some regular differences between the semantics of clefts and pseudo-clefts. The focus of a pseudo-cleft is regularly associated with a predicational reading. The focus of a cleft sentence, on the other hand, typically receives a specificational reading, on which it identifies an entity (or a set of entities) thereby implicitly contrasting it with others in an implicit relevant set. Given that gerunds but not infinitives occur freely in the focus of clefts, these observations lend some empirical support to the hypothesis on the contrastive nature of gerunds, and, in addition, appear to shed some light on the mysterious restrictions that constrain the occurrence of nonfinites in the focus of cleft and pseudo-cleft sentences.

4.4 Coordination

Infinitival and gerundive complement clauses cannot be coordinated, as the following examples illustrate (cf. Quirk et al. 1985:947).

(329) a. *George likes going to the races and to bet on the horses.

b. George likes going to the races and betting on the horses.
c. George likes to go to the races and to bet on the horses.

This receives a principled explanation on the present hypothesis, since the coordinated nonfinite clauses are remarkably dissimilar in that the first (gerundive clause) is itself a carrier of contrastive interpretation, but the second (infinitival clause) is not. The first receives a contrastive interpretation: the eventuality it describes is contrasted with other potential eventualities in the relevant set it evokes, that is, other activities George may or may not like engaging in, but the second embedded conjoin triggers a contrast between the state denoted by the matrix predicate and its opposite or negation, keeping the activity described by the infinitival conjoin constant.

The unacceptability of (329a) is essentially of the same nature as the oddity of the following.

(330) a. ?George LOVES apples and hates BANANAS.
b. ?George loves APPLES and HATES bananas.
c. ?George BOUGHT a car and sold a HOUSE.
d. *George had wanted to BUY a car, but he sold A HOUSE.
e. *George had wanted to buy a CAR, but he SOLD a house.
f. *It was A CAR that George bought and he SOLD a house.

4.5 Nonfinite complements and their interaction with focus phenomena

This argument derives from an observation by Huck and Na (1990:57) that in sentences like (331a–b), where the two clauses correspond to identical interpretations except for the focused constituents, not only the "locus of difference in the second proposition correlates with the contrastive focus," as their theory of focus predicts, but the constituent in the first clause that corresponds to the locus of difference in the second clause "may be (anticipatorily) focussed as well."

(331) a. I had wanted to WALK to the store, but I ended up DRIVING.

b. ?I had wanted to walk to the store, but I ended up DRIVING.
c. *I had wanted to walk to THE STORE, but I ended up DRIVING.
d. *I had WANTED to walk to the store, but I ended up DRIVING.
e. I had wanted to go to the store, but eventually I went to THE BAR ON THE CORNER.

First notice that the complement in the first clause is infinitival, and that in the second it is gerundive. What is most interesting about the focus in the first clause in (331a) is not that it is possible but that it is obligatory, and that it must be a contrastive focus (CF). Observe that the sentence is ungrammatical without contrastive focus on the infinitive in the first clause (see 331b), and that it is markedly unacceptable with contrastive stress on something else (see 331c–d). Notice also that CF on *the store* (the locus of difference) in (331e) is optional, which is consistent both with the focus theory discussed in Huck and Na 1990 and with Quirk et al.'s (1985) observation, interpreted in terms of implicit contrasts, that Goal adverbials tend to be carriers of contrast with implicit Goals in the unmarked case (i.e., when they are not marked as CF).

The hypothesis being developed predicts that, in the unmarked case, *had wanted* in the first clause of (331b) is associated with a (weak) contrastive interpretation, and that this interpretation is incongruous with the reading of the second clause, in which the complement is a CF. In the second clause, it is the complement that receives a contrastive interpretation, and therefore calls for a reading of the first clause in which also the complement is contrastive. Since the complement in the first clause is not the informational focus, and since it must be the focus, because the second clause so requires (and since any constituent can be the CF in a sentence), the infinitival complement in the first clause must be the CF.

Notice, by contrast, that a similar obligatory CF requirement does not hold for gerundive complements (or for any other 'intrinsically' contrastive constituents, for that matter, such as Goal or Source adverbials, as we saw in (331e) above). All three sentences in (332) are grammatical.

(332) a. I had suggested going to the cinema but Mary suggested visiting her parents.
b. I had suggested going to the cinema but Mary suggested VISITING HER PARENTS.

c. I had suggested GOING TO THE CINEMA but Mary suggested VISITING HER PARENTS.

This account, in the context of the theory being developed, predicts that infinitival complements may be only contrastive foci. In other words, if an infinitival complement is the focus of a sentence, it is always the contrastive focus. The 'complementary' prediction is that gerundive complements may be informational as well as contrastive foci. These predictions are borne out by the facts, as we have seen above.

Apparent counterexamples to this prediction are question-answer pairs like the following.

(333) a. What do you want to do?
b. I want to go home.

In such sentences, the infinitive is obviously the focus. But this apparent difficulty dissolves if we observe, as Huck and Na (1990:57) do, that the focus of an answer to a WH-question is typically the CF, which is again consistent with our hypothesis, since it does not exclude infinitives from CF—on the contrary: under circumstances characterized above, it requires that the infinitive be the CF.

4.6 *Intend* in subject-control structures

Intend in subject-control structures may in general take either an infinitival or a gerundive complement (cf. (334a–b)). In (335b), however, it is the gerundive complement that is responsible for the marginal acceptability of the sentence. First consider the following examples:

(334) a. He had really intended to stay longer.
b. He had really intended staying longer.

Now consider the examples in (335), where the second clause in each is a subject-control structure, in which *intend* is supposed to take either an infinitival or a gerundive complement freely. Still, (335b) is inferior in acceptability to (335a).

(335) a. This is my job and I intend to do it.
b. ?This is my job and I intend doing it.

The gerundive complement is odd in (335b) because the contrastive interpretation associated with the gerund runs counter to the fact that the action expressed by the complement is presupposed information. The reasons that the nonfinite complement cannot be contrastive in (335) are fairly obvious. Notice, first, that the act of doing the job is introduced early on in the first conjoin by the definite predicate NP *my job*, which is suggestive of the act of doing the job simply because this is perhaps the most typical act associated with one's job. Second, the definite pronominal object NP in the embedded sentence anaphorically co-refers to the NP in the first clause. A complement with a phonetically null subject and a VP that consists of an implicitly anaphoric head and a grammatically anaphoric pronominal object cannot be the IF of a sentence. What receives contrastive interpretation in the second conjoin in (335) is the matrix predicate, which, therefore, takes a noncontrastive infinitival complement.

Consider also the following examples.

(336) a. He woke later than he had intended.
b. He woke later than he had intended to wake.
c. *He woke later than he had intended waking.

These are somewhat different in structure from (335), but they are very similar in meaning to (335), and the principles that accounted for the meaning and certain relevant aspects of the structure of (335) will automatically account for (336) as well. The most interesting fact about the examples in (336) is that (336c) is ungrammatical because the gerundive complement illegitimately occupies a position that is not a locus of contrast, but a position of a constituent whose interpretation is fixed. That this is so is evidenced by (336a), which shows that the complement may even be omitted.

As regards the examples in (334), both the gerund and the infinitive are grammatical, since there is nothing in the matrix clause that would suggest that either the matrix predicate or the complement clause should be the weak focus. The subtle difference in meaning between these sentences is precisely the difference in whether the matrix predicate or the complement receives greater information prominence: contrastive interpretation in (334b) is associated with the complement, whereas in (334a), the constituent that receives contrastive interpretation is the matrix predicate.

4.7 *Prefer*

The present hypothesis predicts that if there is a verb in English that expresses choice or selection from alternatives by virtue of its lexical meaning and allows either type of complement, it will take an infinitival clause complement if the sentence expresses contrast between the matrix proposition and its negation or opposite, and a gerundive complement when alternatives comparable to the eventuality expressed in the complement clause are contrasted (implicitly or explicitly). *Prefer* is a verb that has precisely these semantic and syntactic properties, and the predictions of the present hypothesis are perfectly borne out by its complements.[6] *Prefer*, meaning 'choose something rather than something else', 'choose one thing or action rather than another', 'like better', is an archetypal verb expressing choice and therefore implicit or explicit contrasts between alternatives. When it takes a gerundive complement (as in (337b) and (338b)), the sentence will express choice and contrast between two (or, implicitly, more) alternative eventualities described in the complement (cf. (337b) and (338b), respectively); when it takes an infinitival complement (as in (337a) and (338a)), the sentence will express a contrast between the proposition expressed in the matrix clause and its negation or opposite. Consider the following examples:

(337) a. She prefers to be alone.
b. I prefer singing to acting.

(338) a. Their father prefers them to be home early.
b. I prefer walking alone.

The following is an apparent counter-example, which, however, receives a principled explanation and therefore confirms rather than undermines the present hypothesis.

(339) There are those who prefer to suffer deprivation rather than claim legal aid.

Apparently, what is contrasted here is the two alternatives spelled out explicitly in the complement clauses on *prefer*, which would seem to require that the first clause be embedded in its gerundive form and not as an

[6] Another verb with very similar properties is *decide*. See section 4.12 for discussion.

infinitive. A careful examination of the meaning of the sentence reveals, however, that the second embedded clause, in fact, represents the opposite of the first. So what is actually contrasted here is a proposition with its negation or opposite. Therefore the occurrence of the infinitival complement is not exceptional or irregular in this sentence and similar sentences at all.

Eagleson's (1972) intuitive observations about some similar examples appear to confirm this, as well as the general conclusions about the nature of the difference in meaning expressed by infinitival and gerundive complements on *prefer*. Consider Eagleson's examples (1972:142):

(340) He preferred to act now rather than risk inflationary developments which would oblige him to act more severely later, with an inevitably deflationary effect.

(341) He preferred to watch the match on T.V. rather than go to the cricket ground.

Eagleson observes that "alternatives may be involved in both the *to*- and -*ing* patterns, but the alternatives are not of the same nature" (ibid.). He further claims that present "in all instances of this pattern" is "the firm implication that the alternative is not really seriously entertained by the subject. It amounts to selection from a set of oppositions rather than an indication of priorities" (ibid.).

Let us consider a slightly different example, which Eagleson borrows from Bladon (1968).

(342) Since we married my wife and I have preferred to live in our own house. (Eagleson 1972:142)

On Eagleson's reading, in (342) "the speaker is indicating that it is not really a matter of choosing between two—or more—pleasant, enjoyable possibilities. The construction implies rather . . . that while he and his wife have any control over circumstances they will always opt to live on their own, and it will only be an unwanted and unfortunate change in their fortunes that would compel them to do otherwise" (1972:142–43).

It is also interesting (and to me pleasing because they provide further support for my hypothesis) to consider Eagleson's comments on the meaning of gerundive complements on *prefer*. He observes that "the construction with -*ing* still quite definitely seems to preserve the element of choice . . . [and] there is also the strong implication that both items are

pleasing, that the subject is . . . stating his order of priorities . . .” (ibid., 143). On his reading, (343) below means typing is “not first favorite with the subject, or even high on his list of priorities” (ibid.).

(343) He much prefers writing to typing.

Let us now consider a further example, on which Eagleson criticizes Bladon for asserting that in such sentences “the *-ing* nominal . . . may also occur, but in free variation with *to-*, when the subject is conscious of an alternative item of preference without his formally expressing it” (Bladon 1968:208).

(344) a. Do you like playing tennis?
b. I prefer watching / to watch television. (Bladon 1968:208, and Eagleson 1972:143)

Eagleson agrees that “both forms are acceptable,” but claims that “they are not equivalent, not in free variation with each other. The *-ing* construction informs us that while the speaker has no objection to playing tennis . . . he derives more pleasure out of television. The construction with *to* however is far more decisive: tennis for all intents and purposes has been ruled out. It is the absence of a comparable alternative which is critical in the selection of this postverbal construction” (Eagleson 1972:143).

Eagleson concludes that *prefer* occurs with infinitival complements “when a decision has to be made between opposites” and it takes a gerundive complement when “it is a question of allocating priorities” (1972:143).

The interpretation of the above observations in terms of the present hypothesis is obvious. All I wish to point out finally is that these observations fall out as a consequence of the general principles of the theory that is being developed.

I will take this opportunity to review some of Bladon’s (1968) observations about infinitival and gerundive complements. He notes that traditional explanations of meaning contrasts between infinitives and gerunds formulated in terms of the particular vs. general dichotomy are untenable. They might apply to examples like

(345) But I didn’t like to tell her the details. (particular) (Bladon 1968:209)
(346) I don’t like being away from home. (general) (ibid.)

but they are "worthless," as Bladon (ibid.) puts it, in cases like

(347) Men never like to be thought cowards.
(348) I didn't like eating my first French meal.

Bladon proposes that matrix verbs of attitude (*like, love* and *hate*) take infinitival complements when the matrix verb expresses desire and that they take gerundive complements when they express enjoyment. This generalization is based on the claim that any of these matrix verbs may be replaced with *want* when they express desire and are followed by an infinitive, and that *enjoy* may be substituted when the verb expresses enjoyment and is followed by a gerund. The resulting sentence will always be synonymous, therefore the examples in the following pairs are interchangeable (cf. Bladon 1968:210).

(349) a. He always likes to have them polished.
b. He always wants to have them polished.

(350) a. She liked being told that it was a bad excuse.
b. She enjoyed being told that it was a bad excuse.

This is clearly an overgeneralization. One may, for instance, very easily like something to happen without actually wanting it to happen.

Finally, Bladon observes that matrix verbs may frequently take nuclear stress when they are followed by an infinitival complement, in examples like (1968:212-14):

(351) She LIKED to have breakfast in bed (. . . but such things were for women of leisure, she reflected).
(352) He HATES to go home by rail.
(353) He LIKES to go home by car.

Such instances, as Bladon (ibid.) observes, upset his system, because, in his interpretation, nuclear stress on the matrix verb leads to an 'enjoyment' reading, contrary to what his hypothesis predicts. On the present hypothesis, however, nuclear stress on a matrix verb that takes an infinitival complement is not unexpected at all, since the matrix verb is what could be called the informational focus of such sentences even in the unmarked case. Such examples, therefore, constitute regular instances of the contrastive interpretation of the matrix verb in the context of an infinitival

complement, which is made more prominent by nuclear stress. (Cf. also p. 84., where a similar phenomenon is observed with the aspectual matrix verb *start*.)

Finally, it is relevant and very instructive to consult the *Oxford English Dictionary* on the appropriate sense of *choose*, a synonym of *prefer*. As is clear from the quote below, a correlation between infinitival complements and a semantic shift in the meaning of sentences in terms of implicit contrasts has long been recognized intuitively.

> The notion of a choice between alternatives is often left in the background, and the sense is little more than an emphatic equivalent of, To will, to wish, to exercise one's own pleasure in regard to a matter in which one is a free agent. **a.** *esp.* with *infin.* To think fit, to be pleased (to do so and so). (Cf. OED, s.v. *choose*, p. 377.)

4.8 *Continue*

Although *continue* may in general take either an infinitive or a gerund as complement, it predominantly occurs with infinitival complements. However, as Newson (1997) points out, it most conveniently takes a gerundive complement when itself is infinitival, cf.

(354) a. I was determined to continue playing no matter how loud the audience jeered. (Newson 1997:5)
b. Are you going to continue gardening after dinner?

What is even more remarkable, verbs that otherwise occur exclusively with infinitival complements may also (sometimes marginally) take a gerund if the matrix clause in which the gerund is embedded is infinitival:[7]

(355) a. *He managed closing the shop by himself.
b. He was determined to manage closing the shop by himself.

(356) a. *They deserved winning every match.
b. There is no team good enough to deserve winning every match.

[7] Both the observation and these data (and my thanks for them) are due to Mark Newson (cf. Newson 1997).

(357) a. *He ventured touching the fierce dog.
b. He's not stupid enough to venture touching the fierce dog.

(358) a. *She expected failing the exam.
b. ?There is no one stupid enough to expect failing the exam.

These facts may be explained within the framework proposed in the present study, along the lines suggested to me by Mark Newson (cf. Newson 1997). Infinitival clauses are inherently noncontrastive. When *continue* is the main verb of such a clause (as in (354), its interpretation will be fixed (i.e., it becomes noncontrastive), and may take a contrastive gerundial complement. That this apparent irregularity is a fairly general phenomenon, is demonstrated by the (b) examples in (355–358) above, which invariably involve gerundive complementation of matrix verbs that otherwise select infinitives.

If the interaction of the contrastivity of matrix predicates and their nonfinite complements can switch the form of predicate and complement around in this direction in sentences involving *manage*-type predicates, one wonders whether the switch also works in the opposite direction: is it possible for a matrix verb that is known to exclusively select gerundive complements (e.g., *suggest*) to take an infinitive, if the implicit contrastive interpropositional meaning of the sentence so dictates (and if it is not completely alien to the lexical meaning of the matrix verb)? The answer is Yes. The discussion follows in section 4.9

4.9 *Suggest*

First consider the following contrast:

(359) a. *He suggested to take the children to the zoo.
b. He suggested taking the children to the zoo.

(359) represents the judgment of probably most (but, as we will see shortly, certainly not all) native speakers of English. One might conjecture that (359) could be given a reading on which the matrix proposition is contrasted with its negation and the complement receives a noncontrastive interpretation, characteristic of infinitival complements. This is, incidentally, probably the

reading many Hungarian learners of English tend to associate with *suggest*-sentences, and therefore even advanced students complement *suggest* with an infinitival clause in hundreds of instances, as any teacher of English in Hungary can testify. If it is an error, which it probably is, it does not seem to be the kind which is only committed occasionally by the innocent learner of English as a foreign language but one that is prone to interfere also with the language of educated (even professional) native speakers and writers of English such as James Joyce, as the reader can verify from the quotation in (360) below.

(360) Uncle Charles smoked such black twist that at last his nephew suggested to him to enjoy his morning smoke in a little outhouse at the end of the garden. (James Joyce: *A Portrait of the Artist As a Young Man.* Harmondsworth: Penguin, 1916, p. 60.)

The same is also documented in Chierchia (1984:300), where, unfortunately, it is not clear whether these are his own examples (and errors), in which case what we see is another instance of overgeneralization by an exceptionally competent user of English as a second language (since Chierchia, although his English is often impressively eloquent in style, does not probably qualify as a native speaker), or he cites authentic material.

(361) a. John suggested to Bill to decide to leave together.
b. John suggested to Bill to signal to leave together. (Cf. Chierchia 1984:300)

The following admittedly deviant but authentic anacoluthon with *suggest* complemented by an infinitival clause is attested by Mair (1990:143).

(362) Hilary Torrance suggested that a letter from the parents to be sent to County Hall putting forward the views regarding the cuts of 2 weeks and enrolment week for the 1984/85 session.

It is particularly interesting because, as he explains, a "lengthy and discontinuous" embedded subject "causes the writer to switch to a construction that is normal with frequently used and semantically related verbs of wishing such as *expect* or *want*" (Mair 1990:143).

Bolinger's collection of what he calls "instances of hole-filling" (1961b:376) contains the following, said by a ten-year-old native speaker:

(363) Mother suggested me to write.

Now consider the following examples, with symbols representing the acceptability judgments of twenty-two native speakers of American English:[8]

(364) a. *He suggested to take a nap.
b. *?He suggested to her to take a nap.
c. ??He suggested a letter to be sent to the parents.
d. ?He suggested for a letter to be sent to the parents.

The data are arranged in reverse order of acceptability, (364a) being the most unacceptable and (364d) the least unacceptable. It is perhaps interesting to note that only three of the informants rejected all four sentences as ungrammatical and ten of them found (364b) perfectly acceptable. Most interesting of all, however, are the data supplied by two of them, who sent back the following contrasts in addition to their responses to (364a–d):

(365) a. He suggested to take a nap if you feel tired.
b. ?He suggested taking a nap if you feel tired.

(366) a. He suggested to take a nap if you want to get rid of that cold.
b. *He suggested taking a nap if you want to get rid of that cold.

(367) a. ?*He suggested to take a nap as the best way to get rid of your cold.
b. He suggested taking a nap as the best way to get rid of your cold.

(368) a. *He suggested to take a nap as the best way of getting rid of a cold.
b. He suggested taking a nap as the best way of getting rid of a cold.

[8] I am most grateful to Anna Szabolcsi at UCLA for supplying me with these data.

First consider (365) and (366). On the most natural reading, the *suggest*-clause is contrastive, asserting that if the condition expressed in the *if*-clause obtains, then the action expressed in the complement is indeed recommended. Choice among alternatives comparable to the action in the complement is not implied. What *is* implied is the contrast between performing and not performing the action in the complement—two options, representing each other's opposites, the recommendation of the first of which is asserted in the matrix proposition. As expected, the infinitival complement is preferred, at least in the language of those speakers of English who are sensitive to this subtle difference in meaning, which these two speakers certainly are.

Now consider (367) and (368). The *as*-phrase in all four sentences clearly indicates that the action expressed in the complement is viewed as one of several alternatives. This is precisely the interpretation associated with gerundive complements. Therefore, as our hypothesis predicts, the gerundive complement occurs (cf. (367b) and (368b)), and it receives a contrastive interpretation. The data require no further comment.

I find it exciting that the theory of implicit contrasts developed in the present work offers a principled explanation even for the apparent irregularities discussed in this section and section 4.8

4.10 Emotive verbs

The emotive verbs *like, love, hate,* and *loathe* can each occur either with an infinitival or with a gerundive complement.[9] It is traditionally assumed that the infinitival complement on these verbs refers to a particular situation, while the gerund describes a 'general situation', to which the matrix verb describes the subject's attitude. Alternatively, it is often claimed, somewhat more loosely, that sentences with infinitival complements on these matrix verbs refer to a particular occasion, while with a gerundive complement they express general statements (cf., e.g., Schibsbye 1970, Zandvoort 1972, and Quirk et al. 1985; see also section 4.7).

Consider the following examples in sections 2.4.3, 2.5, and 4.7, repeated here for convenience:

(345) But I didn't like to tell her the details. (particular)

(346) I don't like being away from home. (general)

[9] See also the discussion of *prefer* in section 4.7 above.

(244) a. I hate the children to quarrel.
b. I hate the children quarrelling.

(347) Men never like to be thought cowards.

(348) I didn't like eating my first French meal.

(175) I like to read in bed but I don't like having meals in bed.

As Bladon (1968) observes, the particular vs. general distinction may account for the difference between (345) and (346), but because it does not seem to be able to cope with examples like (347) and (348), he rejects it (cf. section 4.7 above). As was pointed out in section 4.7, Bladon's 'desire' vs. 'enjoyment' hypothesis is equally untenable. The semantic differences between the pairs (345)–(346), (244a–b), (347)–(348), and between the two conjuncts in (175) can all be accounted for on the implicit contrastivity hypothesis proposed here.[10] The meaning of (175), for instance, could be spelled out something like this: 'As regards reading in bed, I like it, but of the things I could do in bed, having meals is one that I don't like doing.'

Furthermore, the general vs. particular distinction can be subsumed under the more abstract, hence truly more general, opposition between the contrastivity of gerunds and the noncontrastive character of infinitives proposed in the present work. The general vs. particular dichotomy can, in fact, be derived from the contrastive vs. noncontrastive opposition. What is 'particular' about the meaning of sentences like (244a) and (345) is that in the situations that they describe, the eventuality represented in the infinitival complement is fixed in the now familiar sense that it is not contrasted with comparable alternatives, and the proposition expressed in the matrix clause (implicitly contrasted with its opposite or negation) involves this single eventuality. Although the sense of the term 'general' is only too frequently left obscure in characterizations of the contribution of gerundive complements to sentence meaning, it is most probably intended to express that the event described in the complement clause (such as, e.g., the children quarreling in (244a) or having meals in bed in (175)) is to be understood as an instance of a class of events "in general" comparable to quarreling, having meals in bed, etc. That is to say that the event described by a

[10] For a more detailed discussion see section 4.7 above.

gerundive complement is understood in its relation to its 'classmates', which is the relation of (implied) contrast.

4.11 Verbs of effort

Verbs of effort include *try* and *attempt*, among others. Both can take infinitival as well as gerundive complements, though *attempt* is most commonly complemented by an infinitive. The difference between the meaning of the infinitive and the gerund as complements on these verbs is traditionally explained in terms of 'potentiality' vs. 'performance', 'failure' vs. 'success' (as in Bolinger 1968 and Quirk et al. 1985), relative temporal deixis (cf. Wierzbicka 1988, Duffley and Tremblay 1994), or some combination of modal, temporal and aspectual categories (cf. Dixon 1991).[11]

Akin to these accounts is one of the most popular assumptions concerning nonfinite complements on *try* formulated in Zandvoort (1972:27) thus: "*To try* takes a gerund when it means 'to make an experiment', 'to take up', an infinitive when it means 'to make an attempt'." He gives the following examples:

(369) a. Try to keep perfectly still for a moment.
b. To make a living, he had tried writing, painting, and various other things, but had failed in all.

It is fairly obvious how the explanation in terms of the 'attempt' vs. 'experiment' distinction is related to the hypothesis proposed here, and how the former can be derived from the latter. To experiment is, by definition, to perform an action as one of several options or alternatives. The example in (369b) actually *lists* two, and suggests "various other" options. To try doing any one of these is to pick one of a class of implicitly contrasted alternatives, which is precisely the contribution of the gerundive complement to the meaning of the sentence. In (369a), on the other hand, which has the 'attempt' meaning, the speaker requests that the hearer "keep still" not as one of several other options, but as one that is preferable to its opposite, which is precisely the characteristic implication of an infinitival complement. (See also the discussions surrounding (163) in section 2.4.2 and (243) in section 2.5)

[11] See section 2.4.2 for more discussion.

4.12 Infinitival and gerundive complements on prepositional verbs

The hypothesis of implicit contrasts can be extended to the opposition between infinitival and gerundive complements on prepositional verbs. As has already been noted (see p. 71), Wierzbicka (1988) has proposed that the occurrence of one or the other of the respective complement types on prepositional verbs is not arbitrary. Although her account in terms of the volitional meaning of infinitives and the possibility meaning of gerunds has been rejected, the intuitive idea has been incorporated in the theory of implicit contrasts, recognizing that the general claim, though not the specific account, was well motivated.

Consider the following examples with the matrix verb *decide*, which shares with *prefer* the semantic property of expressing choice from alternatives (see section 4.7).

(370) a. What was it that finally decided you to give up your job?
b. I decided on re-laying the lawn while Mary is away on vacation in Florida.

(371) a. I decided to go. (= (157a), p. 71)
b. I decided on going. (= (157b), p. 71)

When the decision involves choice from a set of alternative actions relevant to the action expressed by the complement clause (as in (370b) and (371b), *decide* takes a gerundive complement (embedded in a PP). On the other hand, when the eventuality expressed by the complement is taken as constant in the implicit contrastive interpropositional interpretation of the sentence, *decide* takes an infinitival complement (as in (370a) and (371a)).

Although it cannot be the purpose of this study to offer an exhaustive discussion of the complementation of prepositional verbs, it is perhaps appropriate here to refer to some interesting independent observations by Rudanko (1995), which can almost directly be incorporated in the present hypothesis.

Rudanko (1995) discusses, among others, the following examples:

(372) a. John aimed to clear a path through the thicket.
b. John aimed at clearing a path through the thicket.

(373) a. John labored/toiled/worked to clear a path through the thicket.

b. John labored/toiled/worked at clearing a path through the thicket.

Commenting on the meaning of these contrastive pairs of sentences, he observes that "to the extent that a difference can be made, the *at -ing* construction focuses on the ongoing activity of S_2 [the complement clause]." He specifically points out that in (373b) "the focus is on John being busy with, or engaged in, clearing a path through the thicket," and that the infinitive in (373a) "highlights John's intention and goal and the sense of his working towards his goal" (cf. Rudanko 1995:279). In our terms this means that the infinitival complement renders the meaning of the matrix clause contrastive, while the gerund highlights itself receiving a contrastive interpretation, fixing the representation of the matrix verb.

4.13 Contrastivity and categorial status

The hypothesis developed in the present work raises several questions. One of these concerns the correlation between the semantics of infinitives and gerunds and their syntactic category status. The question is whether this correlation is systematic.[12] Another question is whether there is indeed a one-to-one correspondence. A third question is whether the observed correlation has any explanatory value.

If infinitives are clauses and gerunds are noun phrases, the correlation is perfect: the noncontrastive constituents are clauses, and the contrastive constituents are noun phrases. If Abney's (1987) analysis of gerunds is correct, then all kinds of gerunds are noun phrases. If the noncontrastive character of clauses is their natural property, and if the contrastive character of noun phrases is an intrinsically nominal property, then the noncontrastive nature of infinitives and the contrastive nature of gerunds follows.

If, however, only Poss-*ing* gerunds are noun phrases, and Acc-*ing* gerunds are sentences, as I have analyzed them, then the correlation is not perfect, and the explanation is not as straightforward as that. The intrinsically contrastive character of Poss-*ing* gerunds seems unproblematic. In addition, they are the most 'nominal' of gerunds in that they occur in all NP positions, from some of which *that*-clauses, infinitival clauses, and even Acc-*ing* gerunds are barred. Their resistance to extraction also sets them

[12] The question may seem obvious, though it never occurred to me in this form. I am grateful to Mark Newson for pointing this out to me. The discussion that follows owes a lot in general to his observations in Newson 1997.

apart from the other complement types. Note also that Poss-*ing* gerunds, but not *that*-clauses, infinitival clauses or Acc-*ing* gerunds pattern with indirect questions, which are obviously clausal in structure, but, apparently, nominal in distribution. It appears, then, that of the nonfinite complements discussed here, infinitives and Acc-*ing* gerunds are equally clausal in constituent structure and different only in distribution, the latter being more nominal in this respect, and Poss-*ing* gerunds are the most nominal of all, both structurally and distributionally.[13]

Now consider the following examples (cf. Newson 1997):

(374) a. I prefer him to sing.
b. I prefer him singing.
c. I prefer his singing to his dancing.

(375) a. I recalled him to be bald, so it surprised me to see him with long hair.
b. I recalled him being bald, so it surprised me to see him with long hair.
c. I recalled his being bald, so I decided not to buy him shampoo for his birthday.

Newson reports that to him (374b) is synonymous with (374a) in that he assigns to both the same type of contrastive interpretation, on which either is contrasted with its negation. (Note also the likeness of (375b) to (375a) and the difference of both from (375c), representing the similarities and differences in the readings assigned.) Two different conclusions can be drawn from this: either the contrastive interpretation of Acc-*ing* gerunds is subject to contextual variation, in which case the claim about the contrastive character of gerunds (both Acc-*ing* and Poss-*ing*) made in the present work must be weakened, or the interpretation of Acc-*ing* gerunds is subject to dialectal, not contextual variation.

If Acc-*ing* gerunds (at least in certain contexts) can indeed be associated with the kind of contrastive interpretation typical of infinitives, then the analysis of Acc-*ing* gerunds as sentences seems supported, and the variation in interpretations must be explained by some other factors (not yet understood). In the second case, the vacillation can probably be attributed to

[13] See Chapter 1 for a detailed discussion of these properties.

the chameleon-like[14] nature of Acc-*ing* gerunds: they have all the essential (structural) properties of sentences, and share *almost* all their distributional properties with noun phrases. Evidence to dialectal variation in the treatment of nonfinite complements was provided in section 4.9, where we observed that *suggest* was variously classed by different speakers either with verbs like *enjoy*, which takes only gerunds, or with verbs like *prefer*, which may take either an infinitive or a gerund, depending on the sort of implicit contrastive interpretation assigned.

Since a completely satisfactory solution to the problems raised in this section is not yet available, they must be left for future research. One final note of a difference between the semantics of Acc-*ing* gerunds and Poss-*ing* gerunds may be in order, however, since it might play a role in tying up the loose ends.

Poss-*ing* gerunds, but not Acc-*ing* gerunds, are typically ambiguous (out of context) between a fact and a manner reading (as are *Ing-of* constructions and derived nominals). Acc-*ing* gerunds have a fact reading only. Consider the following examples (cf. Abney 1987:245):

(376) a. John's fixing the sink was surprising/skillful.
b. John fixing the sink was surprising/*skillful.

4.14 Summary and conclusions

The theory that has been developed in the present work not only provides a framework for a general characterization of the contribution of infinitives and gerunds to an interesting aspect of the meaning of sentences in which the matrix verb selects either type of nonfinite complement, but offers a new perspective in which matrix predicates can be viewed and subclassified in terms of the type of contrast they regularly induce.

Infinitival complements render the matrix verb contrastive. Certain verbs in English occur only with infinitival complements (e.g., *deserve, expect, refuse*, etc.). On the present hypothesis, such matrix verbs are associated with a (weak) contrastive interpretation. Let us call such matrix verbs *contrastive* verbs (CVs). On the other hand, there are matrix verbs that occur only with gerundive complements (e.g., *avoid, enjoy, suggest*, etc.). On the present hypothesis, such matrix verbs render their complements

[14] The expression is borrowed from Borgonovo (1994), who originally applied it to Poss-*ing* gerunds, which, I think, were more appropriately characterized by Abney (1987) as gryphons.

contrastive, while themselves are associated with a noncontrastive interpretation in the relevant sense. Let us call such matrix verbs *noncontrastive* verbs (NCVs). There are also verbs that take either type of complement (e.g., *intend* (in control structures), *prefer, try, regret*, *begin, start, continue*, etc.). Let us call such matrix verbs *contrastively unmarked* verbs (CUVs).

Infinitives are noncontrastive complements (NCCs) in that they are associated with noncontrastive interpretation, transferring contrast to the matrix verb. Gerunds, on the other hand, are contrastive complements (CCs) in that they are associated with contrastive interpretation. CVs take NCCs, and NCVs take CCs. CUVs, which may take either, will receive a noncontrastive interpretation with a CC, and will be associated with a contrastive interpretation with an NCC.

For the purposes of a synoptic illustration, I will re-present in more explicit notation a sample of the data that has been discussed, supplemented with some additional examples. Capitalization in the examples below will mark the elements that trigger the respective implicit contrasts described above. The meaning of constituents printed in lower case is kept constant for the interpretation of the sentences. Thus, the upper case–lower case contrast will be the typographical representation of the difference in the contribution of the respective constituents to the relevant aspect of the meaning of the sentences.[15]

The data are arranged in three groups: Group A contains sentences with matrix verbs that take either infinitival or gerundive complements; Group B comprises sentences whose matrix verbs allow infinitives but not gerunds; and Group C contains examples with matrix verbs that take gerundive complements but not infinitives.

Group A. Examples with matrix verbs for which the choice between infinitival and gerundive complementation is available: matrix CUVs, which may take either an infinitive or a gerund as complement.

(7) a. I FORCED John to do it.
b. I forced John into DOING IT.

(107) a. He FORCED them to sing.
b. He forced them into SINGING.

[15] Note that capitalization does not represent emphatic/nuclear stress in the examples that follow.

(156) a. Did you THINK to ask Brown?
b. Did you think of ASKING BROWN?

(157) a. I DECIDED to go.
b. I decided on GOING.

(159) a. I REGRET to ask Brown.
b. I regret ASKING BROWN.

(160) a. I REGRET to tell you that John stole it.
b. I regret TELLING YOU THAT JOHN STOLE IT.

(161) a. I FORGOT to go to the bank.
b. I forgot (about) GOING TO THE BANK.

(163) a. He TRIED to fry the mushrooms.
b. He tried FRYING the mushrooms.

(243) a. Sheila TRIED to bribe the jailor.
b. Sheila tried BRIBING THE JAILOR.

(369) a. TRY to keep perfectly still for a moment.
b. To make a living, he had tried WRITING, PAINTING, and various other things, but had failed in all.

(377) a. John BEGAN to peel the potatoes.
b. John began PEELING THE POTATOES.

(173) a. He STARTED to speak, but stopped because she objected.
b. He started SPEAKING, and kept on for more than an hour.

(215) She told him not to visit her anymore. At first he ignored her and CONTINUED to visit/?visiting anyway.

(216) The economy is terrible. Inflation is out of control and from all indications, things are going to CONTINUE to get/?getting worse.

(217) The band began to play at 9:00. They CONTINUED to play/?playing until 1 A.M. stopping for 5-minute breaks every half hour.

(218) I had hardly slept for two nights, but the excitement of the move plus my nervous energy kept me going. By the third day I BEGAN to feel/?feeling drugged and every time I sat down I STARTED to fall asleep/?falling asleep.

(244) a. I HATE the children to quarrel.
b. I hate THE CHILDREN QUARRELLING.

(335) a. This is my job and I INTEND to do it.
b. ?This is my job and I intend DOING IT.

(336) a. He woke later than he HAD INTENDED to wake.
b. *He woke later than he had intended WAKING.

(337) a. She PREFERS to be alone.
b. I prefer SINGING to ACTING.

(174) a. I LIKE to sing.
b. I like SINGING.

(175) I LIKE to read in bed but I don't like HAVING MEALS in bed.

Choice between infinitival and gerundive complement clauses is not available for the matrix verbs of the sentences in Groups B and C below. It appears that the ungrammaticality of the alternative patterns of complementation in these examples correlates with the fact that the interpretations formulated in terms of implicit contrasts associated with the alternative complementation types are rejected. Group B verbs are contrastive predicates that take noncontrastive complements; Group C verbs are noncontrastive predicates that take contrastive complements.

Group B: matrix CVs with noncontrastive infinitival complements

(12) She LONGED to be/*for being quiet.
(97) Mary EXPECTS John to fail/*failing the examination.
(119) I TOLD/ADVISED/PERSUADED Mark to see/*seeing a doctor.
(106) They BELIEVED him to be/*being a fool.
(222) John MANAGED to close/*closing the door.
(378) Mary TENDS to come/*coming late to lectures.
(379) John WANTS to go/*going to Paris.
(380) I WISH to eat/*eating alone.
(381) He VENTURED to touch /*touching the fierce dog and was bitten on the arm.
(382) She DESERVED to win/*winning because she was the best.
(383) Mary EXPECTS to fail/*failing the examination.

Group C: matrix NCVs with gerundive complements
(184) Ken kept *to talk/TALKING when Joan walked in.
(384) I enjoy *to sing/SINGING.
(385) She dreams *to become/of BECOMING AN ACTRESS.
(386) Bill imagined *to leave/LEAVING.
(387) We are considering *to go/GOING TO CANADA.
(359) He suggested *to take/TAKING THE CHILDREN TO THE ZOO.

4.15 Concluding remarks

In this work I have given a principled account of a considerable amount of the syntactic and semantic phenomena relating to nonfinite complementation in English. Some hitherto insufficiently explored basic aspects of sentence meaning have been captured and accounted for by a relatively small set of very simple and independently motivated principles.

The general principles that have been proposed may be incorporated in a theory of language in which the systematic contribution of certain kinds of syntactic constituents to the meaning of sentences can be accounted for in terms of differences in the type of contrast triggered by those constituents. On such a hypothesis, as has been shown, some ostensibly unrelated but apparently regular similarities in the semantics of focus phenomena, the

semantics of certain subclasses of adverbials, and the semantics of nonfinite complements can be explicitly characterized and given a principled explanation from which the similarities fall out as a consequence.

The last word has not yet been said on any of the issues discussed in the present work, and it probably never will. This should not necessarily be disappointing, however, given that the goal of science is not to settle issues for good but to continuously improve upon possible accounts. A few questions have been left open, and it is very likely that certain elements of the proposals that have been presented here will be refined and modified by future research. I believe, however, that the general assumptions and principles in terms of which the accounts in the present work have been formulated are basically correct and well motivated.

REFERENCES

Abney, Steven Paul (1987). The English Noun Phrase in Its Sentential Aspect. Doctoral dissertation, Massachusetts Institute of Technology.

Akmajian, Adrian (1977). The Complement Structure of Perception Verbs in an Autonomous Syntax Framework. In *Formal Syntax*, ed. Peter W. Culicover, Thomas Wasow, and Adrian Akmajian, 427–60. Orlando, Fla.: Academic Press.

Akmajian, Adrian, and Frank Heny (1975). *An Introduction to the Principles of Transformational Syntax.* Cambridge, Mass: MIT Press.

Andersson, Evert (1985). *On Verb Complementation in Written English.* Lund Studies in English 71. Malmö: Liber Förlag.

Austin, J. L. (1962). *How to Do Things with Words*. Oxford: Clarendon Press.

Austin, J. L. (1971). Performative—Constative. In Searle 1971:13–22.

Barwise, Jon (1981). Scenes and Other Situations. *Journal of Philosophy* 78:369–97.

Bladon, R. A. W. (1968). Selecting the *to-* or *-ing* Nominal after *like, love, hate, dislike* and *prefer*. *English Studies* 49:203–14.

Bolinger, Dwight (1961a). Contrastive Accent and Contrastive Stress. *Language* 37:83–96.

Bolinger, Dwight (1961b). Syntactic Blends and Other Matters. *Language* 37:366–81.

Bolinger, Dwight (1968). Entailment and the Meaning of Structures. *Glossa* 2:119–27.

Borgonovo, Claudia (1994). The Parametric Syntax of Gerunds. Doctoral dissertation, Brandeis University.

Bresnan, Joan (1982). Control and Complementation. *Linguistic Inquiry* 13:343–434.

Capelle, Wilhelm (1961). *Die Vorsokratiker*. Berlin: Akademie-Verlag.

Chafe, Wallace (1976). Givenness, Contrastiveness, Definiteness, Subjects, Topics, and Point of View. In *Subject and Topic*, ed. C. N. Li, 25–56. New York: Academic Press.

Chierchia, Gennaro (1984). Topics in the Syntax and Semantics of Infinitives and Gerunds. Doctoral dissertation, University of Massachusetts.

Chomsky, Noam (1970). Remarks on Nominalization. In Jacobs and Rosenbaum 1970:184–221.

Chomsky, Noam (1980). On Binding. *Linguistic Inquiry* 11:1–46.

Chomsky, Noam (1981). *Lectures on Government and Binding: The Pisa Lectures*. Dordrecht: Foris.

Chomsky, Noam (1982). *Some Concepts and Consequences of the Theory of Government and Binding*. Linguistic Inquiry Monograph 6. Cambridge, Mass.: MIT Press.

Chomsky, Noam (1986). *Barriers*. Cambridge, Mass.: MIT Press.

Chomsky, Noam, and Howard Lasnik (1977) Filters and Control. *Linguistic Inquiry* 8:425–504.

Cole, Peter, and Jerry L. Morgan (eds.) (1975). *Syntax and Semantics*. Vol. 3, *Speech Acts*. New York: Academic Press.

Collins, Peter C. (1991). *Cleft and Pseudo-Cleft Constructions in English.* London: Routledge.

Csató, Valéria, and Csaba Pléh (1987–88). Indirekt felszólítások a magyar nyelvben. *Magyar Pszichológiai Szemle* 44-45:99–115.

Czeglédi, Csaba (1993a). On Constative and Performative Utterances. *Eger Journal of American Studies* 1:9–18.

Czeglédi, Csaba (1993b). Közvetett kérések az angol, a magyar és az orosz nyelvben. In *Emlékkönyv Országh László tiszteletére*, ed. Lehel Vadon, 137–55. Eger: Eszterházy Károly Tanárképző Főiskola.

Czeglédi, Csaba (1994). On the Distribution of Infinitival and Gerundive Complements in English. *Eger Journal of American Studies* 2:11–31.

Davison, Alice (1975). Indirect Speech Acts and What to Do with Them. In Cole and Morgan 1975:143–85.

Dixon, Robert M. W. (1984). The Semantic basis of Syntactic Properties. *Berkeley Linguistic Society, Proceedings* 10: 583–95. Quoted in Wierzbicka 1988.

Dixon, R. M. W. (1991). *A New Approach to English Grammar, on Semantic Principles*. Oxford: Clarendon Press.

Duffley, Patrick J., and Rachel Tremblay (1994). The Infinitive and the *-ing* as Complements of Verbs of Effort. *English Studies* 75:566–575.

É. Kiss, Katalin (1987). *Configurationality in Hungarian.* Budapest: Akadémiai Kiadó.

É. Kiss, Katalin (1992). Az egyszerű mondat szerkezete. In Kiefer 1992:79–177.

É. Kiss, Katalin, and Anna Szabolcsi (1992). Grammatikaelméleti bevezető. In Kiefer 1992:21–77.

É. Kiss, Katalin (1996). Focus is a Non-uniform Phenomenon. Ms., Budapest: MTA Nyelvtudományi Intézet.

Eagleson, Robert D. (1972). Selecting the *to-* and *-ing* Nominal after *Prefer*. *English Studies* 53:141–43.

Emonds, Joseph E. (1976). *A Transformational Approach to English Syntax: Root, Structure Preserving, and Local Transformations*. New York: Academic Press.

Freed, Alice Fredricka (1976). The Semantics of English Aspectual Complementation. Doctoral dissertation, University of Pennsylvania.

Freed, Alice F. (1979). *The Semantics of English Aspectual Complementation*. Synthese Language Library 8. Dordrecht: D. Reidel.

Geis, M. (1970). Adverbial Subordinate Clauses in English. Doctoral dissertation, Massachusetts Institute of Technology. Quoted in Johnson 1988.

Gergely, György (1992). Focus-Based Inferences in Sentence Comprehension. In *Lexical Matters*, ed. Ivan A. Sag and Anna Szabolcsi, 209–240. Stanford, Ca: Stanford University.

Gergely, György (1995). Az aktuális tagolás szerepe a mondatmegértésben. *Általános Nyelvészeti Tanulmányok* 18:43–61.

Greenbaum, Sidney (1980). The Treatment of Clause and Sentence in *A Grammar of Contemporary English.* In *Studies in English Linguistics*, ed. S. Greenbaum et al., 1980. London: Longman.

Grice, Paul (1975). Logic and Conversation. In Cole and Morgan 1975.

Grimshaw, Jane (1979). Complement Selection and the Lexicon. *Linguistic Inquiry* 10: 279–326.

Gundel, Jeanette K. (1977). Where Do Cleft Sentences Come From? *Language* 53:543–559. Quoted in Hedberg 1990.

Gundel, J. K. (1985). Shared Knowledge and Topicality. *Journal of Pragmatics* 9:83–107. Quoted in Collins 1991.

Haegeman, Liliane (1991). *Introduction to Government and Binding Theory*. Oxford: Blackwell.

Halvorsen, Per-Kristian (1978). The Syntax and Semantics of Cleft Constructions. *Texas Linguistics Forum* 11, Department of Linguistics, University of Texas, Austin. Quoted in Hedberg 1990.

Hedberg, Nancy Ann (1990). Discourse Pragmatics and Cleft Sentences in English. Doctoral dissertation, University of Minnesota.

Horn, George M. (1975). On the Nonsentential Nature of the POSS-ING Construction. *Linguistic Analysis* 1:333–87.

Huck, Geoffrey J., and Younghee Na (1990). Extraposition and Focus. *Language* 66:51–77

Huddleston, R. D. (1984). *Introduction to the Grammar of English*. Cambridge: Cambridge University Press.

Huddleston, Rodney and Geoffrey Pullum (2002). *The Cambridge Grammar of the English Language.* Cambridge: Cambridge University Press.

Jackendoff, Ray (1977). *X' Syntax: A Study of Phrase Structure*. Cambridge, Mass.: MIT Press.

Jackendoff, Ray (1983). *Semantics and Cognition.* Cambridge, Mass.: MIT Press.

Jackendoff, Ray (1990). *Semantic Structures.* Cambridge, Mass.: MIT Press.

Jacobs, Roderick A., and Peter S. Rosenbaum (eds.) (1970). *Readings in English Transformational Grammar*. Waltham, Mass.: Ginn and Company.

Johnson, Kyle (1988). Clausal Gerunds, the ECP, and Government. *Linguistic Inquiry* 19:583–609.

Juhász, Pál, and Bertalan Pethő (1983). *Általános pszichiátria*. Vol. 1, *Psychopatológia*. Budapest: Medicina Könyvkiadó.

Karttunen, L. (1971). Implicative Verbs. *Language* 47:340–58.

Kenesei, István (1983). A hatókör és a szórend összefüggései a magyar nyelvben. Unpublished, Szeged: József A. University. Quoted in É. Kiss 1987.

Kenesei, István (1989). Logikus-e a magyar szórend? *Általános Nyelvészeti Tanulmányok* 17:105–152.

Kiefer, Ferenc (1983). *Az előfeltevések elmélete*. Budapest: Akadémiai Kiadó.

Kiefer, Ferenc (ed.) (1992). *Strukturális magyar nyelvtan.* Vol. 1, *Mondattan.* Budapest: Akadémiai Kiadó.

Kiparsky, Paul, and Carol Kiparsky (1971). Fact. In *Semantics: An Interdisciplinary Reader*, ed. Danny Steinberg and Leon Jakobovits, 345–69. Cambridge: Cambridge University Press.

Klein, Eberhard (1982). *Semantic and Pragmatic Indeterminacy in English Non-finite Verb Complementation.* Tübinger Beiträge zur Linguistik 194. Tübingen: Narr.

Koster, Jan, and Robert May (1982). On the Constituency of Infinitives. *Language* 58:116–143.

Labrecht, Knud (1985). Topic, Focus, and the Grammar of Spoken French. Doctoral dissertation, University of California, Berkeley.

Laczkó, Tibor (1995). In Defence of the Gerund. In *HUSSE Papers 1995: Proceedings of the Second Conference of HUSSE, Szeged, January 26–28, 1995*, Papers in English and American Studies 6, ed. György Novák, 243–255. Szeged: Department of English and American Studies, József Attila University.

Lees, Robert B. (1960). *The Grammar of English Nominalizations*. The Hague: Mouton.

Mair, Christian (1990). *Infinitival Complement Clauses in English: A Study of Syntax in Discourse.* Cambridge: Cambridge University Press.

Maxwell, Michael B. (1984). The Subject and Infinitival Complementation in English. Doctoral dissertation, University of Washington.

McCawley, James D. (1988). *The Syntactic Phenomena of English.* 2 vols. Chicago: University of Chicago Press.

Menzel, Peter (1975). *Semantics and Syntax in Complementation.* The Hague: Mouton.

Nelson, Pearson, and Spitzberg (1992). *Understanding and Sharing*. Fourth Edition (CPS version), University of British Columbia. Dubuque, Iowa: Wm. C. Brown Publishers.

Newson, Mark (1997). Czegledi Csaba: Issues In the Syntax and Semantics of Infinitives and Gerunds in English: External Examiner's Report. Ms., Eötvös Loránd University.

OED = Burchfield, Robert W. et al. (eds.) (1987). *The Compact Edition of The Oxford English Dictionary*. Oxford: Oxford University Press.

Pullum, Geoffrey K., and Arnold M. Zwicky (1991). Condition Duplication, Paradigm Homonymy, and Transconstructional Constraints. In *Proceedings of the 17th Regional Meeting of BLS*, *Berkley*, 252–66.

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik (1985). *A Comprehensive Grammar of the English Language*. London: Longman.

Reuland, Eric J. (1983). Governing *-ing*. *Linguistic Inquiry* 14:101–36.

Riemsdijk, Henk van, and Edwin Williams (1986). *Introduction to the Theory of Grammar*. Cambridge, Mass.: MIT Press.

Rooth, Mats Edward (1985). Association with Focus. Doctoral dissertation, University of Massachusetts.

Rooth, Mats (1992). A Theory of Focus Interpretation. *Natural Language Semantics* 1:75–116.

Rosenbaum, Peter S. (1967). *The Grammar of English Predicate Complement Constructions.* Research Monograph Series. Cambridge, Mass.: MIT Press.

Rudanko, Juhani (1995). *Balking at* and *Working at*: On Verbs Governing *at -ing* in Present-day English. *English Studies* 76:264–281.

Ruzsa, Imre (1988–89). *Logikai szintaxis és szemantika.* 2 vols. Budapest: Akadémiai Kiadó.

Schibsbye, Knud (1970). *A Modern English Grammar*. 2d ed. London: Oxford University Press.

Searle, John. R. (ed.) (1971). *The Philosophy of Language*. Oxford: Oxford University Press.

Searle, John R. (1975). Indirect Speech Acts. In Cole and Morgan 1975:53–82.

Szabolcsi, Anna (1980). Az aktuális mondattagolás szemantikájához. *Nyelvtudományi Közlemények* 82:59–83.

Szabolcsi, Anna (1983). A performatívok szemantikája. *Általános Nyelvészeti Tanulmányok* 15:281–91.

Szabolcsi, Anna (1985). Puszta főnév a fókuszban, avagy az elsőrendű predikátumkalkulus csapdája. *Általános Nyelvészeti Tanulmányok* 16:229–250.

Szabolcsi, Anna (1992). *A birtokos szerkezet és az egzisztenciális mondat*. Budapest: Akadémiai Kiadó.

Szabolcsi, Anna, and Tibor Laczkó (1992). A főnévi csoport szerkezete. In Kiefer 1992:179–298.

Vendler, Zeno (1967). *Linguistics in Philosophy*. Ithaca: Cornell University Press.

Vendler, Zeno (1968). *Adjectives and Nominalizations*. The Hague: Mouton.

Webelhuth, Gert (1995). X-bar Theory and Case Theory. In *Government and Binding Theory and the Minimalist Program: Principles and Parameters in Syntactic Theory*, ed. Gert Webelhuth, 15–95. Oxford: Blackwell.

Wierzbicka, Anna (1988). *The Semantics of Grammar*. Studies in Language Companion Series 18. Amsterdam: John Benjamins.

Williams, Edwin S. (1975). Small Clauses in English. In *Syntax and Semantics*, vol. 4, ed. John P. Kimball, 249–273. New York: Academic Press.

Williams, Edwin S. (1980). Predication. *Linguistic Inquiry* 11:203–38.

Wood, Frederick T. (1956). Gerund *versus* Infinitive. *English Language Teaching* 11:10-17.

Zandvoort, R. W. (1972). *A Handbook of English Grammar*. 6th ed. London: Longman.

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