SYNTACTIC ISSUES IN THE
ENGLISH IMPERATIVE

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Preface

This work is an unrevised version of my 1996 University of California, Santa Cruz Ph.D. dissertation. The only changes that have been made are corrections of typographical errors, minor rewording, updating of references, and the inclusion of an index.

I would like to thank Rosemary Plapp and Kristi Long for help with proofreading and preparation of the manuscript.

Iowa City, Iowa
Winter 1998
“Minds are like parachutes, they only function when open.”
_Santa Cruz bumper sticker_

“Minds are like parachutes, using them only slows you down.”
_anonymous_

Acknowledgments

Eventually you just have to stop thinking and write, so it all starts here where I would like to briefly express my thanks to those who have made my time in Santa Cruz so tremendous. I feel very lucky to have been given the opportunity to get my introduction to linguistics at UCSC and to learn from its uniformly superb faculty. I would like to thank them for their top-notch teaching examples, high standards of scholarship, honest encouragement, and the numerous opportunities they have provided me. In particular, the syntax community: Judith Aissen, Sandy Chung, Jorge Hankamer, and Jim McCloskey, have most directly and, it is hoped, positively influenced my thinking and teaching.

This dissertation owes much to its committee. Judith Aissen could not have been a better advisor and committee chair. Everything that passed by her was scrutinized and critiqued with great care and thoroughness and interactions inevitably pushed things towards clarity, rigor, and better organization—all qualities that I value highly. At other points, her consistent, solid advice throughout my career as a graduate student was also invaluable. Jim McCloskey’s insights into linguistic theory, ability to see implications for the big picture, and encyclopedic
knowledge of the literature are beyond admiration. He has helped me to push conclusions to a level of maximum generality and to see the significance, and insignificance, of many of the results arrived at in development of this work. I owe Donka Farkas for her guidance in understanding some of the semantic issues surrounding imperatives. I appreciated her patience as I grappled with the central but unfortunately largely neglected semantic questions and their relation to the syntax. In the ideal world, more of her advice would have been incorporated. More generally, I thank the entire Santa Cruz linguistic community for numerous discussions, constructive previewing of material, and countless grammaticality judgments in areas where I no longer seem to have any. I would also like to use this opportunity to recognize previous professors and mentors, none of them linguists, who have had a great influence on my intellectual development: A. B. Perlman (Mechanical Engineering, Tufts University), Lee Edelman (English, Tufts University), Thomas Kane (Applied Mechanics, Stanford University), and John Hodgkinson (Douglas Aircraft Company).

This dissertation would not have come together if it weren't for my last housemate, Carol, who provided a near perfect environment for its creation. I thank her for keeping me very well-humored and wonderfully well-fed during the final two years of my studies and for sharing with me a family that I am completely embarrassed to say that I know, and enjoy. My other adopted family, the Olneys, has provided me with countless weekends of busy fun—if shoveling snow can be said to be fun—when I surely would otherwise have been idle and unproductive. My own family I owe infinitely much for their unwavering support and confidence in whatever pursuits I have chosen over the years. There's nothing, except for maybe buying another '66 Mustang, that they ever said I couldn't do. So, I've never known what was supposed to be impossible and, consequently, I've never known not to try it. With regard to linguistics, I am grateful for their rarely asking what I'm doing but at the same time approving of it, whatever it is exactly.

A dissertation isn't the best place for one's best friends. They know who they are, how much I have relied on them, and how much they are with me wherever I am. Hopefully they will never read this work—there are too many other things to do together and, as always, too little time.

And thanks to all the trees. . . . Here come just a few of them.
Syntactic Issues in the English Imperative
Introduction

This work is a close investigation of central syntactic issues in the English imperative clause type. It argues that the imperative has largely regular syntactic behavior within a conventional conception of English clause structure. The claims of this work explicitly contrast with early generative treatments which ascribed exceptional structure to the imperative, with concomitant complications in the grammar.

This introduction provides an overview of the syntactic investigation to follow. Section 1 defines the empirical domain under study. The imperative is taken to be a morphosyntactically-identifiable clause type that is the canonical realization of a directive speech act. Defined in this way, a clear body of data is delimited. These data are then previewed in advance of their analysis in chapters 1 through 6. Section 2 gives an overview of the contents of these chapters. For each chapter, it summarizes the primary issue to be investigated, the proposed analytical account, and the consequences for imperative syntax and its relation to general English clause structure.

1. THE DOMAIN OF INVESTIGATION

This section discusses the body of data that will be investigated in the study and how that body of data forms a coherent target of inquiry. Section 1.1 develops what is meant syntactically by the term imperative while section 1.2 surveys the data that fall into this domain.

1.1. The Imperative Clause Type

The range of sentences that have been called imperatives in the literature is astoundingly large. The reason for this variety is that imperative is often defined in semantic terms. Under a semantic
characterization, any construction with the relevant illocutionary force or pragmatic effect may be classified as an imperative, irrespective of its form. Such a description is fundamentally one based on linguistic use and it defines an imperative as a SPEECH ACT TYPE (see the philosophical literature including Austin 1962 and Searle 1969). For example, such an approach potentially labels all of the examples in (1) as imperatives because they all have approximately the same force in a certain situation. I will refer to this speech act type as DIRECTIVE but will not attempt to explicate it (but see chapter 3, section 4 as well as Katz and Postal 1964, Broadie 1972, Stockwell et. al. 1973, Downes 1977, Schmerling 1982, Davies 1986a, and Hamblin 1987).

(1)  
  a. Close the window!  
  b. You should close the window!  
  c. Will you close the window, please?  
  d. The window ought to be closed, John.

While such a classification is useful in describing language's communicative potential and actual use, it does not make any claims about the syntactic structure of such sentences. Typically, however, there is one particular sentence form which is considered the canonical syntactic realization of a given semantic clause type and this allows us to relate a speech act type to the syntax. I will define an IMPERATIVE to be the syntactic sentence form which is the canonical realization of a directive speech act type. In addition to being unified by a canonical use, imperatives also share core syntactic or morphological properties. (2) is a set of criteria for the English imperative, adapted from Davies 1986a:7, which I will use to further characterize the English imperative clause type. Under this view, the imperative is a SYNTACTIC CLAUSE TYPE. See Davies 1986a:chapter 1 for considerable discussion.

(2) Characteristics of the English Imperative Clause Type
  a. lack of tense inflection
  b. optionality of subject

Given (2) and the more extensive discussion in Davies 1986a, an imperative is characterized by the highest verbal head or auxiliary being uninflected for tense. Additionally, the subject may be absent
without apparent syntactic consequences elsewhere. Summarily, the object of investigation in this work is the imperative as defined in (3).

(3) Imperative Syntactic Clause Type
An imperative is the canonical realization of a directive, with the morphosyntactic properties in (2)

The difference between speech act type and syntactic clause type can be further exemplified by considering questions, which will also be of importance in this study. All of the examples in (4) are questions, as a speech act type, because they function as a request for information.

(4) a. Is he here yet?
    b. Who will Jack stay with?
    c. He's here already?
    d. Jack will stay with WHO?

Within this semantic domain, we can identify a syntactic clause type, the INTERROGATIVE, (4)a and b, which is semantically a question but is unique among questions in having certain particular syntactic properties which distinguish them: they license negative polarity items in certain circumstances and require subject-auxiliary inversion, for example. Questions are thus a speech act type whose canonical realization is the syntactic clause type interrogative. Interrogatives themselves are in turn a subtype of finite clause.

It should be noted that this characterization of the imperative is specific to English. While speech act types are likely to be universal under the assumption that all languages are put to roughly the same uses, no such claim is made about syntactic clause types, or their relationships to speech act types. Further partitions in both speech act types and clause types will yield different mappings between form and function, which are not under study here.

1.2. Summary of the Data

Crucial to the investigation of the imperative here is the recognition of a wide range of grammatical imperative data—wider in fact than traditionally assumed. The data are surveyed below. Much of the data and many of the empirical observations which this study explores and
analyzes are originally due to Davies' (1986a) thorough and systematic exploration of the English imperative.

Ordinarily, the English imperative consists only of a verb phrase, in the non-technical sense: a verb in its bare form plus internal arguments and adjuncts, if any. The subject is usually understood to be second person you but is not overt. I will call examples as in (5) SUBJECTLESS IMPERATIVES, taking subject here in a non-theoretical sense to mean a phonetically overt noun phrase that is canonically interpreted as the agent or actor of the imperative verb.

(5)  
   a. Hoist the sails!  
   b. Mind your business!  
   c. Be happy!

English is typologically unusual in also allowing many kinds of overt subjects in imperatives. The term SUBJECT IMPERATIVE describes the examples in (6) in which there is an overt noun phrase filling the role of agent or actor.

(6)  
   a. You take out the trash!  
   b. Everyone take out a pencil!  
   c. One of you fetch me that ladder!  
   d. Someone get me an aspirin!  
   e. Those in the front back away from the barricade!

Besides the expected you in (6)a, quantified phrases, second person partitives, indefinite pronouns, and demonstratives are also regularly found, as in (6)b through e. Chapter 3 discusses the syntactic status of these noun phrases and the apparent semantic restrictions that hold of them.

Subjects also appear in emphatic and negative imperatives, which I will collectively call NON-NEUTRAL IMPERATIVES. Syntactically these are formed by appending subjectless imperatives with do and don't, respectively, as in (7) and (8).

(7)  
   a. Do be more careful!  
   b. Do try some of the dandelion salad!
A claim often made is that subjects are rather restricted in emphatic and negative imperatives (Bolinger 1967; Stockwell et. al. 1973; Schmerling 1977, 1982; Akmajian 1984; Beukema and Coopmans 1989; Zhang 1990). Schmerling 1977 and Stockwell et. al. 1973, for example, take the position that they may never occur with *do*, citing the ungrammaticality of examples like those in (9), in particular with *you* as subject.

\[(9)\]
\begin{align*}
a. & \quad (*) \text{Do YOU/SOMEBODY sit down!} \\
b. & \quad (*) \text{SOMEBODY do open the window!}
\end{align*}

In negative imperatives, the standard generalization, implicitly assumed in Stockwell et. al. 1973 among others, is that a subject is permitted and it follows *don't*, as in (10). Examples with the subject preceding *don't*, as in declarative sentences, are not considered.

\[(10)\]
\begin{align*}
a. & \quad \text{Don't everyone leave!} \\
b. & \quad \text{Don't you give me any lip!}
\end{align*}

It is such limited observations about the position of imperative subjects that typically force restrictive analyses of the imperative in which they are viewed as an idiosyncratic construction and their syntax is divorced from standard assumptions about English clause structure (Schmerling 1977, 1982; Culicover 1976). In an importantly thorough investigation of the English imperative, Davies 1986a re-evaluates the data regarding subject possibilities with *do* and *don't*. The work considers the full range of subject plus *do(n't)* combinations and concludes that both orderings are permitted. Instances of each are given in (11) through (14).

**DO^SUBJECT**

\[(11)\]
\begin{align*}
a. & \quad \text{Do SOMEone help him quickly!} \\
b. & \quad \text{Do AT LEAST SOME of you give it a try!}
\end{align*}
8

Syntactic Issues in the English Imperative

\textit{SUBJECT}^\textit{\textasciitilde DO}

(12) a. SOMEone do answer the phone!
   b. Those with children do bring them along!

\textit{DON'T}^\textit{\textasciitilde SUBJECT}

(13) a. Don’t anyone touch my stuff!
   b. Don’t you misbehave while we’re gone!

\textit{SUBJECT}^\textit{\textasciitilde DON'T}

(14) a. Those with luggage don’t leave it unattended!
   b. Girls go into the hall, BOYS don’t move!

Furthermore, Davies 1986a argues for the acceptability of \textit{do even} with \textit{you}, a combination which most researchers consider completely impossible.\textsuperscript{1,2}

(15) a. For heaven’s sake, of all people, DO YOU give me some support!
   b. Do AT LEAST YOU have a go, even if the others won’t!

For the present, I simply assert the acceptability of the above data. These data will be more fully investigated, particularly with respect to subject options, in later chapters.\textsuperscript{3}

Negative imperatives may also be formed with uncontracted \textit{do not}, (16). I will call such examples \textit{FORMAL IMPERATIVES}.

(16) a. Do not pass up these deals!
   b. Do not walk on the grass!
   c. Do not forget!

It is universally claimed that subjects are impossible in formal imperatives. Chapter 6 more carefully investigates this claim and argues that, although subjects are typically degraded in this environment, there are clear contrasts depending upon where the subject is placed. If the subject is before or after \textit{do not}, the data are marginal, or inconsistently acceptable, (17) and (18). Only when the subject occurs between \textit{do} and \textit{not} are the data robustly ungrammatical, (19).
Introduction

(17)  a. I know I've done wrong but I can't survive on my own.
     ?Oh please, SOMEbody do not desert me!
 b. ?SOMEone do not abandon the gate! The fight is not yet lost and we must maintain the security.

(18)  a. ?Do NOT ANY of you touch that cake! It's for the wedding and if any of it is missing, heads will roll.
 b. ?Do not YOU, of all people, insult me in this heinous and base manner!

(19)  a. I know I've done wrong but I can't survive on my own.
     *Do somebody not desert me!
 b. *Do someone not abandon the gate!

Lastly, I will have occasion to appeal to imperatives with the auxiliaries perfective have and progressive/passive be in investigating imperative clause structure. It is sometimes claimed that imperatives with auxiliaries are ungrammatical. Akmajian, Steele, and Wasow 1979 and Takezawa 1984, for example, do not accept imperatives with perfective have in (20). For most, however, such examples are acceptable.4 (21) illustrates imperatives with progressive and passive be. Davies 1986a explicitly argues that there are in general no syntactic constraints against auxiliaries in imperatives and I accept the conclusion.

(20)  a. Please have read at least the introduction for Monday's meeting!
 b. Have waited at least an hour before going swimming!
 c. Do have reached a decision regarding the matter!

(21)  a. Be paying attention when the instructor looks up!
 b. Be waiting for me at the corner!
 c. Be tested, just to be safe!
 d. Don't be going so soon!
 e. Don't be fooled by his phony credentials!
2. OVERVIEW

The work is organized around various central syntactic issues: particular places in the grammar where it has been argued that 1) imperative syntax irreducibly differs from that of better studied finite clauses and 2) ad hoc syntactic mechanisms are thus required. Each chapter addresses roughly one outstanding point about imperative syntax, as described below. The following briefly describes the contents and conclusions of the individual chapters.

Chapter 1 lays out the syntactic framework in which the analyses are embedded, approximately the Principles and Parameters Theory of the early 1990's including the innovation of Checking Theory from the recent Minimalist Program. It also develops specific analyses of adverb placement, verb phrase ellipsis, negation, and floating quantifiers which are central to much of the clause structure investigations and argumentation in later chapters.

Chapter 2 investigates the position of verbal elements, auxiliaries and main verbs, in imperatives and other English clauses. Current syntactic theory posits that verbal elements typically appear either within the verb phrase or higher, in an inflectional projection. This latter position is often modeled derivationally as V*-to-I* movement of the verbal head. In English tensed clauses, only finite auxiliaries undergo V*-to-I* verb raising. This in turn is typically taken as the reason why they, unlike main verbs, do not require or permit support do in the presence of affirmation and negation, (22).

(22) a. The pies \{ are not, *do not be \} ready.

b. The pies \{ *cooked not, did not cook \}.

As is well-known, auxiliaries in imperatives contrast with finite auxiliaries in requiring do in the same environments. The pattern of grammaticality for imperatives in (23) is the reverse from that of auxiliaries in (22)a and matches that of main verbs in (22)b.
This differing behavior of auxiliaries in finite clauses, (22)\(a\), versus imperatives, (23), is sometimes taken as an indication that imperatives irreducibly differ from finite clauses: they require do even with the auxiliaries have and be. Chapter 2 argues that the difference has an explanation in terms of verb raising. Diagnostics for verb raising using adverb placement, negation, and VP ellipsis are developed and used to demonstrate that auxiliaries in imperatives, like finite main verbs, do not undergo V°-to-I°. Consequently, the parallel behavior is not unexpected. The mechanisms that ensure that do will appear with negation and affirmation in finite clauses in which verbs do not move into I° can then potentially be used to achieve the same result in imperatives. There is little reason to allow imperative clause structure to differ from standard conceptions, at least in this domain.

Chapter 3 investigates the status of the italicized noun phrases in (24).

Although such noun phrases appear to be subjects, numerous works attempt to restrict them in motivated, although exceptional, ways, resulting in their being typically non-subject-like. The chapter argues that they are subjects, and in particular not vocatives. This is a syntactically unsurprising claim since ordinary clause structure provides a structural subject position and typically requires that it be filled. The syntactic and semantic behavior of imperative subjects is thus argued not to be an exceptional feature of the English imperative but to follow from the way an imperative is used.

Chapter 4 initiates the investigation of imperative phrase structure by considering the status of the two formatives do and don't in emphatic and negative imperatives, (25) and (26) respectively.
The chapter considers whether these elements are best analyzed as imperative particles or inflectional heads, as their transparent similarity to finite forms might suggest. It is argued based on patterns of VP ellipsis, word order, and syntactic parallels with related let's-constructions that an analysis in which they are integrated into clausal syntax as inflectional heads is superior. They behave like the corresponding finite forms and can be profitably analyzed with existing mechanisms that are independently needed for finite clause structure. This conclusion provides further support for the claim that imperatives have largely predictable syntax. The elements do and don’t fit expectedly into general English clause structure.

Chapter 5 turns to the phrase structure of the imperatives in (25) and (26) and investigates the structural position of the subject noun phrase and the heads do and don’t. It considers and rejects—based on evidence from VP ellipsis, adverb placement, floating quantifiers, and imperatives with auxiliaries—a hypothesis in which imperative subjects are VP-internal. Instead, the chapter concludes, based on a close investigation of negative preposing and topicalization, that the examples have a syntactic structure parallel to that of superficially similar, more thoroughly investigated, and syntactically unexceptional yes/no questions. The chapter thus claims that imperatives appeal to the well-established process of I°-to-C° movement seen elsewhere in English.

Chapter 6 concludes with an investigation of the syntax of formal imperatives, repeated in (27).

(27) a. Do not pass up these deals!
   b. Do not walk on the grass!
   c. Do not forget!

These examples and similar ones have typically been at the center of debates over the syntactic analysis of imperatives. They display interesting restrictions on subject possibilities and a general syntactic
inertness that has made their assimilation to general English clause structure particularly difficult. In contrast to the conclusions of chapter 5, they are a place in the grammar where imperatives and otherwise similar interrogatives seemingly clearly differ. In particular, the formal imperatives in (28) with the subject intervening between do and not are robustly ungrammatical in comparison to interrogatives with this word order, (29), which are fully acceptable.

(28)  
a. *Do you not desert me!  
b. *Do someone not abandon the gate!

(29)  
a. Do you not like artichokes?  
b. Does somebody not have a pitchfork that I could borrow?

Despite this difference, the chapter nevertheless argues that the syntax of formal imperatives is largely regular. The above contrast is real but is the reflex of patterned and systematic difference between T'-to-C* in the two clause types. While interrogative inversion in (29) is obligatory and triggered by a purely syntactic requirement, imperative inversion is semantically driven and is in fact not present in the corresponding examples, (28). Imperative inversion, the chapter argues, occurs with emphatic do and don't, as concluded in chapter 5, but not with pleonastic do, in (28). The examples are thus ungrammatical because the head movement that would derive the word order is unmotivated. Thus, while imperatives are different from interrogatives in this domain, the chapter shows that the difference has a principled analysis within the theory of clause structure. Consequently, even in this domain, imperative syntax is unexceptional and analyzable within a conventional model of clausal structure—the thesis throughout the work.

NOTES

1. Davies 1986a:90 suggests a functional explanation for the general oddness of do with you as subject. In the acceptable examples, you is not being used as a marker to signal authority over the addressee, as is typical, but, rather, functions contrastively. It contrasts the addressee to certain other people. Adverbs like at least which improve the acceptability of the examples make
this contrast explicit. Do not occurring with you is a consequence of the rarity of situations in which both persuasive do and contrastive you are warranted.

2. Such examples were clearly acceptable in recent stages of English. Poutsma 1928:107 cites numerous text examples:

(i) a. Lucy, do you watch!
   (Sheridan, *The Rivals*, Act I, scene 2, 1775)
   b. Do you give me a minute’s calm attention without looking at Rick!
      (Dickens, *Bleak House*, chapter XXIV, 1853)
   c. Well, do you go, at any rate . . . . Do you go down.
      (Trollope, *Castle Richmond*, chapter VI, 1860)
   d. He must want a secretary. He would be shy at an offer from me.
      Do you hint it if you get a chance.
      (Meredith, *Ormont*, chapter III, 1894)

3. The two subject positions with respect to do(n’t) are not simply free variants of one another. Davies 1986a notes that the difference between the two subject position options, before or after do(n’t), tends to correlate with the reading on the subject. The order do(n’t)subject places contrastive focus on the subject while the order subject^do(n’t) is neutral. I leave this issue for future investigation. General restrictions on imperative subjects are discussed in chapter 3 and seem to be operative in all of these examples. The important claim to be relied upon in this work is that both word order patterns are acceptable.

4. Bolinger 1967 convincingly argues that they are grammatical, citing acceptable examples along with an experiment in which a passage containing a perfective have imperative was submitted to twelve native English speakers. Only three people noted the imperative and none marked it as un-English. Davies 1986a:16 makes the same point.
CHAPTER 1
Clausal Syntax

1. INTRODUCTION

This chapter presents the theoretical preliminaries for the investigation of the syntax of the English imperative which is to follow. The analysis of the imperative is embedded in a theory of syntax roughly corresponding to the Principles and Parameters Theory of the early 1990's. In addition, I import the innovation of Checking Theory from the Minimalist Program (Chomsky 1993, 1994, 1995). To the greatest extent possible, however, I attempt to formulate the results of this work in a theory-neutral way. Section 2 presents the main theoretical assumptions about English clause structure. Sections 3 through 6 investigate narrower domains of English syntax: adverb placement, negation, VP ellipsis, and floating quantifiers. These phenomena are central to much of the syntactic argumentation in later chapters.

2. ENGLISH CLAUSE STRUCTURE

The $\bar{X}$ phrase structure schema in (1)a and b along with the stipulation that English is left-headed and has specifiers on the left allows only for phrase structures as in (1)c.

(1) $\bar{X}$ Principles
a. $XP \rightarrow Spec \ X'$
b. $X' \rightarrow X^* \ YP$

15
Following numerous researchers in taking I(nfl) to be the head of a sentence, I assume that it too is projected according to (1)c. The specifier of IP is the canonical position for the subject in English and its presence is motivated by something like the Extended Projection Principle (Chomsky 1981) or a strong D-feature of inflection (Chomsky 1993). This yields (2) as the scheme for an English clause.1

\[
(2) \quad \begin{array}{c}
& \text{IP} \\
& \text{subject} \\
& \text{I'} \\
& \text{I} \\
& \text{VP} \\
& \text{V'} \\
& \text{V} \\
& \text{(complement)}
\end{array}
\]

In addition to structures that obey the \( X \) schema, I allow for the following adjunction structures. Heads may adjoin to other heads under head movement, yielding a structure as in (3) (order of adjunction aside). With Chomsky 1995, I assume that all head movement is of this sort, although later chapters will not always show the internal details of this operation.

\[
(3) \quad \begin{array}{c}
& \text{XP} \\
& \text{X} \\
& \text{Y} \\
& \text{t} \\
& \text{Z} \\
\end{array}
\]

Maximal projections may adjoin to intermediate levels, \( X' \), and other maximal projections, \( XP \), but are restricted by the Adjunction Prohibition in (4) (Chomsky 1986; McCloskey 1992, 1996a). Informally, the Adjunction Prohibition disallows adjunction to arguments of a lexical head, phrases that are s(emantically)-selected. It
permits adjunction to complements of functional projections, which are not s-selected.

(4) \textit{Adjunction Prohibition} (McCloskey 1992:11)
Adjunction to a phrase which is s-selected by a lexical head is prohibited

Yes/no or polarity questions in English, whose word order shows inversion of the subject and the first auxiliary or modal in the main clause, require additional structure above IP to house the inverted auxiliary. The inversion which relates interrogatives with their declarative counterparts is an example of the head movement and adjunction in (3). It is movement of I° to the head of a higher projection, CP. Interrogative formation is thus I°-to-C° (Koopman 1984, Chomsky 1986). (5) schematizes the analysis.

(5) \textit{Interrogative Inversion in English}

Regarding the specific lexical content of the verbal and inflectional projections, I follow Chomsky 1957, Emonds 1976, Lobeck 1987 and numerous others in taking the modals, \textit{must, can, should}, etc., to be lexically specified as being of category I°. Also of category I° are forms of support \textit{do}, which I take to be directly inserted into I° when needed. Accepting a long tradition dating back to Ross 1969, I take the auxiliaries \textit{have} and \textit{be} to be syntactically of category V°. Categorically, they are the same as main verbs such as \textit{walk, seem}, or \textit{rain}. When the auxiliaries are finite, they obligatorily undergo V°-to-I° head movement; main verbs do not undergo V°-to-I° (Jackendoff 1972, Emonds 1976, Pollock 1989, Chomsky 1991, Lightfoot and Hornstein 1994b, Rohrbacher 1994, and many others). This is investigated more
thoroughly in chapter 2. These lexical specifications are summarized in (6).

(6) Categorial Specification of English Verbal Elements
    I*: modals, support do
    V*: have, be, main verbs

Under these assumptions, the structure of a sentence containing a modal and multiple auxiliaries is (7).

(7) a. Zack might have been waiting
    b. 

2.1. Checking Theory and Movement

Chomsky 1993, 1995 and the Minimalist Program give a very prominent position to the lexicon and morphosyntactic features which are encoded there (see Marantz 1995, Lasnik 1995b for summary). The lexicon, in feeding syntactic structure, supplies only fully inflected elements—for example verbs which are fully specified for person, number, and tense. This information—inflectional, Case, and purely formal syntactic properties—in addition to being reflected morphologically on the lexical items, is represented by features on the head. These features play an important role in the syntax because, for a derivation to succeed, they must be 'verified' as being appropriate for the structure in which they were inserted. This verification is called FEATURE CHECKING and it must occur within a defined, local configuration, in a position that depends upon the particular feature
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being checked. In particular, feature checking takes place within the CHECKING DOMAIN of the head whose features are being checked. On a non-technical level, phrases in the checking domain of a head $H^*$ are a subset of those dominated by HP, as illustrated in (8). The checking domain of $H^*$, which is boldfaced, includes phrases that are in the specifier of HP (ZP), adjoined within HP (XP), adjoined to the complement of $H^*$ (QP), or adjoined to H itself (J).

(8)  

![Diagram of checking domain](image)

The relevant definitions and applications to (8), from Chomsky 1993:15-17 and Chomsky 1995:177-178,299,326 are as follows: First, $\alpha$ dominates $\beta$ if and only if every segment of $\alpha$ dominates $\beta$ (Chomsky 1986). The domain of a head $\alpha$ is the set of categories dominated by the least full-category maximal projection dominating $\alpha$ that are distinct from and do not contain $\alpha$. In (8), the domain of $H^*$ is J, ZP, XP, YP, QP, and everything that they dominate. The complement domain of $\alpha$ is the subset of the domain reflexively dominated by the complement of $\alpha$. The complement domain of $H^*$ is the lower YP and everything it dominates. This does not include QP since not every segment of YP dominates it. The residue is the domain less the complement domain. The residue in (8) is J, ZP, XP, QP, everything they dominate, and the upper YP segment. The minimal residue, or checking domain, is the smallest subset $K$ of the residue such that for any $\Gamma$ in the residue, some $\beta$ in $K$ reflexively dominates $\Gamma$. The checking domain of $H^*$ is J, ZP, XP, and QP. These definitions incorporate conclusions from chapter 4 of Chomsky 1995:326, in which the checking domain excludes phrases adjoined to the maximal projection of the head.

Checking can, in principle, occur at any time in a derivation; however, not all features have the same status regarding checking. If a
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feature is STRONG, then it is required to be checked overtly, before the sentence is pronounced at P(honological) F(orm). If the feature is WEAK, its checking will necessarily be delayed, by the principle of Procrastinate (Chomsky 1995:198), until the covert syntax, after the derivation branches to the level of L(ogical) F(orm). All features must ultimately be checked because they otherwise cause the derivation to crash. Strong features must additionally be checked before PF because they are illicit PF objects. Feature checking serves to drive many, if not all, movement operations since all strong features must move to be checked in accordance with (9) (Chomsky 1995:232): a categorial feature, a feature associated with a certain category (i.e. V, D, N, etc.), moves to check a feature of a functional head.

(9) If a feature F is strong, then F is a feature of a nonsubstantive category and F is checked by a categorial feature.

Examples of feature checking include subjects raising to spec,IP (checking of the strong D-feature of I° by the subject DP) and V°-to-I° raising (checking of a strong V-feature of I° by a verb). I°-to-C° movement illustrated in (5) is taken to be checking of some strong categorial feature of C° by a modal or auxiliary.

3. ADVERBS

In this section, I offer an analysis of the syntax of English adverbs. The primary aim of the discussion is to provide an explicit system in which to investigate adverb placement as a reliable probe on English syntax. Section 3.1 presents observations from Jackendoff 1972 regarding possible adverb positions in English finite sentences. In section 3.2, these generalizations are adapted to the more recent syntactic structures under consideration and I propose an explicit description of the distribution of adverbs in English clauses. Section 3.3 attempts to provide an analytical basis for the distributional patterns. The analysis proposes that adverbs are licensed by lexical heads in a local domain of the head and that this licensing accounts for their realized structural positions. Although the relative position of adverbs and verbal elements is most often used as an indicator of verb raising (e.g. Pollock 1989), such accounts are rarely explicit as to what
assumptions allow the diagnostic to succeed. By developing and defending a reasonable hypothesis about adverb placement in English, this section gives support to the use of adverbs as a reliable probe for verb movement, subject position, and other issues involving the interaction of word order and syntactic structure.

3.1. Adverb Placement: Jackendoff 1972

Jackendoff 1972 develops a classification of adverbs in English based on their positional distribution in a clause. Except for a small class of typically non-ly adverbs, all adverbs in English can appear in what is termed auxiliary position—a position that is somewhere between the subject and main verb, neither clause-initial nor clause-final. According to Jackendoff's typology, these adverbs can potentially have two interpretations: a manner interpretation or a sentence interpretation. Regarding adverbs with the latter, they are propositional modifiers (McConnell-Ginet 1982). Manner adverbs, in contrast, function as modifiers of predicates. Ernst 1984 analyzes traditional manner adverbs as contributing the meaning "there is something about the action, state, etc. denoted by the verb that can be described by the adverb." In contrast to sentential adverbs, which modify a situation, manner adverbs modify an attribute of a verb. In Jackendoff's syntactic analysis, manner adverbs are at the VP level while sentence adverbs modify S. For this reason, I will use the terms VP-ADVERB and S-ADVERB to label the two classes. Examples of each are given in (10) and (11), respectively (Jackendoff's (3.12) and (3.7)). Some adverbs are ambiguous between the two interpretations, behaving as either a VP-adverb or an S-adverb. (12)a illustrates the ambiguity (Jackendoff's (3.1)); it has either of the meanings in (12)b and c.

\[(10)\] Stanley \{completely easily handily\} ate his Wheaties. VP-ADVERB

\[(11)\] Horatio \{evidently probably certainly apparently\} lost his mind. S-ADVERB
BOTH INTERPRETATIONS

(12) a. John \{cleverly\} clumsily dropped his cup of coffee.
    b. It was \{clever\} of John to drop his cup of coffee.
    c. The manner in which John dropped his cup of coffee was
       \{clever\}. \{clumsy\}.

The positional distribution in finite clauses that Jackendoff proposes for the two adverb classes is illustrated in (13) through (20). Most of the examples are taken from Jackendoff 1972:chapter 3. S-adverbs may appear clause-initially, (13), immediately following the subject, (14), or to the immediate right of a modal or finite \footnote{4} auxiliary verb, (15).

(13) a. \{Evidently\} \{Probably\} Horatio has lost his mind.
    b. \{Often\} \{Happily\} Max was climbing the walls of the garden.

(14) a. Horatio \{evidently\} \{probably\} has lost his mind.
    b. Max \{often\} \{happily\} was climbing the walls of the garden.
    c. George \{probably\} will lose his mind.
    d. George \{obviously\} \{possibly\} ate up the cabbage.

(15) a. George will \{probably\} lose his mind.
    b. Horatio has \{evidently\} \{probably\} lost his mind.
    c. George was \{undoubtedly\} \{probably\} ruined by the tornado.

S-adverbs may not appear to the right of a non-finite auxiliary, (16).
(16)  a.  *George has been \{certainly\ \{probably\} ruined by the tornado.

     b.  *George is being \{certainly\ \{apparently\} tailed by the FBI.

VP-adverbs, in contrast, may appear clause-finally, in (17), or to the left of the main verb, in (18). This latter position is independent of what might precede the adverb; any combination of modal and auxiliaries is permissible, as illustrated.

(17)  a.  Stanley ate his Wheaties \{completely\ \{easily\}.

     b.  Bob scaled the wall \{quickly\ \{quietly\}.

(18)  a.  Stanley \{completely\ \{easily\} ate his Wheaties.

     b.  George was \{completely\ \{rapidly\} ruined by the tornado.

     c.  George has \{completely\ \{quickly\} read the book.

     d.  George might have \{completely\ \{entirely\} lost his mind.

     e.  Peter could have been \{safety\ \{effortlessly\} rescued.

VP-adverbs are not permitted clause-initially, (19), or to the left of modals or auxiliaries, in (20).

(19)  *\{Completely\ \{Easily\} Stanley ate his Wheaties.
(20) a. *George \(\{\text{completely rapidly}\}\) was ruined by the tornado.
b. *George \(\{\text{completely quickly}\}\) has read the book.
c. *George might \(\{\text{completely entirely}\}\) have lost his mind.
d. *Peter could \(\{\text{safely effortlessly}\}\) have been rescued.
e. *John will have rapidly been beaten by Bill.

These positional distributions are summarized in (21) and (22).

(21) \textit{Positional Distribution of S-Adverbs}

a. clause-initial
b. immediately following the subject
c. to the immediate right of a modal or finite auxiliary\(^5\)

(22) \textit{Positional Distribution of VP-Adverbs}

a. clause-final
b. to the immediate left of the main verb\(^6\)

Particularly in light of footnotes 5 and 6, I note that this distribution is an idealization. It is nevertheless a useful and otherwise realistic one and I will adopt it for what follows. Examples that do not conform to it are rare and often forced.

This distribution is schematically illustrated in (23), which shows the possible adverb positions in a string of a subject followed by optional auxiliaries followed by a main verb. For orientation purposes, \(\{\text{modal}\}\) is the position of I' in current conceptions.

(23) \[\text{S-ADV SU S-ADV (modal AUX) S-ADV (AUX) VP-ADV V VP-ADV}\]

A proposal to translate this description into a concrete syntactic analysis is conspicuously absent in the recent linguistic literature. I develop one in the following section.
3.2. A Syntactic Proposal

To sketch an account that is descriptively adequate I bring in three assumptions. The first is the finite clause structure we are working with, repeated below. The second is that subjects can only be located in specifier positions, for example spec,VP or spec,IP.

(24)

The third is that adverbs are adjoined elements, attaching either to X' or XP. The excluded alternative is that adverbs are located in specifier positions. Two desirable consequences follow from an adjunction analysis of adverbs. First, adjunction accounts for the possibility of adverb iteration. This would be unavailable if adverbs were in specifier positions since phrases have only one specifier (but see Cinque forthcoming for such a system). The examples of multiple adverbs, in (25), seem to be acceptable, particularly with appropriate intonation, a claim also made in Ernst 1984. Second, on the assumption that heads do not generally agree with adjuncts, we also account for the observation that languages do not typically show agreement with adverbs, in contrast to arguments. Again, if adverbs occurred in specifier position, one might expect to see spec-head agreement involving an adverb.

(25) a. She seldom ever opens the cabinet.
   b. He apparently never merely skims papers but rather reads each one carefully.
   c. The burglars evidently probably broke in the back door.
   d. The mechanic simply carefully separated the two pieces.
   e. It is largely descriptively adequate.
   f. 'He gladly always took people up for rides.' (SF Chronicle, April 12, 1996)
(26) and (27) constitute a proposal that will place adverbs in the correct structural positions as described above. It is not the only set of possibilities and, more importantly, it does not unambiguously determine adverb placement in any given situation. On the other hand, it is largely descriptively adequate and, within the set of assumptions above, it can identify specifier positions and heads that are overtly realized.

(26) **Syntactic Distribution of S-Adverbs**
   a. left adjunction to IP
   b. left adjunction to I’
   c. left adjunction to the topmost VP

(27) **Syntactic Distribution of VP-Adverbs**
   a. left or right adjunction to main verb V’

The proposal places adverbs in the positions indicated in (28). The reader can check that these are just those desired given Jackendoff’s description. Right adjunction of a VP-adverb is not shown since it transparently places the adverb in clause-final position.
Below I consider this proposal in more detail. Before ending this section, I show that the distributional generalizations make two correct predictions regarding the interaction of adverbs with other aspects of English syntax. In the next section, I attempt to demonstrate that, despite appearances, the distributional patterns have some syntactic and semantic generality and are not simply a scattered collection of adjunction positions randomly grouped together so as to obtain the right facts.

3.2.1. Syntactic Consequences

Two desirable syntactic consequences of the proposal are illustrated in (29) through (31). (29) confirms that S-adverbs must always appear to the left of a VP-adverb in the auxiliary position. This follows from (26) and (27) because an adjunction to (the topmost) VP will always be above a V' adjunction site.

(30) and (31) illustrate that VP-adverbs are necessarily interpreted inside VP ellipsis structures while S-adverbs need not be. When the antecedent of a null VP contains a VP-adverb, the interpretation of the elided VP obligatorily contains the adverb, as in (30). In the case of S-adverbs, this is not necessary; the adverb may be excluded from the interpretation, as it is in (31)a through c for pragmatic reasons. (31)d and e illustrate that an interpretation with the S-adverb is also available.

(30) a. Helga easily won her race and Sophie will $\varnothing$ too.
    $\varnothing$ = easily win her race, *win her race
b. Johnny blatantly disobeys the baby sitter because his sister does $\varnothing$.
    $\varnothing$ = blatantly disobeys the baby sitter, *disobeys the baby sitter
c. Daisy thoroughly cleaned the pans since the automatic dishwasher couldn't $\varnothing$.
    $\varnothing$ = thoroughly clean the pans, *clean the pans

(31) a. Sonny will certainly get elected if Ron does $\varnothing$.
    $\varnothing$ = get elected, *certainly get elected
b. Due to the traffic, we will unfortunately miss the opening credits, but those who were there early won't $\varnothing$.
    $\varnothing$ = miss the opening credits, *unfortunately miss the opening credits
c. The Mafia allegedly set the hotel on fire because the owner didn't $\varnothing$.
    $\varnothing$ = set the hotel on fire, *allegedly set the hotel on fire
d. The Joneses will probably buy a Mercedes because the Smiths will $\varnothing$.
    $\varnothing$ = buy a Mercedes, probably buy a Mercedes
e. No logician would knowingly state a falsehood even though a politician might $\varnothing$.
    $\varnothing$ = state a falsehood, knowingly state a falsehood
These examples are accounted for under the assumption that VP ellipsis targets VPs and an S-adverb adjoined to VP creates a two segment category, either of which is a possible antecedent for VPE. Adjunction to V' in the case of VP-adverbs does not create a structurally ambiguous antecedent for VPE. There is only one VP that can be the antecedent and the VP-adverb is necessarily internal to it. Both sets of facts, without additional assumptions, would seem to rule out adjoining VP-adverbs to VP instead of V'.

3.3. Adverb Licensing

A primary desideratum for any syntactic proposal regarding adverb placement is that it reflect the apparent link between an adverb's meaning, or what it modifies, and its syntactic position. This goal is a specific instantiation of what Sportiche 1988 formulates as the Adjunct Projection Condition in (32).

\[(32) \quad \text{Adjunct Projection Condition (Sportiche 1988)}
\]
\[
\text{If some semantic type } X \text{ modifies some semantic type } Y, \text{ and } \\
X \text{ and } Y \text{ are syntactically realized as } x \text{ and } y, \text{ } x \text{ is projected } \\
\text{adjacent to either } y \text{ or the head of } y.
\]

Sportiche's proposal, while intuitively desirable, is programmatic in the sense that it does not specify what the actual syntactic realization(s) of the semantic modification are. This would hinge largely on the interpretation of "adjacent" in (32). The above proposal stipulates what these realizations are for adverbs but is compatible with Sportiche's claim that it is the head of a modified element that plays a central role in the actual syntactic outcome. If we look more closely at the set of positions for S- and VP-adverbs, we see that each group clusters around a particular head, I' or V' respectively. (33) and (34) illustrate the two situations more closely.
Accepting that such groupings have some validity, I will develop the hypothesis that the two adverb types are actually licensed in their possible syntactic positions by the respective heads (see Travis 1988 for a similar proposal and Bowers 1993 for an application of the idea). S-adverbs are licensed by I° and VP-adverbs are licensed by V°. Intuitively, main VPs function predicatively as actions or states and are modified by manner (VP-) adverbs; IP's create a proposition from VP and, hence, are appropriately modified by propositional (S-) adverbs. The head which licenses each adverb type thus reflects the semantics of the adverb, as modifying either a proposition or an action/state—and conversely.

The proposal is that an adverb is licensed by a head and it must occur in a position that is syntactically associated to the head via some relation, call it R. It remains to specify what R is so as to capture the syntactic positions in (33) and (34). I will develop the idea that R can be formulated as "in the checking domain of the head". The set of positions in which adverbs appear in (33) is almost coextensive with the set of phrases that are in the checking domain of I° as defined in section 2.1. Informally, the checking domain of a head includes its specifier, phrases adjoined within its projection, and those adjoined to the complement of the head. We may say, then, that S-adverbs/VP-adverbs must modify IP/VP within the checking domain of the head I°/V°. (26) and (27) repeat the syntactic distributions of adverbs to evaluate how the checking domain relation accounts for them.
Clausal Syntax

(26) **Syntactic Distribution of S-Adverbs**
   a. left adjunction to IP
   b. left adjunction to I'
   c. left adjunction to the topmost VP

(27) **Syntactic Distribution of VP-Adverbs**
   a. left or right adjunction to main verb V'

The analysis correctly predicts the adjunction possibilities for VP-adverbs in (27). Adjunction to V' is within the checking domain of V°. Adjunction to VP is not. Exactly the configurations encoded in the structure in (34) fall out as desired. Although a VP-adverb adjoined to the complement of V° would also be in the checking domain, such a structure is ruled out by the Adjunction Prohibition.

Now consider the distribution of S-adverbs in (26), with the relevant head being I°. An adverb adjoined to the VP selected by I° will be in the checking domain of I° so we account for (26)c, which previously seemed like a rather odd restriction since reference to the 'topmost' VP is otherwise ad hoc. An adverb adjoined to I', in (26)b, is also transparently in the checking domain of I°. The IP-adjoined position, (26)a, is incorrectly ruled out because it is not in the checking domain of I'. I turn to this problem below.

One additional position in the checking domain of I° not considered in the distributional discussion above is right adjunction in general. The checking domain hypothesis predicts that S-adverbs should adjoin on the right as well as the left, as was the case with VP-adverbs. This is in fact permitted. Typically there is a pause required before the adverb, (35). Certain S-adverbial phrases do not require a pause, (36). Thus the prediction is generally borne out, although details remain to be understood.

(35) a. Horatio has lost his mind, *probably*.
    b. Casey thinks that there are guerrillas in the rose garden, *evidently*.
    c. Louis had rid the city of rats, *supposedly*.
    d. She then played the Toccata and Fugue in C Minor, *quite surprisingly*.
32  

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(36)  a. They'll win _most likely_.  
b. His plan will destroy us _in all probability_.  
c. The new measures will destroy us _for certain_.

Returning to (26)a, however, we incorrectly do not permit S-adverb adjunction to IP since an adverb in such a position will not be in the checking domain of a head. Without modifying the definition of checking domain, two options present themselves: either 1) adopt the view that the IP-adjoined site is not a base-generated adverb position, the adverb is licensed elsewhere in the structure and moved to the IP-adjoined position, or 2) license adverbs adjoined to IP from C° or some higher head. I briefly explore both possibilities below and adopt the second proposal.

3.3.1. IP-Adjoined Adverbs

Jackendoff 1972:66 observes that the IP-adjoined, or clause-initial, position for S-adverbs sounds less acceptable in some embedded contexts, (37)a and (38)a, compared to the situation in which the adverb is lower in the structure, (37)b and (38)b and c.

(37)  a. ?George says that _evidently_ Bob has disappeared.  
b. George says that Bob has _evidently_ disappeared.

(38)  a. ?I won't come because [IP _probably_ [IP my mother is sick ] ] 
b. I won't come because [IP my mother [I P _probably_ [I P is sick ] ] ]  
c. I won't come because [IP my mother is [VP _probably_ [VP sick ] ] ]

Since there are numerous movement operations which are restricted in embedded clauses, he concludes from these facts that this adverb position is likely derived via movement. In particular, it seems reasonable to assimilate this hypothesized movement to English Topicalization. For some, this construction also sounds odd in embedded contexts. This is illustrated in (39) and (40). The judgments given are relative.
(39) a. (George says that, this article, he won't read again.)
   b. This article, I won't read again.

(40) a. (I believe that \text{[IP the books [IP I gave away to some friends ]]} )
   b. The books, I gave away to some friends.

Like the left-peripheral adverb position, Topicalization is also analyzed in (40) as adjunction to IP following Baltin 1982 and Lasnik and Saito 1992. The two phenomena can thus be unified by assuming that the IP-adjoined adverb position is simply adverb topicalization. Both topics and clause-initial adverbs would then be instances of a single movement operation: fronting to an IP-adjoined position. Such a move has independent motivation. Gundel 1988:154 demonstrates (contra Chomsky 1995) that topicalization of adverbials is a process that must exist in the grammar anyway. This claim is illustrated by the data in (41). These examples seem to require long-distance construal of the italicized adverbial with the embedded clause. Under the assumption that adverbials are base-generated in the clauses they modify, the derivation of such examples must involve topicalization of the adverbial from the embedded clause as illustrated in (41)c.

(41) a. \textit{Around midnight}, I promised he would be there.
   b. \textit{Yesterday}, Jim claims that he wrote three chapters.
   c. \text{[IP next week\textsubscript{i} [IP George said [CP that he'd talk about quantifiers \textsubscript{t\textsubscript{i}}]]]}

Not all people get the readings in (41) and long-distance movement of adverbials is not uncontroversial. Given the indicated judgments however, its existence is supported by the observation that such data seem to obey island constraints, a standard diagnostic for movement. The examples in (42) contrast minimally with those in (41) in that the adverbial can absolutely not be construed with the lower clause when it is in an island—a complex NP in (42)a, an adjunct clause in (42)b, and a \textit{wh}-island in (42)c. The examples are ungrammatical on the indicated interpretation.
(42) a. *Around midnight, I made a promise that he would be there.
   (cf. I made a promise that he would be there around midnight.)
   b. *Yesterday, Jim is tired because he wrote three chapters.
   (cf. Jim is tired because he wrote three chapters yesterday.)
   c. *[IP next week; [IP George wondered [CP how he'd have time to talk about quantifiers τ]]]
   (cf. George wondered how he'd have time to talk about quantifiers next week.)

The data lead to the conclusion that adverb topicalization to the IP-adjoined position must exist in the grammar on independent grounds. Analyzing all IP-adjoined adverbs as topicalization would reduce the number of base-generated positions required for them while introducing no new syntactic mechanisms. It would also eliminate the need to explain how IP-adjoined adverbs are licensed. The adverbs would be licensed in their base-generated position, before movement.

On the other hand, there is one piece of evidence that suggests that another solution should also be available. The double topicalization construction illustrated in (43) argues against taking all instances of IP-adjoined adverbs as fronted topics. Topicalization of more than one XP is typically quite unacceptable (but see Culicover 1996 for a differing view), an instance of the more general pattern of strong ungrammaticality that results from the combination of two A movements within the same clause.

   b. *To the Salvation Army, the old National Geographics, you should donate.

Examples of single topicalization with an IP-adjoined adverb, in (44) and (45), may perhaps seem degraded, but not nearly to the same extent as the sentences in (43). Under the assumption that all IP-adjoined adverbs are derived via movement, the data in (44) and (45) should have a similar status to (43) since they are syntactically, structurally identical. That the examples below are only slightly degraded may be taken to indicate that they are a distinct phenomenon from double topicalization.

   b. *To the Salvation Army, the old National Geographics, you should donate.
(44) a. Apparently, in his mattress, John hid his money.  
      b. *In his mattress, apparently, John hid his money.

(45) a. Perhaps, the house on the Cape, they’re going to put up for sale.  
      b. *The house on the Cape, perhaps, they’re going to put up for sale.

Independent of the analysis that such examples would receive, their status does not seem to warrant assimilating them to the clearly ungrammatical cases in (43). I conclude from these limited observations that the IP-adjoined adverb position is potentially a base-generated one, in addition to possibly being derived via movement. To account for this, I will offer an analysis in which the IP-adjoined adverb is licensed by the c-commanding head \( C^* \), an option which cannot be excluded in principle anyway.

Given the structure in (46), it is clear that an adverb adjoined to IP will be in the checking domain of \( C^* \) just as an adverb adjoined to VP was in the checking domain of \( I^* \). This provides a mechanical way of licensing IP-adjoined adverbs illustrated in (47).

(46)

```
CP
    \( C^* \)
    \( C \)
    IP
    AdvP
    IP
```

(47) a. *Perhaps it will stop raining soon.  
      b. *Conceivably he went to the wrong restaurant to meet us.  
      c. *Probably you would be more successful in a bigger company.

3.3.2. Licensing from \( C^* \)

Licensing clause-initial adverbs from \( C^* \) leads to two expectations. First, since a phrase adjoined to \( C^* \) would also be in the checking domain of \( C^* \), we expect to find adverbs in this position, between the specifier of CP and \( C^* \). Second, since \( I^* \) and \( C^* \) are distinct licensors,
we introduce the possibility that an adverb could be licensed by only one of the two heads. Such an adverb, if licensed only by C°, would only appear clause peripherally. If licensed only by I*, the adverb would appear immediately following the subject or in the auxiliary position, but not clause-initially. Both of these expectations seem to be borne out and are illustrated below.

The examples in (48) confirm the prediction of C°-adjoined adverbs. I assume that questions are CPs in which the specifier of CP is occupied by a w h -phrase and the head C° contains the inverted auxiliary. With reference to the structure in (46), C° adjunction places an adverb between these two elements as illustrated for (48)g. Although the examples are not all perfect, my consultants also do not judge them fully ungrammatical.

(48) a. ?Who possibly can we call at this hour of the night?
   b. Which of them apparently does he not like?
   c. ?Who ever has he criticized except Jan?
   d. ?Where conceivably could one find a good buy on snow tires?
   e. Bill is arguably more qualified that Tracy, Tony, Tim, Tina, . . .
      ?Who arguably is he not more qualified than?
   f. ?Who stupidly did you invite by mistake?
   g. ?[CP where [C° most likely [C° will [IP the spy meet his contact? ] ] ] ]

The second expectation is that there will exist adverbs which are licensed by only one of either I* or C°. I present two potential instantiations below. The first adverb type involves what I will call E(xtent)-adverbs, exemplified by just, merely, simply, etc. They are licensed only by I*. The second case involves bare-NP adverbs which may appear clause-initially but not clause-internally. They are reasonably licensed only by C°.

In addition to S- and VP-adverbs, Jackendoff 1972 describes a third class of adverbs which have the distribution of neither. Adverbs like merely, hardly, or scarcely do not assimilate into either category on syntactic or semantic grounds. I will call them E(XTENT)-ADVERBS since they approximately describe the extent or degree to which a situation holds. Jackendoff gives their distribution as necessarily
occurring somewhere between the subject and the main verb. (49) and (50) show immediate post-subject and post-modal positions, respectively. (51) illustrates that clause-initial position is not possible. (52) is Jackendoff’s (3.141). As he observes, only clause-internal positions and not clause-peripheral ones are acceptable for E-adverbs.

(49)  
   a. He *simply* is incapable of it.  
   b. The raccoons *scarcely* have touched our garbage.  
   c. They *hardly* should worry about that.

(50)  
   a. He is *simply* incapable of it.  
   b. The raccoons have *scarcely* touched our garbage.  
   c. They should *hardly* worry about that.

(51)  
   a. *Simply* he is incapable of it.  
   b. *Scarcely* the raccoons have touched our garbage.  
   c. *Hardly* they should worry about that.

(52)  
   a. *Merely* John will have been beaten by Bill.  
   b. John ?will have *merely* been beaten by Bill.  
   c. *John will have been beaten by Bill merely.*

(53) extends the description of adverb placement to account for the clause-internal positioning of E-adverbs. This potentially places them in any of the positions indicated in (54). The structure shown is for (49)c and (50)c.

(53)  
   *Syntactic Distribution of E-Adverbs*  
   a. left adjunction to I’  
   b. left adjunction to VP or V’
(53) gives a description of the distribution of E-adverbs. It remains to turn this into a formal licensing scheme for the adverb. I maintain that the distribution in (53) can be captured by allowing E-adverbs to be licensed by $I^\circ$ and $V^\circ$, but not $C^\circ$. Such an analysis would provide support for the idea that $I^\circ$ and $C^\circ$ are distinct licensing options. For E-adverbs, $I^\circ$ licensing will place them in the following adjunction sites: $I^\circ$ adjoined and topmost VP adjoined. $V^\circ$ licensing permits the adverb to adjoin to $V'$ and to a VP that is the complement of some $V^\circ$. These possibilities are schematized in the structure in (55) and are exactly the ones proposed in (53). The reader can verify that they are the positions determined in (53) and that they permit the data in (49) through (52). Crucially, the clause-initial position, repeated below in (51), and the $C'$-adjoined position, (56), are ruled out.
E-adverbs do not appear in the clause-initial position (IP-adjoined) or between a wh-phrase and an inverted auxiliary (C'-adjoined) because they are not licensed by C°. They nevertheless appear in the positions which are licensed by I°. They thus provide evidence for C° and I° being distinct licensers.

A class of adverbials that contrast with E-adverbs in plausibly being licensed by C° but not by I° are bare-NP adverbs (Larson 1985, Emonds 1987). Larson 1985 demonstrates that a restricted set of noun phrases including temporals (numerous examples such as tomorrow,
last week, next Christmas, and noun phrases headed by the common noun time), locatives (headed by the common noun place), directionals (headed by way or direction), and manner NPs (headed by way) may function as adverbial modifiers. (57) through (60) illustrate their distribution. They may appear clause-initially, in (57), and clause-finally, in (58). Structurally, the data illustrate left/right adjunction to IP as schematized in the c examples.

(57) a. Tomorrow I will start my new diet.
   b. Next Christmas the Smiths are going to Hawaii.
   c. \[IP last week \[IP the government expelled several alleged spies \] \]

(58) a. I will start my new diet tomorrow.
   b. The Smiths are going to Hawaii next Christmas.
   c. \[IP \[IP the government expelled several alleged spies \] last week \]

Other syntactic positions for bare-NP adverbs, lower in the clause, are degraded. (59) demonstrates that they may not appear immediately to the right of the subject in the I'-adjoined position. They may also not occur to the right of a modal, in (60), which is the topmost VP-adjoined position. They are also not possible within VP, where they would be adjoined to embedded VP or V', (61).

(59) a. *I tomorrow will start my new diet.
   b. *The Smiths next Christmas are going to Hawaii.
   c. *[IP the government \[I. next week \[I. is expelling several alleged spies \] \] ]

(60) a. *I will tomorrow start my new diet.
   b. *The Smiths are next Christmas going to Hawaii.
   c. *the government might \[VP next week \[VP expel several alleged spies \] \]

(61) a. *I will be tomorrow starting my new diet.
   b. *The Smiths could be next Christmas going to Hawaii.
   c. *according to sources, the government might \[VP have \[VP \[V\Vp last week \[V. expelled several alleged spies \] \] ] ]
Clausal Syntax

Summarily, these bare-NP adverbs may not appear in any of the positions that would be licensed by $I^*$. They only appear adjoined to IP. This is compatible with their being licensed solely by $C^*$, $I^*$, and $V^*$. The latter two are clearly motivated; the licensing of adverbs by $C^*$ is also suggested.

To summarize, I have attempted to explain the syntactic distribution of adverbs by licensing them in the checking domain of individual, semantically contentful heads: $C^*$, $I^*$, and $V^*$. The latter two are clearly motivated; the licensing of adverbs by $C^*$ is also suggested.

Before leaving the realm of adverb licensing, it is worth pointing out that this use of the checking domain is perhaps somewhat unorthodox. The checking domain was intended to serve as a domain in which abstract features are checked in a defined local relationship and morphologically realized as agreement. In adopting the checking domain for adverb licensing, we predict that a language might show overt agreement between a licensing head and an adverb adjoined within the head's checking domain. This is certainly not the case for English and I know of no such language elsewhere. This would seem to be an inappropriate application of the checking domain, as originally conceived. It seems ultimately necessary to distinguish a head's checking domain, a domain in which features are actually checked, from some, still local, domain in which thematic roles are assigned and adverbs are licensed. The former would seem to be the more restricted of the two as it does not include adjoined positions except for direct adjunction to the head.

4. SENTENTIAL NEGATION

Negation in English behaves in many ways like an adverb, although in most recent syntactic works it is not treated as such. I will adopt the view that sentential negation in English, realized as the lexeme *not*, is the head of its own projection in the syntax (Kayne 1989, Pollock 1989, Zanuttini 1991, Potsdam 1997a). Negative sentences as in (62) have the general structure in (63) (I consider contracted negation -*n't* below).

(62)  
   a. Bill did not look well.
   b. You should not miss this movie.
   c. He cannot get here any earlier.
Zanuttini 1991 discusses in depth the position of Neg(ative) P(hrase)s in English and also concludes that there is a NegP immediately dominating VP. More accurately, since her proposal is couched within a complex Infl scenario in which two functional projections, AgrP and TP, replace the formerly unitary IP, Zanuttini proposes that there are actually two NegPs in English. Neg₂P occurs between TP and VP and corresponds to the NegP in (63). The head of this Neg₂P is not. Neg₁P occurs between AgrP and TP and is headed by the dependent morpheme -n’t. Modals and auxiliaries located in T° may move to Neg₁° to adjoin to -n’t and form the negative elements don’t, shouldn’t, etc. I will adopt the least controversial part of her proposal, namely, that Neg₂P exists and is located immediately above VP. I will further assume that the syntactic position of this NegP is constant across clauses. I do not adopt the second negative phrase, Neg₁P, for two reasons. First, it crucially depends upon a split Infl scenario, which I do not adopt. Second, I find the ‘lexical’ analysis of contracted forms in Zwicky and Pullum 1983 particularly compelling. They argue that -n’t is not a syntactic clitic as in Zanuttini’s analysis but rather an inflectional affix. Their evidence is based on semantic and syntactic idiosyncrasies of these auxiliaries which make a clitic analysis of -n’t unlike other clearer cases of cliticization. I will henceforth use the terms NEGATIVE MODALS and NEGATIVE AUXILIARIES to refer to the two classes consisting of can’t, shouldn’t, etc. and isn’t, hadn’t, etc., respectively. Morphologically distinct negative modals are found in numerous languages, for example the languages of West Africa (Zwicky and Pullum 1983, Koopman 1992).

Zwicky and Pullum’s analysis can be adapted to a clause structure in which sentential negation is obligatorily represented with NegP by taking the negative modals and auxiliaries to be formed in the lexicon and appended with the feature [NEG] which must be checked by a
corresponding feature in NegP. This will force the presence of NegP in all cases of sentential negation, even when there is no negative morpheme per se. Otherwise, negative modals and auxiliaries are analyzed no differently than their positive counterparts. In particular, they have the same category status. Negative modals in (64) are analyzed according to the structure in (65). They are inserted into 1° and the [NEG] feature raises from Neg° to be checked.

(64)  
a. Bill didn't look well.  
b. You shouldn't miss this movie.  
c. He can't get here any earlier.

(65)  
\[ IP \quad \text{subject} \quad 1° \quad \text{NegP} \quad [\text{NEG}] \quad \text{tense} \quad \text{VP} \]

Negative auxiliaries have the analysis illustrated in (67). Again, syntactically, they behave no differently from their positive counterparts with the exception of the presence of NegP in the clause. In raising to 1° (see chapter 2), they pass through Neg° to check a [NEG] feature before ultimately checking tense in 1°.

(66)  
a. We aren't satisfied.  
b. Somebody hasn't authorized this.  
c. The answer isn't obvious.
44 Syntactic Issues in the English Imperative

This account of English negation attributes the presence of sentential negation to a unified syntactic source: NegP. At the same time, it takes advantage of Zwicky and Pullum's 1983 observations regarding the morphological realization of negation. The analysis is compatible with Laka's (1990) claim that NegP is actually one instantiation of ΣP, a phrase that specifies the polarity (positive or negative) of a clause. Neg⁺ is merely one form of Σ⁺. For clarity, I will continue to use NegP unless a more general claim is being made.

5. VP ELLIPSIS

VP ellipsis (VPE) in English, illustrated in (68), is a process that allows a constituent consisting of a verb, its arguments, certain adjuncts, and, optionally, accompanying auxiliary verbs to be missing under 'identity' with a like constituent elsewhere in the discourse (Hankamer and Sag 1976; Sag 1980; Zagona 1988a, 1988b; McCloskey 1991; Lobeck 1987, 1991, 1992, 1995).

(68) a. Joe will taste the food if Mikey does.
    b. Matt is moving to Finland and Sophie might also be.

Since auxiliaries plus main verbs and their internal arguments analytically constitute verb phrases, the phenomenon is labeled VP ellipsis.¹³ VPE is seen in other languages besides English, for example, Brazilian Portuguese (Chao 1988), Chinese (Chao 1988), Hebrew (Doron 1990, Borer 1995, Goldberg 1996), Irish (McCloskey 1991), and Malay (Lobeck 1992), although it is not found in all languages.
In this section I develop an analysis of VP ellipsis with which to investigate the phrase structure of imperatives and other clause types. VPE is particularly useful as a probe of the position of elements near the IP/VP interface. The section begins with a presentation and examination of the analysis of VPE in Lobeck 1995. Within a Government-Binding approach, Lobeck 1995 discusses cross-categorial ellipsis and offers a restrictive condition on the licensing and identification of elided categories, including null VPs. The analysis assimilates the licensing and identification of elided VPs to that of other zero elements such as null subjects. Like them, a null VP is required to be in a particular locality relationship with an agreeing head. After laying out Lobeck's system, I proceed to point out some empirical and theoretical difficulties that suggest that some of the analytical particulars are untenable. This careful look at Lobeck's system has two valuable purposes, however. It lays out the core body of data to be accounted for in any syntactic analysis of VPE and it yields valuable insights into the conditions under which VP ellipsis is permitted in English. From this foundation, I proceed to argue for a revised condition that builds on Lobeck's approach. The new Licensing Condition requires a null VP to be licensed by an inflectional head that is in the same s-projection (Abney 1987) as the null VP. I show how this accounts for the full range of Lobeck's data in a more explanatory and theoretically more unified manner.

Before continuing, I introduce some terminology for later use. It has been observed that VP ellipsis behaves much like an anaphoric process: there is an antecedent VP and a null VP whose interpretation is dependent upon the antecedent. The elided VP in the examples below is marked by the symbol $\emptyset$ and I will call it the TARGET. The ANTECEDENT, or TRIGGER, is bracketed below and determines how the target VP is interpreted.

(68)  
\begin{itemize}
  \item a. Joe will \[\text{VP taste the food}\] if Mikey does $\emptyset$.
  \item b. Matt is \[\text{VP moving to Finland}\] and Sophie might also be $\emptyset$.
\end{itemize}

5.1. Lobeck 1995

Lobeck 1995 (adopting a suggestion from Wasow 1972) takes null VPs to be non-NP pronominal empty categories: null pronouns similar to \textit{pro} of null argument languages such as Italian. Chao 1988 and Lobeck
1992 present evidence that elided VPs do have pronominal properties despite being non-NP in nature. They observe that, like pronouns, empty VPs allow split antecedents, may have pragmatically controlled (non-linguistic) antecedents, and obey the Backwards Anaphora Constraint (Langacker 1969), although the first two of these are perhaps controversial (Hankamer and Sag 1976). Given that null VPs can be analyzed as pronominal elements, Lobeck and Chao represent a null VP as in (69)a, where the elided VP is a null pronominal element. I will use the modified representation in (69)b.

\[
\begin{array}{ll}
\text{(69) a. } & \text{VP} \\
\text{pro} & \text{b. } \text{VP} \\
\text{\hspace{1cm} } & \text{\hspace{1cm} } \emptyset
\end{array}
\]

A central goal of Lobeck's approach is to assimilate the possibility of VP empty categories to that of other base-generated null pronominals. The primary mechanism for accomplishing this is the licensing and identification requirement on pro given in (70). It will be referred to as the Licensing and Identification Condition (LIC) or just the Condition. It specifies the surface structure conditions under which pro, both DP and non-DP, can appear.

\[
(70) \quad \text{Licensing and Identification of pro (Lobeck 1995)} \\
\text{At surface structure, a non-arbitrary, empty pronominal must be 1) properly head-governed and 2) governed by an X' specified for strong agreement}
\]

The licensing portion of the Condition is accomplished via the proper head government clause and identification is done through government by an agreeing head. These relationships are defined according to Rizzi's (1990) system of Relativized Minimality (RM), in (71) through (73). The definitions for c-command and m-command that I assume are from Chomsky 1986 in (74) through (76).

\[
(71) \quad \text{Relativized Minimality} \\
X \alpha\text{-governs } Y \text{ only if there is no } Z \text{ such that} \]
\[
(i) \quad Z \text{ is a typical potential } \alpha\text{-governor for } Y, \\
(ii) \quad Z \text{ c-commands } Y \text{ and does not c-command } X
\]
(72) **Head Government**

X head-governs Y iff

(i) \( X = \{A, N, P, V, H [+\text{tense}] \} \)

(ii) X m-commands Y

(iii) no barrier intervenes

(iv) Relative Minimality is respected

(73) **Proper Government**

X properly \( \alpha \)-governs Y iff \( X \ \alpha \)-govern Y within the most immediate projection

(74) **C-Command**

\( \alpha \) c-commands \( \beta \) iff \( \alpha \) does not dominate \( \beta \) and every \( \gamma \) that dominates \( \alpha \) dominates \( \beta \)

(75) **M-Command**

\( \alpha \) m-commands \( \beta \) iff \( \alpha \) does not dominate \( \beta \) and every \( \gamma, \gamma \) a maximal projection, that dominates \( \alpha \) dominates \( \beta \)

(76) **Condition on Domination**

\( \alpha \) is dominated by \( \beta \) only if it is dominated by every segment of \( \beta \)

The intuition behind the RM system is that the government relation holds between a head and another element provided that, other things being equal, there is no closer head which could serve as a governor. Proper head government is a particularly strict form of government which must obtain in the c-command domain of a head. Thus, in (77), the head X governs both its complement ZP and its specifier YP because they are in the m-command domain of the head but X properly governs only its complement ZP because X' defines the immediate projection of X and the specifier YP is outside of this domain.

(77) \[
\begin{array}{c}
\text{XP} \\
\text{YP} & \text{X'} \\
\text{X} & \text{ZP}
\end{array}
\]
Rizzi considers Chomsky 1986 and ultimately follows Cinque 1990 in defining a BARRIER as an element not directly selected by a category nondistinct from [+V]. The nondistinctness specification makes the maximal projections selected by the functional heads I° and C° not barriers, in addition to the complements of V° and A°. Consequently, a head governs an element that it c-commands provided no barrier intervenes and Relativized Minimality is not violated.

Lobeck further allows for government to hold between a moved head and elements in the domain of its original position via the Government Transparency Corollary (GTC), from Baker 1988.

\[78\] **Government Transparency Corollary** (Baker 1988)

A lexical category which has an item incorporated into it governs everything which the incorporated item governed in its original structural position.

The intuition behind the GTC is that head movements such as I°-to-C° inversion or T°-to-Agr° feature checking should not reduce the government domain of the moved head. The GTC serves to restore to a moved head its original government domain, in particular, its deep structure complement. The configuration of concern and the results that the GTC achieves are illustrated in (79). H₁ is a head that has undergone head movement to adjoin to the higher head position H₂. The original government domain of H₁ is the set \{ZP, WP, W°\}: the specifier of H₁P, the complement of H₁ and the head of the complement of H₁. The government domain of H₂ is limited to \{YP, H₁P, t_{H₁}\} by Minimality. The GTC extends the government domain of H₂ to include the union of these two sets, its own government domain plus the government domain of the head that adjoined to it. Specifically, H₂ governs the deep structure complement of H₁, WP. The government domain of H₂ incorporating the effects of the GTC is boldfaced in the structure.
Given these definitions and conventions, the Condition in (70) licenses a null VP via proper government by a V° or I° head which may or may not have independently undergone head movement. This part of the condition then differs little, if at all, from the Empty Category Principle which regulates the appearance of movement-derived empty categories. I now turn to the second part of the Condition, the identification of pro.

As has been long recognized in the literature on null arguments, the possibility of a null argument is tied to the presence elsewhere of features that can identify the missing argument. For nominal arguments, this identification is typically in the form of person and number agreement morphology on or near the verb. For null VPs, the type of agreement that can identify the empty category is less obvious. The strong agreement required by the Identification Condition is defined in (80) and (81), drawing on Emonds 1987.

(80) Agreement (Lobeck 1995)
An X° is specified for agreement iff its features must be ‘shared’ with those of another head or phrase under government.

(81) Strong Agreement (Lobeck 1995)
An X° is specified for strong agreement iff X°, or the phrase or head with which X° agrees, morphologically realizes agreement in a productive number of cases.

If we combine the definition of agreement in (80) with that of government in (72), a head H may potentially agree with its specifier, its complement, or the head of its complement. Call this agreeing
element J. The feature F shared between H and J will depend upon the properties of H. The head H is, additionally, specified for strong agreement and endowed with the ability to license pro if H or J morphologically realizes the shared feature F.

Lobeck 1995 asserts that the relevant agreement feature for VPE is [+tense], since only tensed clauses in English allow a null VP.14 [±tense] is a feature that is typically realized on a verbal head but it is assumed to be located in I° where it is subject to feature checking. Morphological tense appears on either I° or the head of the VP it selects. Taking [+tense] as a morphologically realizable agreement feature, we have that I° is specified for strong agreement under (80) and (81) because the conditions are met: I° governs its complement VP and either I° itself or V° morphologically realizes the feature [+tense]. As a result, we derive Lobeck’s claim that it is I° that identifies pro. This conclusion supports proposals about VPE going back to Bresnan 1976, who first implied that the AUX position was crucially involved in the licensing of VP ellipsis. In the discussion following the explication of Lobeck’s proposal, I return to this central observation and attempt to justify it and make it more precise. Before this, however, I survey the core cases of VPE in English and evaluate how Lobeck’s proposal accounts for the facts. To summarize, the necessary pieces of the analysis are The Government Transparency Corollary in (78), the definition of Strong Agreement in (81) and the Licensing and Identification Condition on pro in (70).

Consider first the classic grammatical case of VP ellipsis in (82)a whose second conjunct has the structure in (82)b. In this example, and the ones below, it is necessary to confirm that the empty category is both licensed and identified.

(82) a. John didn’t leave but Mary should/did ø.

b. 

\[
\text{IP} \quad \text{I°} \\
\text{DP} \quad \text{I} \\
\text{Mary} \quad \text{VP} \\
\text{should/did} \quad \text{ø} \\
\text{[+tense]} 
\]
The empty category in (82) is properly head governed by I* which satisfies the licensing requirement. The identification clause is likewise satisfied by I*. I* is specified for strong agreement because it morphologically realizes tense. In the case of did, this is transparent because of the past tense form of the verb. For modals such as should, Lobeck adopts the hypothesis that they are base-generated in I* and realize tense, following Pollock 1989 and Chomsky 1993 (see Gazdar Pullum, and Sag 1982 for evidence).\textsuperscript{15} Being specified for strong agreement, I* may identify the null VP. (82) thus satisfies both conditions on the appearance of pro and the result is grammatical. Here and in all of the grammatical cases to follow, the empty category is licensed and identified by the same head, I*, although such a situation is not strictly required by (70).

The minimally different example in (83) without the auxiliary is transparently ungrammatical because the empty category is not identified. I* may very well be specified for [+tense] and thus properly govern the null VP and license it; however, I* cannot be said to morphologically realize tense. It is therefore not specified for strong agreement and does not identify the null VP.

\begin{enumerate}
\item a. *John didn’t leave but Mary φ.
\item b. *John didn’t leave but\[IP Mary [I\ [+tense\] [VP φ]]\]
\end{enumerate}

Next consider the grammatical example in (84), which is an elliptical interrogative counterpart to (82). Under the assumption that interrogatives are derived via I*-to-C* movement of the auxiliary/modal, we do not want such head movement to adversely interfere with the licensing and identification by [+tense] in I*. It should be evident that this is the role of the Government Transparency Corollary. The GTC allows the empty category in (84)b to be governed just as in (82) above. C* properly governs the null VP via the GTC and so licenses it. C* also identifies the empty category because it is specified for the strong agreement feature [+tense] by having had I* adjoin to it. The representation assigned to head movement in (84)b follows Lobeck 1995.
(84) a. John didn’t leave but should/did Mary φ?

b. 

```
CP
  \|-- IP
    | \-- [tense]
    \-- should/did
        \-- [tense]
            \-- DP
                \-- Mary
                    \-- I
                        \-- VP
                            \-- t_i
                                \-- φ
```

The example in (85) receives a fully parallel account. Its structure in (85)b differs from the standard case in (82) only in that the auxiliary that is in I* at the surface has moved there rather than having been base-generated there. Its analysis is identical to that given for (84), with the exception that the operative head movement is V*-to-I*. Again, the GTC allows the [+tense]-specified I* to properly govern the empty VP and agree with it via the trace of movement in V*.

(85) a. Mary is leaving and John is/has φ too.

b. 

```
IP
  \-- DP
      \-- John
          \-- I
              \-- V
                  \-- VP
                      \-- t_i
                          \-- φ
```

Now consider the examples in (86), due to Bresnan 1976, which illustrate that VP ellipsis is ungrammatical with aspectual verbs such as start, begin, or continue which Lobeck takes to select bare VP complements, following Emonds 1985. The putative structure of (86)b is in (87).
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(86)  a. *Because Mary continued Ø, John also started speaking French.
    b. *Fire began pouring out of the building and then smoke began Ø.

Pro in (87) is licensed according to the Licensing and Identification Condition because it is properly head governed by the verb. Furthermore, the verb began is transparently specified for tense, leading us to conclude that the empty category is also identified since it is governed by a head specified for strong agreement. It would seem that an incorrect prediction is made. In fact, however, Lobeck agrees that the Condition is satisfied at surface structure in this example. The difficulty arises when the main verb begin raises to 1° at LF to check its tense feature. The LF is as in (88). It is ruled out by assuming that "a feature can identify only one empty category during a derivation (Lobeck 1995:149)". At surface structure, in (87), the feature [+tense] identified the VP pro. At LF, when the verb has raised into 1', it is "blocked from also identifying the matrix VP" which Lobeck assumes without argument must likewise be identified.

(87)  * IP
       /   \
      /     \  
     DP     I' 
      /      /  
     smoke I   VP 
       /  
      V   VP 
       /  
      began Ø

[+tense]

(88)  * IP  (LF)
       /   \
      /     \  
     DP     I' 
      /      /  
     smoke I   VP 
       /  
      V   VP 
       /  
      began V  Ø

[+tense]  t_i  Ø
The assumption necessary to exclude the data in (86) is stated in (89) since it causes difficulties for the analysis elsewhere.

(89) **Restriction on Feature Identification** (Lobeck 1995:149)

A feature may identify only one empty category during a derivation.

In particular, if we return to the example in (85), repeated below, we see that the surface structure of the example is identical to the LF of (88) modulo individual lexical items. Given the restriction in (89) needed to account for the aspectual verb case, the structure in (85)b should also be ill-formed and the example ungrammatical because the feature [+tense] must identify both VPs. This is contrary to fact.

(85) a. Mary is leaving and John is/has $\emptyset$ too.

\[
\begin{array}{c}
\text{IP} \\
\text{DP} \\
\text{John} \\
\text{I} \\
\text{VP} \\
\text{is/has} \\
\text{[-tense]} \\
\text{t}_i \\
\emptyset
\end{array}
\]

b. It seems evident that the assumption in (89) restricting the ability of a feature to license a null VP is problematic in one case or another. If one were to assume that the restriction did not hold or that the main VP didn’t need to be identified at LF, the ungrammaticality of (86) would remain unaccounted for. Adopting the restriction, on the other hand, rules out grammatical examples. A further difficulty for the account of the aspectual verb data is that the Licensing and Identification Condition is assumed by Lobeck to apply at surface structure, so LF operations such as Verb Raising should be irrelevant.

The analysis does correctly predict that inserting a lexical element into I' in the examples in (86) will not save them, (90). (86) is repeated below for reference.
The examples in (90) are still ungrammatical, despite the presence of an additional potential identifying head. The problem is no longer that the verb can raise to $I^*$ at LF and create the need for identification of a second VP. The modal in $I^*$ blocks Verb Raising. It is the case, however, that identification is now impossible. In the examples in (90), which will have the structure in (91), Relativized Minimality prevents the [+tense] modal in $I^*$ from governing the empty category. A closer potential governor exists, $V^*$, even though it is unable to actually identify the empty category. The data in (90) are thus correctly excluded. Even if the account of the ungrammaticality of (86) were to go through, however, it seems intuitively unappealing that (90) and (86) should receive such different explanations.

As is also well known, VPE may optionally leave one or more auxiliaries when it applies:
(92) a. John could have been studying Spanish and Bill could have been studying Spanish too.
b. John could have been studying Spanish and Bill could have been \( \emptyset \) too.
c. John could have been studying Spanish and Bill could have \( \emptyset \) too.
d. John could have been studying Spanish and Bill could \( \emptyset \) too.

(92)d receives an account as in (85) where the immediately adjacent \( I^*[+\text{tense}] \) properly governs the empty category and licenses and identifies it. In (92)b and c, by contrast, the heads adjacent to the null VP, \( \text{been} \) and \( \text{have} \) respectively, are untensed verbs which are incapable of identifying the empty category. There is apparently no way for the empty category to be identified since \( I^* \), a head specified for strong agreement, is too far away to govern. Relativized Minimality strictly excludes \( I^* \) from governing the empty category because of the closer \( V^* \) governors. Lobeck’s way out of this difficulty is illustrated in (93), for (92)b. The key analytical device is that all auxiliaries, both finite and non-finite, move overtly to \( I^* \) at surface structure.

(93)

```
IP
  \( \downarrow \)
DP
  \( \downarrow \)
Bill
  \( \downarrow \)
  \( \downarrow \)
I
  \( \downarrow \)
V
  \( \downarrow \)
  \( \downarrow \)
V_k
  \( \downarrow \)
  \( \downarrow \)
V
  \( \downarrow \)
  \( \downarrow \)
V_i
  \( \downarrow \)
  \( \downarrow \)
t_k
  \( \downarrow \)
  \( \downarrow \)
V
  \( \downarrow \)
  \( \downarrow \)
been
  \( \downarrow \)
  \( \downarrow \)
t_i
  \( \downarrow \)
  \( \downarrow \)
\( \emptyset \)
```

Each non-finite auxiliary undergoes head movement, adjoining to the next highest head in accordance with the Head Movement Constraint. The auxiliary complex finally adjoins to \( I^* \) as shown. The motivation for such movement is taken to be checking of aspectual features. The desirable consequence of such a structure is that VP ellipsis is then permitted. The empty VP will be licensed and identified by \( I^* \) via the Government Transparency Corollary. On the other hand, other
motivation for such head movement is absent and the negative empirical consequences seem overwhelming. The constituent structure in (93) closely resembles that proposed in Chomsky 1957 and later argued for in Akmajian and Wasow 1975. Emonds 1976, Iwakura 1977, and McCawley 1988 present numerous arguments against it drawing on a wide range of phenomena: *There* Insertion, parenthetical placement, *which*-pronominalization, and Coordination. Furthermore, it does not easily fit into conceptions of adverb placement or negation developed here. On a theoretical level, the structure in (93) also runs afoul of the restriction on a single feature identifying multiple empty categories. The feature [+tense] is required to identify three VPs from Lobeck’s viewpoint. Finally, I will present two additional difficulties with this multiple head movement analysis.

First, the structure in (93), without some additional mechanism, derives the incorrect result when 1°-to-C° interrogative inversion applies. Movement of the head 1° derives (94)a rather than the grammatical (94)b.

(94)  a. *Could have been Bill studying Spanish?*
    b. Could Bill have been studying Spanish?

Second, the proposal requires an unmotivated V°-to-D° movement operation in the case of Poss- ing gerunds. Akmajian and Wasow 1975 observe that VP ellipsis is found in Poss- ing gerunds, illustrated in (95) from Iwakura 1977, although it is rather restricted.

(95)  a. Which bothers you more: John’s having been arrested or Bill’s having been 0?
    b. Ford’s having been examined by a psychiatrist was just as unreasonable as Nixon’s having been 0.

Abney 1987 proposes a structure similar to the one in (96) for Poss- ing gerunds. They are fundamentally a D(eterminer) head that selects a VP complement.
Lobeck 1995 independently accounts for ellipsis in noun phrases when preceded by a possessive as in (97) with the assumption that [+poss] is a strong agreement feature. A head that is specified as [+poss], namely the determiner 's, shows strong agreement and identifies an empty category. Since it also properly governs the empty category, the Licensing and Identification Condition is satisfied and ellipsis is permitted.

Abney's structure combined with Lobeck's theory of ellipsis in DPs correctly predicts that a kind of VP ellipsis will be seen in gerunds, (98). These have a structure given by (99). D* properly governs pro, satisfying the licensing condition. D* also identifies pro because it governs the empty category with the strong agreement feature [+poss].
If we return to the examples in (95), repeated below, in which auxiliaries are stranded under VPE, they can only be accounted for in Lobeck’s theory if we move the auxiliaries into the licensing head. That is, parallel to the VP ellipsis examples with multiple auxiliaries, a rule moving non-finite auxiliaries into the functional projection must be posited so as to create a situation in which the head specified for strong agreement, D*, is also the governor of pro. This is the V*-to-D* head movement illustrated in (100).

(95) a. Which bothers you more: John’s having been arrested or Bill’s having been φ?
b. Ford’s having been examined by a psychiatrist was just as unreasonable as Nixon’s having been φ.

(100) The argument against the Lobeck 1995 analysis centers on this needed operation. In contrast to V*-to-I* movement, V*-to-D* movement is unmotivated. It does not exist independently and D* is an unlikely locus of aspectual features for checking; yet, it is apparently required to predict the grammaticality of these examples.
As a last case, I look at VP ellipsis when negation is present. As is well-known, a null VP immediately preceded by sentential not is grammatical, (101). Under Lobeck's theory, not must be the licensing head which we can see by considering the structure of the examples.

(101) a. I definitely want to go to the fashion show although my husband might not \( \varnothing \).
    b. A clown is coming to the party but a mime is not \( \varnothing \).
    c. Some of the guests tried the appetizers but I think that most did not \( \varnothing \).

(102) illustrates the second conjunct of (101)c and what is necessary for the Licensing and Identification Condition to rule them in.

(102)

\[
\begin{array}{c}
\text{IP} \\
\downarrow \\
\text{DP} \\
\downarrow \\
\text{most} \\
\downarrow \\
\text{I} \\
\downarrow \\
\text{I'} \\
\downarrow \\
\text{NegP} \\
\downarrow \\
\text{Neg} \\
\downarrow \\
\text{VP} \\
\downarrow \\
\text{not} \\
\downarrow \\
\varnothing
\end{array}
\]

Relativized Minimality prevents I'[+tense] from governing the empty category because there is a closer potential governor Neg°. Not properly governs pro and thus licenses it. Since it is the closest governor, it must also identify pro for the example to be grammatical. This requires that not be specified for strong agreement—a condition which does not obviously obtain. Lobeck 1995:157 claims that Neg° is specified for strong agreement because it is in a spec-head agreement relationship with an operator in its specifier (not shown in the structure). Lobeck uses Rizzi's (1990) arguments that opacity effects associated with negation are a result of an \( \overline{\Lambda} \) operator in spec,NegP. Despite not "morphologically realizing agreement" as the definition for strong agreement in (81) requires, the spec-head relationship is apparently sufficient to allow Neg° to identify an empty category. At the same
time, Szabolcsi and Zwarts 1993 argue that the weak island effects of negation discussed in Rizzi 1990 receive a more explanatory account in semantic terms since they are invariant across languages, independent of the syntactic analysis of negation as specifier, head, or adverbial (see also Kuno and Takami 1997 for a semantic account of such facts). This weakens the support for spec-head agreement in NegP. Finally, the data in (103) would seem to force one to say that there also exists a positive polarity $\overline{A}$ operator, presumably also in spec,$\Sigma$P. The examples indicate that $\varnothing$, which Laka 1990 takes to be a realization of $\Sigma^*$, licenses a null VP as shown in the structure in (103)d. It must therefore also be specified for strong agreement. While the existence of such an operator is not impossible, its motivation is unclear.

\[
(103) \begin{align*}
\text{a. } & \text{I didn’t mess with your stuff. You did so } \varnothing. \\
\text{b. } & \text{You weren’t invited. I was so } \varnothing. \\
\text{c. } & \text{The dog can’t reach the chops on the counter. It can so } \varnothing. \\
\text{d. } & \text{ } \\
& \text{IP} \\
& \quad \text{DP} \\
& \quad \text{it} \\
& \quad \text{I} \\
& \quad \SigmaP \\
& \quad \text{can} \\
& \quad \Sigma' \\
& \quad \Sigma \\
& \quad \varnothing \\
& \quad \text{VP} \\
& \quad \text{so} \\
& \end{align*}
\]

To summarize, Lobeck’s analysis has three primary difficulties: 1) contradictory restrictions on the identification of $pro$, in (89), 2) unnatural constituent structures related to head movement, and 3) poorly motivated assumptions about the realization of agreement in negation structures. Consequently, the account is of limited use for investigating VP ellipsis in other clause types. It requires structures and assumptions which are at odds with major portions of this work. For these reasons, I will step back from the analytical details. Instead, I will attempt to extract from Lobeck’s thorough examination of VPE the dominant generalizations based on the data surveyed above. These
observations will form the basis for a revised licensing condition developed below.

5.2. A Licensing Condition

A primary intuition behind Lobeck's analysis is that null VPs are allowed as a consequence of being in some structural relationship to an appropriate head. Furthermore, for Lobeck it is filled I' that always plays the central role in the licensing, a claim also expressed in Roberts' (1990) analysis of related VP Fronting. In the analysis that I will develop I crucially rely on Lobeck's fundamental claim. I will argue that an inflectional head must license an elided VP. My analysis will differ from hers in that the relationship that I claim holds between the head and the null VP is less local than government. To this end, I consider two separate but related issues: 1) what is the necessary licensing element for VPE (subsection 5.2.1) and 2) what is the structural relation that obtains between this licensing element and the elided VP (subsection 5.2.2).

5.2.1. The Licenser

In all the grammatical examples of VPE that we have seen thus far, two syntactic elements have always been present: an overt element in I' and a verbal head that is traditionally labeled [+AUX]. This co-occurrence is a consequence of my assumptions regarding the English verbal system in finite clauses. The elements that are inserted directly into I' are all [+AUX] and, if I' is unfilled and a [+AUX] element is present immediately below I', it will move into I'. This ambiguity explains the two main approaches that have been taken in the literature regarding what the licensing element is in VPE structures: I' or X'+[+AUX]. Lobeck's work of course represents the former approach as do Zagona 1988a, 1988b and López 1994. Gazdar, Pullum, and Sag 1982 and Kim 1995, in contrast, take the left-context element of VPE to be a [+AUX] element. What both approaches share is the assumption, formulated in (104), that the licenser is an overt, zero-level category. Most works that have considered the syntactic licensing requirements on elided VPs (e.g. Sag 1980; Gazdar, Pullum, and Sag 1982; Lobeck 1987, 1995; Zagona 1988a, 1988b; López 1994) adopt such a stance. I take it to be relatively uncontroversial.
(104) **Head Condition on VP Ellipsis Licensing**

An elided VP must be licensed by a morphologically realized head

In (105), I summarize these two hypotheses regarding the identity of a null VP licenser. Both conform to the Condition in (104). The Infl analysis takes an I* node overtly filled by a morphologically-independent lexical item to be the licensing element for a null VP. The [+AUX] analysis asserts that the licenser is a head specified [+AUX].

(105) **Two Hypotheses about VPE Licensers**

1) **INFL HYPOTHESIS:** the licenser is a non-affixal element in I*
2) **[+AUX] HYPOTHESIS:** the licenser is an element with the feature [+AUX]

A crucial case for distinguishing between the I*-licenser analysis and the [+AUX]-licenser analysis will be one in which one or the other, but not both, of these elements is present. As stated previously, finite clauses are of no help because both elements are always simultaneously present in any grammatical VPE example. In English, being in I* entails [+AUX] but the reverse does not obtain—[+AUX] elements do not always move to I*, even when it is not otherwise overtly occupied. Chapter 2 demonstrates that this situation holds in subjunctive clauses. Thus, subjunctive complements and their interaction with VPE are investigated below. What we will see is that ellipsis is generally impossible despite the presence of a [+AUX] auxiliary. This observation suggests that the licenser is not correctly characterized as [+AUX] since the presence of a [+AUX] element is not sufficient. The Infl-licenser hypothesis predicts the unavailability of ellipsis since I* is not filled. Surprisingly, the introduction of an overt inflectional element, *not*, rescues the ungrammatical patterns, further supporting the Infl hypothesis. The data thus argue that the necessary element for licensing VPE is I*, supporting Lobeck's general approach. The presence of X*[+AUX] is not sufficient. Upon reaching this result, the data will require that we be more precise about the identity of the licensing element.

Subjunctive complements, italicized in (106), are found with a limited set of English predicates such as *insist, demand, be important,*
be necessary, etc. and they are characterized, at least in the present tense, by a verb phrase headed by a verb in its bare form.

(106) a. We insist that Bob take the leftover vodka with him.
   b. It is important that you be punctual.
   c. It is necessary that the foundation be inspected before we proceed.

Subjunctive clauses are the right kind of test case for investigating the identity of the licenser of an elided VP because, as I will immediately demonstrate in previewing data from chapter 2, subjunctive I° is never overtly filled. None of the [+AUX] elements found in I° in finite clauses—modals, periphrastic do, and raised auxiliaries—are permitted in subjunctive I°. Auxiliaries may indeed be present in subjunctive complements but they do not occupy I°.

(107) shows that modals are impossible in subjunctive clauses.

(107) a. *He demanded that the successful candidates can speak German.
   b. *The police require that the spectators must stand behind the barricade.

Periphrastic do is also not permitted in subjunctive complements. Do is neither necessary nor possible with emphatic affirmation, (108), or negation, (109). It is well known that negation in subjunctives is expressed with not alone, (110).

(108) a. *Contrary to what the polls say, we suggest that Jimmy do run for re-election.
   b. *I requested that she do be more assertive as she is quite competent.
   c. *Mom demanded that you do be careful.
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(109) a. *Who suggested that he \( \{ \text{do not} \, \text{don't} \} \) act so aloof if he hopes to find a wife?
    b. *Jack asks that we \( \{ \text{do not} \, \text{don't} \} \) cut down his bean stalk just yet.

(110) a. Who suggested that he \textit{not} act so aloof if he hopes to find a wife?
    b. Jack asks that we \textit{not} cut down his bean stalk just yet.
    c. The sign requests that one \textit{not} be loitering during curfew hours.
    d. The librarian insisted that the book \textit{not} be returned in shabby condition.
    e. The queen desires that you \textit{not} be inattentive.

The third class of elements that may occupy I' in finite clauses, the auxiliaries \textit{have} and \textit{be}, are found in subjunctive clauses, in (111) and (112), respectively. Chapter 2 argues that these auxiliaries are still in VP, however, and have not moved into I' as they do in finite clauses.

(111) a. After eating, it is imperative that one \textit{have} waited at least an hour before going swimming.
    b. The committee asks that you \textit{have} studied the manuscript beforehand.

(112) a. We insist that from now on you \textit{be} waiting outside.
    b. The public demands that buses \textit{be} on time.

I briefly review the evidence here. Two diagnostics for verb movement are word order with respect to sentential negation and sentential adverbs. Auxiliaries that have undergone verb movement are able to precede either of these elements while auxiliaries that are still in VP cannot. Since auxiliaries do not raise in subjunctive clauses, perfective \textit{have} and \textit{be} in subjunctive complements do not grammatically appear to the left of sentential \textit{not}, in (113), or sentential adverbs, in (114). Similar finite clauses, in which the auxiliaries do raise, are given for
comparison and are fully grammatical. In each example, the sequence auxiliary *not/adverb is italicized.

(113) a. *In the interest of matrimonial bliss, the counselor suggests that you be not keeping secrets from your wife.
   (cf. We want to believe that you are not keeping secrets from your wife.)

b. *The association urges that he be not examined by that quack.
   (cf. He was not examined by that quack.)

c. *Humility requires that one be not proud.
   (cf. They are not proud.)

d. (?)My parents suggested that the baby sitter have not left a mess in the kitchen for them to clean when they get back.20
   (cf. Fortunately, the baby sitter has not left a mess.)

(114) a. *The sales manual requires that all agents be definitely paying attention to the customers' complaints and taking note of them during the exchange.
   (cf. The agents were definitely paying attention to the customer's complaints and taking note of them.)

b. *It is recommended that you be normally approved by the committee before coming to the seminar.
   (cf. Participants are normally approved by the committee before coming to the seminar.)

c. *Protocol requires that the attendees be normally standing when the guest of honor walks in.
   (cf. Attendees are normally standing when the guest of honor walks in.)

d. ?It is mandatory that everybody have certainly read at least the introduction.
   (cf. Everybody had certainly read at least the introduction.)

I conclude that I* is never overtly filled in subjunctive clauses. I will claim in chapter 2 that it is filled with an independent zero subjunctive modal, following Roberts 1985:40 and Lasnik 1995b. The hypothesized structure of a subjunctive complement is (115), where \( M_{sbj} \) is a null subjunctive modal. The structure corresponds to the complement clause (112)b.
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(112) b. The public demands that buses be on time.

(115) [Diagram]

These conclusions interact with predictions regarding the possibility of VPE in subjunctive clauses. The Infl hypothesis predicts that VPE should be unavailable since no licenser is present in (115). I' is not overtly filled. The [+AUX] hypothesis will permit ellipsis because of the possible presence of a [+AUX] element, be in (115).

Ellipsis patterns in subjunctive complements have not been previously documented to my knowledge. What we find first is that, unsurprisingly, it is not permitted if there is no head preceding the elided VP. The data in (116) are thus compatible with the Head Condition on VP Licensing in (104) and are parallel to the finite clause case, repeated in (83).

(116) a. *Kim needn't be there but it is imperative that the other organizers ø.
b. *Ted didn't want to vacation in Hawaii but his agent suggested that he ø.
c. *We think that Mary should present her case to the committee and we ask that Bill ø too.

(83) *John didn't leave but Mary ø.

Ellipsis is also not permitted, however, when auxiliaries are stranded, in contrast to the situation in finite clauses seen earlier. This is the crucial case. Even when auxiliaries are present, (117), the examples are ungrammatical. For comparison, similar finite clause examples are
in (118). Both the relative and absolute grammaticality judgments are important. Even for those who marginally accept some of the examples in (117), they are poor in comparison to the corresponding data in (118).

(117) a. *We can’t count on Josh to be waiting for us at the airport so we request that you be $\phi$ instead.
   b. *My running partner is training for the marathon and it’s imperative that I be $\phi$ too.
   c. *The bridges were repaired before the engineers could even insist that the supporting structure be $\phi$ first.
   d. *If the whole system is to be on time, it is necessary that the connecting flights be $\phi$ as well.
   e. *By the time Wanda finishes, it is necessary that Bob have $\phi$ too.
   f. *When the laborers have come to a decision, it is important that the leader have $\phi$ as well.

(118) a. We can’t count on Josh to be waiting for us at the airport so it would be nice if you \{were \ would be\} $\phi$ instead.
   b. My running partner is training for the marathon and I \{am \ should be\} $\phi$ too.
   c. The bridges were repaired before the engineers could even show that the supporting structure must be $\phi$ first.
   d. If the whole system is to be on time, then the connecting flights \{are \ will be\} $\phi$ as well.
   e. By the time Wanda finishes, it is certain that Bob \{has \ will have\} $\phi$ too.
   f. When the laborers have come to a decision, it is hoped that the leader \{has \ might have\} $\phi$ as well.

Examining the structure of the examples in (117) clarifies how this provides an argument for the Infl-licenser hypothesis and against the
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[+AUX]-licenser hypothesis. The partly elided subjunctive complement of *request in (117)a has the putative structure in (119).

(117) a. *We can’t count on Josh to be waiting for us at the airport so we request that you be ∅ instead.

(119)

If the [+AUX] element be were the licenser of the null VP in (119), the example would be grammatical, contrary to fact. Under the Infl hypothesis, the lack of an overt I* element accounts for the ungrammaticality; there is no licenser. Subjunctive clauses thus indicate that [+AUX] is not always able to license a null VP.21

At the same time, neither analysis would seem to be able to account for the earlier observation that not licenses a null VP. It was seen in the discussion of Lobeck 1995 that not may precede an ellipsis site, repeated in (101). Ellipsis is not in fact always ungrammatical in subjunctive clauses. The same grammatical pattern with negation results there as well, (120).

(101) a. I definitely want to go to the fashion show although my husband might not ∅.
   b. A clown is coming to the party but a mime is not ∅.
   c. Some of the guests tried the appetizers but I think that most did not ∅.
(120) a. Kim needs to be there but it is better that the other organizers not Ø.
   b. Ted hoped to vacation in Liberia but his agent suggested that he not Ø.
   c. We think that Mary should present her case to the committee but we will ask that Bill not Ø.

Lobeck assumed that *not* was the licensing element in (101), although the details of the account were unconvincing. The data in (120) confirm this conclusion, particularly in light of the minimally different but unacceptable cases in (116) without *not*. It seems evident from the examples in (116) and (117) that the subjunctive modal cannot license a null VP; otherwise, there would be no explanation for the data's ungrammaticality. The only place where we can pin the grammaticality difference is on the head *not*. The subjunctive clauses with ellipsis have the schematic structure in (121). *Not* is the licensing head for the null VP.

(121)

Additionally, ungrammatical examples with auxiliaries parallel to (117) can reasonably be salvaged with *not*:

(122) a. John was fooled by Geraldo’s smooth sales pitch so it’s imperative that the rest of us not be Ø.
   b. Isolated flights can be late but it is necessary that the connecting flights not be Ø.
   c. If the laborers haven’t come to a decision, it’s important that the leaders not have Ø either.
Not's dramatic role in licensing null VPs can additionally be seen in other types of non-finite clauses. Contrasts paralleling the above are given in (123) and (124) for small clauses, from Williams 1994, and tenseless why suggestions, respectively. I conclude that not is implicated as a potential VPE licenser.

(123) a. I consider Bill intelligent and I consider Sally not ø.
b. *I consider Bill intelligent and I consider Sally,

(124) [You could be Casper the Friendly Ghost for Halloween.]
a. Yeah, why not (be) ø!
b. *Nah, why be ø!

This ability of not to license a null VP provides a second argument against the [+AUX] hypothesis. Both analyses must admit not as a possible licenser, requiring a revision to the original hypotheses:

(125) Two Hypotheses about VPE Licensors (revised)
1) INFL HYPOTHESIS: the licenser is a non-affixal element in I' or Neg*
2) [+AUX] HYPOTHESIS: the licenser is an element with the feature [+AUX] or Neg*

The statement regarding possible licensers under the [+AUX] hypothesis is a disconnected list: Neg* or an element with the feature [+AUX]. These two elements do not form a natural class and make no predictions about what other elements might also be licensers. This is clearly an undesirable account. On the other hand, the licensers under the Infl hypothesis, I' and Neg*, do form a natural class. On an informal level, they are both functional inflectional heads. One could reasonably predict whether other heads will be licensers.

The situation we arrive at is that I' and Neg* license a null VP while V"[+AUX] does not. In order to characterize the actual licensors more exactly, it is necessary to make a distinction between these two classes. When we examine the structure of a typical clause, in (126), the necessary characterization is clear enough, although perhaps somewhat difficult to formalize: the possible licensers belong to the inflectional layer, which is made up of the projections between CP and the topmost lexical projection of the clause. By lexical projections I mean those
which are traditionally decomposed by the features \([\pm N \pm V]\): AP, VP, NP, and PP.\(^{22}\) (127) defines an INFLECTIONAL PROJECTION. Their heads are licensing elements in VPE contexts.

(126)

\[
\begin{array}{c}
\text{CP} \\
\text{C} \\
\text{IP} \\
\text{subject} \\
\text{I} \\
\text{NegP} \\
\text{Neg} \\
\text{VP} \\
\text{[+aux]} \\
\text{V} \\
\text{[+aux]} \\
\text{XP}
\end{array}
\]

(127) \textit{Inflectional Projection}

An inflectional projection \(\alpha\) is an \(\overline{X}\)-compatible projection such that
1) \(\alpha\) is the complement of \(C^*\), or
2) \(\alpha\) is the complement of an inflectional projection and is not a lexical projection.

With this definition, I offer the preliminary formulation of the licensing condition on VPE in (128). In order for a null VP to be licensed it must be c-commanded by an independent, morphologically-realized, inflectional head. The Licensing Condition in (128) incorporates the Head Condition of (104) and the Infl hypothesis of (125).

(128) \textit{Licensing Condition on VPE} (preliminary version)

An elided VP must be c-commanded by an overt, non-affixal inflectional head.

In this section using English subjunctive data I have shown that an Infl-licenser analysis for VPE is superior to one which takes the licenser of null VPs to be an element with the feature \([+\text{AUX}]\). In the
following section I turn to an investigation of the structural relationship that holds between the licenser and the ellipsis site. The data repeated in (92), in which the licenser and ellipsis site are bold faced, indicate that it is not a completely local one. In (92)b in particular, we can see that maximal projections may intervene between the licenser could and the null VP $\emptyset$. The two are not adjacent. Under normal definitions then, the relationship cannot be either of the local relationships commonly assumed: government or sisterhood. There is nevertheless a close connection between the two and I address this issue below.

(92) a. John could have been studying Spanish and Bill could have been studying Spanish too.
    b. John could have been studying Spanish and Bill could have been $\emptyset$ too.
    c. John could have been studying Spanish and Bill could have $\emptyset$ too.
    d. John could have been studying Spanish and Bill could $\emptyset$ too.

5.2.2. The Structural Relationship

While (128) is not a completely local constraint since the licensing head and the null VP need not be sisters given the data in (92)b and c, it must also not be unconstrainedly non-local in terms of the material that may intervene between the two. For example, we obviously do not want a modal in the root clause to license an otherwise illicit null VP in a lower complement:

(129) *Picasso is painting the walls but the landlord shouldn't know [CP that I asked [CP that he $\emptyset$]]

The only projections that can appear between the functional head and the ellipsis site are those of auxiliaries. There is clearly a precise kind of locality and I would like to explore an account of it in terms of Abney's (1987) concept of a (semantic)-projection and Grimshaw's (1991) notion of extended projection. I develop an analysis of English clauses, based on Aissen 1995, which integrates auxiliaries into the system and permits them to form an s-projection with the immediately dominating inflectional projections and the main predicate they introduce. The ultimate goal is to have a situation in which we can
reasonably allow an inflectional projection to "see through" these optional verbal projections to license null VPs.

The intuition behind the proposals in Abney 1987 and Grimshaw 1991 is that certain orderings of functional and lexical projections are widely pervasive and form a cohesive unit while other head-complement combinations are completely unattested. In the verbal domain, clauses of the form CP/IP/VP are commonly assumed but other combinations do not appear: *CP/VP, *IP/CP/VP, etc. The functional head C always takes an IP complement and I a VP complement, while the syntactic complement of the lexical head V has no such restriction. V may select CP, IP, VP, DP, or PP: various clausal and non-clausal arguments. Abney argues that there are syntactic relations between all heads and their complements but that the relationship between a thematic lexical head and its complement is fundamentally different from the one between a functional head and its complement. This latter relationship Abney labels FUNCTIONAL-SELECTION and its main property is that it is typically unique and predictable. Functional heads will be distinguished by Abney's feature [+F]. The functional elements C and I are clearly [+F] and f-select IP and VP, respectively. I will suggest that this is also a property of V[+AUX] and that they too are [+F] functional heads.

This syntactic predictability of the complement of functional heads corresponds to semantic predictability in some sense as well. Abney describes f-selection as the "passing on" of the descriptive content of the complement and it is clear, in an informal way, that the combining of a functional head with its complement does not result in a new semantic entity in the same sense that combining a lexical head with its complement does. For example, taking the noun phrase the daisies to eat the daisies via verbal complementation is in some way different than going from eat the daisies to didn't eat the daisies or might eat the daisies which involve f-selection.

Abney encodes the semantic transparency of f-selection by recognizing SEMANTIC-PROJECTIONS in addition to the more usual CATEGORY-PROJECTION. A c-projection is the familiar projection of a head that shares categorial features: the c-projections of V are V' and VP, the maximal c-projection of I is IP, and so on. The s-projection of a head, on the other hand, is an extended path along which the head's descriptive content is passed on. That is, in the typical case it will be a c-projection plus any functional c-projections that dominate it. The
maximal c-projection of \( V^* \) is CP, that of \( T^* \), CP as well. Formally, we have (130).

(130) \( S(emanic)-Projection \) (Abney 1987:57)

\[ \beta \text{ is an s-projection of } \alpha \text{ iff} \]
1) \( \beta = \alpha \), or
2) \( \beta \) is a c-projection of an s-projection of \( \alpha \), or
3) \( \beta \) f-selects an s-projection of \( \alpha \)

Abney's term s-projection corresponds to Grimshaw's extended projection. They differ only in how they are composed. A typical verbal s-projection is bold-faced in (131); its head is \( V_1^* \). Under the definition in (130), the complement of this verb is not in the s-projection because it is not f-selected. A verb \( V_2^* \) that takes this CP as a complement will also not be part of the s-projection for the same reason. It will constitute the head of a separate s-projection.

(131) is a structure that incorporates auxiliaries into the system in a way that seems natural. I hypothesize that auxiliaries are functional heads that f-select their complements and they are part of the s-projection formed from the main verb which they dominate. Aissen (1995) formulates a parallel proposal for Tzotzil auxiliaries within Grimshaw's system. Formally, the auxiliaries have and be are \([+F]\).24

We can more generally capture this claim with a feature redundancy statement: \([+\text{AUX}] \supset [+F] \) — if something is specified \([+\text{AUX}] \) then it is also \([+F]\). With respect to the property of selecting a unique
complement, the auxiliaries pattern largely as expected. Only copular *be* is exceptional since it takes AP, VP, DP, and PP. The remaining auxiliaries transparently f-select only VP.

\[(132)\]

\[
\begin{array}{c}
\text{CP} \\
\downarrow \\
\text{C} \\
\downarrow \\
\text{IP} \\
\downarrow \\
\text{subject} \\
\downarrow \\
\text{I'} \\
\downarrow \\
\text{NegP} \\
\downarrow \\
\text{Neg} \\
\downarrow \\
\text{VP} \\
\downarrow \\
[+\text{aux}] \\
\downarrow \\
\text{V} \\
\downarrow \\
[+\text{aux}] \\
\downarrow \\
\text{VP} \\
\downarrow \\
\text{V} \\
\downarrow \\
\text{XP}
\end{array}
\]

It is not unreasonable to claim that auxiliaries are functional in nature. Abney 1987 ascribes the properties in (133) to functional elements, although he stresses that they are not criterial. In addition to selecting a unique complement, auxiliaries also satisfy several of the other properties. The match is not exact; however, it is suggestive and the hypothesis is worth exploration. Auxiliaries are at least 'weakly' functional. At the same time, their categorial specification of V° recognizes their verbal status (Ross 1969, Pullum and Wilson 1977).

\[(133)\] *Characteristics of Functional Elements* (Abney 1987:64)

1) functional elements constitute closed lexical classes
2) functional elements are generally phonologically and morphologically dependent
3) functional elements permit only one complement, which is generally not an argument. The arguments are CP, PP, and DP. Functional elements select IP, VP, NP.
4) functional elements are usually inseparable from their complement
5) functional elements lack what I [Abney] will call "descriptive content". Their semantic contribution is second-order, regulating or contributing to the interpretation
of their complement. They mark grammatical or relational features, rather than picking out a class of objects.

Although such a proposal might seem contradictory within current syntactic frameworks because I am claiming that a head is both lexical and functional, it need not be. It certainly has a natural interpretation in theories of grammar which do not adhere to categorial divisions (for example Lakoff and Johnson 1980, Lakoff 1987). Heine 1993 specifically considers this issue with respect to auxiliaries and argues for a continuum going from full verbs on one end to grammatical tense-aspect-mood markers on the other. Auxiliaries fall in the middle of this analog chain. While we do not need to go so far as to accept that there are no categorial distinctions in syntax, there seems to be nothing contradictory about maintaining that lexical elements have one set of properties and functional elements have another set of properties and that some elements, auxiliaries, have both sets of properties. This is coherent as long as the properties are not inherently contradictory.

If we accept that auxiliaries are functional categories, their inclusion in a clause does not create a new s-projection. This allows a straightforward revision of the requirement on VPE that captures the desired degree of locality: the licensing inflectional head and the empty category must be in the same s-projection.

(134) Licensing Condition on VPE (final version)
An elided VP must be c-commanded by an overt, non-affixal inflectional head within the same s-projection

In the final section, I demonstrate the empirical adequacy of the condition in (134) for the range of data that has appeared thus far.

5.3. Confirmation of the Licensing Condition

The data used to explore Lobeck's analysis of VPE are correctly accounted for by the Licensing Condition in (134) with no additional stipulations. The examples are repeated in large part below. I evaluate the data with respect to the two requirements inherent in the condition: 1) that an appropriate licensing element be present and 2) that it be within the s-projection of the null VP.
Both parts are clearly satisfied in (82) and (92)b through d. The c-commanding licenser in all cases is the modal or form of *do* located in the inflectional head *I*. The null VPs are also part of the extended projection of the inflectional head as required. In (82) and (92)d, they are directly f-selected by *I*, creating an s-projection. In (92)b and c, c-projections of the auxiliaries intervene but they are still part of the same s-projection because they are functional heads by hypothesis. (92)b has the structure in (92)e with the s-projection bold-faced.

(82) John didn’t leave but Mary should/did φ.

(92) a. John could have been studying Spanish and Bill could have been studying Spanish too.
   b. John could have been studying Spanish and Bill could have been φ too.
   c. John could have been studying Spanish and Bill could have φ too.
   d. John could have been studying Spanish and Bill could φ too.

(83)a is ungrammatical because it fails the licenser requirement. There is no overt inflectional head to serve as licenser, as can be seen in (83)b.

(83) a. *John didn’t leave but Mary φ.
   b. *John didn’t leave but [IP Mary [I+[+tms] [VP φ ] ] ]
Lobeck recognizes that I°-to-C° head movement, in which I° was filled at an earlier syntactic level, must not count to rule out examples where there is a null VP. (84)a, shown with its structure, must be licensed according to the Licensing Condition. It is if we use the assumed definition of c-command and the condition on domination, repeated below. I° c-commands the null VP because the first category dominating it is CP. C° does not dominate I° because not every segment dominates I°. The elided VP and the licenser are still within the same s-projection. This is indicated by the bold-facing of the s-projection.

(84) a. John didn’t leave but should/did Mary φ?

b. 

```
CP
    /\      /
   C   IP
    |   /\   /
 I°  C  DP  I°
    |   |
should/did
    |   |
   Mary t₁  VP
    |   |
      φ
```

(74) **C-Command**

α c-commands β iff α does not dominate β and every γ that dominates α dominates β

(76) **Condition on Domination**

α is dominated by β only if it is dominated by every segment of β

Examples with raised auxiliaries, (85), are similarly accounted for. The licensing element is the auxiliary which has moved into I°. Again, the null VP and the licenser are transparently in the same extended projection.

(85) a. Mary is leaving and John is/has φ too.
Part of the Licensing Condition is fulfilled in (91): there is an overt inflectional head, namely, the modal in I°. What does not obtain is that it is in the same s-projection as the null VP. The head of the
s-projection to which the modal belongs is the lexical verb *begin*. Because the verb is not functional, [+F], its VP complement is not included in the s-projection. The null VP constitutes a separate s-projection. Thus, the bare VP complement to a non-functional, lexical head will never be able to elide independent of whether or not there is a licenser available. The account of Bresnan’s original examples in (86) is the same. The data are correctly predicted.

Lastly, the Licensing Condition accounts for the ellipsis data involving *not*. In finite clauses, (101), there are two licensors, the modal and the Neg head *not*. Both inflectional heads are within the s-projection of the elided VP.

(101) a. I definitely want to go to the fashion show although my husband might not φ.
   b. A clown is coming to the party but a mime is not φ.
   c. Some of the guests tried the appetizers but I think that most did not φ.

The subjunctive data, repeated in (120), was the critical test case because the overt modal is not present. The only available licenser is *not*. The examples are grammatical because there is a licenser and it is within the s-projection of the null VP. (135) indicates the structure of the elided clause in (120)c.

(120) a. Kim needs to be there but it is better that the other organizers not φ.
   b. Ted hoped to vacation in Liberia but his agent suggested that he not φ.
   c. We think that Mary should present her case to the committee but we will ask that Bill not φ.
What we see is that the descriptive Licensing Condition in (134) correctly predicts the core VPE data.

5.4. Conclusions

Before summarizing, I offer some commentary concerning the Licensing Condition and its status in the theory.

First, it should be observed that the Licensing Condition readily extends cross-linguistically in a way that a constraint based on licensing by the feature [+AUX] does not. While there has been a great deal of research into the possible universal status of the category AUX (Steele et al. 1981), the hypothesis is by no means uncontroversial and in recent theorizing has been largely replaced by the introduction of functional heads like I(nfl) and T(ense). Summarily, it seems evident that not all languages have a syntactic class of [+AUX] heads. The [+AUX] hypothesis makes a more modest prediction regarding the cross-linguistic presence of [+AUX] elements: if a language has VP ellipsis then it will necessarily have a class of [+AUX] elements to license them. But even this narrower implicational claim does not seem to hold. In at least two languages, Irish (McCloskey 1991) and Hebrew (Doron 1990, Goldberg 1996), VPE is claimed to be fully productive after main verbs which have raised to an inflectional head, in the absence of an auxiliary. Auxiliaries in these languages are not necessary to license a null VP and we have already seen that in English they are not sufficient. The subjunctive data, (120), in which negation served as the licenser of the null VP, demonstrated that ellipsis succeeds in the absence of any verbal element. The larger picture thus further suggests that auxiliaries are not implicated in the licensing of
null VPs. To maintain the [+AUX] hypothesis, one would be forced to the alternative that the licensing of null VPs is done on a language-specific basis: the [+AUX] hypothesis is correct for English but not applicable to other languages.

On the other hand, analyses of most languages postulate an organization of phrase structure in which lexical projections are dominated by an inflectional layer. Under such a scenario, VPE is in principle possible and is independent of the existence of a class of auxiliaries in the language. It is dependent upon the presence of an overtly occupied inflectional head, the situation claimed to hold for both Irish and Hebrew, mentioned above. As a result, if the proposal is correct, it explicitly supports a conception of clause structure in which there are inflectional heads such as I° in the syntax. Without such an assumption, the licensors of null VPs in each language are a potentially unconnected set of elements which seem to have no unified description either within the language or across languages more generally. As in the past, the need to list members involved in a particular syntactic phenomenon can indicate that a generalization is being missed. Under the Infl analysis, the description/generalization is claimed to be maximally simple: the unifying property is that the licensors of null VPs occupy an inflectional head position.

Second, implicating inflectional heads in the formal licensing of ellipsis has potentially positive consequences for syntactic analyses of ellipsis embedded within split Infl clause structures (Pollock 1989 and most recent work within the Minimalist Program). It is permitted that VPE may actually be, more generally, ellipsis of categories larger than VP, provided that these categories are complements of certain inflectional heads. This is a desirable result in that numerous recent proposals claim that elements such as main verbs and direct objects that are traditionally thought to be within VP have actually moved outside of it overtly (Johnson 1991; Chomsky 1993; Bowers 1993; Koizumi 1993; Kratzer 1996; Runner 1995a, 1995b; Lasnik 1995a). If direct objects are outside of VP at surface structure, as claimed, but they are still elided under ellipsis, then the target of VPE cannot be a VP. It must be some larger constituent which contains the material commonly present in a deep structure verb phrase. The present proposal admits this possibility.

At the same time, one would want to ask why inflectional heads should be implicated in the licensing of empty VPs. The Licensing
Condition on VPE is in appearance a formal syntactic requirement which does not, as yet, follow from anything in the theory. It is not a semantic identification condition in the sense that it helps to recover the meaning of the elided VP. It belongs to the syntactic module proper unless motivation can be found for its existence. I will leave (134) as it stands, recognizing that, while it seems necessary, it is nevertheless somewhat mysterious.

Third, the introduction of a notion like s-projection into the formulation of syntactic constraints seems necessary in a theory of syntax that espouses the presence of numerous functional heads. A recurring difficulty in recent syntactic analyses is the observation that these projections, although present, are nevertheless "invisible" to many syntactic mechanisms: movement, selection, agreement, and locality phenomena (Grimshaw 1991). Acknowledging the theoretical status of s-projections permits a straightforward way of dealing with this theoretically-induced difficulty.

Fourth, it is important to place this proposal within the context of previous analyses of the syntactic licensing of VPE, beyond Lobeck's work. In this way it will clearly be seen as support for and an extension of existing research programs. Neither piece of the Licensing Condition, the identity of the licensor nor its locality relationship with the null VP, is without grounded precedent. The intuition that the element responsible for licensing null VPs is an inflectional head has a long tradition in the earlier works of both Lobeck (1987, 1991, 1992) and Zagona (1982, 1988a,1988b), as well as Chao (1988). Roberts 1990 is particularly explicit about the unique role of overt I* in licensing the related movement phenomenon of VP Fronting. Regarding inflectional heads more generally, Lobeck 1995 as we have seen recognizes the importance of Neg* in VPE licensing. López 1994 capitalizes upon the role of Neg* and argues that the licensing element for VPE in both English and Spanish is always precisely Σ*, the head of a polarity phrase ΣP (Laka 1990) which includes negation as one of its instantiations. López's (1994) proposal shares with this one the recognition that other inflectional heads besides I* can license a null VP.

The various proposals have differed more radically on how the licensor and the ellipsis site are related. In Lobeck 1995 we saw that hypothesizing movement of the auxiliaries into I permitted the licensor and the null VP to be connected by the very local relationship of
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government. Zagona 1988a, 1988b also propose that government is the proper relationship; however, the work achieves government over intervening maximal projections through coindexation and consequent government by a chain rather than movement. A primary intuition in the proposal is that auxiliaries are transparent to government by I°. Lastly, López 1994 assumes as well that government is the relevant relationship, adopting Zagona’s insight. In López’ system, government across the auxiliaries is permitted by appealing to the notion of projection system, fundamentally an s-projection consisting of the main verb phrase and dominating auxiliary verb phrases, and stipulating that maximal projections are not barriers to government inside a projection system. The driving force behind Zagona’s and López’ proposals is to allow VPE licensing to be reduced to the Empty Category Principle. This brings us to the account presented here, repeated below, which can be seen as a fusion of many of the basic claims of the previous accounts.

(134) Licensing Condition on VPE

An elided VP must be c-commanded by an overt, non-affixal inflectional head within the same s-projection

A primary difference is that the Licensing Condition is less theory-dependent, neither appealing to government nor implicating specific functional heads.

Finally, it must be pointed out that the discussion of VPE has been simplified and idealized to a certain extent. As is well known, there are various additional restrictions on the auxiliary sequences that permit and do not permit ellipsis. What such cases indicate clearly is that the Licensing Condition will be a necessary but not sufficient condition in most dialects of English. I will illustrate two of these additional restrictions below. I have not attempted to incorporate them into the above account because I believe that they are rather parochial in nature. The restrictions are neither robust nor common to all dialects of English. They are thus reasonably handled at a different level of analysis.

Sag 1980, Steele et. al. 1981, and Zagona 1988a observe that certain VPE interpretations are unavailable where one would not expect them to be based on a naive syntactic view of VPE. Perfective have creates such a situation. The example in (136) from Zagona 1988a:103
is ungrammatical, at least in some idiolects, on the given interpretation, although it has another meaning where perfective have is not interpreted in the elided VP. Perfective have, even when it has not raised into 1°, cannot for whatever reason be interpreted at the ellipsis site despite being within a VP. Zagona accounts for the unavailable reading in (140) using syntactic mechanisms.

(136) *John might have read that chapter and Bill could \( \emptyset \).
\( \emptyset = \) have read that chapter
ok: \( \emptyset = \) read the chapter

It is evident from the example in (137), a text example from the comic strip *Peanuts*, that such a restriction cannot be maintained for all speakers. The example contains numerous examples of VPE and two VP antecedents are available: have been great and be great. They are bold-faced and italicized respectively. Parallel to the example in (136), only the latter should be an actual antecedent. In the interpretation of the ellipses in (137)a through e, also marked by italicization, this is indeed the case. In fact, this is the only sensible interpretation. In the final frame, (137), the interpretation of the null VP is different and uses the entire bold-faced VP which includes perfective have. Observe that using only the italicized VP makes much less sense in the given context. The example is thus of the same form as (136) and illustrates that whatever accounts for (136) is not a fully general feature of English VPE. Given that it only holds in certain dialects, or perhaps only under certain semantic conditions, it is reasonable not to embed its analysis deeply within the Licensing Condition on VPE.

(137) [Snoopy is talking to Woodstock]
   a. 'You and I are a lot alike ... Just a common bird and a common dog ... Of course, if we had wanted to \( \emptyset \), we could have been great ... 
   b. But we didn't want to \( \emptyset \) ...
   c. But if we had wanted to we could have \( \emptyset \) ...
   d. But we didn't need to \( \emptyset \) ...
   e. But we could have \( \emptyset \) ...
   f. Or could we \( \emptyset \)?
A second case illustrating the idiosyncratic nature of VPE is what I will call the Stranded -ing Constraint. Numerous researchers (Akmajian and Wasow 1975, Pullum and Wilson 1977, Iwakura 1977, Huddleston 1978, Akmajian, Steele, and Wasow 1979, Steele et al. 1981) observe that VPE is ungrammatical when the elided VP immediately follows an auxiliary in the -ing form. (138) from Akmajian, Steele, and Wasow 1979 illustrate this with be^be sequences in finite clauses.

(138) a. *John is being noisy and Bill is being ø too.
    b. *John was being watched by the FBI and Bill was being ø too.
    c. *John isn’t being very assertive now but he should be being ø.

It also obtains in gerunds, which it was suggested earlier exhibit a kind of VPE. The examples in (139) are from Akmajian and Wasow 1975 and Iwakura 1977.

(139) a. *Which bothers you more: John’s having been arrested for drug dealing, or Bill’s having ø.
    b. *Which bothers you more: John’s having taken drugs, or Bill’s having ø.
    c. *Ford’s being examined by a psychiatrist was just as unreasonable as Nixon’s being ø.

Finally, it obtains in British dialects (annotated by the diacritic £) in which do may be inserted into the position of the elided VP (Pullum and Wilson 1977:761):

(140) a. £I didn’t know the answer but John may do.
    (cf. I didn’t know the answer but John may ø.)
    b. *£I’m not working but Bill may be doing.
    c. £I haven’t seen him but John may have done.
    (cf. I haven’t seen him but John may have ø.)
    d. *£If you’re not working you should be doing.

The parochial nature of this constraint is evidenced by the fact that, according to Huddleston 1978 and Gazdar, Pullum, and Sag 1982, all of the above examples are grammatical in some dialects of British
English. Huddleston 1978:46-47 offers the additional acceptable examples in (141).

(141) a. When is the building going to be demolished? (£It already is being $\emptyset$.
   b. Is John unkind then? (£Not usually, but he is being $\emptyset$ at the moment.
   c. £Sam was being examined by a psychiatrist at that time and Bill was being $\emptyset$ too.
   d. £He’s always being teased about it. I don’t think he likes being $\emptyset$.
   e. £I’ve been Rex’s mistress for some time now, and I shall go on being $\emptyset$, married or not.

Warner 1993 discusses additional restrictions of this sort.

To summarize, in this section I have developed a constraint on the licensing of elided VPs in English based on the Licensing and Identification Condition from Lobeck 1995. I have argued for its correctness using data from finite declarative clauses and subjunctive complements. Chapter 2 will show that it receives further support from the behavior of imperatives.

6. FLOATING QUANTIFIERS

Sportiche 1988 develops a novel theory of floating quantifiers which crucially takes advantage of the VP-internal subject hypothesis (Kuroda 1988, Koopman and Sportiche 1991). In this section, I lay out Sportiche’s basic analysis of Quantifier Float (QF) for English as far as it will be relevant for the syntactic issues under consideration. The phenomenon of QF provides a valuable window on clausal syntax and will be recruited in the investigations of imperative subjects and clause structure in later chapters.

Sportiche’s theory of QF is more appropriately described as quantifier stranding. Floating quantifiers like all and both may be stranded in any position that the noun phrase they modify passes through in the derivation. Floating quantifiers should then be canonically associated with derived arguments—any argument that is not in its deep structure position at surface structure. QF will be particularly relevant for subjects if Bobaljik and Jonas 1996 are correct
in claiming that all subjects must move overtly. Since subjects are
assumed to originate in the specifier of VP and to move to a higher
functional specifier which is their surface position, intermediate
specifiers are potential stranding positions for floated quantifiers. I
consider the details of the proposal below.

Following Shlonsky 1991, the structure of a noun phrase like *all
the answers* is as in (142). *All* and *both* are heads of category *Q*
which take full DP complements.

(142) a. Elsie has *all the answers*.

b. 

\[
\begin{array}{c}
\text{QP} \\
\text{Q'} \\
\text{Q} \\
\text{DP} \\
\text{all} \\
\text{D} \\
\text{NP} \\
\text{the} \\
\text{answers}
\end{array}
\]

Quantifier stranding is stranding of the QP by movement of the DP. It
proceeds via the specifier of QP, which naturally accounts for the
agreement between the DP and its modifying quantifier that many
languages show (Shlonsky 1991, Merchant 1996). This intermediate
landing site also allows the extraction from QP, an operation that would
otherwise violate Subjacency if it occurred directly from the
complement of *Q* position. The derivation for *The rebels might have
all fled* is in (143) and that for *The rebels might all have fled* is in (144). In
the former, the quantifier is stranded in the base, specifier of VP
position. In the latter, it is stranded in an intermediate specifier of VP
position.27
(143) a. The rebels might have all fled.

b. 

(144) a. The rebels might all have fled.

b. 

These two cases clearly show that when a subject is separated from its modifying quantifier, it can no longer be in its base position.

Under a stranding analysis, *The rebels all fled*, in (145)a, is also an example of the same phenomenon. Constituency tests in (146)—
conjunction, clefting, placement in object position, and topicalization—all show that the string the rebels all is not a constituent. The analysis given to it is (145)b. Most generally, when a full DP precedes its associated quantifier (all or both), we can conclude that the quantifier has been stranded by leftward movement of DP.

(145) a. The rebels all fled.

b. 

\[
\begin{array}{c}
\text{IP} \\
\text{DP}_k \\
\text{I'} \\
\text{the rebels} \\
\text{I} \\
\text{VP} \\
\text{QP} \\
\text{t}_k \\
\text{Q'} \\
\text{V} \\
\text{t}_k \\
\text{fled} \\
\text{all}
\end{array}
\]

(146) a. *The rebels all and their leader fled. 

b. *It's the rebels all who fled. 

c. *We hid from the rebels all. 

d. *The rebels all, we saw.

The one exception to this claim is pronouns. They may optionally appear to the left of all or both and still form a constituent with the quantifier (Postal 1974, Maling 1976), in (147). Analytically, the pronoun is able to move into the specifier of QP and not proceed any farther (see Shlonsky 1991 for discussion). It thus forms a constituent with the quantifier as in (148).

(147) a. The queen invited you both.

b. We sold them all.
The sequence you all, which appears often in imperatives, is thus not an indication of QF and will not be used in demonstrating the implications of QF.

An important consequence of Sportiche's analysis for argumentation in later chapters is that QF is a diagnostic for movement. A non-pronominal noun phrase cannot be in its base-generated position if it precedes a modifying quantifier. The appearance of a noun phrase to the left of all or both necessarily indicates that the noun phrase is no longer in its base position, the specifier of VP.

The primary alternative to Sportiche's analysis is one in which the quantifiers are treated as adverbs (Klein 1976, Dowty and Brodie 1984, Kayne 1984, Doetjes 1992, Baltin 1995, Bobaljik 1995). They would have roughly the distribution of E-adverbs discussed earlier. If Sportiche's analysis were rejected in favor of an adverbial approach, then the arguments that appeal to it would be reduced to ones relying on adverb placement. Because of the novel and convincing nature of the stranding analysis, I will adopt it and point out the consequences that it has for imperative syntax.

NOTES

1. In this structure and what follows, subjects are shown in spec,IP. This should not be taken as a claim about their base position. A VP-internal base position (the VP-internal subject hypothesis of Kuroda 1988, Koopman and Sportiche 1991) is compatible with all the analyses presented but explicitly adopting one does not benefit the exposition so I leave it out of the representations. In future phrase markers I will also omit the X' level when not relevant.

2. Phrases adjoined to the specifier of the head are also in the checking domain as are phrases adjoined to the specifier of the specifier of the head and phrases adjoined to this specifier, etc. Since this is clearly a shortcoming with the definition of checking domain, I ignore these positions.
3. The analyses that follow are only concerned with the syntactic category adverb—words that typically end in -ly—except where noted. I leave open the possibility that the analysis could be extended to adverbials more generally. While such a move seems ultimately desirable, other kinds of adverbials, for example prepositional phrases, noun phrases, and clausal adjuncts, do not always have the same distribution as roughly synonymous adverb phrases. This is particularly true for clause-internal positions. Jackendoff 1972:94 points out the similarity between sentence-level adverbs and prepositional phrases that function like sentence adverbs. He shows that adverb/prepositional phrase pairs such as probably/in all probability have the same syntactic distribution. This is not the case, however, for many VP-level adverb phrases and PPs such as the pair soon/at 6:00.

4. Throughout, I use finite to mean bearing tense, where the tenses in English range over past and non-past. Under this conception, only indicative clauses are finite since only they contain tensed forms, of which the modals are assumed to be instances (Gazdar, Pullum, and Sag 1982).

5. Ernst 1984 argues that S-adverb interpretations are not restricted as Jackendoff 1972 claims and that, in addition to the above, they may also be found after multiple auxiliaries. Some of his examples in (i) do seem acceptable. They may be compared with the minimally different examples in (ii) in which the adverbs are moved farther left to a more usual position. It is unclear why examples such as (i) are so infrequent or difficult to create. In general, S-adverbs do not sound grammatical when they are as far right as in (i)—as Jackendoff originally maintained and I will idealize here.

(i)  
   a. The library staff has been stupidly filing all those articles on Raising in the child psychology section.
   b. Egbert might have been cleverly abducted to get an interview with the guerrillas.
   c. Millicent must have been very clearly disqualified by the RUSSIAN judge, or else the committee would not have protested so hard.
   d. She may have actually been only aiming for the vice-president's job.
(ii) a. The library staff has *stupidly* been filing all those articles on Raising in the child psychology section.

b. Egbert *cleverly* might have been abducted to get an interview with the guerrillas.

c. Millicent must *very clearly* have been disqualified by the RUSSIAN judge, or else the committee would not have protested so hard.

d. She may *actually* have been only aiming for the vice-president’s job.

6. Again, Ernst’s (1984) proposal is less restrictive. In addition to permitting VP-adverbs next to the main verb, it allows them to the left of the passive auxiliary, as in (i). I will ignore this in the formulation above.

(i) Bobby will have handily been beaten by Billy Jean.

7. One or the other of these is typically assumed in most analyses. For example, Johnson 1991 and Bowers 1993 assume adjunction to X’ while Pollock 1989, Iatridou 1990 and Chomsky 1991 assume adjunction to XP.

8. Although I will not do so here, a workable, and perhaps more straightforward, proposal could also be developed taking R to be government (Rizzi 1990).

9. Under the view that double topicalization is acceptable (Culicover 1996), the difference in grammaticality is no doubt attributable to the difference in ease of processing. When an argument is topicalized, the hearer must link it up with the verb of which it is an argument. Topicalized S-adverbs require no such processing effort provided they have not been moved from a lower clause. Thus, the contrast here may well have independent motivation once multiple topics are permitted.

10. The proposal does not prevent right adjunction of E-adverbs, which must transparently be prohibited so that these adverbs do not appear clause finally. I have no explanation for this restriction. Kayne 1994 unilaterally rules out right adjunction and is one potential path to pursue. I will not do so here because it would require complete rethinking of other aspects of adverb placement. The fact that E-adverbs can be licensed by any verb, including auxiliaries, while VP-adverbs can only be licensed by predicative main verbs is also unaccounted for. It is undoubtedly due to their differing semantics. Given that there is no unified theory of the meaning of E-adverbs, I will not pursue these problems.

11. There are two difficulties with this analysis for which I have no explanation, calling it into doubt. First, the proposal predicts that these
adverbials should appear in the C'-adjoined position. (i) shows this prediction to be wrong, although some speakers do accept the data.

(i)  
   a. */?Who tomorrow can we call to fix the plumbing?  
   b. */?Which of them last year did she date?  
   c. */?Where next weekend will you ever find a hotel room?

Second, the clause-final position seems analyzable as adjunction at some level lower than IP. The negative polarity item any is licensed in these bare-NP adverbs by sentential negation but only in the clause-final position. This is surprising if the two positions are structurally identical, modulo direction of adjunction.

(ii) a. *Any day this week, you won't find an available room in this town.  
     b. You won't find an available room in this town any day this week.

A more accurate characterization of the placement of these bare-NP adverbs may be that they must be clause peripheral.

12. Issues for future research are why the adverb classes under investigation, particularly E-adverbs and bare-NP adverbs, have the distribution that they do and whether the syntactic distributions have a more fundamental semantic basis.

13. More generally, it has been claimed (Steele et. al. 1981, Williams 1984, Baltin 1995) that VP ellipsis needs to be viewed as predicate ellipsis given examples such as (i). The missing constituent, marked by $\emptyset$, is interpreted as an AP, DP, or PP, depending on the complement of be in the antecedent.

(i)  
   a. Snoopy might be [$_{AP}$ mean to the new puppy] and the cat might be $\emptyset$ too.  
   b. Mrs. Witherspoon is [$_{DP}$ a notary public] and her husband might be $\emptyset$ as well.  
   c. John is [$_{PP}$ in trouble] and, if you don't behave, you will be $\emptyset$ too.

Under the analysis of the copula be here, there is no movement that would allow us to claim that the missing constituent in any of these cases is a VP, although such mechanisms are in principle available. See for example Lobeck 1995 or earlier analyses such as Akmajian and Wasow 1975 and Iwakura 1977 in which there is a rule of non-finite be raising which moves certain forms of non-finite be to the left, out of VP, leaving behind a VP with no head. Although
the label Predicate Ellipsis or Post-Auxiliary Ellipsis (Sag 1980) would thus be more accurate, I will continue to refer to the phenomenon as VP ellipsis because it is verbs that primarily concern us here. The observations that are made below will be seen to readily extend to a more general view of ellipsis.

14. Ellipsis is clearly also possible in non-finite complements in (i). Lobeck offers an analysis of this possibility that relies on the presence of tense in the predicate which selects the infinitival complement. I will not consider Lobeck's analysis of such examples here.

(i) a. John doesn't care about going to the parade but Bill hopes to Ø.
   b. I'll do it if you really want me to Ø.

15. More precisely, since Lobeck actually employs a split Infl analysis in which IP is broken into TP and AgrP, modals are base-generated in TP from where they raise to AgrP for feature checking. It is hoped that maintaining the conceptually simpler IP analysis does not alter Lobeck's fundamental proposals.

16. "S-structure, the level at which licensing and identification conditions on ellipted categories must be met (Lobeck 1995:162)."

17. A further theoretical problem derives from Lobeck's (1995:162) assumption that only unchecked features can identify empty categories. She crucially uses this to explain the fact that French and German do not have VP ellipsis. If we assume that only unchecked features identify pro then we must assert that English auxiliaries, which raise to I' from where they can identify an empty category, do not raise in order to check features. If this were the motivation for raising, pro could not be identified because the strong agreement features would have been checked.

18. Abney 1987:244 asserts that VPE in Poss-ing gerunds is impossible but the examples here and below seem acceptable.

19. The elements that are [+AUX] are the modals, periphrastic do, all uses of be, perfective have, main verb have (British English), and so-called quasi-modals, dare, need, etc. See Huddleston 1980, Quirk et. al. 1985, and Warner 1993:11 for criteria and lists of members.

20. Johnson 1988 demonstrates that the behavior of negation with respect to perfective have in subjunctives is exceptional and examples like this one with not following have are sometimes acceptable. One interpretation of the data is that have is higher in the structure than be in comparable examples. The sentential adverb example in (i) that will be introduced in the text shortly supports the same conclusion. For some people, it is not completely ungrammatical either, hence the ? judgment.
It is mandatory that everybody have certainly read at least the introduction.
(c.f. Everybody had certainly read at least the introduction.)

The subjunctive data are part of a larger body of facts, discussed in Lobeck 1987 and Johnson 1988, pointing to the inadequacy of treating perfective *have structurally the same as auxiliary *be. The phenomenon is further discussed in chapter 2.


(i) a. John's been rather melancholy lately.
    b. We've never seen this happen before.

AR is relevant to VPE because, as is well known, VPE is excluded following a reduced auxiliary:

(ii) a. *Pam is writing a movie review and Tim's ø too.
    b. *He says he's happy and she says she's ø too.
    c. *Joe read the material and I've ø too.

Assuming that such auxiliaries cliticize to the preceding material (Kaisse 1983, Zwicky and Pullum 1983) by moving out of I' and adjoining to the preceding maximal projection, the ungrammaticality of the examples follows because I' is transparently not filled. Under Lobeck's analysis in particular, it does not properly govern the elided VP. This argument does not distinguish the above two hypotheses, however, because both can appeal to the cliticization process as being the source of the ungrammaticality of (ii), irrespective of the categorial or featural specification(s) of the reduced element. Furthermore, it is not uncontroversial that AR involves syntactic cliticization. Alternative analyses exist which account for (ii) as a violation of prosodic requirements (Sells 1983, Selkirk 1984). This fact, and others, follow from the theory of metrical phonology (see Sag and Fodor 1995 for an overview). Under this view, the status of the reduced element as I' or [+AUX] is also immaterial.

Zagona 1988b provides an argument for Infl licensing based on the behavior of VPE in to-infinitival clauses. Because I have found much dialectal
variation in the crucial data in this complex domain, I have not presented the arguments based on it but, rather, have attempted to present independent arguments for the same conclusion. Zagona's results support the general line of analysis here.

22. Numerous other phrases have been claimed to exist in this inflectional region, among them agreement, mood, aspect, tense, and polarity. If their existence were assumed, one would expect that they too could license null VPs. On agreement and tense phrases see Pollock 1989 and the large body of work that has resulted from his proposal. Laka 1990 proposes the existence of a polarity phrase ΣP which subsumes negation and affirmation. If Laka is right about emphatic so being a realization of Σ* that alternates with Neg*, then the observation that so appears to license an elided VP is correctly predicted, in (i).

(i) Billy doesn't like artichokes. Yes, he does so φ!

A mood phrase is also found in Laka 1990. Aspect phrases have also been proposed in the literature.

23. I will more closely follow the exposition in Abney 1987 because of its wider generality. Grimshaw's system is intricately dependent upon categorial features which ultimately introduce unnecessary complexity for my purposes.


25. Gazdar, Klein, Pullum, and Sag 1985 argue that copular be selects an XP complement unspecified for category status. It need only be a predicative expression. Such an approach might permit us to view be as selecting one kind of complement.

26. Cross-linguistically, this cannot be the only requirement for ellipsis to be present. As Lobeck 1995 demonstrates, languages in which all verbs move to 1°, such as French (Emonds 1978, Pollock 1989), may still lack VPE. I have no proposal for predicting whether or not a language whose VPs meet the structural aspects of the Licensing Condition will actually permit null VPs.

27. It should be noted that under the system of clause structure adopted here, there is no derivation for The rebels all might have fled. This is because there is transparently no specifier position between the subject and the modal, as reference to the above structures will show. One might thus interpret this as an argument for an exploded clause structure in which the unitary IP is decomposed into two or more functional projections, typically AgrsP and TP (Pollock 1989), and subjects occupy the higher specifier position (spec,AgrsP).
There would then be a specifier position, the lower specifier (spec,TP), for the quantifier. However, it is often assumed that the specifier of TP is unavailable in English (Chomsky 1993, 1995, Bobaljik and Jonas 1996). If this is indeed the case, the example is still unexplained.

1. In a clause structure in which IP is not unitary (Pollock 1989, Chomsky 1991) and all verbs move to at least the lowest inflectional head (e.g. Johnson 1991, Bowers 1993, Koizumi 1993, and others), Verb Raising would need to be characterized as movement to the highest inflectional head, rather than as movement out of VP. The absence of VR would be characterized as movement to at most an intermediate inflectional head (see Rohrbacher 1994:9). If a complex Infl scenario were adopted, the discussion could be modified accordingly.

2. Such examples would seem to be clear violations of the Head Movement Constraint since the auxiliaries transparently move over the head Neg° to land in I°. One or more of three assumptions must be in error. Either the HMC is not a true description of all head movement phenomena, nor is not the head of its own projection (see Ernst 1992, Chomsky 1995, Lasnik 1995b for discussion), or finite auxiliaries do not originate in VP.

3. Here and elsewhere I attempt to remain neutral as to whether VPE is deletion at PF or reconstruction/copying at LF. By LF, both theories would seem to countenance equivalent representations for elided VPs. In particular, the trace in the structure above will be present in (at least) the LF representation of the target clause under both theoretical approaches.

4. The same situation cannot easily be created with A-movement, at least in part because of Case considerations. A-movement, such as passive, will typically leave a trace that is not Case-marked. When the antecedent VP is duplicated at the target site, the trace will be without Case, making the example potentially ungrammatical for independent reasons. Despite this complication, examples of the relevant type can be found in the literature and are claimed to be grammatical. If the data in (i), variously from Sag 1980, Dalrymple 1991, and Fiengo and May 1994, are acceptable, they make the same point as the above A-movement cases.

(i) a. This law restricting free speech should be [VP reversed t] by Congress, but I can assure you that it won't °.
   b. It should be [VP noted t], as Max did °, that Fermat's last theorem has not yet been proven.
   c. Botanist: That can all be [VP explained t].
      Mr. Spock: Please do °.
   d. In March, four fireworks manufacturers asked that the decision be [VP reversed t], and on Monday the ICC did °.
   e. A lot of this material can be [VP presented t in a fairly informal and accessible fashion ], and often I do °. (Chomsky 1982:41)

5. Not all A-movement cases containing the desired configuration are as acceptable as the above. Sag 1980 cites similar examples which he indicates that his consultants found very degraded:
Further research will elucidate the differences between the examples in (i) and those above. Fiengo and May 1994 indicate that issues of contrastiveness are involved. One apparent difference is that the traces in the text examples are bound by antecedents which are more clearly D-linked (Pesetsky 1987, Cinque 1990, Rizzi 1990).

6. See Hoekstra 1994 and references therein for proposals that the argument structure of have and be is not as transparent as assumed here. If those analyses turn out to be correct, the data would not transparently illustrate the desired point.

7. Not all examples similar the ones above seem ungrammatical as Lobeck (1992), who appeals to the patterns originally noticed by Bresnan 1976, suggests. For some aspectual verbs such as start, finish, and continue, this is likely due to the observation that they can be intransitive as in (i).

(i) a. Don’t start until I say so.
   b. He continued despite my warnings.

These cases cannot be VP ellipsis, however, since the interpretation of the “missing” complement can be easily pragmatically controlled, a characteristic not shared by VP Ellipsis (Hankamer and Sag 1976; Schachter 1977, 1978; Chao 1988). If such readings can be ruled out through context, ellipsis is generally unsatisfactory with the aspectuals.

Some examples with causative verbs, particularly make and let, are also quite acceptable:

(ii) a. They made Max clean the toilets but they can’t make me ø.
    b. ‘I was going to be a neo-deconstructivist but mom wouldn’t let me ø.’ (Calvin and Hobbes July 12, 1995)

I follow Gazdar, Pullum, and Sag 1982 in analyzing such examples as Null Complement Anaphora and not VP Ellipsis.

8. Lasnik 1995b proposes an alternative, morphologically-based, explanation for these data. In that analysis, VPE requires strict morphological identity of VPs at some appropriate level:

(i) *Identity Requirement on VPE* (Lasnik 1995b)
   A form of a verb V can only be deleted under identity with the very same form. Forms of be and have are introduced into syntactic structures already fully inflected. Forms of ‘main’ verbs are created out of lexically introduced bare forms and independent affixes.
Observe that the given morphological realization that is required in the elided VP's in (42) is the bare form have, not has as in the antecedent. Since auxiliary have and be are inserted into structures fully inflected, there is never a point at which there is the required morphological identity in the examples, so they are ruled out.

As appealing as such an account might be, there are counterexamples to it, in (ii), in which ellipsis is grammatical but the italicized auxiliaries are not of the same form.

(ii) a. John may be questioning our motives, but Peter hasn't φ.
   φ = been questioning our motives
b. ?Mary is being examined and Jack really should φ also.
c. We could have been great . . . but we didn't need to φ.

(Peanuts cartoon)

Potsdam 1997b discusses additional empirical difficulties with the account of VPE in (i).

9. The data with the adverb following auxiliary have repeated in (i) seem more natural than the corresponding data with be and the contrast with the S-adverb*auxiliary order in (ii) seems less strong.

(i) a. ?Have certainly read at least the introduction!
b. ?Have normally waited at least an hour before going swimming!

(ii) a. Certainly have read at least the introduction!
b. Normally have waited at least an hour before going swimming!

If the examples in (i) were fully acceptable, they would be interpreted according to the diagnostic to indicate that have raises in imperatives. Lobeck 1987:72-78 reaches a similar conclusion regarding non-finite occurrences of have based on its interaction with adverb placement, VP ellipsis interpretation, and VP fronting. The work concludes that non-finite have is actually base-generated in I' with the modals. I will resist this conclusion based largely on the results of the other diagnostics to follow. Johnson 1988 also observes numerous subtle irregularities with have but argues against generating non-finite have in I' based on the variable position of not in subjunctive and infinitive clauses. He suggests that have is a bound morpheme which must affix onto another head. This unusual behavior of perfective have is addressed later.

10. Warner 1985, in the context of a GPSG analysis of the English auxiliary system, claims to be the first to discuss such examples.

11. These two sets of examples will not clearly contrast for all speakers. This is because for some there is general difficulty in retrieving an antecedent VP headed by perfective have. This restriction was discussed in chapter 1, section 5.4. For me, there is a clear difference.

12. See chapter 4 for evidence that such examples are instances of VPE and not frozen expressions.
13. Warner 1985:48 claims that don't you! is ungrammatical; however, it seems that it merely needs to be put in some context to make it acceptable.
14. The variable and partially acceptable status of some of the examples may conceivably be attributed to Ernst's (1984) observation that S-adverbs are sometimes acceptable inside VP.
15. The because-adjunct could be adjoined to either IP or VP. Neither position is c-commanded by constituent negation, as the above structure indicates.
16. These examples also have an irrelevant third reading in which the because-clause is construed with the matrix verb.
17. The b example contains a because-clause and is ambiguous, indicating sentential negation.
18. (i) illustrates using the negation diagnostic that raising is also not found in infinitival complements. Neither a main verb in a nor an auxiliary in b can precede sentential not. This is unsurprising, however, since to reasonably occupies the Infl position and blocks VR.

(i) a. *[For Bruce to win not] would be a tragedy.
   b. *[For there to be not an election] is likely.
19. Baker 1991 articulates a structured system of core grammar versus peripheral grammar which is explicitly designed to account for the parochial nature of FAR. The work largely concludes that it is not clear that the motivation for FAR is due to deep theoretical principles rather than simple lexical arbitrariness. Baker argues this position in great depth in considering Pollock's (1989) and Chomsky's (1991) analysis of the phenomenon. In weighing descriptive richness against theoretical restrictiveness, Baker determines that the analytical cost of accounting for English auxiliary behavior is too high if its analysis is admitted into the core grammar. He thus concludes that FAR is a peripheral rule and not an epiphenomenon reflecting deeper principles. His analysis has the effect of moving the account of auxiliary raising into a less central, language-particular portion of the grammar. This is one possible approach towards explaining FAR. See also Pollock 1989 and Lasnik 1995b.

1. An alternative way of explicating these roles is in terms of the concept of a common ground (Grice 1975; Stalnaker 1974, 1979; Heim 1988). The common ground as defined by Stalnaker is the set of presuppositions that participants in a conversation all share. It is a set of mutually-held background assumptions. Participants in a discourse share a common ground and are working towards specifying the body of information in it. Rather than targeting participants with an illocutionary act, as above, the speaker's goal is to update and further the common ground. Under this view as well, the addressee is the most directly affected participant. When a statement is made, the common ground is changed in complex ways. The addressee is the one who is to update her/his knowledge base to make it compatible with the common ground. Although an explication of discourse roles in such terms has the advantage that the machinery is explicit in the literature, it is less helpful in the current context because it does not easily extend beyond assertions to imperatives (Heim 1988:290).
2. In terms of a common ground, informing Bea has the affect of requiring her to update her knowledge base so as to be compatible with the common ground. Cici is not required to take this action, although she is passively affected by the new common ground.

3. For example, Benveniste 1966 and Farkas 1988 argue that speaker and addressee, realized as first and second person pronouns respectively, are united in various syntactic phenomena. According to the discourse structure above, however, they do not form a natural class. On the other hand, they are still unique in being the only required discourse roles and can thus be differentiated in that manner. It is not clear whether the discourse structure above needs to explicitly encode this grouping.

4. Formally this may be ruled out by the accessibility requirement (Chomsky 1981) or the i-within-i condition. More generally, circularity of reference must be excluded.

5. Downing 1969 claims the same pattern for French, citing the example in (i) from the Port Royal Grammar of 1676.

(i) Soleil qui voyez toutes choses...
sun which see.2pl. all.plural things
'Sun who sees all things, …'

Jim McCloskey (personal communication) indicates that Irish shows a similar pattern:

(i) A Mháire a bhfuil an fhidil leat, ...
VOC Mary COMP is the fiddle with.you
"Mary who's carrying the fiddle, …"

6. The judgments in the literature on examples involving someone as a vocative are inconsistent. Davies 1986a marks such examples as ?. Downing 1969 and Thorne 1966 claim that they are ungrammatical. I will agree with Stockwell et. al. 1973 and Quirk et. al. 1985 and assert that they are acceptable, as my consultants confirm.

7. Thanks to Anastasia Giannakidou for insightful help with these and other Greek data in this chapter. The left-peripheral noun phrases can be identified as vocatives because they are separated from the rest of the sentence by an intonation break, lack the definite article which is otherwise required in most contexts, and/or have overt vocative morphology.

8. The reverse situation also exists; namely, there are noun phrases that are acceptable as vocatives but not as INPs. Such examples also demonstrate that INPs and vocatives are distinct. The test is of limited use, however, because such NPs belong to a restricted set and are readily identifiable. Quirk et. al. 1985 and Davies 1986b survey many such cases that include occupations (waiter, driver, doctor, etc.), epithets (dear, sweetie-pie, honey, coward, idiot, asshole, etc.), and general nouns (brother, buddy, partner, etc.). These NPs are acceptable vocatives, (i), but not declarative clause subjects, (ii).
(i)  
a. *Waiter is bringing our drinks.
   b. *Dear is in the kitchen.
   c. *Partner moseyed up to the bar.

(iii) illustrates that the same NPs are also bad in imperatives without vocative intonation. In these examples, then, they cannot be vocatives.

9. McCloskey 1997 does not include this as it is not only a property of subjects. It is, however, a typical property of at least subjects, so I include it here.

10. I use an ECM verb here to avoid placing an accusative pronoun in finite clause subject position, which is independently ungrammatical.

11. Schmerling 1982 goes so far as to assert that there is no scope interaction whatsoever among quantified noun phrases in imperatives. That is, none of the above examples, nor any like them, are ambiguous; they have only the scope possibilities permitted by the surface order of the quantifiers. Such a claim would give ultimate prominence to INPs within the domain of scope ambiguity. Unfortunately, it seems that the assertion is too strong. The imperatives in (i) are clearly ambiguous with the most natural reading being the one in which the subject is interpreted within the scope of the object, the reverse of the surface order.

(i)  
a. Me/UWe/Us stand up!
   b. Him/He try to run faster!

Such examples do seem truly terrible but it is not clear whether their ungrammaticality is due the pronominal status of the INP, its referent, or something else. The observation that the pronoun you is regularly permitted suggests that it is not the syntactic status of pronouns that is problematic in (i). On an informal level, it is the very use of such examples that is dubious. It is
unlikely that one would issue an imperative to oneself, making first person pronoun subjects all but useless. Third person pronouns in b might be reasonably ruled out because the pronoun does not supply enough information to identify the subject. In support of this is that the examples improve if descriptive content is added to the pronoun, in (ii).

(ii)  
   a.  *He who stole the eraser put it back immediately!  
   b.  *She who tracked in mud take her shoes off this instant!

If this is so, it is still not clear why, when the pronoun can unambiguously identify a referent, the examples are not very natural:

(iii)  
   a.  *You make the dinner and John do the washing up! No? All right then, he cook and you wash up!  
   b.  *This next chess game, you be white, I be black, and he be the timer!

15. Zhang 1990:25 holds a similar position to Downing's, assuming that INPs are fundamentally "addressee-limited subjects". He does recognize exceptions, which he labels "non-addressee-limited", but states that the only possibility is a coordination of you with a third person noun phrase. Such conjunctions are still grammatically second person in nature.

   Downes 1977 perhaps too shares Downing's position in stating "the fact of the matter is that the subject NP must refer to the hearer of the utterance, the addressee. Any NP whatever that does not exclude this interpretation can be the subject of an imperative." Since hearer and addressee are distinct in the above system, it is unclear which one Downes intends.

16. Schmerling 1982 makes the claim that INPs are restricted to audience reference, a somewhat more permissive formulation than Downing's. This too would seem too narrow given these examples. Schmerling's term "audience", however, is perhaps best paraphrased as "intended hearers". She remarks in a footnote that her notion of "audience" must be interpreted as a subset of the domain of discourse not necessarily limited to those who are physically present at the time of the utterance. The term has to do instead with the intentions of the speaker. She correctly observes that the imperative in (i) may be uttered with no apparent audience in sight (or earshot).

(i)  
   Somebody help me!

17. The context of the proposal is a discussion of the responsibility relation, to be introduced below, which relates an individual, the initiator, to a situation which s/he is seen as bringing about. Farkas 1988 suggests that, if the initiator is distinct from the actual intentional agent of the situation being brought about, then the initiator is in an A-relation with the agent and is seen as determining his/her actions.

18. This is also true of earlier theoretical mechanisms, Chomsky's (1981) Extended Projection Principle in particular.
19. I will only be concerned with argument, referential pro here unless otherwise indicated. Other types of null pronominals which ultimately require analysis include quasi-argument, expletive, and arbitrary pro.

20. Lillo-Martin 1986 argues with data from American Sign Language that a licensing condition formulated to require that pro be properly governed is also incorrect and that only identification is needed.

21. In support of the Caseless nature of pro, one might point to imperatives in the numerous languages that do not permit pro to alternate with an overt subject. This state of affairs would follow if Case was not assigned to the imperative subject position in these languages. Only pro could appear.

22. It is clear that both situations require further investigation before Y. Huang's conclusion can be accepted. For the Cuban Spanish case, it could very well be that the range of distinctions necessary for "rich" agreement still obtain. With regard to the Icelandic situation, Holmberg and Platzack 1995:110 offer a different, and perhaps more faithful, interpretation of Sigurðsson 1993. They take Old Icelandic to have pro subjects only in a restricted set of discourse-controlled cases. What was lost in the change to Modern Icelandic were these contextually determined instances of pro. In essence, they are claiming that Old Icelandic was not a subject drop language in the traditional syntactic sense.

23. A weaker proposal is to admit that the desired concept of "rich inflection" is simply a theoretically necessary construct that only imperfectly correlates with overt agreement. Lillo-Martin 1986:441 suggests that rich inflection is ambiguous between "overtly morphologically rich" and "syntactically rich enough to allow a null argument". This latter notion she calls STRONG AGREEMENT. For example, the languages Italian, Greek, and German all have comparably morphologically-rich systems of verbal inflection; however, only the first two have null referential arguments so that only they would be analyzed as having strong agreement which licenses null subjects. Syntactically, German has WEAK AGREEMENT which does not license pro. The way in which Lillo-Martin's proposal presages current ideas regarding feature checking and strong/weak syntactic features (Chomsky 1993, 1995) is striking and her proposal would seem to adapt readily into a Minimalist framework. Analyses in this vein are developed in Platzack 1994 and Speas 1994. A Minimalist approach to the recovery of pro would admit that identification is a morphosyntactically-based property that need not be fully determinable from looking at a language's morphological paradigms. The possibility of identifying pro is encoded in the lexicon, in the strength of the features [PERSON] and/or [NUMBER]. Such an approach maintains the core of Taraldsen's observation and at the same time acknowledges the overwhelming empirical difficulties that seem to face a purely morphological agreement-oriented theory of null arguments. The problematic languages mentioned above would be accounted for in a formal feature-based analysis because there are no necessary theoretical implications, in either direction, between morphological richness and the
identification of pro. Furthermore, a formal feature account of pro recovery would not necessarily preclude an analysis that incorporates the concept of rich agreement. If it turns out that rich agreement could be appropriately defined then such a definition would provide a basis for asserting that a language has strong agreement features. Despite its promise, I will not pursue such an analysis here.

24. The proposal will be unable to account for languages such as Chinese and Korean in which pro is permitted but there is no morphology that would permit its identification. The mechanism to be proposed is therefore unlikely to be the only means of licensing a null element in a given language.

25. It has been suggested to me that Finnish illustrates the same state of affairs but I have not explored the data.

26. These are not control structures with PRO since neither example requires a coreferential interpretation as far as I can determine from Kenstowicz’ discussion.

27. Farkas 1987 mentions similar instances of pro in French, Turkish, and Palauan in which pro occurs with a fixed interpretation which is not dependent upon its licensing head but which entails a particular value for the feature [PERSON].

28. This same assertion is made in Holmberg and Platzack 1995:107.

29. My own investigation of the languages indicates that Luo at least freely allows subjectless imperatives. None of the examples cited in Stafford 1967, including those in (i), has a subject or subject agreement morphology.

(i) a. Kel chiemo!
   bring food
   “Bring food!”

b. Go-ye!
   hit-him
   “Hit him!”

Sources on Hawaiian (Elbert 1970) indicate that the subject in imperatives is “commonly expressed”. It is unclear whether this means they are obligatorily expressed.

30. The options for number on the pronouns, singular or plural, will not be discussed because the pattern does not differ from that in declarative clauses. In particular, I ignore the possible use of third person plural pronouns in situations where a gender-neutral singular pronoun is desired:

(i) Everyone enjoyed themselves.

31. F&Z argue that semantic agreement occurs when a lexical head is not available or able to supply morphosyntactic feature values. They discuss two cases in Romanian: conjoined noun phrases and deictic pronouns. The latter are not lexically headed but assumed to be heads belonging to the functional category D’ (Postal 1970, Abney 1987).
1. I use the label 'imperative verb phrase' solely to make clear that the structure under consideration is an imperative. No theoretical significance should be attached to the term.

2. An admissible alternative to adjunction that is also found in the literature is to have DO be a head which subcategorizes for a non-finite clause. Bolinger 1967 and Pollock 1989 (for don't only) analyze DO as a fossilized main verb which takes a VP or IP complement. Beukema and Coopmans 1989 takes DO to be a complementizer which subcategorizes for a non-finite IP. This version of the analysis is not different in essential ways from that considered in the text. The arguments carry over since they are independent of the phrasal status of the imperative particle.

3. Two of the generalizations that follow were pointed out in Akmajian 1984 and thus it is particularly unclear why that work finds it necessary to consider DO as a special set of 'imperative particles'.

4. The VPE data also argue against the alternative imperative particle analysis mentioned in footnote 2 in which DO is a head, either a main verb (Bolinger 1967, Pollock 1989) or a complementizer (Beukema and Coopmans 1989), but it is not part of the inflectional complex. As is known, neither main verbs, in (i), nor complementizers, in (ii), license a following empty category.

(i)    a. *People began pouring out of the building and then smoke [\(v\) began] \(\varnothing\).
       b. *John started speaking French because Mary [\(v\) continued] \(\varnothing\).

(ii)   a. *Jose doesn't believe that the fireworks will take place but I think [\(c\) that] \(\varnothing\).
       b. *The jury is convinced that they did the right thing but the public wonders [\(c\) whether] \(\varnothing\).

5. I hypothesize that let's-constructions have one of the analyses being investigated, an auxiliary or imperative particle analysis. A third analysis, different from both of these options is not ruled out of course. The appendix to this chapter demonstrates that let's-constructions are not simply imperatives with a main verb let. It discusses related but distinct let-imperatives, in (i), and, secondarily, let-constructions, in (ii), and argues that let's-constructions differ at least from ordinary imperatives like (i).

(i)    (All of you) let your arms hang gently to the side!

(ii)   'Let me not to the marriage of true minds admit impediments.'
       (Shakespeare, Sonnet 116)

6. Clark 1993 suggests that the acceptable examples above contain appositives derived from the examples in (i) which have explicit appositive intonation.
(i)  
  a. ?Let us, you and me, be roommates next year!
  b. ??Let us, US, go instead!
  c. ?Let us, all of us, go!

The examples in the text, however, clearly do not require the comma intonation associated with the appositives in (i). In addition, the examples in (ii) and (iii) indicate that contraction is not generally possible with appositives in this environment. These examples are particularly bad with the unbroken intonation contour that is found on the grammatical examples.

(ii)  
  a. Let us, those who are prepared, set off at once!
  b. *Let's, those who are prepared, set off at once!

(iii)  
  a. Let us, the stragglers, make an effort to catch up!
  b. *Let’s, the stragglers, make an effort to catch up!

The relative acceptability of (iv) is also unexpected if the noun phrase following let’s is an appositive.

(iv)  
  ?Let’s none of us say anything to her about it!

None of us in this example does not behave like an appositive. First, it is an unlikely if not impossible appositive because of its semantic properties: *They invited us, none of us. Second, it licenses the negative polarity item anything in object position. I conclude that Clark 1993 is incorrect in reducing the noun phrases under investigation to appositives.

7. I will call the post-let’s noun phrase the subject since I later claim that it occupies the specifier of IP. I thus use the term subject in the sense developed in chapter 3: the noun phrase that occupies spec,IP. I do not claim that the post-let’s noun phrase is the logical subject of let’s since I will claim below that let’s is base-generated in Infl and is like the modals in having no external argument.

8. This is strikingly confirmed by examples in which a pronoun anaphoric to the quantified subject must be grammatically first person and must include the speaker in its interpretation, at least figuratively. I am told that examples as in (i) typically have a use that is most appropriate with children in a kindergarten-like setting.

(i)  
  %Let’s everyone take our/?his/?their crayons and coloring books!

9. The possibility of nominative case in (i) is clearly a result of the more general recent tendency, illustrated in (ii), for nominative case to be substituted in conjoined noun phrases independent of structural position. (i) is not a reflection of ambiguous Case assignment in let’s imperatives as (iii) shows. See Seppänen 1977 and Davies 1986a for discussion.
Let's you and I be roommates next year!

This is just between you and I.

The superintendent needs to see Bill and I right away.

*Let's WE take care of this for them!

The pattern with not seems to be universally accepted; however, two other patterns of negation are also acceptable for a minority of speakers:

Don't let's try that!

Let's don't try that!

The first will be discussed in section 4. An analysis of the second pattern, which I will not pursue, is that don't rather than not is the head of NegP. This proposal receives initial support from the observations that in this dialect the subject appears in the same position, preceding negation, and don't, as the head of NegP, expectedly licenses a null VP.

Let's you and me don't stay up too late!

Let's don't you and me worry about that!

Should we go in?

No, let's don't o!

Several researchers (Ard 1982, Stein 1990) have suggested that all uses of do can be reduced to one of emphasis. The thesis is that the distribution of do is semantically conditioned and the common denominator in its appearance with negation, interrogatives, and affirmation is a focus on the polarity of the clause, the truth or falsity of the proposition. I will not explore this more general possibility.

Jorge Hankamer (personal communication) indicates that there are registers of certain dialects in which pronouns in conjoined NPs are always accusative, independent of clause type or structural position. I do not know whether this is the same dialect that Zhang documents.

This can be seen in left dislocation examples, where a dislocated pronoun is always accusative regardless of the case of its coindexed element:

You and him be on time just this once!

*You and he be on time just this once!

For reasons developed in chapter 3, quantificational and second person subjects are best, just as in neutral imperatives.
16. Huddleston 1978:49 notes exactly parallel behavior for *do in a *do-
let’s construction:

(i) Let’s go and see John.
*Oh, yes, do ϕ!
ϕ = let’s go and see John

(ii) Let’s go and see John.
Oh, yes, do let’s ϕ!
ϕ = go and see John

17. Seppänen 1977 suggests that don’t let’s could be analyzed as a single
auxiliary unit.

18. Here and below, in illustrating the let-construction, I attempt to use
examples that do not have, or disfavor, the let-imperative interpretation. Some
of the examples may, unavoidably, be ambiguous.

19. Iveland 1993 claims that let also must be allowed to have an object
control subcategorization frame: [ __ NP VP] in which the NP complement of
let controls the subject of the VP small clause. I will not be concerned with
such details here. This argument structure still contains an external argument.

20. A close semantic parallel is the relationship between the transitive
and unaccusative uses of verbs such as *sink or melt. In the transitive use, (i)a,
there is an external agent while in the unaccusative use, (i)b, no agent is
implied.

(i) a. The navy sank the ship.
b. The ship sank.

21. In practice, this difference is often subtle as there is a use of the main
verb let in which the subject need not be agentive and the external argument
takes on a less direct role, in (i).

(i) a. The rains let our crops flourish.
b. The 1984 political climate let Reagan take the White House.
c. The new freeways let us get to work in record time.

22. The data demonstrate one unexplained difference between do(n’t) and
let’s: let’s obligatorily raises to the higher head X, while do(n’t) does so only
optionally (see section 3.3.1). The let’s-constructions in (i) with the subject
preceding let’s are ungrammatical. I have no explanation for this fact although
the result can be mechanically achieved using the feature checking analysis
developed for do(n’t) in chapter 6.

(i) a. *Us let’s go instead!
b. *You and me let’s get out of here!
c. *All of us let’s send him a card!

1. Generative proposals claiming that imperatives are VPs or other
reduced clause types include Schmerling 1977, 1982 and Platzack and
dialect of English profitably employs a VP-internal representation for the
subject.
Platzack and Rosengren 1994 also adopts a structure similar to the one above for imperatives in the Germanic languages. The work argues that these subject-like noun phrases are syntactically and semantically distinct from ordinary subjects although they are subjects in some sense. The work observes that second person pronominal subjects in imperatives in numerous languages show properties which would be unexpected if they were simply ordinary syntactic subjects. Platzack and Rosengren suggests that the argument of the imperative verb is nevertheless syntactically represented. This argument, which they characterize as an actor/addressee, is base-generated in VP and, at all times, remains there because there is no higher agreement/inflectional projection above VP in imperative clause structure for it to move into. As an actor/addressee argument rather than a subject, it does not have all the syntactic characteristics of a subject—in particular, the need to check syntactic features.

2 Platzack and Rosengren 1994 develops such a view, although the proposal also eliminates the inflectional projections which the subject raises up into to check its morphological features. The work can be seen as appealing to both avenues discussed above.

3 It seems clear that such examples cannot involve vocatives rather than subjects since, as observed in the discussion of floated quantifiers in chapter 1, strings like the twins both are not constituents, which vocatives must be. Furthermore, the noun phrases without the quantifier do not pass the tests typical for vocatives discussed in chapter 3: a separate intonational phrase and an inability to trigger third-person anaphora.

4 For some people, including me, examples with floating quantifiers following be do not always sound fully natural. They are marked ungrammatical in Sag 1980. The preferred position for the quantifier is preceding be. This does not necessarily diminish the argument, however. What is important is the relative contrast between the imperative examples above and their finite clause counterparts. The VP and CP/FP hypotheses differ in how they relate imperatives to finite clauses. It is uncontroversial that subjects in English raise to a higher inflectional projection. The VP hypothesis, unlike the other two hypotheses, claims that the situation is different in imperatives. An alternative way of stating the argument is that the VP hypothesis predicts that the two clause types should show correspondingly different judgments on parallel examples with stranded quantifiers. The relevant pairs are in (i) and (ii). The VP hypothesis predicts that there should be a sharp contrast between the a examples and the b examples, with the a examples being fully ungrammatical.

(i) a. ('?Don't you be both talking at once!
   b. ('?You shouldn't be both talking at once.

(ii) a. ('?You be both waiting for me promptly at 3!
   b. ('?You should be both waiting for me promptly at 3!

To the extent that the b examples are degraded, the a examples are no more so to me.
5. The acceptability of these examples given the appropriate context suggests that Stockwell et. al. 1973 are incorrect in claiming that such preverbs are incompatible with imperatives. Davies 1986a:12 makes the same observation.

6. A sketch of an analysis would run as follows. Assuming that finite clause subjects occupy spec,F1 P and F1 ' is the surface position of modals, the I'-adjoined adverb position becomes adjunction to F1 '. If we allow no other adjunctions within the F projections (with the possible exception of adjunction to F2 '), then the imperative data in (i) correctly fall out.

(i)
   a. Don't you just stand there!
   b. Everyone don't just stand there!
   c. Everyone just don't stand there!
   d. *Don't just you stand there!

7. A similar argument can be made using topicalization within relative clauses, although the data are less robust. The topic in these examples must appear to the right of both the complementizer and wh-phrase and to the left of the subject:

(i)    a. the fake diamond which/that to Ivana we sold
       b. *the fake diamond to Ivana which/that we sold
       c. *the fake diamond which/that we to Ivana sold

Rochemont 1989 and Lasnik and Saito 1992 point out the marginal nature of examples like these. Such data and Baltin's (1982) original example in (ii) are not accepted by all speakers. Furthermore, the data itself is not very stable; similar examples in (iii), some from Rochemont 1989, are of varying acceptability.

(ii)    He's a man to whom liberty we could never grant.

(iii)   a. *He's a man who liberty we could never grant to.
       b. *This is the book that under the table I saw.
       c. ??He's a man from whom money we could never take.
       d. ??That's the sort of joke that on Bill we could never play.
       e. ??This is the spot where to Janice my father proposed.

It appears that complex stylistic and pragmatic factors affect the acceptability of the examples as it improves with contextualization and focus on the topic XP.

8. An alternative is that the topic is located in the specifier of a projection immediately dominating IP. Culicover 1991 argues for such an analysis, positing a Pol(arity) Phrase above IP. I will not pursue this possibility here.

9. Rochemont 1989 makes the same observation.
10. These data have a status similar to the topicalization in relative clause examples mentioned in an earlier footnote. Their acceptability is somewhat variable. Radford 1988, for example, states that such data are impossible, offering (i). Further examples in (ii) also seem marginal.

(i) a. *That kind of pen what can you use for?
b. *What that kind of pen can you use for?

(ii) a. *His convertible when did Bob say he drove?
b. *The dog how could you toss the leftovers to?
c. ?The important guests what did the waitress serve?

Within the Lasnik and Saito 1992 theory, which Rochemont initially adopts, the examples are actually Subjacency violations, thus, predicted to be ungrammatical. The definitions for Subjacency are given in (iii) and (iv). The definition of L-marking follows Chomsky 1986. Relevant to this discussion is that T L-marks VP but C* does not L-mark IP. Given the definition of barrier in (iii), IP is a barrier, as is a non-complement CP.

(iii) γ is a barrier for β if
   a. γ is a maximal projection
   b. γ is not L-marked, and
   c. γ dominates β

(iv) β is subadjacent to α if for every γ, γ a barrier for β, the maximal projection immediately dominating γ dominates α.

The structure that we are interested in corresponding to the above examples is in (v).

(v) $[CP, topic_i [CP, wh_j [C, AUX_k [IP subject [t_k [vp t_i ... t_j ] ] ] ] ] ]$

There are two situations to consider, depending upon whether the topic or wh-phrase moves first. Movement of the wh-phrase to spec,CP crosses one barrier, IP, but the wh-phrase is subjacent to its trace according to (iv) because the maximal projection immediately dominating this barrier, CP₁, also dominates the wh-phrase. Movement of the topic to the CP-adjoined position now violates Subjacency. The topic crosses two barriers, IP and CP₁. The maximal projection that immediately dominates IP is CP₁ and it does not dominate the topic phrase. Suppose the topic were to move first. In order to not violate Subjacency as in the above scenario, the topic cannot move in one swoop to the adjoined location. It must first stop in the spec,CP₁ position before moving on. This initial movement to the specifier crosses one barrier but obeys Subjacency since the projection immediately dominating the IP barrier, CP₁, also dominates the specifier position. The second movement, from spec,CP₁ to the adjoined position also obeys Subjacency. One barrier is crossed, CP₁, but again the maximal projection that immediately dominates it is CP₂ and this also dominates the adjoined topic. But now, movement of the wh-phrase to the
specifier of CP₁ is illicit because it is occupied by a trace of the topic phrase and movement cannot cover up traces. Thus, the Lasnik and Saito system actually provides no derivation for Rochemont's examples. One could allow the data in by saying that matrix CPs are L-marked but this seems somewhat ad hoc. An alternative is to recognize the marginal status of the examples and accept that they are Subjacency violations.

11. It is evident that the difficulty here is not a semantic incompatibility between the adverb and posing a question (see Bellert 1977, Ernst 1984:290 and references cited therein). These questions are acceptable if the adverb is in the VP-adjoined position:

(i) a. Don't the airliners usually fly over this neighborhood?
   b. Will he most likely regret his indecision?

12. On this view, an unmoved adverbial is not an operator and so not subject to the Operator Criterion.

13. The ungrammaticality of the examples is not due to an incompatibility between sentence-initial adverbials and imperatives, as (i) shows. Initial adverb phrases are acceptable if they are not inversion triggering. It is also not due to an incompatibility between only adverbials and imperatives, as they may appear clause finally, (ii). In such cases, however, they are not in spec,CP and thus are not operators subject to Rizzi's Operator Criterion.

(i) a. During the solo, don't everyone sing!
   b. When I say the word, everyone run to the left side of the airplane!

(ii) a. Don't everyone sing only when I say!
   b. Try this only with adult supervision!
   c. Do say your lines only when it's your turn, please!

14. While these contrasts seem real, their basis remains mysterious. I have no theoretical account of the above differences. In general, Negative Inversion cannot and should not be limited to applying to only arguments. Many ITAs are precisely that, adverbials.

15. This example and the one above might be independently ungrammatical due to a general constraint against topicalizing negative quantifiers.

16. The a and c examples may well be grammatical as declaratives with question (incredulity) intonation. I have found no way to exclude this possibility.

17. The situation is complicated by the fact that most polarity questions independently license NPIs:

(i) a. Will anyone go?
   b. Does he ever clean his desk?

Important for considerations here, Han and Siegel (1997) and others (e.g. Borkin 1971 and Ladusaw 1980) observe that NPIs are licensed only in questions in which a negative answer is possible. NPIs are ungrammatical in
questions in which a negative answer is not possible. One instance of this is so-called alternative questions, illustrated in (ii), in which the answer is not yes or no but must be one of a choice of alternatives. As shown in (iii), NPIs are not licensed in this case.

(ii) Will Bob Dole or Bill Clinton win the election?

(iii) *Will Bob Dole or Bill Clinton ever win the election?

The question/answer scenario above is intended to be of this type.

18. See the earlier discussion regarding the marginal status of Topicalization with wh-questions which accounts for the data marked \(?/??\).

19. These examples may be acceptable to some. In such cases, however, it is easy enough to see that they are then not interrogatives but declaratives with question intonation. Since only questions and not declaratives license NPIs, declaratives in disguise should not permit NPIs, which is the case. (i) is ungrammatical with the NPI ever.

(i) a. *So embarrassed is Jack ever that he can’t answer a question?

1. Given that I have recognized the possibility of subjects with emphatic imperative do, examples like this one do have a grammatical reading in which do is emphatic and not is constituent negation. Under such a reading, do is stressed and is either persuasive or contrastive. Further examples of this are given in (i). They differ from the ordinary formal imperatives under investigation in which do is neutral.

(i) a. *Do AT LEAST SOME of you not snub our guest!
   b. *For heaven’s sake, of all people, DO YOU not give me a hard time!

2. For the sake of discussion, I will ignore how to prevent inflectional projection(s) from extending this phrase marker. It might be claimed that there are no features to check and, thus, by economy, no further structure is needed, or permitted.

3. An adverbial analysis of floated quantifiers (Doetjes 1992, Baltin 1995, Bobaljik 1995) also sheds no light on the data. Under an adverbial approach, the descriptive restriction required to prevent the ungrammatical examples is somewhat unusual: adverbs must be disallowed in formal imperatives in the pre-verbal but post-do not position(s). A condition of this sort would seem to be incorrectly overly restrictive since the data in (i) indicate that all other kinds of adverbs are compatible with formal imperatives. Floated quantifiers would need to be singled out as a special kind of adverb.

(i) a. Do not always be so quick to criticize!
   b. *Do not normally start cleaning until the customers have left!  (S-adverb)
   c. Do not so rudely interrupt us next time!  (VP-adverb)
   d. Do not simply skim the material, read it thoroughly!  (E-adverb)
4. Akmajian surmises that unstressed *do not* obligatorily contracts to *don't*. Akmajian's restriction is ambiguous and silent regarding the status of (i) in which both formatives are stressed. It seems acceptable.

(i) Dó not leave the room!

5. The inconclusive nature of Schmerling's floating quantifier data indicate that they are of limited use.

6. To the extent that historical data can be enlisted in a synchronic study, it supports these observations. I have found two instances of subjects in formal imperatives and both have the subject, *you*, following *do not*. I have not found any examples of the pattern *do*subject^*not*. The first example in (i) is from Visser 1963b:1541; the second is from Poutsma 1928:107 taken from Sweet 1891-1898:§506.

(i) a. Do not you add to the idle race! (1807)
   b. Do not you do that! (~1898)

7. Parentheticals could also be used to illustrate the same point.

8. It is necessary to confirm that these examples can represent instances of sentential negation, as desired, and not solely constituent negation. Chapter 2, section 5.2.2, discussed four tests for distinguishing the two types of negation. Of use here is the observation that sentential negation, but not constituent negation, can take scope over VP adjuncts, thereby introducing scope ambiguities and licensing NPIs. (i) indicates that the negation in such examples may take scope over a quantificational adjunct. The example is ambiguous with the two readings in (ii). (ii)a in particular corresponds to the interpretation in which negation has wide scope and must be sentential. (iii) indicates that this negation may also license an NPI in a VP adjunct.

(i) My parents have both not worked for many years.

(ii) a. Both my parents have worked for not many years. NOT > MANY
   b. For many years, both my parents haven't worked. MANY > NOT

(iii) The twins could both not vote during *any* of the elections.

   An additional test not previously discussed is available since these examples may contain a modal. It is well-known that sentential negation, but not constituent negation, may take scope over some modals in *I* (Zwicky and Pullum 1983, Ernst 1992). That the example in (iv) is ambiguous, with both of the readings in (v) and, in particular, the wide scope reading for negation in (v)a, indicates that we are potentially dealing with sentential negation.

(iv) The twins can both not vote.

(v) a. Both the twins are not able to vote. NOT > CAN
   b. Both the twins are able to not vote. CAN > NOT
9. We can again ascertain that the instances of *not* in such examples are potentially sentential negation. (i) demonstrates that similar instances of negation introduce an ambiguity with quantified adjuncts, made explicit in (ii). (ii)a is the desired reading involving wide scope of sentential negation.

(i) The union members will probably not accept the contract for many years.

(ii) a. The union members will probably accept the contract for not many years.
    b. For many years, the union members will probably not accept the contract.

VP ellipsis is clearly possible after these examples, again indicating that we are dealing with sentential negation (see chapter 2, section 5.2.2):

(ii) a. The President might be above the law but policemen are certainly not φ.
    b. The Wessons are often home at night but the Smiths are usually not φ.
    c. Joe is pretty unpredictable. He may show up or he may just not φ.

10. The data can be accommodated if we give up assumptions 1) and 3) and adopt a structure as in (i) in which modals occupy a distinct, higher head position from *do*.

![Tree diagram]

The data could then be accounted for by claiming that spec,NegP is not available as a stranding site for floated quantifiers and that I₂ does not license S- or E-adverbs or, alternatively, that the Neg projection is inert for adjunction. Despite the tenability of such an analysis, neither the structure itself nor the individual assumptions would seem to have any support beyond these particular data. I leave it as an open alternative to be independently motivated.
11. If the source of the tight morphological connection between a form of support *do* and sentential *not* is indeed phonological, then it might ultimately be unnecessary to assume that *not* actually moves to I'. The rule might better be formulated as a restriction on prosodic structure deriving from the obligatorily unstressed nature of dummy *do*. I leave this for further investigation. It would be preferable if the head movement above did not actually have to be posited since there is no actual evidence for it. It is one mechanism, perhaps not the correct one, to capture the observed locality requirements.

12. These examples are potentially good on a reading where *do* is emphatic and *not* is constituent negation. The case of interest, however, is one in which *do* is not emphatic, but neutral.

13. The data are once again degraded if the adverb appears below *not*:

**S-adverbs**
(i) a. ??Do not definitely tell them where you're from!
   b. *Do not certainly make claims that are unfounded!
   c. *Do not absolutely mention this!

**E-adverbs**
(ii) a. ??Do not just think about it!
   b. ??Do not simply give them your address!
   c. ??Do not merely return the forms and they'll leave you alone!

The account of at least (i) could be syntactic: Neg° does not license S-adverbs. This seems incorrect, however, given the declarative clauses in (iii) in which an S-adverb appears grammatically below *not*. These examples are analyzed as having the S-adverb licensed by Neg° in the VP-adjoined position, which is governed by Neg°; (iii)d.

(iii) a. He did not apparently have an alibi.
   b. Jeff has not definitely finished his homework.
   c. Policemen are not obviously above the law.
   d. The students [T, will [NegP [Neg° not [VP obviously [VP see the problem here ]]]]]

I would suggest that the unacceptability of the data in (i) and (ii) is semantically based. The examples crucially differ from the ones in the text in that the adverb is within the scope of negation. It is not expected that the two sets of data should be synonymous or equally felicitous. (iv) and (v) indicate that grammatical formal imperative examples with the adverb below *not* can be constructed.

(iv) a. Do not normally wait so long before responding!
   b. Do not definitely refuse until you're sure of your plans!

(v) a. Do not just think about it, do it!
   b. Do not simply give them your address if you want them to call you!
   c. Do not just stand there!
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