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A Generative Theory of Ellipsis:
A Consideration of the Linguistic Use of Silence

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Linguistics

by

Timothy Ames Shopen

Doctoral Committee:

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This work is dedicated to those who give themselves to the process of understanding and changing the world, with a commitment to people as their primary premise; to those who place human development above material development; to those described in the statement of Bertrand Russell quoted by Noam Chomsky in the introduction to his 1971 Russell Lectures:

"Those whose lives are fruitful to themselves, to their friends, or to the world are inspired by hope and sustained by joy: they see in imagination the things that might be and they way in which they are to be brought into existence. In their private relations they are not pre-occupied with anxiety lest they should lose such affection and respect as they receive: they are engaged in giving affection and respect freely, and the reward comes of itself without their seeking. In their work they are not haunted by jealousy of competitors, but are concerned with the actual matter that has to be done. In politics, they do not spend time and passion defending unjust privileges of their class or nation, but they aim at making the world as a whole happier, less cruel, less full of conflict between rival greeds, and more full of human beings whose growth has not been dwarfed and stunted by oppression."
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I extend my thanks to Paul Schachter and Barbara Partee for the help they have given me all through this work. Paul is the most penetrating critic I know; he has been a standard for clarity and coherence that has been a continuing challenge for me. Barbara has often amazed me with illuminating remarks on my work that direct my attention along parameters I hadn't even noticed; I credit this to her philosophical education, but also to a superb imagination. Charles Bird, Joe Emonds, Fred Householder and Roger Lass have all read drafts for substantial portions of this work and aided me considerably with their comments.

Three people that I have had the privilege of working with stand out in my mind as ones who have had an important influence on my thinking: Terry Moore, Dick Stanley and Charles Bird. Terry did much to get me interested in the interplay between reference, meaning and the speaker and hearer's view of the context for speech acts, the larger framework in which I have viewed ellipsis. Dick helped me formulate one of the central ideas here, that of using lexical entries for verbs and other propositional heads, rather than trees, as the part of the representation of sentences that establishes the correspondence between semantic functions and syntactic constituents in all cases of lexically governed meaning. It follows that when there are ellipted constituents as in Henry refused or Al explained, it is the structure that receives phonetic interpretation that accounts for the grammatically determined meaning, and not some larger tree structure.
that undergoes deletion rules. From none have I gotten more ideas than from Charles: it is partly due to his observations that I have arrived at the conclusion that semantics is indeterminate; the extent to which his thinking has been a catalyst to my own should be apparent to the reader.

Joe Emonds' distinction between structure-preserving and root exception transformations have been a great aid to me, since all of the former are lexically governed and it is Emonds' point that they are structures the syntax of which ought to be captured by phrase structure rules: this has led me to the hypothesis that the notion 'related sentence type' can be correctly characterized by the kind of lexical redundancy rule proposed in Shopen and Konaré (1970) we call the 'word structure condition', whenever the related sentence types are lexically governed, and that all structure-preserving sentence types can be generated directly by phrase structure rules. Then an elliptical structure like the agentless passive can be generated by phrase structure rules and not require a transformational derivation that involves a deletion of the ellipted constituent; one of my principle conclusions in my work on ellipsis is that syntactic deletion rules are unnecessary and ill-conceived.

I did the research and writing for this thesis during three years of full time teaching. It is thus an outgrowth of experience both as a student and as a teacher. I am grateful to my teachers in the first case and to my students in the second. Both kinds of experience have been important in the development of my present point of view.
My training at UCLA centered around my participation in the UCLA English Syntax Project under the direction of Robert Stockwell, Paul Schachter and Barbara Partee. I learned much about English syntax, and I learned what it means to make a commitment to a theoretical paradigm. As teacher and as chairman of the department, Stockwell did much to encourage an atmosphere of sharp advocacy of ideas and of debate, as for example in the graduate colloquium series, and it made the department a good place in which to develop a point of view. Besides the three teachers already mentioned, Peter Ladefoged and Vicki Fromkin gave me each in their way a concern for explanation in linguistic theory, Peter in his search for empirically supported criteria with which to validate hypotheses for phonological feature theory, Vicki in her understanding of the interplay between data and theory together with her broad research interests. At key moments she got me to read and understand such important works as Lees' review of Syntactic Structures and Vygotsky's Thought and Language.

I can testify to the conflict between teaching and research in regard to time, concentration and creative energy, but I can also agree with the traditional notion that the two kinds of activity are complementary. I have benefited in having to submit to the discipline of teaching. What is special is the pedagogical dialogue, that tension between all that is personal and original in the thinking of teachers and students on the one hand, and on the other that common core of axiomatic knowledge and point of view that makes people part of the same scientific community. Conventional ways of thinking
constitute a constraining force, but also, when new observations are made, a stimulus for new ideas; this dialectic plays a creative part in every endeavor of the mind, I am convinced, and pedagogy is one place where it occurs with intensity. Too much teaching can be stifling, but none at all would be boring; in balance, I think that I have grown in teaching, and that this dissertation is better than it would have been if I had done it before starting to teach.

My experience has demonstrated to me how much the building of a theory is a collective process. I will mention two final examples. The core of Chapter I is thinking that began when Bob Terry pointed out to me that "Into the dungeon with him!" and "Off with his head!" could not in their most obvious interpretations be accounted for as fragments of complete sentences; we then noticed that these expressions were instances of a productive pattern, and I was able to find several more patterns with the same properties. Sections 2.5-2.9 of Chapter IV started out as a response to a remark by Noam Chomsky: I questioned the validity of the passive transformation, and he said "What about raising?" (in a sentence like John was expected to resign). Then when I told Barbara Partee of my concern for the interaction of the passive and raising transformations, she got me to look at notes by Paul Postal summarizing arguments for raising; from this series of interactions finally came my own thinking presented here. Whatever the validity of my conclusions, I would like for what I have given back in this study to be a coherent contribution to the dialogue of which it is a part.
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ABSTRACT OF THE DISSERTATION

A Generative Theory of Ellipsis:
A Consideration of the Linguistic Use of Silence

by

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Doctor of Philosophy in Linguistics
University of California, Los Angeles, 1972

Professor Paul Schachter, Chairman

This study raises a challenge to the view that language has only 'complete' units of communication. The notion of completeness is analyzed in grammatical terms, and it is shown that there are productive 'incomplete' patterns that are part of English in their own right rather than being truncated representations of some other 'complete' patterns. I argue that incomplete sentences should be generated without deletion rules since the meaning which is grammatically determined in any utterance is that which corresponds to the forms that receive phonetic interpretation; aspects of meaning corresponding to silence are grammatically indeterminate and are left for the larger cognitive faculty to deal with, including imagination and perception of extra-linguistic context. If I am right, then fields related to linguistics such as neurophysiology, psychology, sociology and ethnology are not just ancillary to grammatical studies, but are indispensable for a full account of language as a means of communication.

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Chapter I presents arguments for making the goal of a generative grammar 'all and only the well-formed utterances' rather than 'sentences'. This is to permit the generation of productive patterns of incomplete sentences which could not be derived from complete sentences by deletion rules alone.

Chapter II gives grammatical definitions for two kinds of 'completeness' relevant to the notion 'sentence', and prepares the way for a formal treatment of ellipsis. The assignment of semantic functions to constituents in structures governed by lexical heads takes place within the lexical entries for those heads rather than on trees: this is key to the analysis of constituent ellipsis which follows.

Chapter III provides an analysis of two kinds of ellipsis: constituent ellipsis and functional ellipsis. Further arguments are given against the analysis of ellipsis by deletion rules. It is argued that 'all and only' is not a possible goal for semantics, that it would be no more possible to exhaustively define a language in terms of semantics than it would be to do so in terms of phonetics. It follows that the goal of grammatical description should remain a generative syntax with rules for semantic and phonetic interpretation that take us as far as is feasible and interesting from a grammatical point of view.

Chapter IV defends the notion of the word as prime in syntax and presents an analysis of agentless passives. It is proposed that passives be generated directly instead of being derived from underlying actives; consequences for the rest of the grammar are
considered, e.g., no raising in the derivation of *John was expected to resign*. The word structure condition, originally formulated in Shopen and Konaré (1970), is presented as the correct means of capturing the notion 'related sentence type' in cases where the sentence types in question are governed by lexical heads. What results is a grammar with less reliance on transformations, with more importance accorded to the traditional notion of word.
CHAPTER I: TOWARDS A GRAMMAR OF ALL AND ONLY THE WELL-FORMED UTTERANCES

1. Well-Formed Utterances That Are Not Sentences

A generative grammar of a language, it is typically said, should generate all and only the well-formed sentences. With this principle in mind, there is hardly a grammarian of English who would include utterances such as the following in the output of his rules:

(1) a. A cup of coffee.  h. On.
b. Your deal.  i. Hot.
c. Strawberry Jam.  j. Beautiful!
d. Adults only.  k. Medium rare.
e. No pets.  l. Slow.
f. Out the back door!  m. Coming?
g. To San Francisco.  n. Going down.

The reason to be given is not that these utterances are ill-formed, but that they are not sentences: they are deemed incomplete. The initial purpose of this essay is to explore the notion of completeness and its relevance to the theory of competence and to attempt to answer two questions: What distinguishes a sentence from a well-formed utterance that is not a sentence? What kind of a model of competence would be required if the goal were reformulated and became the generation of all and only the well-formed utterances?

Any speaker of English is aware of situations in which utterances such as those in (1) are used as coherent pieces of communication. It might be said that these utterances are ill-formed without linguistic contexts that allow them to be interpreted as complete
sentences, or that if such linguistic context is not present, the ideal native speaker-hearer has competence to deal with them only by tacitly creating linguistic structure that makes it possible for them to be interpreted as complete sentences. But this view arises from the unfounded assumption that the sentence is the minimal unit of language use. I say unfounded since I regard observable linguistic behavior, plus the subjective judgements of native speakers about same, to be the starting and ending points for a theory of linguistic competence: there is plenty of both to suggest that utterances like those in (1) can be just as appropriate and well-formed linguistic units in their own right as full-fledged sentences. The burden of proof lies on those who make them out to be a code for some other kind of language; if they really are a code, it ought to be harder to communicate with them, not easier (in the sense that extra encoding processes are involved, besides those necessary for sentences). There are countless situations in the day-to-day uses of language, such as naming, labelling, calling by name, giving commands, making requests and exclaiming, to name a few, where the use of a complete sentence would be redundant, if not outright absurd.

The claim that utterances such as (1) are deviant and therefore germane only to the study of performance cannot be taken seriously. When we know as little as we do about either competence or performance, let alone what the dividing line between them is, this is just rhetoric. I will demonstrate early in this essay that there are regularities of form and meaning in incomplete sentences that are not directly relatable to those of complete sentences. In particular, I will show that there
are productive patterns in the linguistic behavior of many speakers of
English which could not be added to the output of the grammar by simply
putting in some additional deletion rules. This alone, it seems to me,
is a demonstration that these utterances are a part of competence in
their own right.

The conclusions drawn here for the theory of competence, if
correct, have important implications for the theory of performance as
well: they provide a point of view towards the interaction of
linguistic competence and other aspects of cognition. For example
there is the question of how much of the process of putting words
together to form utterances is algorithmic and how much it is random
from the vantage point of the grammar; conversely, there is the ques-
tion of how much of this process depends on decision-making which is
not strictly linguistic, but is based on knowledge which could be
better characterized as encyclopedic\(^1\), on memory, imagination and
perception of non-linguistic context.

No a priori reason exists for assuming that a well-formed
linguistic act (where the criterion of appropriateness is added)
necessarily contains a complete sentence. If it is suggested, for
example, that every well-formed linguistic act contains a coherent
proposition in which some predication is made, then consider the many
instances in which predicates are uttered and not subjects, such as the
one described by Vygotsky (1962, p. 139):

"Now let us imagine that several people are waiting for
a bus. No one will say, on seeing the bus approach,
'The bus for which we are waiting is coming.' The sen-
tence is likely to be abbreviated 'Coming', or some such
expression because the subject is plain from the situation."

3
As Vygotsky indicates, the study of incomplete sentences is especially relevant for the consideration of the interaction of language and thought. There is no easy way of discerning the nature of this interaction, as for example the extent to which what Vygotsky calls "inner speech" plays a role in thought. In Vygotsky's theory, this unspoken mental form of language has its origin in the "external speech" which linguists traditionally take as their subject matter, but has a distinct character both in form and in meaning. The relation of language to thought is relevant to any serious theory of language, and while this subject is filled with many unanswered questions, it would be best not to proceed from unlikely hypotheses such as ones saying that concept-formation and language are one in the same, or that there is a one-to-one correspondence between all possible utterances and all possible concepts, since it is easy to think of examples of concepts for which no utterances exist, or for which there is reason to believe no utterances ever could be produced.

The kind of concept which is not capable of expression in language is one which contains a set of relations, proportions or attitudes, and perhaps no discrete subparts. Fred Householder (personal communication) has pointed out that the recognition of individuals, by sight or by the sound of the voice, is a conceptual aptitude of anyone with normal intelligence; it is not unusual for a person to be able to recognize several hundred others by sight and perhaps a somewhat smaller number by sound of voice, and yet to describe in words what makes each of the individuals unique is probably an impossible task. Occasionally, there is a distinctive
trait, e.g. "You can't miss him because he has three arms"; however, for most of the acquaintances we have to describe to others, no such unmistakable distinctive traits exist. Utterances are analytical: they have discrete subparts, words, relations, etc.: on the other hand, much of what makes someone's outward appearance distinctive defies analysis into discrete subparts: the attitude of the eyes in relation to the shape of the head, the shape of the cheeks, posture, balance, coloring, etc., and the way all of these things relate to each other to make the overall appearance that we perceive and remember. What we retain and use to recognize individuals is very hard, probably impossible to verbalize beyond a gross kind of approximation, and yet it must be a concept: it is knowledge that allows us to make discrete and consistent judgements. Certainly the ability to make discrete and consistent judgements is central to the definition of 'concept'. The observation that other creatures, e.g. dogs, have a capacity for individual recognition would only tend to support the main point, which is that individual recognition involves a set of mental images quite different in kind from the mental images that correspond to language.

An obvious extension of the individual recognition example can be found in any art or craft, where there is recognition of the work of various individuals. Devotees of a musical instrument hearing a recording can typically distinguish the playing of several of the greatest masters of the instrument from that of anyone else, and the playing of each of these masters from that of the others. This includes recordings of first performances of new pieces. Anyone conversant with attempts to set forth in words what makes one instrumentalist's playing
distinct from that of anyone else knows that it is usually impossible: sometimes there is a distinctive trait, e.g. "Starker plays the last movement of Bach's C Major Suite faster than anyone else in the world."

but for every instrumentalist who distinguishes himself in such a manner there are many more who do not; moreover, it is not distinctive traits so much as the overall auditory image created by the artist taken as a Gestalt that sets him apart from everyone else. ²

In contrast to the individual recognition example in its original form, this extension concerning the product of individual craftsmanship or artistry has an additional aspect of interest. Presumably individual appearance or the sound of one's voice is for the most part an accident of nature, but the work of an artist or craftsman is the product of an individual personality. The fact that great masters of an instrument can perform consistently in such a way as to create an auditory image recognizable from that of any other performer shows something about their cognition too: they must each have a unique set of concepts, like a set of well-formedness conditions, that they use to decide how to play a piece. I have heard it said by more than one artist that the keen attitudes of mind that motivate them in the fine decision-making of their work cannot be put into words.

Another example is the notion of genre in any art form. Performers, creators and devotees distinguish between instances of closely related genres and subgenres, such as, in the field of music, folk, jazz, rock, old time country music and blue grass, and subgrouping within these. The genre appears to be a complex of criteria for evaluating a performance where it is the hierarchical relation of the
criteria, the complex whole, which determines the value of the concept rather than the individual criteria themselves. The notion of individual criteria may be partially misleading: some aspects of music can be analyzed and dissected, such as the notions of scale for pitch and measure for rhythm, but other aspects cannot, e.g., the subtle slurring and phrasing techniques that play against the analytical notions of scale and measure; in addition, there is tone quality, and many proportional and relational qualities of ensemble playing, principles of balance, change, development, movement, that transcend analytical formulas for harmony, counterpoint and other aspects of musical composition. It is probably the case that much of what constitutes a musical genre, a literary genre, a genre in the visual arts, in a craft, in cooking, in dancing, in love-making, may not have discrete criteria as such, but rather poles in a many dimensional continuum.

Enough examples have been given to make the point that there are plenty of concepts which by their nature cannot have any more than the grossest correspondences in linguistic expression. But I should not proceed without pointing out that there are a vast number of aspects of linguistic competence that must be concepts in that they are used to make discrete and consistent judgements, and yet they resist verbal description, as linguists know only too well. There is, for example, what an individual uses to produce and recognize many different oral genres and subgenres, i.e. dialects, styles, etc. The best that linguists have been able to do in describing dialects is to seize upon some group of distinctive traits, e.g. whether or not the intervocalic
fricative in *greasy* is voiced, but no one has claimed to have given an exhaustive description of what makes the speech of one social subgroup recognizably different from that of another in the same language community. Labov (1969) has demonstrated that often a distinguishing trait is the proportion of utterances in which a sound distinction is made. This suggests that linguistic competence itself may not be wholly analytical in its composition and offers a partial explanation for why it is so hard to describe with an analytical model.

It would be the greatest of paradoxes if it turned out that language, the analytical tool of man par excellence, is the manifestation of a concept which itself could not be exhaustively analyzed in terms of discrete subparts. Among other things, this could mean that perfect machine translation by digital computer was in principal impossible. Whatever the answer to this problem is, if we admit that linguistic competence is itself a kind of complex concept, there is no reason to assume that it has within it the capacity of generate verbal replicas of itself, nor of all other concepts. Language offers a host of examples to support the point I am making here, e.g., it may be impossible to put into words what it is that allows me to recognize Mr. X's voice from among all the other people I have ever heard, or what it is that enables me to tell the difference between the speech of native speakers of the English spoken in Philadelphia and all the other places where English is spoken, or what it is in the meaning of the word *consider* that makes that unit of meaning different from all the others that I know, or what it is that enables me to tell the difference.
between the vowel sounds in *beet* and *bit* as spoken by virtually any native speaker.

Scientists working with analytical models do the best they can at approximating phenomena many parameters of which often do not have discrete subparts. People using language in the course of their daily lives are really doing something comparable. A primary function of language is communicating concepts and feelings from one mind and body to another, and the medium, as analytical as it is, is often inappropriate for what it is that it is supposed to convey. Who is to say that a coherent unit of communication is only possible in terms of complete sentences? I think it is altogether possible that given common knowledge, common focus on the context of the particular conversation, that even for concepts that could be analyzed totally in terms of language and communicated in terms of complete sentences, people may prefer to analyze the concept into language only so much as to make it clear, and for the rest, continue to view things in terms of hierarchically organized proportions, relations and attitudes. Communication may take place partly in terms of linguistic signals, and what is not expressed linguistically may be filled in by conceptual processes other than language. This view does not constitute an axiomatic basis for the theory of language but it does appear the most well-founded assumption from which to proceed at this time.

If it is said that the only way in which an incomplete sentence such as Vygotsky's *Coming* can be produced or perceived by a native speaker is by using his knowledge of his language to think of it as a complete sentence, *The bus for which we are waiting is coming*, etc.,
this appears to me equivalent to an extreme version of the Sapir-Whorf hypothesis, a claim to the effect that thinking is possible only via language. Since positive evidence for that hypothesis is lacking, and there appears to be substantial negative evidence against it, the most reasonable assumption seems to be that in the situation at the bus stop the single word Coming may be the full extent to which language is involved in the communicative act; it then becomes important to account for the possible sound-meaning properties that the grammar can assign to such truncated utterances in and of themselves which enables them to serve as coherent units of communication.

It seems to me that the theoretical challenge of Coming etc., is twofold. Whatever competence we have for communicating with incomplete sentences must be closely related to our knowledge of complete sentences, and surely we can and do on occasion use our knowledge of complete sentences to communicate with incomplete ones. Grammatical theory ought to account for this ability, and for that the notion of completion and sentence reduction will be introduced. But it is even more important for many of the theoretical issues of current interest to consider the second challenge, which is how people succeed in communicating in incomplete sentences without passing through the intermediary of complete sentences, in effect how an utterance can be coherent as a piece of communication, while it is recognizable by the native speaker as an incomplete sentence. This concern has led me to a reconsideration of the criteria for grammatical well-formedness. The completeness which is a criterion for sentencehood is certainly a part of linguistic competence; indeed, a definition of this kind of
completeness (independence) appears to follow naturally from the theory of propositional structure that I will elaborate below; however, independence is not a criterion for well-formedness. Instead, there is a kind of internal completeness (integrity) which is a property of all well-formed utterances, and in addition, all utterances must have grammatical coherence. Grammatical coherence is the external aspect of well-formedness where all constituent meaning is interpreted as being a part of some unified propositional meaning. I assume as a premise that such unified propositional meanings are a property of the grammar, and leave as an open question what the irreducible primes of these meanings are.

I will argue that under the general heading of "context", the traditional distinction between linguistic and nonlinguistic contexts should be reevaluated. In many cases, grammatically coherent interpretations appear possible for well-formed utterances that are not sentences whether or not a linguistic context is presupposed. That is, it often appears possible to conceive of contexts where no previous utterances have been made; in other cases, the utterance under consideration may not be the first utterance of the discourse, but it can be considered free from linguistic context inasmuch as the ellipted part of the utterance meaning does not have antecedents anywhere within the discourse, e.g., consider the deictic value of Nice dress.

Andreas Koutsoudas has pointed out to me that there is a class of utterances such as Yes, I do which one has a strong tendency to think of as occurring in a linguistic context only. Even more so, would be Yes, I did and Yes, I have. As opposed to A cup of coffee
and *Coming* then, we may have a class of utterances which do require linguistic contexts in order to be grammatically coherent: that is, an interpretation of *Yes, I have* would have to make reference to the linguistic context that is presupposed. But, this would be no more reason for analyzing them as truncated versions of some longer utterance. *Yes, I have* appears to be a grammatically complete sentence, but one with elliptical value, in the same way that *Johnnie refused* is a grammatically complete but elliptical sentence. Grammatical completeness (Chapter II) and ellipsis (Chapter III) will be defined in different terms. After the essentially semantic definition of ellipsis that I give in Chapter III (*NB. Bill explained, Henry refused*, etc. will be called elliptical), I will argue that ellipsis is a special case of the speaker's reliance on context, and that there ought to be a unified account of the notion 'context', making special distinctions between linguistic and non-linguistic context only when the linguistic material warrants it, e.g., the reflexive pronoun *himself* requires an antecedent in the *linguistic* context in order to be part of a well-formed utterance, while the personal pronoun *him* does not.

It is my conclusion that utterances such as those in (1) are well-formed as they stand, and I adopt the suggestion made to me by Charles Bird that incomplete sentences be generated directly by phrase structure rules instead of being generated as complete sentences in underlying representations and then undergoing deletion.

Consideration of the grammatical properties of well-formed utterances that are not sentences will cast light on the grammar as a
whole. At least for syntax and semantics, in a grammar of all and only the well-formed utterances of English the notion of cooccurrence must be captured entirely be interpretive rules. Order is properly defined by context-free phrase structure rules and transformations that perform permutations. The study of well-formed utterances that are not sentences and the complementary phenomenon of ellipsis leads to the distinction between cooccurrence and order as a natural division in the syntagmatic aspect of utterance construction.  

On the side of meaning, propositional structure must be accounted for by interpretive rules. Semantic functions such as AGENT, INSTRUMENT, THEME, GOAL, SOURCE, etc., cf. Gruber (1965) and Fillmore (1968a), as well as more idiosyncratic aspects of relational meaning, must be conceived of as being imposed on NPs, PPs, etc. in semantic interpretation, rather than being properties of those constituents themselves. Thus, we can say that the inherent properties of the phrase A cup of coffee in different linguistic and non-linguistic contexts are the same, and yet provide a means of accounting for the range of propositional values that can be attributed to it: it is read off as part of a list of items in a menu; it is spoken, with no further linguistic context, to an attendant serving beverages by a customer going through the line at a cafeteria; it is given as a short answer to any of the following questions -- What did Harry put the salt in? What would please the Senator most? What did George spill on his pants? To what would you compare Elliot's new swimming pool?

An investigation of the general problem of incomplete subparts of sentences, such as subjectless clauses and agentless passive
clauses, will lead to the claim that these structures too should be
generated directly with their propositional structure, accounted for by
interpretive rules. Instances of deletion by identity will be shown to
be an unnecessary part of the grammar and in fact one which makes an
incorrect claim about linguistic competence.

On the side of form, agreement, concord, and in fact any
context-sensitive aspect of form will have to be accounted for by
interpretive rules. The notion of interpretive vs. generative rule
presented here will not correspond to the semantics/syntax dichotomy.
Interpretive theory as it has been developed by Chomsky (1969) and
Jackendoff (1969) has dealt primarily with questions of semantic
interpretation, and indeed most of this study is concerned with
semantic interpretation too; however, there is nothing inherent in the
notion of an interpretive rule that limits it to just meaning. If I
am correct in saying that linguistic competence includes the capacity
to generate a set of utterances that are not sentences but yet are
grammatically well-formed without deletion rules than my claim about
the central importance of interpretive rules follows. The treatment
of ellipsis in Chapters III and IV will also mitigate against deletion
rules. The evidence I present is by no means exhaustive, but the con-
clusion I believe warranted by the arguments presented here is one of
sweeping consequences for the theory of grammar: it points in
principle to a grammar with no feature-changing rules and no second
lexical look up. Forms that would have to be inserted on second
lexical look up are inserted freely in the first lexical insertion
with a context-free procedure where only category features matter;
interpretive rules, like a set of well-formedness conditions, check utterances to see if all the subparts match and agree with each other properly.

Interpretive rules employ much the same principle of well-formedness as were used to formulate feature-changing rules, except that one element is not thought of as changing another any more; rather pairs, triplets, n-tuples of lexical items are thought of as matching or agreeing with one another. This approach is the only one that will allow us to give a general account of e.g., number agreement for all and only the well-formed utterances. Surely, it can not be the case that if exclamations such as What an idiot! and What idiots! are generated directly without deletion rules, that there is a different lexical entry for idiot or idiots in that case than there is in the utterances He is an idiot! (*He is idiots), What an idiot he is! (*What idiots he is!) i.e., with number unspecified when agreement rules can operate, but specified when they cannot. 4

A typical response to examples such as those above is to say that What an idiot! and What idiots! come from What an idiot he is! and What idiots they are! respectively, and in fact that is how there is an alternation in the predicate nominals between singular and plural: there is a feature changing rule of number agreement, the argument runs, which is ordered before deletion. But then suppose there is a productive pattern that uses predicate nominals without any subject noun phrases for them to agree with in a feature changing rule, and this pattern cannot be derived by deletion rules alone from any set of complete sentences. This turns out to be exactly the case with the
definite article-epithet pattern, e.g., The idiot! and The idiots! which correspond not to He is the idiot! but He is an idiot! This special epithet pattern will be one of the ones discussed in the next section to illustrate the point that incomplete sentences are not always subparts of complete ones.

2. **Incomplete Sentences Are Not Always Subparts Of Complete Ones**

Grammarians typically exclude from systematic consideration the sound-meaning correspondences in incomplete sentences: as justification, it is said that the characterization of well-formed utterances that are not sentences will follow from the grammar of sentences, since all of the former occur as subparts of the latter. But this last assumption is not true. Consider the utterance Off with his head!, cited by Jespersen (1926, see quote below) as an example of a "semi-articulate" sentence. Bob Terry (personal communication) has pointed out that this utterance exemplifies a very productive pattern, and that it constitutes an instance where no complete sentences exist which include the form and the meaning of a productive class of incomplete ones.

(2) a. Off with his head! c. Up with your hands!
b. Down with the dictator! d. Out with the luggage!

 e. On the porch with that trunk!
f. Behind the azaleas with those rose bushes;
g. Into the dungeon with him!

With falling intonation, these utterances can be understood as commands. They can take tags, e.g.
(3) a. On the porch with that trunk, will you?
   b. Behind the azaleas with those rose bushes, can't you?

One need only imagine a job of moving things in progress with everyone concentrated on what they are doing in order to see a situation in which these utterances with tags would be acceptable. (3a) with will you? has an effect of politeness, cf., the extended version

On the porch with that trunk Mr. Stevenson, will you please? with the intonation:

(4) On the porch with that Mr. Stevenson,

Example (3b) I would find acceptable in a situation where there is a tone of annoyance on the part of the speaker, cf., the extended version Hey! Sylvester, Behind the azaleas with those rose bushes, can't you? (N.B. a 'rising tone of annoyance'):

(5) Hey! Rose azaleas, can't you? (Sylvester, behind those bushes with

These utterances are like sentences in that under appropriate circumstances they constitute coherent pieces of communication, and yet unlike the usual sentences of English in that they have no verb.
Moreover, in regard to the part of the meaning that concerns motion,
their propositional structure is incomplete in a way that it would not be in most cases if a verb were present. In just this sense I will say that these utterances have meanings that are relatively indeterminate.

Let us say that there is a relation between a complete and an incomplete sentence called completion of:

(6) A complete sentence S may be a completion of an incomplete one U if and only if

a. the semantic interpretation of U is a subpart (not necessarily a proper subpart) of the semantic interpretation of S, and
b. the form of U can be shown to be systematically related to that of S by syntactic principles of some generality.

Assuming that the examples in (2) qualify as incomplete sentences, we will observe that there are simplex utterances which standard theory treats as complete sentences, which are closely related in form and which augment meaning just by the addition of a verb. We could tentatively call them the completions of (2), e.g., for (2g) *Into the dungeon with him!* there are possible completions of the form:6

(7) a. Go into the dungeon with him!

   b. Move into the dungeon with him!
      (jump, crawl, walk, hurry, etc.)

But of course the most obvious interpretation allows completions rather of the following forms:

(8) a. Put him into the dungeon!

   b. Take him into the dungeon!
      (shove, drag, carry, drop, lead, etc.)
Similarly, we can relate (2a) **Off with his head!** to **Go off with his head!**, etc., but the most likely interpretation leads rather to **Cut his head off!** (strike, knock, pull, rip, yank, tear, twist, etc.). The pattern exemplified in (2) is **PP with NP** whereas those in (8) have the form **V NP PP**. The prep with and the order of the major constituents appears to be an artifact of the incomplete sentence pattern. This shows that by deletion rules alone it would not be possible to derive all well-formed incomplete sentences from underlying complete ones.

If one took the position that all well-formed sentences had to be derived from one of their possible completions, then we would allow incomplete sentences to be derived only by a process of sentence reduction and in this case a transformational derivation involving at least three major operations would have to be involved, e.g.

(9) **Verb Deletion:** \[\begin{array}{l}
\text{V} \\
\text{NP PP} \rightarrow \emptyset \text{ NP PP}
\end{array}\]

**Metathesis:**
\[\text{NP PP} \rightarrow \text{PP NP}\]

**WITH Insertion:**
\[\text{PP NP} \rightarrow \text{PP [with NP]} \frac{\text{PP}}{\text{PP}}\]

One might take this sort of analysis one step further with a more abstract underlying representation that **had to** undergo a sentence reduction process. The existence of an underlying archi-verb could be posited, with presumably no phonological features, and just those syntactic and semantic features held in common by the set of verbs that can appear in completions, and the transformational rules producing the incomplete pattern could be constrained to operate on
all and only the phrase markers carrying the archi-verb. This approach, however, appears the weakest possible one. It is fence-straddling, claiming that the underlying representation for sentences has to be syntactically complete up to but not including the level of lexical entries. The syntactic features of the archi-verb for lexical insertion would belie the syntax of its actual occurrence in utterances: its strict subcategorization feature would in effect undergo absolute neutralization. It would have to be a positive absolute exception (cf., Lakoff (1965) for the transformational process in (9); the only claim being made about the meaning of the utterances would be that its propositional meaning is relatively indeterminate. The partially specified semantic features of the archi-verb would contain just that relatively indeterminate propositional meaning that rather appears to be a property of the pattern PP with NP as a whole.

The PP with NP pattern appears to be restricted to occurrences where it is itself the entire utterance, e.g., *She said into the dungeon with her husband, but OK She said "Into the dungeon with my husband". Any attempt at embedding leads to disaster, e.g., "This is the man whom into the dungeon with. *This is the dungeon into which with him, *We regret that into the dungeon with him, etc. It is true that no subjectless imperative may be embedded, e.g., *We regret that cut off his head, but it is not true that subjectless imperatives cannot be part of longer utterances, e.g., with the verb say in the reported command construction (discussed more below) She said cut off her husband's head, She said put her husband into the dungeon.8 Thus
commands of the form \textit{PP with NP!} are more severely restricted than ordinary commands.

The ordinary subjectless imperative is derived in standard transformational theory by a strictly specified process of sentence reduction, i.e., from a source which is a complete sentence, where the meaning of the incomplete sentence that occurs on the surface is a subpart (in this case identical) of the meaning of the underlying complete one. Stockwell, Schachter, and Partee (1968) include the most thorough standard theory analysis of imperatives that has been done, and there it is argued that there is an essential unity between underlying representations for the usual subjectless imperative and a range of embedded clause constructions, e.g., \textit{YOU} subjects could be deleted in matrix clauses by imperative formation rules, but only on the last cycle in the matrix clause; however, essentially the same underlying representation that produces \textit{Come to our house!} will in embedded position in this analysis give an output of a different form, e.g., \textit{It is important for you to come to our house}. This analysis has the merit of making an underlying clause representation freely generable anywhere there is an S on a tree, and then accounting for the particular form of the clause by its syntactic environment.

It is quite revealing to compare the hypothetical archi-verb analysis of the \textit{PP with NP!} construction suggested above to the Stockwell, Schachter, Partee analysis of imperatives. This construction has not only (a) form which can occur only in a particular syntactic environment as is the case of ordinary subjectless imperatives like \textit{Come to our house!}, but also (b) a range of meaning that can only be
associated with just this construction PP with NP! The standard
theory analysis of imperatives has (a) but not (b). The archi-verb
would be then a device set up to obtain a clause construction that is
well-formed only when it is itself the entire utterance. Charles Bird
(personal communication) has pointed out that there would be no way to
prevent the insertion of this archi-verb in subordinate position unless
we had conditions on lexical insertion which referred to the syntactic
environment of the clause in which an item was being inserted! No
feature for lexical insertion of such power has ever been justified.
Notice that the occurrence of the archi-verb anywhere except in a main
clause would either have to be prevented from the outset or else
compensated for by a blocking rule set up just for that one lexical
item.

It is quite obvious that native speakers can relate Into the
dungeon with him! to sentences such as (7) and (8) and that the notion
of a possible completion corresponds to something psychologically real
of functional importance in everyday language use. It could therefore
be proposed that the grammar include a set of transformations called
sentence reduction rules, which would relate incomplete sentences to
their completions, e.g. (9). For most incomplete sentences this would
entail an unconstrained amount of deletion, and so be too powerful to
add anything of interest to the theory of grammar: one need only
consider all the possible completions for A cup of coffee., The man.,
etc. In what is probably a minor number of cases, however, such as the
one in (9) and several others that will be discussed shortly, the
possible completions are much more restricted and the sentence reduction
rules would be much more limited in scope. At least for these instances, the proposal might have some merit. If sentence reduction rules were added to the grammar, it is not clear to me what their status would be with respect to other transformations in the same sense. Thus, it seems to me that they would be at best a kind of minor appendage to the grammar.

I have argued in the preceding section of this paper that there is good reason to believe that linguistic competence includes the capacity to generate incomplete sentences as incomplete sentences and that this includes providing semantic interpretations which are in some sense coherent, i.e., so that these sound meaning correspondences can be complete as pieces of communication, even if they are not complete as grammatical structures. This view, if correct, provides a much more serious challenge to linguistic theory than does the claim, no doubt true, that people have the ability to relate incomplete sentences to complete ones; the later view might lead to the belief that the sentence is the minimal unit of linguistic usage, and that Into the dungeon with him!, A cup of coffee., etc. are abbreviated surface forms of underlying sentences. But the grammatical apparatus involved in the majority of cases would be of little theoretical interest because it would involve unconstrained deletion rules. On the other hand, the idea that Into the dungeon with him! or A cup of coffee. can be a coherent piece of communication by itself gives new perspective to everything in the grammar designed to capture the syntagmatic aspects of utterance construction.
I propose that the phrase structure rules of the grammar generate incomplete sentences directly, i.e., that there be rewrite rules of the form \( U \rightarrow X \) where \( U \) stands for utterance and \( X \) is a string of one or more categories. Thus we will have \( U \rightarrow \text{PP PP} \) (Into the dungeon with him!), \( U \rightarrow \text{NP} \) (A cup of coffee), \( U \rightarrow \text{AP} \) (Medium rare), etc. If adopted, this proposal has profound consequences for the general view of constituent structure.

Before I proceed to a discussion of the interpretive rules that must be included in the grammar if Into the dungeon with him! is to be generated directly as simply a sequence of two prepositional phrases, it will be worthwhile to observe other utterance patterns that could not be derived from their completions by deletion rules alone. The PP with NP! pattern is not an isolated example.

As an example of what he calls "nominal sentences", Jespersen (1926, p. 121) cites the following example:

(10) Amazing the things that Russians gather together and keep. (H. Walpole)

Analyzed as having the pattern PRED NP, this utterance exemplifies a quite productive pattern.

(11) a. Quite interesting what Jim said to me.
    b. A good talker your friend Bill.

The PRED NP pattern appears to have an interesting intonational property, which is that the PRED constituent must receive the most prominent stress (cf. 106):
(12) a. A good TALKER your friend Bill.
   b. *A good talker your friend BILL.

Under the same heading, Jespersen cites the following example:

(13) What a beastly and pitiful wretch that Wordsworth.
    (Shelley)

In the grammar of Standard American English this last example,
but not the others, might be derived by deletion only from a produc-
tive exclamatory construction that can occur in main clauses.

(14) a. What a beastly and pitiful wretch that Wordsworth is!
    b. *Amazing the things that Russians gather together and
       keep are!
    c. *Quite interesting what Jim said to me is!
    d. *A good talker your friend Bill is!

For Standard American English this main clause exclamatory
pattern appears to be well-formed only when the rule of WH-fronting
has been involved. Thus, if the pattern in (10) and (11) were to be
derived from completions containing be there would be no well-formed
sources examples like this in (10) and (11), only for ones that
involved a rule of WH-fronting.

(15) a. How amazing the things that Russians gather together
    and keep are!
    b. What a good talker your friend Bill is!

This construction is no doubt related to the productive and
still shorter exclamatory construction in e.g., What an idiot!,
How interesting!, How amazing!, What a good talker!

If these exclamations were going to serve as sources for
utterances of the form PRED NP where the PRED expression contained
a WH-expression, the problem of the intonation contour would have to be accounted for. In the exclamatory pattern that includes the copula, the PRED expression can never be destressed, but the subject NP can receive the most prominent stress. The output of the supposed sentence reduction process, on the other hand, can never be the case cf. (12): 9

(16) a. What a good TALKER your friend Bill is!
   b. What a good talker your friend BILL is!
   c. What a good TALKER your friend BILL is!

(17) a. What a good TALKER your friend Bill!
   b. *What a good talker your friend BILL!
   c. *What a good TALKER your friend BILL!

I conclude that the exclamatory pattern exemplified in (16) and (17) can never have the PRED expression presupposed; on the other hand, the PRED NP utterance pattern appears constrained to use in situations in which the subject NP is presupposed and therefore destressed. Any analysis by sentence reduction would have to take these facts into account: among the possible source-output pairs above, only (16a) to (17a) would be allowable.

The utterances of the form PRED NP have meanings that are indeterminate at least in regard to tense and aspect. Without knowing the context in which (13) was uttered, I could imagine (14a), (18a) or (18b) as possible completions.

(18) a. What a beastly and pitiful wretch that Wordsworth was!
   b. What a beastly and pitiful wretch that Wordsworth has been!
It is interesting to note that only a stative meaning seems possible for the pattern PRED NP. That is, if we call (19a) active and (18b) stative, then I would say that only the latter is a possible completion for (19c):

(19) a. What an ass the guy at the next table is being!
b. What an ass the guy at the next table is!
c. What an ass the guy at the next table!

It appears that any sentence reduction rules proposed for the pattern PRED NP would have to specify copular be, and no other copular verbs that one might conceive of, and constrain the possible combinations of auxiliary verbs. Furthermore, for all cases where the PRED expression did not contain a WH-expression, sentence reduction would have to go through two steps, e.g. for (10) and (11), there would have to be an inversion rule making PRED the leftmost constituent, and then an obligatory deletion of the verbal expression. All of this makes the PRED NP pattern appear to be not just a "fragment" of some complete sentence construction, but a construction with independent status in the grammar. The same conclusion appears in order for the sample PRED pattern, What an idiot!, How interesting!, etc.

An example of another sort involves the exclamation of epithets of the form the + EPITHET! that show an emotional attitude of the speaker towards another person.

(20) a. The angel!
b. The old fox!
c. The dirty rat!
d. The son of a bitch!
e. The lousy bum!
Example (20e) is a classic expression at a baseball game. Note that it displays an emotional attitude toward someone, and as such constitutes a predication. One would never at a baseball game transmit the same kind of a message with a non-emotional term, or one not descriptive of an animate being.10

(21) a. The second baseman!
b. The flagpole!

If (21b) is understood as an insult to someone it is a part of this pattern, otherwise not. Note that without the, inanimate objects can be referred to, e.g., (referring to a newspaper) That trash! but not The trash!. If it is agreed that utterances such as those in (20) are incomplete sentences, then it can be seen that their completions involve the same noun phrases with indefinite instead of definite articles, e.g., for (20c), (22a), not (22b):

(22) a. My boyfriend is a dirty rat!
b. My boyfriend is the dirty rat!

The definiteness of the expression The dirty rat! seems to correspond to the definiteness of the subject NP in a completion. By itself in this expression, the definite noun phrase the dirty rat does not have the same meaning as it would as a proper subpart of a larger utterance, as in:

(23) a. I saw the dirty rat.
b. The dirty rat ran out on me.

In these examples there is a class symbolized by dirty rat that has been established in the context and which has been exhausted, i.e.,
in this case there is only one **dirty rat** that is relevant. That is the usual meaning of the definite article. But in the exclamation The **dirty rat**! there is no implication that the referent to which the epithet applies is the only one in the context to whom this term is applicable, and thus **My boyfriend is a dirty rat**! appears the possible completion for (20c), and not the corresponding sentence with a definite article.

These epithet expressions have indeterminate meaning in that the subject onto which the epithet is predicated is not expressed; also there is an indeterminacy similar to the one discussed for the pattern Jespersen calls "nominal sentences" concerning tense and aspect. Whatever other details might be involved, sentence reduction for these epithet expressions would involve not only deletion of the subject, but a suppletion rule changing the indefinite article of the predicate nominal to definite.

Another productive pattern is illustrated by the following examples:

(24) a. **To all my friends in Antartica, my most fervent wishes for a safe return.**

b. **To the little lady with a brown dress, a bunch of roses.**

This is reminiscent of the imperative pattern discussed earlier in that the possible completions would seem to involve double object verbs with the major constituents in reverse order. In this case, however, the verbs would not express physical motion **per se**, but rather communicative or possessional motion as in **send, give,**
bequeath, etc. It should be noted also that a comma appears necessary here where it is not in the Into the dungeon with him pattern.

The patterns described in this section constitute an additional argument for the major claim of this chapter, which is that linguistic competence includes the capacity to generate incomplete sentences directly. It is reasonable to ask why the hypothetical process of sentence reduction for the generation of these so-called "sentence fragments" would involve more than just deletion rules. If complete sentences were merely a particular kind of superficial realization of underlying complete ones, it appears an extra stroke of perversity for the form of incomplete sentences to have a different correspondence to meaning than that of the corresponding complete ones. If on the other hand we take the view that people can communicate directly with incomplete sentences, the facts can be accounted for more naturally. A grammar generates all and only the well-formed utterances of a language; some of them are complete sentences and some of them are not, although all can receive coherent semantic interpretations.

There is a range of sound-meaning correspondences possible for utterances, and no reason exists to suppose that everything about the sound-meaning correspondences of incomplete sentences should be subsumed neatly under the grammatical description of complete ones. The relation completion of can be said to correspond to a collection of transformation-like rules, which are quite idiosyncratic, and seemingly arbitrary, but this is what we would expect in trying to relate different outputs of the grammar to each other, e.g., as would be the case if we tried to use transformation-like rules to characterize
the notion synonymous utterance. At this juncture, it is appropriate to consider the grammatical status of a very important set of utterances in English. They occur either by themselves, or set off by commas as subparts of larger utterances, e.g.,

(25) a. What about Ralph?  
b. What about Ralph, will he be here for Christmas?

(26) a. So what?  
b. So what, do you have any better ideas?

(27) a. Please.  
b. Please, bring me a glass of water.

(28) a. Well!  
b. Well, that was a good movie!

(29) a. No.  
b. No, Jack won't come to the party.

(30) a. Yes.  
b. Yes, I would be glad to go with you.

If the (a) utterances are incomplete sentences, what could their completions be? The (b) utterances appear to be expansions rather than completions, and it should be noted that when the shorter utterances are included as subparts of larger ones, they are set off by commas, like separate clauses. Each one of the shorter utterances seems to be a brief way of expressing the same things that could be expressed by an infinite number of longer utterances. Each one of the shorter utterances can constitute a full piece of communication by itself; at the same time they are typically used in dialogue as either responses, introductions, or clarifications for other utterances.
The conceptual import of each of these utterances is very clear, so that it is not unusual for the utterance that follows one of these to itself be an incomplete or elliptical sentence, e.g.,

(31)  a. What about Ralph, here for Christmas?
b. So what, any better ideas? 
c. Please, a glass of water.
d. Well, a good movie!
e. No, he won't.
f. Yes, I'd be glad to.

What about Ralph? has the function of topicalizing Ralph for a question.\textsuperscript{11} So what? calls for a particular kind of logical conclusion, and at the same time the speaker seems to be challenging the beliefs or opinions of the person to whom he is talking. Please signals a request from the speaker to the hearer. Well used with various intonations has different functions, but in all cases it seem to serve to attract attention and indicate either (with falling intonation) that the speaker has a pertinent thought or (with rising intonation) serve as a query as to whether or not the listener does. No indicates a negative response with all its vast conceptual possibilities, and Yes is its affirmative counterpart. Both No and Yes appear to presuppose that the thing that is being negated or affirmed is already identified and in common focus.

If it were decided that these utterances were incomplete sentences, and an attempt were made to derive them through sentence reduction, the algorithm that would have to be created would, I believe, deprive the notion of completion of any systematic content whatsoever. The instructions to the grammar in effect would have to
be to delete almost everything and substitute a new structure. In the
case of What about Ralph? a noun phrase would be preserved from the
source structure (N.B. that about is irrelevant to any possible
completion) in the case of the other expressions, it appears that
nothing would be preserved. In any case, I don't think these
utterances have any counterparts that could be called completions
from the point of view of their meaning.

The closest I can come to "completions" for the (a) utterances
is what occurs in the (b) utterances after the commas, but I don't
think these utterances really include the meaning of the shorter
utterances, at least not as a well-defined subpart. If someone asks
Would you like to go with me?, an affirmative answer could be either
Yes, or I would be glad to go with you; however, Paul Schachter
(personal communication) points out that if the question had been
Would you mind going?, the answer might be No, I'd be glad to go with
you, but not Yes, I'd be glad to go with you. Thus, while Yes and
I'd be glad to could be said to share an element of 'affirmation'
neither one could be said to contain the semantic structure of the
other. The meaning of What about Ralph? can be said to be included in
Will Ralph be here for Christmas? only in the most abstract sense that
a question is uttered which can be interpreted as being about Ralph.
The scope of affirmation, negation, interrogation, emphasis are aspects
of sentence meaning related in complex ways to constituent structure
and lexical meaning. The extensions of the theory that would be
necessary derive e.g., Yes from I would be glad to go with you, or No
from Jack won't come to the party do not appear to be motivated at this
time. We then have an interesting situation. If these utterances are incomplete sentences, then we have an instance where less than complete sentences could not be derived by a process of reduction from possible completions, because it cannot, it appears, be established that completions exist for them at all. If any or all of them measure up to the criterion of completeness (which I will attempt to define below) and are classified as sentences, then this throws perspective on the kind of structures that should be generable by PS rules. In either case, it would appear that a grammar that included Yes, etc., in its output could not have PS rules of the usual sort where S is the initial symbol and it expands only by the usual rules S NP VP, etc.

3. An Interpretive Account Of "Into The Dungeon With Him!"

3.1 A Survey of Imperative Construction Types

There is a wide range of incomplete sentences that can be interpreted as imperatives, and which, like the utterances of the Into the dungeon with him! pattern, can be said to allow relatively indeterminate but coherent semantic interpretations: they are relatively indeterminate in the sense that the meaning is less specific than it can be in complete sentences; they are coherent in the sense that they can serve by themselves as complete units of communication. It appears that all utterances require a kind of semantic completeness whether or not they are syntactically complete. For the semantic aspect I use the term grammatical coherence. An utterances is
grammatically coherent once it has a unified propositional meaning assigned to it which gives a role to each constituent in the utterance. 12

(32)  
a. A cup of coffee!  
b. With cream and sugar!  
c. Medium rare!  
d. Two dollars worth!  
  i. No wisecracks!

e. To the airport!  
f. End of the line!  
g. Correct change only!  
h. No pets!

Again, tags are possible:

(33)  
a. A cup of coffee, will you?  
b. End of the line, will you?

Various reflexive expressions are possible, too.

(34)  
a. By yourself! By yourself, can't you?  
b. On your own time! On your own time, can't you?

The tags and reflexives show agreement with the understood second person subject, as is well known. If they are anything other than the second person, the utterance cannot be understood as a command, e.g.,

(35) On his own time, can't he?

This utterance could be interpreted as a short answer to a question like When can he do it?, but never as a command. The examples with tags and reflexives make it clear (assuming the major claims of this paper are correct) that we have to have an interpretive theory of those structures. 13
The kind of command treated as a complete sentence in standard theory is of course an incomplete sentence, too, at least on the surface. The standard derivation is in effect an instance of sentence reduction, e.g., (36a) is reduced to (36b):

(36) a. You will shave yourself, won't you?
    b. Shave yourself, won't you?

Alternatively, an underlying imperative feature that never has direct phonological manifestation is posited in the underlying representation and it triggers the transformation that deletes the second person subject.

(37) You [+ Imperative] shave yourself, won't you?
    Shave yourself, won't you?

But it seems to me that Shave yourself! is just like Vygotsky's Coming in being a subjectless utterance where the subject is not mentioned because it is already clear from the context. And of course more than just a covert second person subject is involved in the part of the meaning which is understood but not expressed. As with any utterance, it is understood that there is a speaker; there it is understood the speaker (first person) is imposing his will on the person to whom the utterance is directed (second person); moreover, whatever the specific properties of the command, the thing that the speaker commands the hearer to do must be 'agentive'. The notion 'agentive' is used to apply to a variety of meanings; here I will take it to mean 'conscious and responsible direct cause'. Be tall! cannot be interpreted as a command because the second person cannot cause
himself to be tall, but Be nice! is quite acceptable as a command. In the same way, in any of the possible interpretations of A cup of coffee as a command, the second person has to be understood as causally involved, in making it, bringing it, etc. I will view 'cause' as the feature that corresponds to the notion 'agentive'.

In a grammar of all and only the well-formed utterances, the challenge is to account for the meaning and well-formedness of all utterances that can be understood as commands. As a first approximation, the propositional meaning that is common to all imperatives can be represented as follows: the symbols I and YOU are constants; IMPER (imperative) and CAUSE (direct causation) are semantic predicates and are to be taken as primitives in a system abstract enough to systematically describe the semantic structure of any utterances; PROP is short for PROPOSITION. The semantic structure of simplex sentences is typically like a molecule, with atomic propositions, each one of which contains one predicte.

(38)

I will say that there is a general interpretive rule that can assign (38) as semantic structure to main clause utterances; a subject of the clause has must be interpretable as second person. This interpretive rule might well be constrained to apply to utterances with falling intonation only. According to standard theory, all aspects of pronunciation should be an automatic consequence of the syntax,
including intonational contours. Although it is not clear to me how intonation is to be formally represented in syntax, this aspect of the theory appears correct to me in principle (cf. Stockwell 1960). I will call this a propositional structure rule and give it the following form:

(39)

**OPTIONAL PROPOSITIONAL STRUCTURE RULE:**

Main clause + falling intonation $\rightarrow$ SEMANTIC STRUCTURE (38)

Condition: If there is a grammatical subject, it must be interpretable as second person.

Semantic structure (38) can be thought of as a template that is fitted over the utterance for the semantic interpretation. If the internal properties of the utterance conflict in any way, e.g., the subject cannot be interpreted as second person, the inherent semantic content conflicts with the predicate CAUSE, etc., then there is a mismatch, and an anomalous reading results.

This is not an exhaustive treatment of imperatives. The foregoing is a first approximation; there are a number of facts that will have to be taken into account beyond what has already been discussed. I will give a survey of some of the important kinds of observations that need to be taken into account once the goal of all and only well-formed utterances is adopted.

As is well known, besides the kind of command discussed so far where the order is issued to the second person from the first person, there is the first person plural inclusive in commands, e.g., *Let's go!*
It is of interest to note that many incomplete sentence commands allow this interpretation: I find that a cup of coffee! can be interpreted in a manner comparable to Let's have a cup of coffee!, as well as Bring me a cup of coffee!, etc.; on the other hand, Careful! and Slowly!, to be discussed below, do not allow this interpretation. The possible completions of the latter would include Be careful! and Walk slowly!, but no Let's be careful! or Let's walk slowly! I have no idea why this should be so. The utterance pattern of greatest interest in this section, Into the dungeon with him!, etc. does allow the inclusive first person interpretation, it seems to me, in an obvious way: (the person issuing the command can be one of the agents of the action).

Note the following judgments on grammaticality pertain when the following utterances are understood as commands:

(40)  a. Be careful!  
      b. Be quite!  
      c. Be nice!  
      d. Be polite!  
      e. Careful!  
      f. Quiet!  
      g. *Nice!  
      h. *Polite!

It must be the case that adjectives understood as modifying the second person subject in commands, must be accompanied by the copula, but that careful, quiet, and perhaps a few others, are marked in their lexical entries as exceptions to the general constraint. Note that the productive utterance pattern with AP alone applies to a third person or object, e.g., Medium rare!, Red with green polka dots!, etc. There is a comparable situation with manner adverbs:

The worst of the adverbs used alone as commands in (41) appear to me to be the ones that have the most stative, non-causative constituent meanings. If I can accept (41h) or (41i) at all, it is in a situation that involves pretending or play-acting, e.g., a drama coach issues them as a command to an actor. But here exactly the stative force of these adverbs would be attenuated, the actor is causing himself to appear to behave responsibly, etc. Perhaps then, manner adverbs used alone as commands receive well-formed interpretations provided that they do not conflict with the causative meaning that is a part of every imperative.

Locative adverbs can be used as imperatives. Either the proximal or distal deictics allow this interpretation. On the other hand, only the proximal temporal expression is compatible with an imperative reading:


Negation is another rich parameter of commands for which I am only prepared to offer some observations here: the well-formed adjectival commands Careful! and Quiet! defy negation. Not careful! and Not quiet! cannot be understood as commands; negation of manner adverb commands is somewhat more felicitous, but still awkward, e.g., Not slowly!15 Without further linguistic context, Not now! can be
interpreted as a command. Not a cup of coffee!, Not well-done!, Not with mustard!, Not into the dungeon with him! can all be interpreted as commands. No pets!, No wisecracks! have negation within the noun phrase.

A most striking fact is that a negative command of the form Not PP!, where the PP has a preposition of stationary location as its head, allows a special kind of interpretation not possible in the comparable affirmative commands. As commands, In the garden!, On the roof! can only be understood as part of a proposition of directional motion, even though there is good reason to believe that the constituent meaning of the prepositions in and on is that of stationary location. Affirmative commands of this sort will be discussed further below. Note, however, that Not in the garden! and Not on the roof! suddenly make another very different kind of interpretation possible, where the prepositional phrase is indeed understood as one of stationary location, and plays the role of what is called a "sentence adverb" in standard theory, i.e. Don't do such-and-such in the garden!, Don't do such-and-such on the roof!. The affirmatives could never be interpreted in a comparable way, i.e., they do not mean Do such-and-such in the garden!, Do such-and-such on the roof!

Similarly, as a command, the affirmative In the dungeon with him! (with the preposition of stationary location in as opposed to the directional preposition Into) allows only an interpretation of directional motion, with either Go in the dungeon with him!, etc. as possible completions, or Take him in the dungeon!; however, Not in the dungeon with him! allows a "sentence adverb" interpretation Don't do
such-and-such in the dungeon with him! Again, the affirmative would not allow an interpretation of the sort Do such-and-such in the dungeon with him! It is also remarkable that in the "sentence adverb" interpretation of Not in the dungeon with him!, the object of with can be interpreted only as having a semantic function of accompaniment, never as THEME of the central proposition, as it is when completions are allowed such as Don't take him in the dungeon!, etc. A completion allowed by the "sentence adverb" interpretation of Not in the dungeon with him! could be Don't play your radio in the dungeon with him!, but never Don't tickle him in the dungeon!

The phenomenon just discussed is perhaps related to the fact that No! can be interpreted as a command meaning Don't do such-and-such!, but there is no command interpretation for Yes! The affirmative command comparable to No!, would be the general anaphoric interpretation of Come on! or Let's go!, or one of the interpretations of O.K.!

It should not be surprising that it is as easy as it is to use incomplete sentences as commands, since the usual context in which commands are uttered is one in which a great deal of what is understood propositionally is already self-evident. There is a productive double-constituent pattern of the form NP X where the NP must be something closely related to the hearer, and the X can be one of several kinds of constituents:

(43) a. Books open to page 15!  
   b. Hats off!  
   c. Seatbelts fastened!  
   d. Notebooks on the floor!  
   e. Cigarettes out!  
   f. Lights on!
Where articles might occur, they generally sound odd in this construction:

(44)  a. ?The books open to page 15!  d. ?The notebooks on the floor!
b. ?The hats off!  e. ?The cigarettes out!
c. ?The seatbelts fastened!  f. ?The lights on!

There seems to be the requirement that the NP refer to something closely related to the hearer, e.g., a personal possession or something immediately within reach and under the control of the hearer. This being the case, the awkwardness of the examples in (44) could be due to the redundancy or 'over all' effect of the definite articles. As commands to interior decorators, the following would be quite odd:

(45)  a. ?Rugs on the living room floor!
b. ?Yellow paint on the bathroom walls!
c. ?Curtains hung on the windows!
c. ?Old wallpaper scraped from the ceiling!

Thus the oddness of (44) is probably due to a semantic property of this pattern rather than syntactic constraint against articles.

When the pattern is NP PP and PP is to NP, the NP can be the proper or common name of the person to whom the command applies. In this case it appears to me that the person or persons named may be presumed to be among the hearers or else close by the people who hear:

(46)  a. Dr. Kilgare to the operating room!
b. New recruits to Room 108!
c. Prize winners to the judges' stand!

Again the definite article sounds odd:
(47)  a. ?The new recruits to Room 108!
    b. ?The prize winners to the judges' stand!

The game "Simon says" is replete with commands in this pattern, where the NP refers to a body part:

(48)  a. Hands on your shoulders!
    b. Left foot behind the right one!
    c. Right knee on your chest!
    d. Cheeks puffed out!
    e. Eyes closed!
    f. Elbows up!
    g. Tongue out!

3.2 The Reported Command Construction

"Simon says" illustrates a construction closely related to the command, which I will call the reported command:

(49)  a. Simon says hands on your shoulders!
    b. Simon says eyes closed!
    c. Simon says tongue out!

This construction can be used to report most of the incomplete sentences used as commands that I have discussed so far:

(50)  a. He said new recruits to Room 108.
    b. He said notebooks on the floor.
    c. He said a cup of coffee.
    d. He said no pets.
    e. He said to the airport.
    f. He said careful.
    g. He said medium rare.
    h. He said slowly.

Pronoun agreement shows that these should be considered indirect quotes, e.g., He said no sugar in his coffee, She said term papers in her mailbox or under the door of her office by noon Wednesday, etc.
Thus, I feel justified in not using quotes to write the reported command construction.

The commands that are considered complete sentences in standard theory, e.g., Go to the airport! can also appear in the reported command construction with say, i.e., when an order is reported without the to of the infinitive construction:

(51) a. He said to go to the airport.
     b. He said go to the airport.

The verb say seems close to unique in being capable of participating in the reported command construction, e.g.,

(52) a. He said to the airport.
     b. *He ordered to the airport.
     c. *He argued to the airport.
     d. *He begged to the airport.

The verb tell plus indirect object appears marginally acceptable in the reported command construction.

(53) a. He told me medium rare.
     b. He told me no sugar in his coffee.
     c. ?He told me to the airport.
     d. ?*He told me careful.

In my dialect, the reported command construction does not appear to allow the Into the dungeon with him!, e.g., (Where the semantic interpretation is to have coreference between the subject of say and the possessive pronoun in the reported command)

(54) a. She said "Into the dungeon with my husband!"
     b. *She said into the dungeon with her husband.
(55)  a. He said "Out of my house with those cats!"
     b. *He said out of his house with those cats.

There are in general severe constraints on the inclusion of incomplete sentences as subparts of complete ones, and incomplete sentences used as commands are no exception. The set illustrated by Into the dungeon with him! must stand entirely by themselves, while To the airport! or New recruits to Room 108!, can be the object of say in a reported command construction.

The reported command construction is a highly marked structure, which resists embedding in a number of contexts, though not all. (56) contains acceptable instances of embedding, but (57) and (58) show that relative clause embedding of the reported command construction produces either awkward or completely unacceptable results.

(56)  a. I think he said to the airport.
     b. I think he said new recruits to Room 108.

(57)  a. ?This is the man who said to the airport.
     b. *This is the airport which the man said to.
     c. *This is the airport to which the man said.

(58)  a. ?This is the man who said new recruits to Room 108.
     b. *This is the room to which the man said new recruits.
     c. *These are the new recruits that the man said to Room 108.

I have encountered speakers who accept (57a) and (58a) while rejecting the corresponding (b) and (c) utterances. For them, the appropriate generalization appears to be that embedding of reported commands is allowed, but that this construction does not allow fronting of a constituent from within the reported command. This second part of
the generalization holds for all speakers I have encountered. For
some speakers, then, there is limitation on embedding and for all
speakers the reported command is insulated against movement rules,
cf., information questions.

(59) a. *To which airport did he say?
b. *To which room did he say new recruits?
c. *Who did he say to Room 108?

The difference between He said to go to the airport with the
usual infinitive construction, and He said go to the airport with a
reported command becomes more apparent when one embeds them. Sentential
complements again differ from relative clauses:

(60) a. I think he said to go to the airport.
b. I think he said go to the airport.

(61) a. This is the man who said to go to the airport.
b. This is the airport which the man said to go to.
c. This is the airport to which the man said to go.

(62) a. ?This is the man who said go to the airport.
b. *This is the airport which the man said go to.
c. *This is the airport to which the man said go.

Again, fronting is prohibited from reported commands:

(63) a. To which airport did he say to go?
b. *To which airport did he say go?

While I am focusing on imperative constructions in this section,
I should not fail to point out that commands are not the only
utterance type that can be reported after say, e.g., there can be
short answers to questions too, e.g., I asked him what color the house
was and he said red, I asked him where the bathroom was and he said on the second floor, I asked him where his books were and he said in his bedroom. Again, I find the reported utterance construction odd if it is relativized, e.g., ?When I asked where I might find an old inner tube, there was one person there who said in his garage, and of course it resists fronting, e.g., *...there was a garage which one person said in.

It seems likely that say is strictly subcategorized for a wide range of syntactic categories, e.g., + [__NP], + [__S], + [__PP], + [__AP], + [__VP] and + [__NP PP]; moreover, the grammar is sensitive to cases where the object of say is a reported utterance, inasmuch as it will be insulated from fronting, etc. This suggests that the category U (utterance) may appear in tree structures governed by say and is referred to in grammatical rules, and that there is reason for regarding a reported command such as He said go to the airport as a simplex sentence.

Bird (personal communication) accepts instances of the PP with NP! imperative pattern in the reported command construction, e.g., acceptable for Bird, He said on the porch with his books, She said off with her husband's head; furthermore, he finds my examples (57a), (58a) and (62a) of marginal acceptability (i.e., where the reported command construction is embedded but not broken up syntactically by a permutation rule). He suggests a stronger hypothesis: say is subcategorized for U, i.e., any utterance whether or not a complete sentence.
One might suppose that U as opposed to S is in general protected from rearrangement by T-rules. Whatever their syntactic environment, the incomplete sentences that I have discussed so far do not in general allow permutations; however, there are some exceptions. For truncated utterances taking the form of a prepositional phrase, an information question pattern is possible, e.g., corresponding to To the airport, Where to?; corresponding to With mustard and relish, What with?, etc. Clearly there is much more to be said on this matter.

3.3 "Into The Dungeon With Him".

The utterance pattern of Into the dungeon with him! is in general very tightly constrained. In my dialect it is only grammatical when it stands by itself as an utterance. In this respect it is more tightly constrained than To the airport!, etc. This is no doubt related to the fact that the Into the dungeon with him! pattern is more complex. It is tightly constrained internally as well. For example, it is difficult to find acceptable instances of constituent negation with this pattern, e.g., perhaps it is grammatical to say Into the dungeon with none!, but NB *Nowhere with him!, *Not anywhere with him, *Into no dungeons with him!. Note also *On the porch with none of those trunks, *In the cupboard with none of those dishes, etc.

It is important to note the imperative meanings that are not possible with the pattern PP with NP! The following are attempts at completion pairs of the form U: PP with NP/S V NP PP (I accept for purposes of the discussion here the judgement of standard theory that
subjectless commands are complete sentences. In all cases the
completion pairings are ungrammatical, and in some cases the incomplete
sentence member U is by itself ungrammatical:

(64) a. U: Into a pumpkin with the carriage!
   S: Change the carriage into a pumpkin!

   b. U: To Harry with the problem!
      S: Explain the problem to Harry!

   c. U: ?On Mel with the accident!
       S: Blame the accident on Mel!

   d. U: *For George with the job!
      S: Finish the job for George!

   e. U: *Until three o'clock with the vigil!
       S: Maintain the vigil until three o'clock!

   f. U: *With Mother with the children!
      S: Leave the children with Mother!

As a first approximation, I conclude that an imperative
interpretation on an utterance of the form \textit{PP with NP} is well-formed
if and only if the first PP is compatible with an interpretation of
directional motion. There is good reason to believe that directional
motion is a property of utterance pattern as a whole, and does not
just emanate from the first PP. This view follows from the observa-
tion that prepositions that occur at the head of the first PP do not
have to be inherently motional in their meaning, e.g.,\textsuperscript{16}

(65) a. In the dungeon with him!
    b. In front of the house with those garbage cans!
    c. Behind the barn with those pitchforks!
    d. Under the pillow with that tooth!
    e. On the top shelf with those cans of tomato paste!
    f. Between the gatepost and the road with that mailbox!
All of these utterances could be short answers to questions with the meaning of stationary location, e.g., *Where is it?*, *Where did she stay?*, *Where did they keep them?*, etc. Note, however, that with *to*, *towards*, *from*, *into*, etc. the prepositional phrase is compatible only with an interpretation of directional motion, e.g., compare:

(66) a. He hurried to the house. (towards, from, into)  
    b. He hurried in the house. (in front of, behind, under)

(67) a. *He stayed to the house. (towards, from, into)  
    b. He stayed in the house. (in front of, behind, under)

The crucial examples are (66b) and (67b). In the latter only one interpretation is possible, while in the former we understand one of two meanings for the prepositional phrase: if it is analyzed as a part of the proposition governed by the main verb *hurry*, i.e., if it is a complement on *hurry*, we understand directional motion; if we understand it as a sentence adverb, as we would have to in Standard American with preposing, *In the house he hurried*, etc., then we understand stationary location.

In either of the interpretations for (66b), my analysis leads me to the claim that only one preposition *in* in involved. The possibility for the interpretation of directional motion has to do with the semantic properties of the main verb. Thus, we can understand *in the house* as the GOAL of motion with the motional verb *hurry*, but not with verb of stationary location *stay*. The meaning of stationary location inherent in a prepositional phrase like *in the house* is compatible with the meaning of directional motion coming
from the verb: the prepositional phrase can then be understood to express a point of reference for the motion; on the other hand, prepositional phrases that have directional motion as an inherent part of their meaning are not logically or semantically compatible with verbs that express stationary location such as stay, and so (67a) is ill-formed. This view of the interaction of verb and preposition meanings will be expanded in Chapter II.

With the foregoing considerations in mind, it seems a striking fact that when prepositional phrases of stationary location are used in affirmative utterances with falling intonation and are interpreted as commands, they must be understood as expressing directional motion. For example, note the well-formedness of the following completion pairs:

\[(68)\]

a. \(U: \text{In the room!}\)  
\(S: \text{Stay in the room!}\)

b. \(U: \text{In the room!}\)  
\(S: \text{Get in the room!}\)

It is not that one cannot form commands that signal stationary location, e.g., \textit{Stay where you are!}, \textit{Keep your gun in your holster!} It is rather that prepositional phrases of stationary location used as commands without verbs must be interpreted as expressing directional motion. This is the case in general, and the case in particular for commands of the form \textit{PP with NP} where the first PP has a preposition of stationary location as its head as in (65). A possible explanation is that change is the unmarked semantic value of a command, while permanence is a marked one: unless a locative command is marked as
indicating that a location should be maintained, it is understood as a change in location.

A closer look at commands with the verbs of stationary location *stay* and *keep* suggest that in a deeper sense locative commands may always concern change of location. These verbs can be understood as the negation of motion, and indeed in e.g., *Stay in the igloo!*, *Keep John in the igloo!*, the commands seem to call on someone to take initiative to prevent a change in location from taking place. In non-imperative interpretations, there seem to be two interpretations possible, one non-agentive and the other agentive: in *John stayed in the igloo*, John can be an agent or not. If by an agent we understand that he is taking initiative to not change location. This is the only interpretation possible in commands, and so also with the progressive: while *The box stayed in the igloo* is just as acceptable as *John stayed in the igloo*, we get *The box was staying in the igloo* vs. *John was staying in the igloo*. In *Keep this box in the igloo!*, we understand 'Don't cause it to go elsewhere.' or 'Prevent it from going elsewhere.' The negative sense of *keep* in commands is particularly vivid when the object is animate and can be imagined to have its own volition to go elsewhere, e.g. *Keep the lion in the cage!*

It is notable that commands with *stay* or *keep* must be understood as having a subject that is what Grube would call a CAUSATIVE AGENT, cf., footnote 14. *Stay here!* calls for active, causative participation on the part of the subject, as do *Keep the box here!* and *Keep the prisoner here!* Affirmative commands with these verbs of stationary location are closely equivalent to, if not synonymous with,
negative commands with verbs of motion: compare Stay here! with
Don't leave! and Keep the prisoner here! with Don't take the prisoner
away! or perhaps Don't let the prisoner leave! Negative commands with
these verbs of stationery location are like affirmative commands to
cause oneself to move, e.g., Don't stay there! is very close in
meaning to Go away from there!, while Don't keep the prisoner here!
is close to Take the prisoner away from here!

As a first approximation, I will say that change of location
is part of the meaning of any command concerned with location. Note
that the command Be here at 9! has a narrower interpretation than a
declarative like He was here at 9. The command must be agential and
I see one of two contexts in which it could be issued. In one case,
the person to whom the command is issued is not here at the time the
order is pronounced and the command is equivalent to an affirmative
command to change location, e.g., Come at 9!; in the other case, the
addressee is here at the time the order is issued and there is a
presupposition that he might leave. If he is away in the meanwhile,
he should come back; if he is here until 9, he should not then leave.
In the latter case it amounts to a negative command of change of
location, e.g., Don't leave before 9! or Stay here until 9! If there
was no presupposition that leaving was possible, there would be no
reason in this second case to say Be here at 9! Note that in the
affirmative or negative, change of location is always part of the
meaning.

The analysis that I am about to propose for imperative of the
form PP with NP! will use the notion directional motion, but I use the
term awaiting a more precise analysis of verbs and prepositions concerned with motion. It is clear in fact that not all expressions with motional meaning can be understood as imperatives. A short excursus into one of the problems that I have encountered is in order here to illustrate the tentative nature of the generalizations about semantics that seem possible at this time. I would add that this is also an illustration of how little is understood about the meanings of some of the most common words of English.

The prepositional expressions off, out of, away from, etc., as well as from, would seem to have meanings that concern the starting-point for motion, I borrow Gruber's term SOURCE as a convenient label for that aspect of meaning. Now note that not all of the following utterances can be interpreted as commands:

(69) a. Off the desk!
    b. Out of my room!
    c. Away from the stove!
    d. From the kitchen!

I find that the first three can all be interpreted as commands, but that (69d) cannot. This surely has something to do with the lexical properties of from. This preposition sets itself apart from the others in other ways too, e.g. with intransitive get:

(70) a. He got off the desk.
    b. He got out of my room.
    c. He got away from the stove.
    d. *He got from the kitchen.

(70d) can only be rectified by adding an expression for the ending-point of the motion, the GOAL:
(71) He got from the kitchen to the front porch.

When the verb of an utterance has implicit in it the notion of a GOAL, then a PP with from can occur as the sole complement, e.g.,

(72) a. He entered from the living room.
b. The plaster dropped from the ceiling.

It is perhaps the case that GOAL is an implicit part of the meaning of Off, Out and Away, e.g., that Off the desk means 'from the surface of the desk to a point'. Then we could say that not only is change of motion a part of the interpretation of all locational commands, but that GOAL must be expressed in some way. Note that (69d) From the kitchen! could never be a command, but it could be short answer to a question like Where did you get that chair?

Another parameter in the grammar of prepositional phrases concerns the notion of CAUSE. With from as the preposition signaling the starting-point of motion, the verb get used intransitively is indeterminate as to whether the meaning is causative or non-causative (spontaneous); with the other SOURCE expressions above, only a causative (agential instrumental) interpretation is possible:

(73) a. The box got from New York to Detroit.
b. The diesel got from New York to Detroit.
c. The prisoners got from New York to Detroit.

(74) a. *The box got off the loading platform.
b. *The box got out of the truck.
c. *The box got away from the warehouse.
(75) a. Nicholas got off the loading platform.
b. Nicholas got out of the truck.
c. Nicholas got away from the warehouse.

In (73), a causative (cf. AGENT, INSTRUMENT) interpretation is possible but not obligatory. In (74) and (75), on the other hand, a causative meaning is obligatory, and thus those beginning with the subject NP The box are unacceptable. The only way that they could be interpreted as well-formed, would be if there would be some way of viewing the box as having its own means of locomotion. It would appear then that SOURCE expressions such as away, out and off presuppose a causative subject, while the meaning of from is indeterminate in this respect. This difference can be seen with the verb get, because in its intransitive usage, it also is indeterminate in this respect. (The verb get is analyzed further in connection with passives in Chapter IV.)

If the main verb of an utterance is causative, then the utterance will have a causative interpretation no matter what the SOURCE expression is, e.g.,

(76) a. He snatched the box away from the shelf.
b. He snatched the box from the shelf.

As opposed to the verb get which is indeterminate in regard to causative meaning, and snatch which is determinate in that it is causative, the verb receive is determinate in predicking a non-causative meaning on its subject. Because away, etc. presuppose a causative subject, they are incompatible with this verb; from being indeterminate in this respect is compatible with receive e.g.,
(71)  a. *He received the parcel off the desk.
b. *He received the parcel out of the room.
c. *He received the parcel away from the post office.
d. He received the parcel from the post office.

It should not pass notice that in (77d) while the subject NP cannot be interpreted as playing a causative role, the object of from can, i.e., the post office can be interpreted as a kind of institutional agent. If off, out of and away mean GOAL as well as SOURCE, as was suggested, then (77a)-(77c) could be ill-formed in two ways: not only because receive is non-causative, but because the subject of receive is understood as GOAL. (Note that in general receive cannot take a PP GOAL, e.g., *John received a book to the dormitory.)

A more thorough study of lexical entries for heads (verbs and prepositions) with motional meaning, plus their manner of combination in utterances, will no doubt be necessary before the proper generalizations for these phenomena are discovered. The intricacies of the grammar of expressions of motion explored briefly above are shared in many ways by the particular utterance type to which this section is devoted, the imperatives of motion of the form PP with NP! If the head of the PP is from in this pattern, the utterance is ill-formed:

(78)  a. Off the desk with your feet!
b. Out of my room with those potato chips!
c. Away from the stove with that box!
d. *From the kitchen with that football!

With the foregoing in mind as a qualification on the adequacy of my semantic terms, I will proceed with the presentation of interpretive rules for the imperatives like Into the dungeon with him!
For the most obvious semantic interpretation of the PP with NP commands, we can make our first approximation of the semantic structure as follows: we will include the semantic structure already which I have claimed is included in the semantic interpretation of all commands, and we can add another atomic proposition with a two-place predicate DIRECTION, where DIRECTION X Y is to be understood as 'x moves in respect to direction y'. The terms will be used to establish correspondences with syntactic structure.\textsuperscript{17}

(79)

\[
\text{IMPER} \quad \text{PROP} \\
\quad \text{CAUSE} \quad \text{YOU} \\
\quad \text{PROP} \\
\quad \text{PROP} \\
\quad \text{DIRECTION} \quad x \quad y
\]

This is to be read as 'I give the command that you be the direct cause for x to move with respect to direction y'. This semantic structure is assigned to utterances of the form PP with NP + falling intonation by an optional propositional structure rule. The terms of this propositional meaning are matched with the constituent meaning generated by the PS rules and lexical insertion. Another way to think of the x and the y is as indeces marking the correspondence between semantic and syntactic structure. The optional rule of propositional structure is as follows (the CONDITION here is for those dialects that do not allow "Into the dungeon with him" in subordinate position):
(80) OPTIONAL PROPOSITIONAL STRUCTURE RULE:

PP with NP + falling intonation + SEMANTIC STRUCTURE(79)
\[
\begin{align*}
y & \quad x \\
\end{align*}
\]

CONDITION: Syntactic pattern indicated may not be in subordinate position

This rule says that the NP object of with is to be interpreted as the left-hand argument of DIRECTION and the first PP as its right-hand argument, or in other words the NP with x is to be interpreted as moving, while the PP with y is to be interpreted as the point of reference with which the movement is taking its direction.\(^{18}\)

The predicate DIRECTION is a relatively indeterminate proposition of motion. It can be thought of as having just those semantic features which are held in common by all the verbs that can occur in the possible completions for these utterances. Not determined are (a) the relation of the cause of the motion to the motion itself, and (b) the means of locomotion. Verbs of motion are more or less specified in these respects. With causative double-object verbs of motion like carry and lead, the cause of the motion (subject) moves along with the object; with throw and drop the cause is stationary and the movement is away from it, so that borrowing a term from Gruber (1965), the cause of the motion is at the same time the SOURCE (starting-point) of the motion; with pull and draw this aspect of the meaning is not as determinate, we can think of the cause the motion as moving with the object or as being stationary, and if stationary it would be thought of as being stationary at the end-point of GOAL.
(Gruber) of the motion.

In certain contexts, the verbs take, and bring can be appropriate for two different situations each. What is most interesting is that the contexts in which one is most determinate are not the ones where the other is most determinate. The following examples illustrate:

(81) a. We brought the boy into the room. LESS DETERMINATE
    b. We took the boy into the room. MORE DETERMINATE

(82) a. We brought the boy out of the room. MORE DETERMINATE
    b. We took the boy out of the room. LESS DETERMINATE

When bring has as complement expressing the end-point of the motion as in (81a) the cause of the motion can be thought of as moving with the object, or as having been at the end-point from the outset. Following one tradition (81a) might be called ambiguous, but this is assuming more than we have evidence for. It is not that verbs or utterances are obligatorily specified for these aspects of meaning but rather that various utterances narrow down more or less the number of situations to which they can apply truthfully. The same comment holds for (82b): take has the same lack of determinacy with a complement such as out of the room representing the starting-point for the motion. The complementary cases are (81b) and (82a) where one can only conceive of the causes as moving with the objects, cf., Fillmore (1965 and 1966) on take, bring, come and go.

The means of locomotion expressed by double-object causative verbs of motion varies according to the particular verb, e.g., with
carry the cause does all the work, while with lead the effort is shared; drag, shove, roll and fling all have meanings where the effort is supplied by the cause, but different kinds of effort and with different affects on the object and different kinds of movement through space. It is relevant to note that the verbs take and bring don't specify anything in their meaning about means of locomotion; however, there would seem to be little justification for a claim that bring, for example, is ambiguous just because it has less specific meaning in this regard than say drag. It would be better to say that bring is indeterminate in this regard.

The pattern PP with NP! can be said to be indeterminate in just the sense that it could apply to any of the situations in which any of the verbs discussed above could be used. It puts none of the conceptual limits pointed out above.

We should recall for a moment the other less obvious imperative meaning for the PP with NP! pattern, e.g., for Into the dungeon with him! the possible completion Walk into the dungeon with him!, for On the table with the dishes! the possible completion Jump on the table with the dishes!, Put the box on the table with the dishes! etc. Here the possible completions include transitive and intransitive verbs of motion and in all cases we understand the second person to whom the command is addressed as being the cause of the movement. The semantic structure in this interpretation can be of two sorts and can be represented as follows, slight variations from (80):

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(81) is to be read 'I give the command that you be the direct cause for you to move in respect to direction y'. It corresponds to readings where possible completions would include intransitive verbs of motion, e.g., *Hurry into the dungeon with him*, *Go into the dungeon with him*, etc. (81b) is to be read 'I give the command that you the direct cause for x to move in respect to direction y'; in this case the utterance is elliptical in respect to the term x inasmuch as there is no constituent in the utterance corresponding to 'x' (cf., the definition of constituent ellipsis in Chapter III). Possible completions in this case include transitive verbs of motion, e.g., *Take Mary into the dungeon with him*, *Put Mary into the dungeon with him*. Characterization of the with NP phrase is not included here. Note that NP can receive several interpretations. The assignment of this semantic structure can be formally represented by another propositional structure rule:
I have found widespread agreement among speakers of English that the semantic structure of (79) is far more obvious than that of (83a) or (83b) for the PP with NP pattern. It is particularly interesting since the semantic structure which is least preferred, the ones in (83), are the ones that allow completions which include the form as well as the meaning of the shorter utterances. The answer may lie in part with the analysis of the role of with in English utterances.

Bird (1970) has pointed out that there are number of languages in the world, English and Bambara are two, which use the same morpheme to signal instruments and accompaniment, e.g., John cut the tree with an ax, John cut the tree with Bill. He points out that it would be a strange accident indeed if these morphemes like with were simply superficial representations of two different underlying grammatical relations, semantic functions or the like. If instead we think of instrumentation and accompaniment as being two different semantic interpretations possible for with phrases where the meaning of the morpheme with itself remains constant as some abstract sense of 'association' the situation is much more understandable. This point of view is reinforced by the observation due independently to Cheryl Austen (1970) and myself that instrumentation can also be understood in a wide variety of locative prepositional phrases with the
preposition with nowhere in sight, e.g., we roasted corn over the
fire/...under the broiler (Austen)\(^2\) or Jack sent the flowers to Margo
in a taxi cab. The locative prepositional phrases remain locative
but can have the meaning of instrumentation imposed on them. The
conclusion warranted by the data then is that \textit{with} does not have a
one-to-one correspondence with the semantic function \textit{INSTRUMENT} and
that, in fact, \textit{with} has a one-to-many correspondence with a number of
semantic functions in readings on the total constructions in which it
occurs.

In the most natural interpretation of the \textit{PP with NP}! command
pattern, we find another interpretation for the object of \textit{with} besides
accompaniment and instrumentation. In our analysis, \textit{with} has the
single relatively indeterminate, abstract meaning of 'association',
and this makes it quite appropriate for the variety of semantic
functions that can be imposed on it and its object by interpretive
rule. Here the semantic function imposed on the object of \textit{with} is
what Gruber (1965) would call the \textit{THEME} of motion, i.e., the thing
that moves, and is the most important element in the proposition of
motion. (Note that \textit{with} can introduce a Co-\textit{THEME} of motion in the
sense of 'accompaniment' e.g., \textit{He went with John}). Now there is an
obvious intuitive sense in which Gruber is correct in saying that the
moving object is the most important element in a proposition of motion
and it might well be that presented with the string \textit{PP with NP}! and
the alternative of semantic interpretations (79) on the one hand, or
(83a) or (83b) on the other, that there is a tendency for the native
speaker to choose the one that gives more prominence to the last \textit{NP}
in the propositional structure. Note that this makes what Gruber would
call the THEME of motion explicit rather than elliptical. In general
semantic interpretation deals with the words that occur in an
utterance first, and then may proceed to add various extra embellish-
ments provided that they do not conflict with what is overtly expressed.

The notion of indeterminancy in meaning that I use here, cf.,
also Chapter III, is concerned ultimately with the possible referential
extension of language, e.g., when I say that drag is more determinate
than pull in certain respects, I mean that there are potentially less
situations that could appropriately serve as referents for that verb,
or to put it in other terms, there is a more stringent set of truth
conditions for drag then there is for pull. Conversely, the possible
referential extension for the various interpretations of the PP with
NP! construction is much larger.

Deciding what semantic features are determinate in lexical
entries is not an easy matter. In phonology there are reasonable
grounds for saying that certain feature specification are obligatory
for all phonological segments, or for at least an important class of
segments. There is not enough known about lexical items to make any
comparable claim. I am not sure there is any semantic feature shared
by all verbs of motion except 'motion' itself. The feature [+ HUMAN]
has been proposed as one marked on all lexical entries for concrete
nouns -- but even here it is not clear this is the case.

Arguments have been persuasively presented to the effect
that all concrete nouns must be specified + or - HUMAN because of
agreement phenomena with pronouns; however, another view seems at
least plausible. Perhaps the contrast in meaning between forms that make the morphological distinction referred to as +HUMAN and -HUMAN, e.g., between he and it and between who and which, is more abstract and subjective than is usually supposed. Whether or not one refers to a pet dog as he or it seems to depend on a difference in point of view rather than a difference in lexical properties. It seems to me more likely that some quite abstract feature differentiates the meaning of the pronouns, e.g., he includes a feature + INTELLIGENCE or the like (rather than + HUMAN), and when one refers to a pet dog as he or who, he is not confusing the status of the dog in respect to humanness, but rather attributing intelligence to it.

(85) a. The dog ran up and it licked my hand.  
    b. The dog ran up and he licked my hand.

(86) a. The dog which licked my hand was shaggy.  
    b. The dog who licked my hand was shaggy.

If I am right, then the same lexical item dog occurs in each of these examples, while the interpretations are different because of the use of the different pronouns. I see no reason to consider an utterance like (85b) or (86b) as in any way deviant, having heard many like it from animal lovers. The difference in linguistic behavior between the people who say it and the people who say he in relation to a dog (or a baby!) is not one of linguistic competence so much as one of point of view. And of course the same individuals are capable of saying it or he in respect to a dog depending on which dog it is, their mood for the day, etc. I would conclude that the evidence from
morphology does not support the claim that the +HUMAN vs. -HUMAN distinction is a necessarily obligatory specification in lexical entries for nouns. It may be the case that +HUMAN is a part of lexical entries for all nouns, but it hasn't been proved for English yet. And even if it is proved that this feature is a part of all lexical entries for nouns, it is a long way from that statement to a situation in which a feature matrix could be presented with which to specify the semantic properties of any lexical item of English.

In discussing the varying degrees of semantic determinancy in different expressions of motion, I have cited verbs and prepositions that are determinate for specific features, but I have tried to make it clear at the same time that I am not claiming the particular semantic features to be a part of all lexical entries for verbs or prepositions. I do not presume that just because the verb drag means among other things that its object is necessarily in contact with the surface across which the motion is taking place that therefore all verbs have a value for this aspect of meaning, e.g., that there is a comparable feature that has something to do with the semantic structure of pull. There is good reason to believe that the verb snatch is +CAUSE in the meaning that it imposes on its subject, receive is -CAUSE in this regard, and get when used intransitively is neither the one nor the other. It is not ambiguous, it is just indeterminate. There is just one semantic structure for get in this usage (John got to Detroit, etc.) and agential or non-agential interpretations can be imposed from without.
The distinction as to whether a lexical item or a construction is ambiguous or just indeterminate will be of paramount importance in this work. There are actually three crucial categories: (a) Structural ambiguity, either syntactic or lexical (*Flying planes can be dangerous, He stood by the bank*); (b) interpretive ambiguity (*Into the dungeon with him* in the sense that (79), (83a) or (83b) can be assigned as interpretations, or *He got to the cemetery*); (c) indeterminancy, where the grammar does not determine any interpretation along a given parameter. The term ambiguity is reserved for cases where two or more grammatically determined meanings converge on the same phonetic output.

The lexical entry for get is semantically indeterminate in much the same way as the PP with NP! pattern is. The latter always has a causative meaning, but that is a property of all imperatives. One could propose a sentence reduction analysis for the PP with NP! pattern where get is always the underlying verb, but it would still be necessary to account for the causative meaning common to all imperatives, and the fact that while (87a) is well-formed, (87b) is not.

(87) a. Get the letter from the post office!
    b. *From the post office with the letter!*

While a number of questions are left open, I believe I have shown how in principle one would go about providing an interpretive analysis of the "Into the dungeon with him" construction. This approach is to be preferred to one involving sentence reduction,
because in its most prominent interpretation the sentence reduction approach would involve not just deletion rules but also a metathesis rule and a with insertion rule. More important, the deletion rules alone would not produce recoverable underlying structures and the theory would be made too powerful to be of any interest. The indeterminacy of meaning for this structure (allowing completions with take, bring, pull, drag, throw, drop, etc.) constitutes the strongest argument for direct generation.

Similar analyses are warranted for other patterns called "sentence fragments", actually constructions with productive status in the grammar in their own right. On the one hand, we have seen that in a number of instances deletion rules alone would not suffice to derive these utterances as "fragments" of complete sentences. They have form-meaning correspondences all their own. On the other hand, the grammatical indeterminacy in the meaning of e.g., A cup of coffee or Nice dress! makes the use of deletion rules uninteresting. Deletions would be in no way recoverable. When so-called "sentence fragments" are being used, less meaning is determined by the grammar and more is left for the rest of cognition to fill in.

4. Externally Imposed Semantic Interpretation and the Notion 'Specific Utterance Type'

4.1 The Imposition of Semantic Features from Outside a Constituent.

The most novel aspect of the analysis just presented is the matter of having interpretive rules which impose semantic structure on
utterances from without. The propositional meaning 'imperative' was imposed on various "sentence fragments" from without by interpretive rule, rather than being an internal property of the syntactic structure. Furthermore, to the pattern PP with NP additional propositional meaning was imposed by interpretive rule just in case it was identified as an imperative. A similar analysis was implied for NPs like The idiot! The goldbricker!: they can be optionally understood as pejorative epithets, they are the definite articles receiving a special interpretation that they would not otherwise. In each case, particular syntactic configurations can be interpreted as instances of several 'utterance types', and the semantic properties assigned to the subparts of these configurations vary according to the utterance type. 'Utterance type' then includes idiosyncratic correspondences between whole syntactic configurations and semantic functions.

In standard theory the semantic structure of utterances is supposed to be derivable directly from the inherent properties of the lexical items and their syntactic configuration. To the extent that semantic structure is projected from syntactic configuration, it is supposed to be by general principles that apply to any utterance in the language. In the discussion I have just concluded, a particular kind of meaning is assigned to a particular utterance type. I would like to demonstrate here that this practice is not destined to just a minor number of incomplete sentence types like those exemplified by Off with his head! Hands on your shoulders!, The son of a bitch!, etc. There is in fact evidence that many productive utterance types are as idiosyncratic in their meaning as they are in their form, and that
no set of general principles of syntactic structure nor of lexical meaning will explain all of what native speakers know about these utterance types. Standard generative theory is not equipped to capture the full notion of utterance type; but both generative semantic theory and the kind of interpretive theory advocated here are.

First a word about interpretive rules. In standard transformational theory, with the kind of projection rules for semantic interpretation proposed by Katz and Fodor (1963), the meaning of any constituent in the final derived reading for an utterance must be attributed to that constituent as an inherent property. The meanings of constituents interact with each other only as one moves up to higher nodes; the interpretive process sifts out from the possible semantic values inherent in a constituent those which are compatible with the environment. No aspect of the meaning understood for a constituent in the interpretation of an utterance can be analyzed as having come from some place else. No projection rule of the Katz-Fodor variety would analyze the example from Fillmore (1968) *bend the handkerchief*. Fillmore gives this as an example of lexical presupposition in verbs. It is a perfect example of a case where a more powerful semantic device is required, one which will take the feature out of the lexical material in bend and impose it on the interpretation of handkerchief, i.e. schematically:
In generative semantics the presupposition about the object would presumably be a part of a representation more abstract than that at which the verb *bend* is inserted on the tree, but at the same time the lexical entry for *bend* would necessarily have to contain reference to STIFFNESS as a cooccurrence feature. Thus, STIFFNESS would still be a part of the lexical entry for *bend* and not of the lexical entry for *handkerchief*. This analysis would also not be commensurate with Katz-Fodor semantics.
4.2 Indefinite Determiners in the Context of Particular Utterance Types

Chomsky (1969) and Jackendoff (1969) have proposed interpretive rules which are governed by lexical items and by general principles of syntactic configuration. It has not yet been noted that there is a need for interpretive rules in the grammar of English that are governed by the notion utterance type. Several examples will be discussed here, and to begin with instances involving the interpretation of the indefinite article.

It is well known that more than one interpretation is possible for the English indefinite article. I would say that there is a scale of determinacy in the specificity of a noun phrase like a man, a book. The least determinate is the generic interpretation as in A man is a mammal, the most determinate is the specific interpretation as in ...And then a man came over to our table...; in between, is the non-specific indefinite interpretation, in If I only had a man around the house! There is an ambiguity between the specific and non-specific interpretations of the noun phrase a book in I need a book. This sentence can be continued in one of two ways: either ...Any one will do — I'm always happier when I'm reading or ...Here's its title — Would you see if the library has it? At issue here will be the question of whether the ambiguity of I need a book is a structural ambiguity (i.e., with two lexical items a occurring) or an interpretive ambiguity, where only one lexical item a occurs in the sentence I need a book, and where the feature + Specific is imposed on it from outside...
the syntactic structure by interpretive rules. The position that I
will adopt here will be that there is a single lexical entry a and
that its inherent meaning is simply 'indefinite' - a meaning which is
indeterminate along the parameter of + GENERIC and + SPECIFIC. These
features are imposed by interpretive rule. A book in I need a book
is then an instance of interpretive ambiguity.

There are a number of facets to the interpretation of indefi-
nite articles, but what is of importance here is that there is a well
known utterance type which when used affirmatively and as a main
clause generally allows only the specific interpretation on indefinite
noun phrases; utterances with there as grammatical subject, the most
common of which have be as a main verb, e.g., There is a man in the
next room, There is a man playing a trombone, etc. See Chapter IV,
Section 2 for an analysis of the construction involving there as a sub-
ject plus be as main verb. There subjects can also occur in simplexes
with the main verbs occur, exist, appear, and take place, and several
others, e.g., There appeared a slimy sea monster. In 1927 there took
place a terrible mine disaster that led to reform of mine safety laws.

Perhaps largely because of the commitment to the weaker (and
therefore in and of itself theoretically interesting) semantic theory
of Katz and Fodor (1963), theoreticians working within the paradigm of
standard theory responded to observations such as thosw above on
the possible range of semantic interpretations for the indefinite
article by positing homonymous lexical items equal in number to the
various semantic interpretations. As I shall argue in Chapter II,
when one begins to take into account observations such as Fillmore's
on bend the handkerchief this principle fully extended leads to a theoretically untenable position; however let us suppose for the moment that there are three homonyms for each of the indefinite expressions a(n) some, three, etc., each one distinguished by the features +GENERIC and +SPECIFIC, cf. Fillmore (1966b), and the chapters on determiners and negation in Stockwell, Schachter and Partee (1968).

It has been generally assumed that there subjects are introduced transformationally (but cf., the arguments for a lexical analysis in Section 2, Chapter IV below). Note that I need a book is ambiguous, but There is a book that I need is not: the first allows either a +SPECIFIC or a -SPECIFIC interpretation; the second allows only +SPECIFIC.

(89)  a. I need a book: here's its title - Would you see if the library has it?

b. I need a book: any one will do - I'm always happier when I'm reading.

(90)  a. There is a book that I need: here's its title - Would you see if the library has it?

b. *There is a book that I need: any one will do - I'm always happier when I'm reading.

Assuming that there subjects are introduced transformationally, assuming further that there are homophones a differentiated by the features +SPECIFIC and +GENERIC, the following constraint would have
to be placed on the grammar: the structural description for the There-
insertion transformation would have to specify that the NP a book, etc.
is +SPECIFIC, - GENERIC. In this way the grammar would account for
non-ambiguity of utterances like There is a book that I need.

If there subjects were introduced in deep structure, but we
were still constrained to follow the postulates of Katz-Fodor
semantics, i.e., we had separate homophones a, then lexical insertion
of there would have to be limited in a comparable way: restricted to
those subtrees where the NP we are considering here carries the
features +SPECIFIC, - GENERIC.

A wider look at the data reveals a far more complex situation.
If specificity means something on the order of 'exists and is known to
speaker' then it must be said that indefinite NPs are not always
specific after there. To begin with several modals can change the
interpretation of specificity.

(91) a. *There might be a book that I need — Here's its title.
   See if the library has it.

   b. I might need a book — Here's its title. See if the
      library has it.

The there is construction asserts the existence of the NP
following. Thus, might in (91a) draws into question the existence
of a book that I need and renders impossible a +SPECIFIC interpretation,
such as is still possible in (89b). In (89b) it is the main verb need
that is attenuated by might, but not necessarily the specificity of
a book. One may counter that in There might be a book that I need there
is a possible world in which a +SPECIFIC book exists, so that anaphora with it is still possible in the appropriate environment, e.g.

(92) There might be a book that I need -- If there is, I will give you its title, and ask you to get it out of the library.

But then we are saying that the specificity of the book depends on its environment and on the derived semantic interpretation of the NP a book that takes its environment into account that 'specificity' means different things in different contexts. We cannot follow the Katz-Fodor postulate that the semantic properties attributed to a constituent must be due to inherent lexical features plus grammatical relations. We need more powerful interpretive rules that can impose semantic values from the outside.

The construction with a there subject can occur in subordinate position in larger contexts which affect the interpretation possible for indefinite articles, e.g., consider the following syntactically diverse 'contrary-to-fact' and 'future less vivid' constructions. Jespersen (1933) calls all these instances of 'the preterite of imagination'.

(93) a. I wish there were a book that I needed.
      b. Suppose there were a book that I needed: would you get it for me?
      c. If only there were a book that I needed!
      d. Unless there were a book that I needed, I wouldn't go to the library.
These constructions rule out a 'specific' interpretation of a book in the sense of 'exists and is known to speaker'. Their semantic effect overrides that of the there subject when the latter is in embedded position. One could make it a lexical property of wish and suppose to require an NP with the appropriate semantic content (presumably the indefinite article in a book would have to be inherently - SPECIFIC to satisfy the Katz-Fodor postulate) in embedded position, but then this would have to cancel out the requirement of there as subject. Furthermore, giving the power of selectional restriction from a verb down into an embedded clause would be unprecedented and besides increasing the power of the notion 'selectional constraint' in a perhaps unprincipled way, would vastly complicate the grammar. More serious, this kind of patch work suggested for wish and suppose would seem inconceivable for it and unless under present assumptions, and we would be left looking for some unified account of the semantic notions 'contrary-to-fact' and 'future less vivid', or all together 'the presents of imagination'.

If instead of positing multiple lexical entries for indefinite articles, we say that (a) there is one lexical entry for each, (no homonyms a(n), some, three, etc.), (b) they are indeterminate with respect to the features + GENERIC and + SPECIFIC, and if we make those features aspects of the meaning of NPs that are imposed by interpretive rules, then there is some hope of coming up with a descriptively adequate analysis. The distinction between + SPECIFIC will sometimes depend on lexical entries for verbs. For example, the past tense of forget imposes + SPECIFIC as in I forgot a book although this can be
overridden in the contrary-to-fact construction *If I forgot a book...*, and the tendency is -SPECIFIC in other contexts when the non-past form is used, as *I won't forget a book this time, I might forget a book*. Also, and what is most important for this section, this is a feature of interpretation that can also be strongly influenced by an utterance. The only place for such information in the model I am proposing is in the semantic component. Interpretive rules take into account the utterance type as well as the general characteristics of the syntactic configuration, and the lexical material occurring in the utterance. The semantic component will contain something comparable to dictionary entries, but instead of the entries being for lexical items, they will be for utterance types, e.g., an entry for 'contrary-to-fact' utterance types and for simplex construction with there subjects. The semantic value concerning the specificity of such NPs as a book in these constructions will be a property of the derived reading but not of the lexical entry for the indefinite article.

To recapitulate, let us consider the ambiguous clause, I needed a book, ambiguous in the sense that a book can be + or -SPECIFIC. The underlying representation will be on the order of (94a). Interpretive rules will produce derived readings of either (94b) or (94c):
Sometimes the subtree in (94a) occurs in a larger sentence that determines one of the two derived readings (94b) or (94c), so that no ambiguity is possible in the total derived reading, e.g., There appeared a book that I needed, If I needed a book, I would be going to the library now, etc. If it does, then the semantic component will impose the + or - SPECIFIC interpretation with reference to semantic entries under headings for utterance types. This amounts to a context sensitive interpretive rule where the context refers to more than lexical
meaning and the general notions 'grammatical relations', 'left-to-right order of constituents' or the like; the context refers to particular utterance types. Consider the following as part of the semantic component, a first approximation:

(95) 'UTTERANCE TYPE' INTERPRETIVE RULES
a. Constructions with there subjects assert the existence of indefinite NPs: insert the feature + SPECIFIC.
b. 'Preterite of Imagination' constructions deny the certainty of the propositions expressed in clauses they govern. Indefinite NPs within them do not have certain existence or identity at the time of the utterance: insert the feature – SPECIFIC in the indefinite NPs.

Now consider the problem of producing a correct derived reading for a sentence such as the following:

(96) If there happened to be publication of a book that I needed, I would go to Joe's house to borrow the money to buy it.

The interpretive rule (95a) would assert the existence of the NPs headed by publication and (within) book and the feature + SPECIFIC would be inserted. But then by (95b) the certainty of the whole clause there happened to be publication of a book that I needed is denied as is the certainty of existence of the indefinite NPs therein: the feature – SPECIFIC would be the one in the final derived reading.

The analysis of the constructions affected by the interpretive rules may lead to underlying representations that contain enough semantic information dominated by the syntactic structure to account for the derived interpretations of the indefinite NPs. For example, in Chapter IV, Section 2 below, an analysis of there subject
constructions with be is made in terms of an idiomatic lexical entry. Be this as it may, we would still want a generalization such as (95a) as a kind of redundancy rule for all simplex constructions with there subjects. If there is an idiomatic lexical entry with be mentioning the special deictic meaning that arises when there is subject, then there must also be one with exist, take place, appear and perhaps several more verbs. (95a) would capture the unity of all these constructions with there subjects. Similarly, if we captured the special meaning of 'the preterite of imagination' in contrary-to-fact and future-less-vivid conditional constructions, say be enriching the lexical entry for if (a rather unlikely event, given current assumptions), we would still want to relate this idiosyncratic, marked form-meaning correspondence to other constructions that determine 'preterite of imagination' interpretation.

If (95a) is all there is to the sentence being interpreted, then we have a case of interpretive ambiguity. The semantic component has a rule that imposes arbitrarily either a + SPECIFIC or a - SPECIFIC interpretation on indefinite NPs which do not yet have either of these features. We can say that this rule is context-free and applies after the context-sensitive interpretive rules (cf., Jackendoff, forthcoming for extensive treatment of constructions affecting the interpretation of the specificity of indefinite NPs).

(97) CONTEXT FREE INTERPRETIVE RULE (APPLIES AFTER CONTEXT SENSITIVE INTERPRETIVE RULES): OBLIGATORY

Indefinite NPs without + or - SPECIFIC value will be assigned one or the other of these values. Pick one or the other at random and insert in NP.
In (94), either (b) or (c) will result as a derived reading.

If I am right in these claims, then we see need for a stronger notion of 'semantic interpretation'; at the same time we see a return to the practice of traditional grammarians in making generalizations about meaning associated in an idiosyncratic fashion with particular utterance types.

Including rule (97) in the grammar is relevant to the grammar of so-called "sentence fragments". Indefinite NPs often constitute entire utterances, e.g.,

(98) a. A dog! 
b. A book!

Such NPs are interpretively ambiguous: we can understand them as either + or - SPECIFIC. (98a) could be uttered as a cry of delight or fear (perhaps as a warning to a companion) upon the discovery of a dog. With this kind of deictic force the utterance would have to be said to have a + SPECIFIC interpretation. On the other hand, (98a) could be a kind of wish: 'A dog! — I wish I had one'. In this case the interpretation would have to be - SPECIFIC. (98b) could be used with deictic force with the referent in view and therefore be + SPECIFIC, or it could be used with - SPECIFIC as the intended meaning in a situation such as the following: John's friend Bill is halfway down the street on the way to do some shopping; John shouts A book! to him as a reminder to Bill to buy a book of some sort as a present for a mutual friend.
For the utterances in (98) the choice of the interpretation + or - SPECIFIC is not grammatically determined: it is rather determined by a larger cognitive faculty which includes cognizance of the extra-linguistic context. Rule (97) operates at random and perception of extra-linguistic context is used to accept or reject the output. Having rule (97) operate for the utterances in (98) as a random choice of a value for the feature SPECIFIC accounts precisely for the role played by linguistic competence. It shows that the grammar generates those noun phrases with either interpretation, but that the choice for the grammar is random in these cases where there is no further linguistic context; at the same time, this analysis posits just a single indefinite article a. The fact that there is no formal differentiation between a with a + SPECIFIC as a opposed to a -SPECIFIC interpretation, plus the fact that variation along this semantic parameter seems always determined by context, linguistic or extra-linguistic, provides the support for our analysis.

4.3 Information Questions

One of the best known examples of an utterance type that has a special sound-meaning correspondence is the information question.

(99)  

a. When did you beat your wife?  
b. What did you steal from me this time?  
c. With which pen did you forge the check?  
d. Where did you give birth to triplets?

All information in an information question except that which is interrogated is 'presupposed', meaning 'assumed to be true'. Sentences
such as those in (99) can be used to brow beat people, or as jokes: if the listener supplies the information requested, he accepts the presupposition, i.e., admits as true the rest of the information in the sentence. Note that in each case the semantic function associated with the interrogated constituent is presupposed, e.g., in (99a) it is presupposed that there was a time when the listener beat his wife, in (99b) that there was something stolen, in (99c) that a pen was used to sign the check and in (99d) that there was a place at which birth was given to triplets. What is interrogated in each case is the referent which fulfills these semantic functions: this is the only part of the sentence that is not presupposed.22

The semantic characteristic of information questions just pointed out with respect to English is, as far as I know, true of any language. It makes this utterance type quite distinct. One hypothesis would be that the lexical meaning of interrogative words like when, where, who, what, which, why and how carries the information that the clauses in which they are used are to have the special presupposition structure just noted. This is the most conservative hypothesis because it allows the possibility of accounting for the derived meaning of each information question through the combination of lexical meanings, without recognition of the particular construction in which those lexical items appear. Let us concede that this is the case. But we are only accounting for the interpretation of these sentences one by one. We would still want to have a generalization about information questions as a class, a kind of redundancy rule.
(100) In information questions, all information is presupposed except the constituent(s) that is (are) interrogated.

A statement such as (100) accords special status to the utterance type 'information question'.

4.4 The Cleft Construction

Consider the cleft construction in English. Bruce Fraser (1971) (after an observation by Kuno) points out that there is an important semantic difference between clefts and the corresponding simple declaratives.

(101) a. It was John who ate candy.
    b. John ate candy.

Clefted constituents are understood to be unique. In (101a), we understand John to have been the only one to have eaten candy. Thus, (102a) is unacceptable:

(102) a. *It was John who ate candy and Bill ate candy too.
    b. John ate candy and Bill ate candy too.

Fraser points out that a clefted constituent cannot be modified by even.

(103) a. *It was even John who ate candy.
    b. Even John ate candy.

Part of the meaning of even is that the constituent it modifies is not unique in the semantic function it fulfills. Thus there is a direct clash with the meaning of the cleft.
A possible analysis for this aspect of meaning in clefts is that the definiteness of the expletive it subject makes the constituent immediately across the copula from it unique in the derived interpretation, i.e., in the same way as the definite article in (104a).

(104)  a. The one who ate candy was John.
       b. *The one who ate candy was John and Bill ate candy too.
       c. *The one who ate candy was even John.

If the constituent meaning of it does not account for the uniqueness associated with clefted constituents, then we would need a generalization about the particular utterance type cleft listed in the semantic component. Be this as it may, there are other aspects to the meaning of clefts which could not, it appears, be accounted for simply in terms of the meanings of lexical items and general principles of combination. There is presupposition structure something like that in information questions: everything except the clefted constituent is presupposed. In (101a) It was John who ate candy, it is necessarily presupposed that someone ate candy. Because of this, clefts have different freedom of occurrence from the corresponding simple declaratives.

(105)  a. Speaker A: The beer and the onion rings are all gone. Who do we have to blame for this?
       Speaker B: It was Bill who drank all the beer and Fred and Harry who ate the onion rings. Let them pay for it.
       b. Speaker A: The beer and the onion rings are all gone. Who do we have to blame for this?
       Speaker B: Bill drank all the beer and Fred and Harry ate the onion rings. Let them pay for it.
(106) a. Speaker A: We can serve the beer and onion rings in the refrigerator to our guests tonight.
   Speaker B: No we can't. It was Bill who drank all the beer and Fred and Harry who ate the onion rings.
   b. Speaker A: We can serve the beer and onion rings in the refrigerator to our guests tonight.
   Speaker B: No we can't. Bill drank all the beer and Fred and Harry ate the onion rings.

It would appear that the appropriate generalization here must make mention of the utterance type 'cleft'.

(107) In clefted clauses all information except that contained in the clefted constituent is presupposed.

This generalization on clefts may fall in as part of a still more abstract one that also takes the construction type 'relative clause' into account. Note the variation on the dialogues in (105) and (106) where relative clauses with definite articles are used instead of cleft constructions.

(108) a. Speaker A: The onion rings are all gone.
   Speaker B: The one who ate them will have to pay.
   b. Speaker A: The onion rings are all gone.
   Speaker B: Someone ate them. He will have to pay.

(109) a. Speaker A: We can serve the onion rings in the refrigerator to our guests tonight.
   Speaker B: The one who ate them will have to pay.
   b. Speaker A: We can serve the onion rings in the refrigerator to our guests tonight.
   Speaker B: Someone ate them. He will have to pay.

The subordinate clause in relative clause constructions with definite articles appears to be presupposed or 'factive' in the same way as the cleft. It may be that the definiteness of the lexical items it and the are part of the explanation for this phenomenon; however,
the manner in which lexical items combine to produce the derived
meaning appear to be special for these constructions.

The full semantic characterization of clefts ought to account
for how it is that this construction cannot be used in English to
answer ordinary information questions.

(110) a. Q. What did you buy at the market?
    A. It's rice that I bought at the market.

   b. Q. What did you buy at the market?
       A. I bought rice at the market.

Paul Schachter (personal communication) has pointed out that if
the information question is itself clefted, the answer can be, too.24

(111) a. Q. Who is it that can fly faster than a speeding bullet?
    A. It's Superman that can fly faster than a speeding bullet.

   b. Q. Who can fly faster than a speeding bullet?
       A. It's Superman that can fly faster than a speeding bullet.

While clefts cannot be used to answer unclefted information
questions, they can be used to answer a variety of Yes-No questions
where the constituent in the question that corresponds to the clefted
one in the answer is focused, particularly to contradict the expected
answer.

(112) a. Q. Did you buy POTATOES at the supermarket?
    A. No, it's rice that I bought there.

   b. Q. Did you buy potatoes at the SUPERMARKET?
       A. No, it's rice that I bought there.

   c. Q. Did you buy potatoes at the SUPERMARKET?
       A. No, it's from the vegetable vendor that I bought them.
It would appear then that when a child learns English, he not only learns a general set of principles for combining words to make larger units of meaning, but he also learns peculiar and idiosyncratic rules for both the form and the meaning of various utterance types. This holds for full sentences just as much as for productive 'sentence fragment' patterns like those of "Into the dungeon with him", "The idiot!", etc. This should not be surprising: after all, it has long been recognized that there are peculiar characteristics of form in difference utterance types; there is no reason why there shouldn't be special aspects of meaning as well.

The projection rules of Katz and Fodor (1963) which work up trees a node at a time carry semantic information from lower nodes to higher ones, but they do not carry information about syntactic configuration along with them. To recognize a particular utterance type, it would appear necessary to construct an algorithm which takes the whole lexical and syntactic character of an utterance into account at once. A more powerful device than a Katz-Fodor projection rule is needed. I would propose a set of interpretive rules which have a structural description (as in transformations) taking into account syntactic hierarchy as well as lexical features and instructions for semantic interpretation telling what semantic features should be imposed on utterances meeting the structural description, or on subparts of same. The generalizations put forth here on There subject constructions, constructions involving the 'preterite of imagination', information questions and clefts are informal approximations of such rules. In Chapter IV Section 2, a similar generalization will be proposed for the utterance type passive.
CHAPTER II: COMPLETENESS AS A CRITERION FOR SENTENCEHOOD

1. Two Aspects of Completeness: Integrity and Independence

In order to formalize the notion of sentence, as opposed to a well-formed utterance which is not a sentence, it is necessary to distinguish two aspects of grammatical completeness: integrity (internal well-formedness and completeness) and independence (external completeness). The two are nicely illustrated by a pair of examples such as the following:

(1) a. The theft of the crown jewels from the queen by the Pink Panther.
    b. The Pink Panther stole the crown jewels from the queen.

Although they are both well-formed, and contain virtually identical semantic content, the second utterance can stand alone in a way that the first cannot. Both could be subparts of larger utterances, e.g.,

(2) a. The newspapers reported the theft of the crown jewels from the queen by the Pink Panther.
    b. The newspapers reported the fact that the Pink Panther stole the crown jewels from the queen.

Only the first of the two utterances in (1), however, appears to require such inclusion. As opposed to incoherent utterance fragments such as theft of the, stole the, etc. both (1a) and (1b) have integrity within them, while only the second has independence. In Otto Jespersen's The Philosophy of Grammar (1926) there is an extremely perceptive
discussion of the principle of completeness as a criterion for
sentencehood, where it is independence rather than integrity that is
stressed, and where Jespersen relates the independence to his notion
of "nexus". I quote (Jespersen 1926, pp. 307 & 308):

"A sentence is a (relatively) complete and independent human
utterance -- the completeness and independence being shown by
its standing alone or its capability of standing alone, i.e.
of being uttered by itself...in order to be recognized as a
sentence, an utterance must be such as might be a piece of
communication where there is someone to listen to it...It will
be noticed that sentence as here defined is a purely notional
category: no particular grammatical form is required for a
word or a group of words to be called a sentence. [Emphasis
 mine, T.S.] I do not even imitate scholars who introduce the
term 'normal sentence'(Normalsatz) for sentences containing
a subject and a finite verb...[Jespersen then goes on to dis-
 criminate between three kinds of sentences, T.S.]:
1) Inarticulate sentences:...'Off!'...(2) Semi-articulate
sentences:...'Off with his head!'...(3) Articulate sentences:
...'You must strike off his head'... Articulate sentences con-
tain both components of a nexus [Emphasis mine, T.S.] and as
the 'nominal sentences' [cf. my discussion of the examples
in (10)-(19) in Chapter I of this paper discussion in Jespersen
1926 is on p. 12, T.S.]...are in minority, that means that
the great majority of articulate sentences contain a finite
verb."

I believe that Jespersen is entirely correct in saying that
there is no definition of a complete sentence independent of the
analysis of the sentence as a piece of communication. It is easy to
prove the inadequacy of any definition of a complete sentence that
makes reference to only form classes or configurations:

(3) a. Jack snored.
b. *Jack sent.

The above examples show that "subject plus finite verb" could
not exhaustively define the class of complete sentences. The reason
that (3b) is ill-formed could well be explained with Jespersen's notion of nexus. The verb snore has nexus with the subject noun phrase and with no other constituent; the verb send on the other hand has nexus with constituents in object position as well as the noun phrase in subject position and if these constituents are not present the sentence is incomplete. In my terms, I would say that (3a) has integrity, while (3b) does not. Part of the correctness of Jespersen's treatment of this problem it seems to me, is that he links the notion of independence to the theory of propositional structure. As the next step in this study, I will briefly outline a theory of propositional structure of the kind that would be entailed in a theory of grammars designed to generate all and only the well-formed utterances of a language, and show how the definition of a complete sentence follows from such a theory.

2. An Interpretive Theory of Propositional Structure

2.1 Referees and Players

In the propositional structure of English utterances, not all constituents play the same role. I use the term REFEREE to denote the key, phonetically realized lexical items that govern propositional structure, and through syntactic construction predicate meaning onto other constituents within the same utterance. The phonetically realized constituents onto which meaning is predicated are PLAYERS. Theft and stole in example (1) above are REFEREES. Using terminology borrowed from Gruber (1965), I will say that these lexical items
attribute the meaning AGENT to the Pink Panther, THEME (of possessional motion) to the crown jewels, and SOURCE to the prepositional phrase from the queen. Unlike Gruber in his theory of thematic relations, or Fillmore (1968a) in his theory of case grammar, I hold that the semantic functions such as AGENT that are associated with the various constituents of utterances are not properties of those constituents themselves, or the subparts of phrase markers that underlie them, but are rather imposed on them in semantic interpretation. Thus, the inherent properties of form and meaning are the same for the noun phrase the Pink Panther whether it appears in (1b) The Pink Panther stole the crown jewels from the queen, or in any other utterance.

(4) a. The Pink Panther received the crown jewels from the queen.
b. The queen threw the crown jewels at the Pink Panther.
c. James Bond broke the window with the Pink Panther.
d. Willard compared the Pink Panther to Aristotle Onassis.

To illustrate the role of REFEREES in propositional structure, I give a rudimentary representation of the syntactic structure of example (1b), and the lexical entry for the main verb steal:

(5) a.

```
S
  NP
    The Pink Panther
  VP
    stole
      NP
        the crown jewels
    PP
      P
        from
      NP
        the queen
```
(6) (a) (b) (c) (d) (e)

steal, +V, *[___NP PP] [__THEME SOURCE], causative, agential, possessional motion, illegally depriving a victim of rightful possession

Under (a) in the lexical entry for steal the reader is to understand the underlying phonological representation, under (b) and (c) the category and strict-subcategorization features as in standard theory, and (3) the meaning of steal. The novel part of the lexical entry is (d). It may be thought of as template which is fitted over the strict subcategorization feature (c), or over the subpart of the three in (5) to which (c) corresponds. Semantic interpretation takes place through this template. The pairing of the syntactic feature under (c) and the semantic feature under (d) gives the propositional structure for the verb phrase for which steal is the head. Thus, the object NP is to be interpreted as THEME of possessional motion, and the PP as the SOURCE of the possessional motion. Since the meaning of steal is agential, the subject NP onto which the VP is predicated has to be interpreted as AGENT.

A principal criterion for well-formed semantic structure is the matching of the semantic functions imposed on PLAYERS with the internal semantic properties of these constituents. For example, consider the matching of the semantic function SOURCE with the PP in construction with steal, and in particular consider the preposition that is the head of that phrase. It appears that any preposition is well-formed in that position, provided that it is semantically
compatible with the function SOURCE. We get X stole Y from Z, away
Z, etc. The prepositions in turn impose their own semantic functions
with which noun phrase objects must be compatible. Thus, while from
allows either a volume or a surface as an object, e.g., from the room,
from the door, the preposition off allows only a surface. Thus, we
can get Joe stole the poster off the wall, where wall is understood as
a surface, but *Joe stole the poster off the room is odd, because room
is interpreted as a volume. In the dialect where Joe stole the poster
off Sam is acceptable there is either (a) a different lexical entry for
off, or (b) Sam is being treated metaphorically as a two-dimensional
surface.

Both formal properties and extra-linguistic 'real world'
knowledge can be relevant: for example, because of the meaning of
steal the SOURCE must be interpretable as having a relation to a
victim. The utterance He stole the diamonds from the mountain makes
sense if we can conceive of someone being the rightful owner of the
mountain, but He stole the pearls from the ocean is harder to interpret,
because we do not think of the ocean usually as belonging to anyone.
In a cosmology where nature is thought of as animate, and thus capable
of being victimized, the utterance is acceptable without even the need
for a metaphorical interpretation. As Fillmore (1970) has made so
clear it is difficult to say exactly where the dividing line comes
between real world knowledge and formal semantic properties, cf.,
the example in the discussion above, the anomalous *off the room. I
am sure that the notion of surface vs. volume is a part of the semantic
properties of the preposition off, but I see no reason to assume automatically that this distinction is inherent to the noun room. REFEREES, e.g., off, must always have sufficient lexical properties to insure the well-formedness of the constructions they govern, but it is an independent task to determine what the semantic properties of PLAYERS are, e.g., the room, the cabinet, etc.

The system that I am proposing for the interpretation of propositional structures governed by REFEREES is similar in principle to the analysis proposed by Fillmore (1968b) and (1970) for lexical presupposition. For example, Fillmore shows that the verbs bend and fold differ in that the former presupposes stiffness on the part of its object: bend the handkerchief is odd unless the handkerchief is conceived of as stiff through being frozen, starched or the like. What is most relevant to this discussion in Fillmore's treatment is that the presuppositions are viewed as a property of the lexical entry for the verb, and that they are imposed on constituents in the same utterance; well-formedness depends on whether on not the constituent can be interpreted in such a way as to match appropriately with presupposition that is imposed on it. I am simply extending this principle to the semantic functions of propositional structure, THEME, SOURCE, GOAL, AGENT, INSTRUMENT, etc.

In the systems for propositional structure of both Gruber (1965) and Fillmore (1968a), semantic functions are properties of underlying tree structures which precede lexical insertion; however, at the same time, lexical entries for verbs are necessarily marked for the semantic functions with which the verbs can be allowed to
cooccur. This amounts to doing the same thing twice. I am saying that in cases of propositional structure governed by verbs, it is sufficient to show the semantic functions as a property of their lexical entries only and not only is it sufficient, but, as I am attempting to demonstrate, it is a more natural description of linguistic competence. While thinking of the features in lexical entries for verbs that concern semantic functions as cooccurrence restrictions (as in Gruber and Fillmore), it is also possible to think of them as templates for semantic interpretation.

REFEREES are the phonetically realized heads of the phrases NP, VP, AP and PP that govern syntactic cooccurrence restrictions within their phrases. As I have attempted to show with my example steal, the point at which to define syntactic cooccurrence restrictions for these heads is also the optimum point at which to define the correspondence between the syntactic structure for the phrase and semantic structure. This syntactic-semantic correspondence is the propositional structure of the phrase. Propositional structure (correspondences between syntactic structure and functional meaning) extending beyond phrases is accounted for by interpretive rules which predicate the meaning of various constituents onto others, e.g., the meaning of the VP is predicated onto the subject NP.

Constituents that are PLAYERS will have a REFEREE with them, e.g., the phrase from the queen in (1b) is a PLAYER for the REFEREE steal, and within it in turn is the REFEREE from. There is typically a hierarchy of REFEREES in an utterance.
As I indicated in Chapter I, certain aspects of propositional structure may be imposed directly on an utterance and its subparts by rules of semantic interpretation, without the presence of a lexical head in the utterance to govern that aspect of meaning. It is not just in incomplete sentences that this is the case. We can have propositional structure without REFEREES as well as with them in complete sentences, cf., my discussion below of structurally determined meaning in sentence adverb constructions and adjunctive constructions like a crook in John came back from Newark a crook. The core of functional meaning in most utterances, however, is governed by lexical items realized phonetically on the surface.

Sentence adverbs are just one instance where the hierarchy of the semantic structure does not correspond in any obvious way with that of the syntax, at least in surface structure. In the utterance John built the table with the hammer, the prepositional phrase with the hammer presumably carries the semantic function INSTRUMENT. This function is logically a two-place predicate, that is, the hammer is the instrument of something. The object of instrumentation is the act built the table or perhaps John built the table, but in standard theory, neither of these is a constituent. These observations provide motivation for a departure from standard theory, since there is every reason to demand that semantic structure be represented just as systematically as syntactic structure. One departure has been the polysentential underlying representations of generative semantics, where the only hierarchy of underlying representations is that of semantic structure, while the hierarchy of syntax is represented only
in surface structure. In the theory that I am proposing here syntactic structure and semantic structure stand side by side, each with their own properties, and the correspondence between the two is established by interpretive rules. With the notion of REFEREE I am attempting to show that a great deal of the relational meaning imposed by interpretive rules comes from lexical meaning.

As we shall see in the more detailed analysis in Chapters III and IV, it is possible to build into the lexical entry a semantic representation with all of the detail and independently motivated hierarchy that one might want to employ in an underlying representation in generative semantics. As in Jackendoff (forthcoming) lexical entries for phrasal heads act as operators and establish correspondence between syntactic and semantic structure. It is to be expected that the two kinds of structure will have different primes and different hierarchy. Reasons for choosing one interpretive model over a generative semantic one concern the indeterminacy of semantics as opposed to syntax. This will be central to the discussion of Chapter III.

2.2 Contextually Determined Meaning

In an interesting paper on the noun phrase, Bird (1969) gives examples of various sorts where the propositional structure of the noun phrase should not be considered a property of the lexical entry for the head noun, e.g., the tomatoes by Julia Child, the cornfields by Van Gogh, the nude by Picasso. In none of these cases could the agency understand for the object of the by be thought of as a
syntagmatic realization of the lexical meaning of the head noun, at least not with the meaning that is ordinarily associated with the head nouns *tomatoes*, *cornfields* and *nude* when they occur alone. The ordinary meaning of these nouns is as REFEREES with no PLAYERS in their phrase, i.e., intransitive heads the way the verb *elapse* is intransitive. In contrast, there are noun phrases such as *the theft by the Pink Panther*, *the lecture by Professor Williams*, *the criticism by Matthew Arnold*, *the destruction by the Americans*, *the recipe by Julia Child* and *the paintings by Van Gogh and Picasso*. The head nouns *theft*, *lecture*, *criticism*, *destruction*, *recipe* and *paintings* are all interpreted variously as actions or the results of actions and the notion of agency is implicit within them whether or not it is realized as a part of the propositional structure of the phrase.

Bird points out that all of the first group of examples have a special "artifact" interpretation: *tomatoes*, *cornfields* and *nude followed with by* phrases are understood as some sort of transformed artifact of the original. The nouns of the second group of examples, on the other hand, are all understood as the real article, the thing itself, the original. The artifact interpretation of the first group is certainly a marked one, and with examples in isolation would not be noticed easily without the accompanying *by* phrase. However, in the proper context it is possible to get the artifact interpretation even when the noun occurs without any complements, e.g., after a cooking contest, *The tomatoes were the most imaginatively conceived*, or after an art exhibit, *I liked the cornfields best*. In fact, virtually any of the enormously large number of concrete nouns in English can receive
an artifact interpretation when we begin to think of artistic repre-
sentations. Noun phrases such as the boy, the tree, the apple, etc.
all are capable of two interpretations, one for "the thing itself" and
the other for "artifact"; furthermore, all of the artifact interpreta-
tions allow an agent to be expressed in a by phrase, the boy by Daumier,
the tree by Manet, etc.2

There are logically two alternatives, Bird points out. Either
the number of lexical entries for concrete nouns in the lexicon of
English is doubled, or the aspect of the interpretation 'artifact' is
not an inherent property of these nouns themselves. Bird proposes
an interpretive rule which optionally imposes the artifact interpre-
tation on the nouns from without. Thus, in this analysis, there is
interpretive ambiguity for concrete nouns (e.g., cornfields in I liked
the cornfields) along the semantic parameter ± ARTIFACT in the same way
as there is for the indefinite article a in my analysis in Chapter I,
Section 4 in respect to the feature ± SPECIFIC. Following this
alternative, another interpretive rule could assign the appropriate
semantic function to a by agent phrase within any noun phrase receiving
an artifact interpretation. 3 There are a number of facts of this
kind which make it appear that either we have contextually determined
meaning for constituents or a virtually infinite lexicon.

Notwithstanding the propositional structure without REFEREES
as in the command A cup of coffee!, sentence adverb constructions as in
We decided on the boat and artifact agency as in the tomatoes by Julia
Child, etc., lexical heads, and in particular verbs, are the fulcrum
for utterance construction in every language that I know of. The
study of lexical meaning is going to be the principal source of insight into propositional structure. The propositional structure of an utterance is usually the syntagmatic realization of lexical meaning, i.e., a REFEREE has its PLAYERS take on the roles of its propositional meaning. In another paper (Shopen and Konarč, 1970), it is argued that the redundancies in propositional structure governed by lexical entries for heads should be represented in the lexicon by word structure conditions.

The grammar that generates all and only the well-formed utterances of a language (including productive incomplete sentence patterns like that of "Into the dungeon with him") requires, it seems to me, a theory of propositional structure such as the one outlined here in which semantic functions associated with constituents are contextually determined, rather than being properties of those constituents themselves. I see no other way to give a consistent account of the native speaker's ability to use a PLAYER like The Pink Panther with or without linguistic context and provide semantic interpretation. On the one hand, we have utterances with REFEREES using this PLAYER such as those in (1), (2) and (4): the PLAYER receives its semantic function from the main verb. We have many instances, on the other hand, where the PLAYER alone constitutes the entire utterance, but where it is obvious that native speakers have the ability to give it a semantic function, since it serves as a coherent piece of communication.

The reader is asked to imagine the typical circumstances for the utterances that follow, and also the appropriate intonational
patterns; two versions will be presented, a longer and a shorter, but it should be clear that either utterance would be perfectly acceptable for the situation described. (7a) or (7b) would be equally appropriate as a warning, (8a) or (8b) as a request; the warning amounts to naming some entity as a threat and the request appears to be a subtype of command; (9a) and (9b) go together as a dialogue where the noun phrase the Pink Panther takes two roles of an introduction, those of ADDRESSEE and NAME; (10a) and (10b) illustrate the addressing and naming functions by themselves:

(7) a. Look out! The Pink Panther!
   b. The Pink Panther!

(8) a. The Pink Panther, please.
   b. The Pink Panther.

(9) a. Pink Panther, Nelson Rockefeller.
   b. —Nelson, the Pink Panther.

(10) a. Pink Panther. (rising intonation)
    b. The Pink Panther. (falling)

In these situations, rather than going through some silent mental process of sentence reduction, the native speaker in this analysis supplies the appropriate semantic functions by interpretive rule. For (7b) the function must be something like the predication THREAT. For (8b) it appears that there is some sort of command interpretation, attenuated by a mood of politeness, where the person spoken to is requested to cause the Pink Panther to be available: call it REQUEST. This is a relatively indeterminate interpretation, since the manner in which he is to be made available is not specified.
The introduction situation of (9) seems to involve within each one of the utterances the assignment of functions something like ADDRESSEE and NAME to the two people respectively, in that order each time, with perhaps an overriding function INTRODUCTION holding the whole together. (10a) is to be thought of as exemplifying the assignment of ADDRESSEE in isolation, and (10b) NAME, both frequent occurrences.

Intonation would seem to be a cue that helps make clear which function is to be applied where. In (7b) a part of the message is an emphatic intonation and a tone of voice that conveys alarm: how much of this is language seems to me a question without any automatic or obvious answer. But it should be clear in any case that the grammatical material of these utterances, particularly the ones which have nothing but the NP the Pink Panther plus intonation, is not enough to determine a unique semantic function in each case. For example, this NP with falling intonation could be not only NAME but also REQUEST, THREAT and a whole host of others. From the point of view of the grammar this should be treated as a case of interpretive ambiguity. The precise choice of a semantic function is made with aid of extra-linguistic perception of the context.

It is inconceivable that people would have one kind of competence for the use of a noun phrase like the Pink Panther when it is part of an utterance with a verb, and another when it is a coherent piece of communication by itself. In the kind of theory that I propose, the semantic function assigned to this noun phrase is always externally imposed, and the choice of semantic function always depends upon the context: when the context is linguistic, the choice
is determined by language; when there is no linguistic context, the choice is largely random as far as the grammar is concerned, while the actual selection of the appropriate function depends on some broader cognitive faculty capable of judging the well-formedness of the referential use of language. The grammar provides the semantic functions and criteria for judging well-formedness insofar as linguistic symbols are involved.

The relational meaning of linguistic symbol always depends on its context. Just as a PLAYER like the Pink Panther finds its value as a piece of communication according to the context around it, so does a REFEREE like Vygotsky's Coming. This verb has a semantic function (THEME of motion) which it must predicate onto something in its context, be it linguistic or not. If the context is linguistic, and the rules of grammatical form have been satisfied so that an interpretation of the utterance as a whole is possible, the predication will be grammatically determined according to syntactic structure, e.g., on the linguistic symbol John in Bill saw John coming or John was coming etc.

If the context is non-linguistic, the predication will be made onto a referent, external to the utterance. The fulfillment of the predication will be a part of the grammar in the first case, and a part of the broader cognitive faculty in the second. Of course, I am using the term predication in a wider sense than just grammar. First, I am talking about predication onto linguistic symbols which is grammatical predication in the usual sense; second, I am talking about the predication of the meaning of whole utterances onto referential
situations, which can be called referential predication. In the first case I am talking about grammar, while in the second I am talking about the referential use of language, which must be accounted for by a theory of cognition that includes a theory of linguistic competence but more besides. In the first case, we can talk about grammatical well-formedness of utterances, irrespective of their referential use; in the second case, we can talk about appropriateness for the context and the well-formedness of the linguistic act. The predications in utterances like *The irretrievable past is coming* or Chomsky's *Colorless green ideas sleep furiously* can be said to be grammatically anomalous. The predication that takes place with the one word utterance *Coming* when by a pointing gesture it is made to apply to some immobile object can be said to be cognitively anomalous. The longer utterance *I am coming* and the one word utterance *Coming* are both grammatically well-formed, but either may be the truth or a lie, appropriate for the situation or not, a well-formed linguistic act or not.

It should be emphasized that we are dealing with an empirical distinction here. There is no a priori means of deciding how much of the meaning of a grammatical constituent is inherent to it and how much is contextually determined. I have cited instances where I believe there are principled reasons for positing a greater role for contextual influence and a lesser one for constituent meaning: the analysis of presupposition by Fillmore (1968b) and (1970) in *bend the handkerchief* makes the stiffness that we understand as a property of *the handkerchief* come not from that constituent itself but from *bend*. This seems the most likely analysis by far, since if we considered
stiffness a part of the constituent meaning, we would have to say that native speakers know at least two lexical items pronounced handkerchief, one occurring in bend the handkerchief, a stiff one, and another in fold the handkerchief; and then we would have to say that there are more than two, e.g., wring out the handkerchief has a wet one, wet the handkerchief has a dry one. In The handkerchief plummeted downward and The handkerchief floated up into the air we have a heavy and a light one respectively. With cross classification of the three dichotomies uncovered so far there would be eight distinct lexical entries for handkerchief, (a) a stiff dry light one, (b) a stiff dry heavy one, and six more.

Note that if we add Bird's artifact-real thing dichotomy to the list of semantic properties that must be included in the analysis of the lexical meaning for handkerchief and we cross-classify properly, e.g., to distinguish between the representation of a non-stiff, wet, heavy one in a Salvador Dali painting and a real, non-stiff, wet, heavy one hanging out on someone's washline, then we would be up to sixteen homophonous lexical items. And of course it doesn't end here. Bird (personal communication) has pointed out that the expression put together with a singular object, imposes on that object the presupposition of its being in pieces before the action takes place, e.g., I put the vase together. To this we can oppose an expression like take apart which imposes on a singular object the presupposition of its having been whole before the action took place. Thus, I put the handkerchief together and I took the handkerchief apart presupposes two different kinds of handkerchiefs. If one followed the path of
making all such aspects of interpretation lexical properties of the noun itself, we would have the unlikely situation of a vast number of nouns in the lexicon with a feature [+ IN PIECES] as an inherent property of meaning; in addition, we would be up to thirty-two homonymous lexical entries pronounced handkerchief. Mark Long has noted that in the expression The handkerchief turned green, it is presupposed that the handkerchief was some color other than green to start out with. To make this aspect of meaning a part of the lexical meaning would produce the curious state of affairs of having a large number of lexical items with the inherent feature [- GREEN], and of course there would have to be comparable negative feature for every color word, etc. in the language. With only the color green, the number of homonyms handkerchief is already up to sixty-four.

If we permitted such an analysis, it is altogether possible that we would have to give up the idea of the lexicon as a set of primes for the semantic structure of utterances, and rather devise some new theory where "lexicon" denoted the output, perhaps potentially infinite, of some finite number of generative rules, and some more abstract set of primes, and where by some unexplained accident there is an extraordinary number of homonyms. But, of course, there still have to be a finite set of primes.

Not all lexical meaning can be successfully described with discrete semantic features of general import for a large number of entries. Indeed, lexical entries would appear to be at least in part idiosyncratic Gestalts, e.g., consider what the lexical entry for the noun ravioli is in respect to its semantic characterization and
what makes it distinctive from all other nouns in the lexicon. But be
they Gestalts or be they combinations of feature matrices plus
idiosyncratic and unanalyzable Gestalts, the semantic properties of
lexical items must be just those which distinguish different meanings
from each other. Thus, the inherent semantic properties of
handkerchief should be just those truth conditions which distinguish
the universal set of objects by that name from all other non-identical
universal sets.

It is not my claim that the neuro-physiological reality
corresponding to linguistic competence is made up entirely of
discrete subparts or that there is a discrete boundary between
linguistic and non-linguistic aspects of cognition or physiology.
In particular I do not believe that there is in reality a discrete
boundary between the linguistic and the non-linguistic cognitive
properties of a word. The cut-off point is an abstraction made for
the purposes drawn in a principled manner.

At the beginning of Chapter I I discussed the analytical
nature of scientific models vs. the oftentimes non-analytical structure
of the parts of the universe that those models are designed to describe.
Whatever the neuro-physiological nature of language is, however, we
do know that it is finite. As scientists, we seem committed to
describing reality in terms of discrete models with discrete subparts,
with the result that much of what we are doing is probably doomed
forever to a certain degree of inaccuracy. Explanatory adequacy would
seem to amount to making the best of this dilemma be deciding which
aspects of what we are describing are most important, and finding
principled ways of making our model represent those before all else. From my point of view, the finiteness of linguistic competence is near the top of the list; if this assumption is well-founded, and if we have a principled basis for positing a smaller number of discrete subparts as lexical primes than would be necessary otherwise, then it seems to me there is theoretical support for abandoning the strictures of the weaker theory of semantic interpretation in Katz and Fodor (1963) and allowing interpretive rules that capture contextually determined meaning. It is a natural extension of Fillmore's notion of 'lexical presupposition' to have the functional meaning associated with constituents, AGENT, INSTRUMENT, etc. contextually determined, too.

The notion of contextually determined meaning is the key to explaining the linguistic competence of people for generating all and only the well-formed utterances. Grammars limited to sentences, and largely ignoring elliptical sentences have not had to face this theoretical problem squarely. Linguistic units are always used in a context and a major theoretical task for linguistics is to develop a unified theory of context, be it linguistic or extra-linguistic.

2.3 Lexically Determined Functional Meaning: Complex Correspondences
In Deep Structure Between Semantic Functions and Grammatical Relations

There is not a one-to-one correspondence between semantic functions and positions on a tree in a syntactically motivated deep structure, nor a one-to-many correspondence. There are rather one-to-many correspondences in both directions.
It should be remembered that Chomsky was the first to point out the inadequacy of the system of grammatical relations he himself formalized in Chapter II of *Aspects* (Chomsky, 1965). That theory of grammatical relations posited one-to-one correspondences between positions on the tree (defined by the notion 'immediately dominated by'), and a consistent and unique aspect of relational meaning. For example, subject of is presumably a unique and consistent aspect of sentential meaning corresponding to the NP immediately dominated by S; however, in Chapter IV of the same book (pp. 160-163), Chomsky presents well-chosen examples that belie the claims of Chapter II, e.g., the following pair:

(11) a. John strikes me as pompous.

b. I regard John as pompous.

Chomsky points out that there is no syntactic motivation for making the word order of one of this pair of sentences more basic than the other. We will say that the first person pronoun I/me is called the 'experiencer' in the propositional meaning of these sentences; then notice that this part of the relational meaning is manifested in subject position in (b), but in object position in (a). In his analysis of psychological predicates, Postal (1970a) makes all 'experiencers' underlying subjects, but he does not present any convincing syntactic evidence in support of this decision, cf., Kimball (1970).

Various proposals have been put forth as a means of making the Chomsky (1965) notion of grammatical relations a workable one. Consider the verbs *break*, *cook* and *eat*. All three can be used
transitively, with what could be called an AGENT in subject position, and a THEME of change of state in object position.

(12) \[ NP_1 \quad NP_2 \quad = \quad AGENT \quad THEME \]

a. John broke the egg.
b. John cooked the egg.
c. John ate the egg.

All three verbs can be used intransitively as well, but in this case the possible correspondences between syntactic position and semantic function vary from verb to verb.

(13) \[ NP_1 \quad = \quad AGENT \quad \]

a. *John broke.
b. John cooked.
c. John ate.

(14) \[ NP_2 \quad = \quad THEME \quad \]

a. The egg broke.
b. The egg cooked.
c. *The egg ate.

Sentence (13a) is acceptable only if John can be conceived of as the THEME of the change of state 'break', and therefore fulfilling the presupposition 'brittle'. In order for (13a) to be acceptable then George broke John would have to be, too. This is possible in only a metaphorical extension of the basic meaning of break used in colloquial style. Sentence (14c) is acceptable only in the fairy tale-like situation where an egg is conceived of as being able to ingest food in a manner similar to a fully-formed animal; in this case, the egg is fulfilling the semantic function AGENT and it ought to be just as acceptable to say The egg ate the bacon.
Hall (1965) proposed a deep structure analysis of sentences such as those in (14) that would allow consistent semantic correlates for deep structure grammatical relations. She proposed that the initial symbol #S# be rewritten by PS rules with an optional subject NP, \( S \rightarrow (NP) \ VP \), and that there be a subject formation transformation in certain cases that could move an object NP from the VP into subject position. Then, her analysis would have examples such as the well-formed ones in (14) as subjectless sentences in deep structure, with the egg in object position just as it would be in the transitive sentences in (12), e.g., the derivation of The egg broke:

(15) a. \[ S \rightarrow (V P) \]
    \[ V \rightarrow \text{broke} \]
    \[ \text{NP} \rightarrow \text{the egg} \]

    b. \[ S \rightarrow (NP) \ VP \]
    \[ \text{NP} \rightarrow \text{the egg} \]
    \[ V \rightarrow \text{broke} \]

Fillmore's case grammar generalizes the notion of a subject formation rule, but at the same time gives up trying to exhaustively define semantic functions in terms of deep structure syntactic position. Indeed the full array of meanings that can be manifested in syntactically motivated deep structure grammatical relations make any such system unfeasible. Thus, Fillmore adopted the use of semantic labels on underlying tree structures.

For one thing, subjects can have a number of other semantic values beside AGENT: (13) and (14) provide some examples; in Fillmore's terms (16a) has a DATIVE subject, (16b) a LOCATIVE and (16c) an OBJECTIVE.
(16)  a. John received the package.  
b. The room filled with people.  
c. Bill got sick.

For another, the same semantic functions correlate with different syntactic positions.

(17)  a. The package got to John.  
b. People filled the room.  
c. The experience sickened Bill.

One can continue trying to extend the procedure adopted by Hall, which is to make deep structure abstract enough, with a correspondingly complex enough set of transformations, so that it is possible to provide a unique grammatical relation in deep structure for each semantic function. There are, however, two kinds of facts that make it clear that any such attempts will be bound to frustration.

First, any interesting account of functional meaning will have to be able to do one of the things that Gruber's (1965) generative semantics does, and that is to assign more than one semantic function to a single syntactic constituent. There is an interesting relation between pairs of verbs like teach, learn and lend/borrow. In Gruber's terms there is motion (abstract motion in teach/learn, possessional motion in lend/borrow) between a SOURCE and a GOAL in the propositional meaning of all of these verbs, but in one member of each pair the motion goes from left to right, while in the other it goes from right to left.

(18)  a. John taught French to Bill.  
b. John lent money to Bill.

SOURCE ← THEME → GOAL
    b. Bill borrowed money from John.

    \[ \text{GOAL} \leftarrow \text{THEME} \rightarrow \text{SOURCE} \]

On the other hand, the subject is the one who is taking initiative in all four cases, so that the semantic function AGENT should be assigned to the subjects of \textit{teach} and \textit{lend} along with \textit{SOURCE}, and to the subjects of \textit{learn} and \textit{borrow} along with \textit{GOAL}.

(20) a. John taught French to Bill.
    b. John lent money to Bill.

    \[ \text{SOURCE} & \text{AGENT} \leftarrow \text{THEME} \rightarrow \text{GOAL} \]

(21) a. Bill learned French from John.
    b. Bill borrowed money from John.

    \[ \text{GOAL} \leftarrow \text{AGENT} \rightarrow \text{THEME} \rightarrow \text{SOURCE} \]

Given this semantic analysis, the only way to have a unique deep structure source for each semantic function would be to have the constituents that show up as grammatical subjects occur more than once in underlying representations and have one of their occurrences deleted on the surface. This is precisely what Gruber does in going from his prelexical representation to deep structure, but the prelexical representation is by definition a semantically motivated entity, not a syntactic one.

One can get around this problem by having a less abstract semantic analysis as would be the case in Fillmore's case grammar. Then the same analysis in terms of semantic functions would be given to all four of the sentences, \textit{AGENT} – \textit{VERB} – \textit{OBJECT} – \textit{LOCATION}. The
difference between the LOCATION phrases would be attributed to the prepositions to and from; the difference between the subjects of teach and lend on the one hand (starting points for motion), and learn and borrow on the other, would be due to the idiosyncratic meaning of the verbs. But Gruber's work shows that his more abstract analysis captures many more regularities of semantic structure, and cooccurrence restrictions stemming from it. In Chapter III more use will be made of Gruber's thematic relations and it will be demonstrated that motion between SOURCE and GOAL is a more pervasive aspect of semantic structure than even Gruber showed.

The second relevant fact here is that there is good reason to posit more than one instance of the same semantic function in the same sentence in some cases. One difference between the verbs send and bring is that in the former the subject remains stationary and the motion emanates from it, while in the later the subject moves along with the object, e.g., in John brought the book to Bill, John moves along with Bill, while in John sent the book to Bill, John remains stationary. One might wish to say that this aspect of the meaning is just an idiosyncratic aspect of the meaning of the verb again, but these are not the only verbs so differentiated, and the motion of John in John brought the book is certainly just as prominent as the motion of the book. In Gruber's terms, John and book are both THEME of motion.

The verbs that Gruber calls transactional, like buy and sell involve two propositions of motion. A piece of merchandise moves from the salesman to the customer, while money moves from the customer to
the salesman. There are then two SOURCES, two GOALS and two THEMES of motion.

(22) a. John bought a car for $50 from Bill.

\[
\begin{align*}
\text{GOAL} & \leftarrow \text{THEME} \rightarrow \text{SOURCE} \\
& \quad \text{(car)} \\
\text{SOURCE} & \leftarrow \text{THEME} \rightarrow \text{GOAL} \\
& \quad \text{($50)}
\end{align*}
\]

b. Bill sold a car for $50 to John.

\[
\begin{align*}
\text{SOURCE} & \leftarrow \text{THEME} \rightarrow \text{GOAL} \\
& \quad \text{(car)} \\
\text{GOAL} & \leftarrow \text{THEME} \rightarrow \text{SOURCE} \\
& \quad \text{($50)}
\end{align*}
\]

Unless one wants to make a less abstract analysis, in which the recurrence of the basic thematic motion proposition is submerged into 'idiosyncratic verb meaning', it would appear that to supply unique deep structure grammatical relations for each semantic function, there would have to be a number of clauses underlying the simplexes that show up on the surface. But of course there is no syntactic motivation for this.

Bird (1970a) presents examples of the same import: more than one occurrence of the same semantic function in the same simplex, this time in the noun phrase. He presents NPs with three AGENT constituents!

(23) Toscanini's symphonies of Beethoven by RCA...

Bird's observations are paralleled by those of Rader (1971) who points out instances of multiple instruments in examples such as:

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(24) a. We unlocked the door with an electric key with a remote control operating device.
b. A remote control operating device unlocked the door with an electric key.

To be sure there is a semantic hierarchy among these multiple AGENTS and INSTRUMENTS that has a number of interesting syntactic consequences. Bird and Rader account for the syntactic consequences in an interesting manner in their respective papers.

All of this is evidence against the hypothesis that unique deep structure sources can be posited for each semantic function, where deep structure is a syntactically motivated level of abstraction. In a theory committed to a syntactically motivated deep structure, then, correspondences between grammatical relations and semantic functions will be many-to-one in both directions. This is reason for using lexical entries for propositional heads as operators (cf., Jackendoff forthcoming) to establish the correspondences. It is just at this level that by definition syntactic cooccurrence is defined for propositional heads (REFEREES) and just here then that the correspondences to semantic functions can be defined most economically. In Chapters III and IV a number of lexical entries will be presented for verbs. Correspondences between complex semantic structure and syntactic cooccurrence features for verbs and other propositional heads are accounted for in a revealing way there, one which allows for an adequate description of elliptical utterances.

Note that in standard transformation theory, from Syntactic Structures on, as well as in earlier grammatical theories, there seems to have been an implicit assumption that the least marked and most
"normal" order of constituents is essentially that which occurs in the surface structure of active declarative, non-emphasized utterances, and this is what PS rules in standard theory grammars have been designed to generate. Note also that it is just in the word order of active, declarative, non-emphasized utterances that PLAYERS are most easily locatable with respect to their REFEREES. Permutations that occur in the formation of information questions, topicalized structures and emphasized structures, e.g., Beans I like, Out of the house stomped John, To none of his associates did he breathe a word, typically wrench complements out of the phrases in which their heads occur. It is significant that given the order of constituents that is assumed in deep structure in standard transformational theory, no syntactic phenomena have been discovered which move heads away from their complements; rather, rules have been proposed which move complements away from their heads.

It would appear that in order to assign the lexical features to heads of VPs, PPs, NPs and APs necessary to account for the well-formedness and meaning of their combination with other constituents, that it would be best to refer to some single order of constituents, i.e., before various permutation transformations have a chance to operate, and this could be none better than the order necessary for affirmative, declarative, non-emphasized utterances. Deep structure then becomes the level of syntax for which lexical cooccurrence features can be most succinctly defined. In this view, deep structure is abstract in the sense that other word order is derived from it by permutation transformation, but not unlike surface structure for an
important class of utterances. Jackendoff (1969) has argued that there are aspects of semantic interpretation and well-formedness that depend on surface structure word order, cf., also Chomsky (1969). It may well be that there is a natural division between the aspects of propositional structure that I have concerned myself with in this study, and those considered by Jackendoff. I have concentrated on heads of VPs, PPs, NPs and APs and the correspondences between form and meaning in the aspects of grammar where these heads are involved seem naturally referable to a syntactically-motivated deep structure; however, Jackendoff’s work on negation, quantifiers and adverbs makes it appear that surface structure word order and the notion of scope in the hierarchy of surface structure configurations is the essential point of departure for those aspects of the grammar. There may, for example, be a distinction between what could be called surface structure REFEREES, e.g., quantifiers and adverbs, perhaps modals, and deep structure REFEREES, verbs, prepositions, nouns and adjectives: in other words lexical items that predicate meaning on constituents with which they cooccur, in the first case in terms of surface structure, and in the second in terms of deep structure. Jackendoff gives examples such as the following:

(25) a. Truthfully, John lied to Bill.
b. John truthfully lied to Bill.
c. *John lied to Bill truthfully.

If the adverb truthfully is moved by transformation either in or out of the position that it occupies in (25c) then semantic interpretation will have to wait until after that transformation has
operated. It would appear that one could argue that adverbs of this kind are heads that predicate meaning in terms of surface structure configuration. On the other hand, there is no comparable situation for the lexical items that I have been calling REFEREES throughout this chapter. Consider variations on example(1b)

The Pink Panther stole the crown jewels from the queen.

(26) a. Which jewels did the Pink Panther steal from the queen?
b. Who did the Pink Panther steal the crown jewels from?
c. From the queen the Pink Panther stole the crown jewels.
d. The crown jewels the Pink Panther stole from the queen!

There may be instances of surface structure interpretation of presupposition, emphasis, etc. in these examples; however, the propositional structure that involves the lexical entries for the verb steal and the preposition from is the same in all these utterances. On the other hand, if one tried to carry out semantic interpretation, indeed check syntactic well-formedness, in those aspects of utterance construction that are governed by the lexical entries for verbs and prepositions, and do all this in surface structure, the task would be accomplished very inelegantly indeed, and it might prove impossible. The lexical entries for these items would have to have cooccurrence features for locating its complements in all the possible surface structure configurations that are allowed in the grammar. Given that in the formation of information questions the interrogated constituent can be raised from an unlimited depth of embedding, this makes it seem dubious that lexical entries could be written for Vs, Ps, Ns or As in surface structure.
(27) What on earth did Mack say Robin told him Sarah reported having read in the newspaper that the Pink Panther stole from the queen?

The standard theory procedure of assigning a semantic function to the NP what on earth in deep structure is exactly right. In both standard theory and the theory developed here, it is the position of this NP in the clause with stole that determines its semantic function. To assign the semantic function instead in surface structure would be much more complicated: there would have to be scanning procedure checking each clause, and each lexical entry for a REFEREE to find an instance of an ellipted argument.

2.4 Lexically Determined Functional Meaning: A Criterion for Deciding Between Lexicalist and Transformationalist Hypotheses

In Shopen and Konaré (1970), it is argued that transformations should not be allowed to change the properties of lexical entries that govern propositional structure. Chomsky (1968) gives evidence that English deverbal nouns are idiosyncratically related to the verbs to which they are morphologically related in terms of their meaning and cooccurrence restrictions, so that they should be lexical entries in their own right. He makes it clear that he expects cooccurrence restrictions between heads and their complements to be lexically defined, but he does not go so far as to say that propositional structure, i.e., the assignment of semantic functions to heads and complements, bears directly on the problem; however, he does much
to suggest that it is relevant. For example, he points out the following data:

(28)  
   a. John amused the children with his stories.  
   b. *John's amusement of the children with his stories...  
   c. *The amusement of the children with funny stories by John...  
   d. John's amusement at the children's antics...

The verb *amuse allows the imposition of an AGENT interpretation on the subject NP onto which it is predicated, while the noun *amusement does not allow a similar interpretation to be imposed within the NP. In contrast, there are many examples like the following:

(29)  
   a. John educated the children.  
   b. John's education of the children...

The ill-formedness of (28b) and (28c), therefore, has to do with peculiar lexical properties of the lexical entry for *amusement. In addition to the other arguments amassed by Chomsky, an important reason for making deverbal nouns lexical entries in their own right is that their properties as REFEREEES cannot be predicated from the lexical entries for the corresponding verbs, i.e., it cannot be predicated from the lexical entry for the verb what the freedom of occurrence is for the deverbal noun in well-formed propositional structures. It seems to me that this is a necessary conclusion no matter what theory of propositional structure one adopts, since in any case the lexical entries for heads must have syntactic and semantic cooccurrence features.

A frequent situation is for more propositional structure to be required for the verb than for the deverbal noun, and also,
especially where the passive construction is involved, for the propositional structure governed by the deverbal noun to be less determinate than in the case of the verb.

(30) a. *We expected.
    b. Our expectation was not fulfilled.

(31) a. *We loaned.
    b. Our loan was worth $50 in American currency.

(32) a. *We surprised.
    b. Our surprise was too much for Karl.

(33) a. *We complimented.
    b. Our compliment was extravagant.

There is an obvious difference in semantic interpretation in the last three pairs of examples. The possessive construction with Our has a less determinate meaning that the subject NP-VP construction with We. The possessive pronoun has to be interpreted as having a "close relationship" with the head noun. The precise semantic function imposed on the possessive pronoun depends on the properties of the head noun for propositional structure, i.e., the way it allows the possessive pronoun to "plug in" to its propositional meaning.

In the case of loan, surprise or compliment, we can understand our to refer either to an actor or to a patient. The possessive construction itself should not be called ambiguous but indeterminate. If we impose a specific semantic function AGENT-SOURCE on the one hand (the loan by us or the loan from us) or GOAL on the other (the loan to us), on the our of Our loan (31b), it is by an interpretative rule. The range of choices possible for semantic functions to be
imposed on our is limited by the head noun loan, the REFEREE that
governs the phrase. Note that our loan can be interpreted differently
from either the loan to us or the loan from us: it could be a loan
that "we" are intermediaries for in some sense, that we are investi-
gating for the Treasury Department, etc.; in other words, as is
generally the case in possessive constructions with propositional
nouns, imposition of propositional meaning from the noun itself is
optional. When no specific propositional meaning is supplied in
semantic interpretation by the head noun in these constructions, then
the possessive structure itself seems to impose its own meaning, a
very indeterminate one closely paraphrasable by clauses with have,
e.g., We have a loan (to investigate), We have a loan (to mediate),
We have a loan (to certify). 5

2.5 Syntactically Determined Functional Meaning

Up until now we have discussed propositional meaning that is
determined by REFEREES, propositional heads having phonetic manifesta-
tion. They assign functional meaning to PLAYERS, syntactic constituents
having phonetic manifestation. There are important instances in all
languages that I am acquainted with where functional meaning is
grammatically determined without the presence of a REFEREE. I am not
referring to cases such as A cup of coffee (which will meet our
definition of functional ellipsis about to be presented in the next
chapter), where a wide choice of semantic function is left open for the
NP, and none is determined within the utterance itself; rather I
mean cases where the assignment of functional meaning is determined

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by the syntax of the utterance. One of the most important instances of this in English is sentence adverbs, e.g., the sentence interpretation of the example from Chomsky (1965): 6

(34) John decided on the boat.

Sentential adverbs constitute only one kind of syntactically determined functional meaning. There is the case in Russian where the present tense of copular sentences has no verb: there is a verb to be for He was a student and He will be a student, but not for He is a student. Since NPs like a student are not ordinarily predicates (cf. the verb study, He studies, etc. which always looks for a subject), I want to be able to say that this construction in Russian is without a REFEREE, and that it is structurally determined.

There are a number of interesting constructions in English with syntactically determined meaning, including a great many where some adjunct is added to the nucleus of the sentence making some additional predication onto the surface structure subject, e.g.,

(35) a. The farmer milked the cows before eating supper.
    b. The cows were milked by the farmer before eating supper.

In my dialect phrases like before eating supper have grammatically determined subjects only if an appropriate one is in surface structure subject position.

(36) a. George was easy to please, before going to college.
    b. It was easy to please George, before going to college.
In (36a) it is George who went to college. This interpretation is not possible in (36b); instead, we must import some subject not realized in the context of the sentence, e.g.,

\[ (37) \]

a. It was easy for us to please George, before we went to college.

b. It was easy for the children to please George, before they went to college.

It will be noted that when the surface structure subject of the main clause does not supply a subject for the phrase beginning \textit{before}, that we understand the same subject for both \textit{please} and \textit{going}. That the principle of main clause subject predominates is illustrated by the following:

\[ (38) \]

George was easy for Hilda to please, before going to college.

Here it can only be George who went to college, not Hilda. That the only grammatically determined subject for \textit{going to college} can be the main clause surface subject is illustrated by the unacceptability of the following example. This judgement represents my dialect and some of the informants I have checked. I have found other informants for whom this example is acceptable:

\[ (39) \]

?*It was easy for Hilda to please George, before going to college.

The facts vary from dialect to dialect, but it remains the case that without a governing \textsc{REFEREE}, functional meaning is determined for NPs in various positions on the tree by the structure itself. It is current practice to analyze such constructions with underlying
constituents that get deleted on the surface. I see no reason to view these as instances of ellipsis, however, and prefer to introduce the notion 'syntactically determined meaning' into the grammar. These cases are all ones with highly determined functional meaning, not the indeterminacy typical of ellipsis. There will be an interpretive rule that accounts for how extra adjunctive constructions can be interpreted as predications on the grammatical subject. By accounting for them with the notion 'syntactically determined meaning', we clear the way for an account of the kind of ellipsis which is characterized by indeterminate meaning, aspects of meaning where the grammar does not complete the job.

Concessive phrases are an interesting instance of structurally determined meaning:

(40) a. Though a crook, Mack treated Betty with kindness.
    b. Though a crook, Betty was treated by Mack with kindness.

Here again, it is the surface subject that receives the predication.

(41) a. Though reluctant, Agamemnon sacrificed Iphegenia at Aulis.
    b. Though innocent, Iphegenia was sacrificed by Agamemnon at Aulis.
    c. ?Though innocent, Agamemnon sacrificed Iphegenia at Aulis,
    d. ?Though reluctant, Iphegenia was sacrificed by Agamemnon at Aulis.

In the following set of examples we see that the semantic properties of the concessive phrase itself are relevant to the acceptability of the overall construction.
(42) a. Though antiquated, the violin was perfect to play the sonata on.
    b. Though antiquated, the sonata was perfect to play on the violin.
    c. *Though antiquated, it was perfect to play the sonata on the violin.
    d. Though hot and humid, it was perfect to play the sonata on the violin.

(42d) is acceptable while (42c) is not. (42d) can be interpreted as a kind of sentential adverb: it is a weather expression and needs only an expletive it as subject in a full clause (It was hot and humid). Antiquated, on the other hand, needs some kind of grammatically determined subject, and in this construction (in my dialect at least), it has to be the surface subject.

As a final example, consider the construction that follows:

(43) a. John came back from Newark a crook.
    b. John came back from visiting Henry a crook.

The surface subject gets the extra predication. It would be difficult to derive these examples by deletion rules.

(44) a. John came back from visiting Henry, who is a crook.
    (≠ 43b)
    b. *John came back from Newark, who is a crook.
    c. John, who is a crook, came back from Newark.
    (≠ 43a)

The closest paraphrases:

(45) a. When John came back from Newark, he was a crook.
    b. When John came back from visiting Henry, he was a crook.

If one wanted to derive (43) from (45), it would be necessary to completely rebuild the trees making subordinate clause into main
clause, and main clause into a truncated adjunct. Instead of going
this route, I would opt for generating the utterances of (43) in
deep structure very much as they are on the surface and having
interpretive rules to capture the notion 'syntactically determined
functional meaning'.

This brief section is not intended as any more than an outline
of the notion introduced here. Much more deserves to be said. The
notion of syntactically determined functional meaning is a necessary
one in a negative sense, for I shall not consider examples of the
sort considered in this section in my treatment of ellipsis.

There are then in my analysis three sources of functional
meaning: all PLAYER constituents by definition require functional
meaning to be predicated onto them and this can be accomplished (a) by
lexical determination — REFEREES impose an interpretation on the
PLAYERS for which they are subcategorized; (b) by syntactic deter-
mination — the construction itself, without a REFEREE, imposes a
functional interpretation on a PLAYER; finally, (c) by a 'free'
interpretation — the PLAYER has no REFEREE and does not participate
in a larger construction which could assign a semantic function to it.

Examples of each of these three are presented in turn:

(46)  a. The D.A. read the indictment to the Pink Panther.
       b. The Pink Panther, a well-known jewel thief, was
          accused by the D.A. of having stolen the crown
          jewels from the queen.
       c. The Pink Panther!

In (46a) the NP the Pink Panther receives the semantic function
GOAL from the verb read; in (46b), besides the lexically determined
functional meaning it receives from the verb *accuse*, this same NP
becomes the subject for a second NP acting as a predicate in an
appositive construction, where it is just the syntax of the appositive
construction, not any governing REFEREE, that determines the
propositional meaning; in (46c) there is no structurally determined
semantic function, and only a 'free' interpretive rule can attach
functional meaning, e.g., THREAT, REQUEST. In the last case, the
only grammatical constraint on the choice of a semantic function is
the semantic compatibility of the functional meaning with the
constituent meaning of the PLAYER: presumably, the Pink Panther could
not be interpreted temporally, e.g., (46c) could not be acceptable as
a short answer to the question, What time will you be home for supper?

Syntactically determined functional meaning is akin to the
lexically determined variety in that grammatical structure narrows
down the possible choice of semantic functions, usually to just one.
We want to have a semantic analysis of the appositional and adjunctive
structures in (47) similar to the ones we have for the lexically
governed structures in (48). All are describable with a semantic
predicate of abstract location.

(47) a. The Pink Panther, *a jewel thief* ... (NP Apposition)
b. The Pink Panther returned from Europe *a jewel thief*.
   (NP Adjunction)

(48) a. The Pink Panther is a jewel thief.
b. We consider the Pink Panther a jewel thief.

The semantic predicate *LOCATION* \( x \ y \) is to be understood '\( x \) has
the location \( y \)': the \( x \) is, in Gruber's terms, the *THEME* of location,
while the \( y \) is the LOCATION. Consider the same examples parsed semantically:

\[(49)\]

a. \( \text{The Pink Panther, a jewel thief...} \)
\[
\begin{array}{c}
\text{x} \\
\text{y}
\end{array}
\]

b. \( \text{The Pink Panther returned from Europe a jewel thief.} \)
\[
\begin{array}{c}
\text{x} \\
\text{y}
\end{array}
\]

c. \( \text{The Pink Panther is a jewel thief.} \)
\[
\begin{array}{c}
\text{x} \\
\text{y}
\end{array}
\]

d. \( \text{We consider the Pink Panther a jewel thief.} \)
\[
\begin{array}{c}
\text{x} \\
\text{y}
\end{array}
\]

In each case "The Pink Panther" is "located" in the set "jewel thief". In the lexically determined meaning, the lexical entry for the governing verb shows a correspondence between the two NPs and the terms of the semantic description. Consider a first approximation for the lexical entry in its copular uses. \textit{Be} is analyzed in greater detail in Chapter IV. We will adopt from now on the practice of displaying the NP subject in the syntactic cooccurrence feature for verbs, for ease of exposition.

\[(50)\]

\[
\begin{array}{c}
\text{(a)} \\
\text{(b)} \\
\text{(c)} \\
\text{(d)} \\
\text{(e)}
\end{array}
\]

\[
\begin{array}{c}
\text{be, +V +AUX, [NP[AP] (PP)] [LOCATION x y], ...}
\end{array}
\]

(a) is to be the phonological representation of \textit{be}, while (b) is its categorization; (c) is its syntactic cooccurrence feature, and we see that NP, AP or PP can be predicated onto the subject; (d) is the semantic template that matches the syntactic feature, and the terms of the semantic structure appear as indexes under the syntactic...
constituents to which they correspond; (e) is for whatever constituent meaning, if any, we might want to articulate for be.

It is through lexical entry (50) that (48a) *The Pink Panther is a jewel thief* is interpreted for its functional meaning. A somewhat more complex lexical entry for *consider* includes the same predicate LOCATION as a subpart, and this predicate is also a part of the interpretive rules that represent the syntactically determined meaning of appositive constructions.

Consider first the analysis of the appositive construction involving commas, as in (46b) and (47a). Just as there is a syntactic cooccurrence feature in the lexical entry (50c), so there is a description of the syntactic structure in the interpretive rule their function is precisely the same in semantic interpretation and they could be given the same name. Just as there is a semantic template in the lexical entry (50d), so there is a description of the corresponding semantic structure in the interpretive rule. This first approximation of the interpretive rule is *not* to be construed as a transformation, but rather as a statement of correspondence:

\[(51)\]

**APPOSITIVE NOUN PHRASE INTERPRETIVE RULE**

a. \[X - \text{NP} - , - \text{NP} - , - X \leftrightarrow \text{[LOCATION} x \ y \text{]}\]

\[\begin{array}{cccccc}
\text{x} & \text{y} \\
1 & 2 & 3 & 4 & 5 & 6
\end{array}\]

b. *The Pink Panther, a well-known jewel thief, was accused by the D.A. of having stolen the crown jewels from the queen.*

The commas in the rule (subparts 3 and 5) are to represent the intonation of this kind of apposition. The indexes x and y under parts
2 and 4 on the left hand side of the two-way arrow are showing the correspondence to the semantic structure. It is to be stressed that the rules for appositive and adjunctive NPs presented here are first approximations, presented as examples of the kind of rule that are to be employed.

The formal difference between NP apposition and NP adjunction is one of intonation. The semantic difference is that the structure with commas, the appositive NP, always modifies the first NP to the left, while the one with sustained intonation, the adjunctive NP, is a modifier of the grammatical subject. A complex set of conditions are necessary. (52a) will apply to (52b), but not to (52c).

(52)

**ADJUNCTIVE NOUN PHRASE INTERPRETIVE RULE**

a. \( X - NP - X - NP - X \leftrightarrow [LOCATION \ x \ y] \)
\[ \begin{array}{c c c c c}
1 & 2 & 3 & 4 & 5 \\
\end{array} \]

Conditions: (i) 2 & 4 are clause mates; (ii) 2 & 4 are part of the same sustained intonation curve; (iii) 2 = grammatical subject; (iv) 4 is not a PLAYER for any REFEREE; (v) 5 does not contain any PLAYERS for a REFEREE in 3

b. The Pink Panther came back from visiting Henry a well-known jewel thief.
c. The Pink Panther came back from visiting Henry, a well-known jewel thief.

3. **The Definition of a Well-Formed Sentence**

3.1 **Intergrity**

Having outlined an interpretive theory of propositional structure, I believe that it will be possible for me to present a
coherent elaboration of the notion of grammatical completeness, and some further thoughts on the complementary notion of grammatical, well-formedness. The discussion will be an endeavor to sharpen the distinction introduced in the first section of this chapter between integrity, the internal well-formedness and completeness that is a property of all well-formed utterances, and independence which is a property of sentences alone.

In great part, syntax is the syntagmatic realization of the lexicon. Whether or not an utterance is grammatically complete frequently depends on the cooccurrence requirements of lexical heads, very often of verbs, e.g., Jack snored and *Jack sent differ in completeness and well-formedness even though their structure is identical in terms of syntactic configuration. In the terminology developed here, this amounts to saying that REFEREES differ in the number as well as the kind of PLAYERS that they require.

Fillmore (1968b) makes just this point when he compares the verbs rob and steal: he points out that although they have very similar propositional meaning, the two differ in the arguments that are required to be realized in the propositional structure of utterances, i.e., the arguments that must take on syntactic form. In the terms of case grammar, they both have meanings that involve three arguments, AGENT, DATIVE and OBJECT, but with rob OBJECT is optional, while with steal the DATIVE and OBJECT are optional.

(53)  a. Harry robbed a casino of its silver.
b. Harry robbed a casino.
c. *Harry robbed (of) its silver.
d. *Harry robbed.
(54) a. Harry stole silver from the casino.
b. Harry stole silver.
c. Harry stole from the casino.
d. Harry stole.

Fillmore's observations on these two verbs demonstrate the need for a distinction between propositional meaning on the one hand and its syntagmatic realization (propositional structure) on the other. The two verbs differ not so much in their propositional meaning as in their propositional structure. In a number of dialects, including my own, John stole the money is acceptable but not *John robbed the money. It could not be the case that *John robbed the money is semantically anomalous: the major characteristics of its propositional meaning the same as in the quite acceptable John stole the money. It is rather the way in which the propositional meaning finds syntagmatic manifestation that is anomalous in *John robbed the money.

Satisfying the requirements for propositional structure in lexical entries for REFEREES corresponds to the aspect of grammatical completeness and well-formedness that I have called integrity. If heads occur in utterances with too few, too many or the wrong kind of constituents to be incorporated in the propositional structure specified in their lexical entries, then the utterance has an internal ill-formedness. Note that propositional structure and integrity are notions that refer to sound-meaning correspondences. Thus, requirements for propositional structure can be violated in either form or meaning. *John robbed from the casino is ill-formed in my dialect because the arguments for rob are set forth in unacceptable form, cf. the acceptable John robbed the casino; on the other hand, *John robbed the
square root of three is unacceptable because an abstract noun phrase
like the square root of three is a semantically unacceptable argument.

Under the appropriate circumstances, the sentences in (55) are
well-formed; the sentences in (56) are ill-formed no matter what the
context. The latter are instances of not enough PLAYERS:

(55) a. Henry explained.
b. Fred promised.
c. Jack gave.
d. Ralph borrowed.
e. George kept the book.
f. Mildred looked through.

(56) a. *Henry expected.
b. *Fred surprised.
c. *Jack sent.
d. *Ralph loaned.
e. *George put the book.
f. *Mildred looked at.

The well-formed utterances on the left might each be called
elliptical in the sense that there are arguments of the propositional
meaning which are not realized syntactically; in fact, in exactly
this sense they will be called elliptical in Chapter III; on the other
hand, they are grammatically complete and well-formed in that they
meet the minimum requirements specified by the lexical entries for
the REFEREES, i.e., in the same way that John robbed the bank and
John stole the money are well-formed and complete. In other words,
they have integrity. It should be emphasized that this term is meant
to designate the aspect of well-formedness that corresponds to the
minimum requirements of REFEREES for propositional structure. Thus,
for a given REFEREE a range propositional structure is often allowed
within the limits of integrity, e.g., Henry explained and Henry
explained the algorithm to the class have different numbers of PLAYERS for the REFEREE explain, but both have integrity.

At the same time, an utterance can be ill-formed by having too many PLAYERS, which is to say more constituents than can be incorporated into a coherent propositional structure given the lexical entries for the REFEREES of the utterance, e.g.,

\[(57) \]
\[a. \text{*The professor talked about Chaucer's "Troilus and Criseyde" to us last week on Shakespeare's "Anthony and Cleopatra".} \]
\[b. \text{The professor talked about Chaucer's "Troilus and Criseyde" to us last week.} \]
\[c. \text{The professor talked to us last week on Shakespeare's "Anthony and Cleopatra".} \]

\[(58) \]
\[a. \text{*The operator explained the new dialing system carefully to me that long distance calls are cheaper after 11 PM.} \]
\[b. \text{The operator explained the new dialing system carefully to me.} \]
\[c. \text{The operator explained carefully to me that long distance calls are cheaper after 11 PM.} \]

\[(59) \]
\[a. \text{Jim compared the reception to the carnival.} \]
\[b. \text{*Jim objected the reception to the carnival.} \]
\[c. \text{*Jim enjoyed the reception to the carnival.} \]
\[d. \text{Jim objected to the carnival.} \]
\[e. \text{Jim enjoyed the reception.} \]
\[f. \text{*Jim sulked the reception.} \]
\[g. ?\text{Jim sulked to the carnival.} \]
\[h. \text{Jim sulked.} \]

Too many PLAYERS appears to me the worst kind of ill-formedness, worse than not enough PLAYERS or the wrong kind of PLAYERS. If I am correct in ranking too many PLAYERS as the worst kind of ill-formedness, a formal explanation can perhaps be provided by the notion of grammatical coherence. All utterances require grammatical coherence in order to be well-formed, as well as integrity. We have
coherence when each constituent in the utterance is incorporated into a unified propositional meaning. It is a violation of coherence if a PLAYER constituent goes without a semantic function. Note that each instance of too many PLAYERS is simultaneously a violation of not only integrity but grammatical coherence as well.

Utterances violating integrity by having the wrong kind of PLAYERS or not enough PLAYERS may still obtain coherence in many cases by a process of reinterpretation, and thus be more well-formed than an utterance all or parts of which it is not possible to incorporate into a unified propositional meaning. In this way we can account for the ability of native speakers of a language to understand non-native speakers trying to communicate, e.g., in English when the verb look is misused but where the semantic content is still quite obvious, *Look the man! (the wrong kind of PLAYER) or *Look at! (not enough PLAYERS for the REFEREE at). The notion of coherence is intended to include syntactically ill-formed but semantically interpretable utterances.

The third and last way in which integrity can be violated is when propositional heads are accompanied by constituents which do not meet the syntactic or semantic requirements specified in their lexical entries, i.e., not the wrong number, but the wrong kind of PLAYERS. The following examples illustrate how REFEREES specify the syntactic shape which their PLAYERS must assume and in some cases require idiomatic lexical entries:
(60)  a. Paul objected to the color scheme
    b. Paul disapproved of the color scheme
    c. Paul criticized the color scheme

(61)  a. *Paul objected of the color scheme.
    b. *Paul objected the color scheme.

(62)  a. *Paul disapproved to the color scheme.
    b. *Paul disapproved the color scheme.

(63)  a. *Paul criticized to the color scheme.
    b. *Paul criticized of the color scheme.

Examples (60)-(63) demonstrate that verbs can have peculiar
and distinct requirements for the form of the constituents that serve
as their complements, even when they have very similar meanings. The
same state of affairs pertains in the following examples:

(64)  a. We obey the law.
    b. We adhere to the law.
    c. We abide by the law.

Propositional structure as I have defined the term is the
correspondence between the constituents of the syntactic structure and
the subparts of semantic structure in utterances. The correspondence
between propositional meaning and syntactic form can be described to
a considerable extent by general rules, but at the same time there is
a considerable amount of idiosyncracy within the general framework
which is due to the lexical entries for the heads that govern
propositional structure within their phrases, i.e., REFEREES. The
extent to which the knowledge of particular words is indispensable
for knowing how to give syntactic form to propositional meaning in

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English can be illustrated in a comparison of the verbs ask and inquire. There can be no doubt that these verbs express similar propositional meaning; with no other apparent explanation than that of lexical idiosyncracy, however, they have different syntax.

(65) a. Tom asked Bud what his shoe size was.
    b. Tom inquired of Bud what his show size was.

(66) a. Tom asked Bud his shoe size.
    b. *Tom inquired of Bud his shoe size.

Ask and inquire both take an indirect object: with the former it is an NP while with the latter it is a PP with of as its head. Of greatest interest is the direct object. With ask the direct object can be either an NP or an included question construction, presumably an S. Any NP is acceptable as long as it can be interpreted as a question, e.g., Tom asked Bud his weight, ...the name of home town, ...his favorite baseball team, but not *Tom asked Bud his shoe under usual circumstances. With inquire, only the included question construction is allowed, unless the direct object is interrogated, at which point both verbs allow the interrogative pronoun what:

(67) a. What did Tom ask Bud?
    b. What did Tom inquire of Bud?

Both verbs allow a complement about NP in place of the direct object discussed above, but in this case the meaning is not the same, e.g., Tom asked Bud about his shoe, Tom inquired (*of Bud) about his shoe, where the NP object of about does not have to itself be interpretable as a question; the interpretation of the expression as a
whole is 'formulate a question about NP' without saying what the
test is. Lass (personal communication) points out that there is
also e.g., What did Tom ask of Bud? This indicates a favor, request,
etc., while (67b) indicates a question.

Other verb pairs with similar propositional meaning but
different syntax are teach vs. instruct and order vs. command, e.g.,

(68) a. The general ordered the troops to go to the front.
b. The general ordered the troops to the front.

(69) a. The general commanded the troops to go to the front.
b. *The general commanded the troops to the front.

The notation for the part of lexical entries for heads
governing propositional structure is no doubt often full of redundancy.
I am claiming that it is necessary to include both a statement of the
permitted syntactic cooccurrences and the corresponding semantic
templates defining the propositional meaning that is to be imposed
on the syntactic environment, e.g., for steal + [___ NP PP]
[___ THEME SOURCE]. Surely, a great deal of the syntax can be
predicted from the semantics while the semantics can be at least
grossly delimited from the syntax; however, a study of verb pairs such
as ask/inquire, teach/instruct and order/command, as well as sets such
as object/disapprove/criticize or abide/obey/adhere demonstrate
that there is no one-to-one correspondence between syntax and semantics.
I conclude that both syntactic and semantic cooccurrence features must
be a part of lexical entries for heads, i.e., REFEREES, and that to the
extent that the notation is redundant that it be accounted for in
conventions for lexical redundancy.

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Note that *force* and *compel* present an interesting asymmetry:

(70) a. They forced Joe to enter the cell.
b. They forced Joe into the cell.

(71) a. They compelled Joe to enter the cell.
b. *They compelled Joe into the cell.

It might appear that we have a situation comparable to *order/command* illustrated just above: it is comparable to the extent that one member of the pair allows either an NP plus infinitive phrase construction or an NP PP construction, while the second allows only NP plus infinitive; however, while *order/command* appears a case of just lexical idiosyncracy, the case of *force/compel* has an interesting correlation with semantics that amounts to a kind of redundancy.

Bird (1971) has examined a number of verbs taking double object constructions of which *force*, *jam* and *compel* are representative. He points out that *jam* and *compel* complement each other in that (i) *jam* presupposes that its object is not capable of independent action while *compel* presupposes that its object is capable of independent action, and (ii) *jam* allows only an NP PP construction, while *compel* allows only an NP plus infinitive phrase construction.

(72) a. John jammed a pencil into the jar.
b. John jammed Joe into the cell.

In order for (72b) to be acceptable, Joe has to be unconscious, or tied up and helpless, if not dead, in other words incapable of independent action. By contrast,
(73)  a. John compelled Bill to leave the room.
        b. *John compelled the pencil to go into the jar.

(73b) is unacceptable because the pencil cannot, except in a
fairy tale, be thought of as capable of independent action. Likewise,
a complementary situation in the syntax:

(74)  a. John jammed a pencil into the jar.
        b. *John jammed a pencil to go into the jar.

(75)  a. *John commanded Bill out of the room.
        b. John commanded Bill to leave the room.

Bird points out that force, which can use either the NP plus
infinitive or the NP PP constructions allows the infinitive construc-
tion only when the object NP can be conceived of as being capable of
independent action.

(76)  a. John forced Bill into the room.
        b. John forced the pencil into the jar.

(77)  a. John forced Bill to enter the room.
        b. *John forced the pencil to go into the jar.

Bird finds only one exception to the following generalization:
verbs allow the NP plus infinitive construction if and only if the NP
is understood as capable of independent action. The one exception
is the verb cause.

(78)  a. John caused Bill to go into the room.
        b. John caused the pencil to go into the jar.

It appears to me that Bird's generalization can and should be
made a lexical redundancy rule, and that the non-conformity of cause
make it a more marked lexical item.

3.2 A Definition of Idiom

We will define idiom as an instance where a syntactic
cooccurrence feature in a lexical entry specifies particular lexical
items rather than syntactic categories. The non-idiomatic interpreta-
tion of kick the bucket will be governed by a syntactic cooccurrence
feature [NP__NP]. For the idiom there will be a separate entry
kick with the feature [NP__the bucket]. This feature amounts to an
instruction to treat the three words kick the bucket as a single unit
of meaning.

Object to, disapprove of, adhere to and abide by are all two-
word idioms. Lexical entries for verbs require a particular
preposition and verb to operate as a single unit of meaning; the
preposition has its inherent semantic properties masked over by the
meaning of the larger construction in the same way that any morpheme
does in any idiom. Syntactically the preposition continues to act as
an independent constituent, while semantically the verb and the
preposition function as a single unit. Instead of strictly sub-
categorizing these verbs in the usual manner + [__ PP], the
particular preposition is made a part of their required syntactic
cooccurrence, +[__ to NP], +[__ of NP], +[__ by NP].

Verb-preposition idioms are fixed and allow no variation. By
contrast, there are verbs that allow any of a number of prepositions,
provided that they are compatible with the semantic function that is
that is imposed on them in the interpretation of propositional meaning. The syntactic representation for utterances with the two kinds of verbs is no different in principle, but the interpretation of meaning is. Compare:

(79)  a. We abide by the rules.
       b. We stay by the stove.

The syntactic representation for these two utterances, in terms of categories and configuration, should be the same. This follows from the fact that there is no appreciable difference in syntactic behavior, e.g., By which rules do you abide?, By which piece of furniture does one stay to keep warm? The fact that there is different potential for pronominalization would appear to be a consequence of a semantic, not a syntactic difference, We stay there, *We abide there, etc. The semantic function associated with the PP objects of the two verbs are different: stay imposes an interpretation of physical location, while abide should have the same abstract semantic function as is a part of the meaning of obey. The syntactic representations:

(80)  a.

```
S
  /\  
NP VP
  /   
V    PP
  /    /
We abide by the rules
```
While *abide* is strictly subcategorized +[__ by NP], *stay* has the feature +[__ PP] and allows any PP that is compatible with an interpretation of stationary location, as the following examples demonstrate:

\[(81)\]
\[
\begin{align*}
\text{a. } & \ast \text{We abide to the law.} \\
\text{b. } & \ast \text{We abide with the law.} \\
\text{c. } & \ast \text{We abide for the law.}
\end{align*}
\]

\[(82)\]
\[
\begin{align*}
\text{a. } & \text{We stay behind the curtains.} \\
\text{b. } & \text{We stay on the boat.} \\
\text{c. } & \text{We stay in air-conditioned rooms.} \\
\text{d. } & \ast \text{We stay to the museum.} \\
\text{e. } & \ast \text{We stay into the swimming pool.} \\
\text{f. } & \ast \text{We stay through our group of friends.}
\end{align*}
\]

It is important, though not obvious distinction whether cooccurrence between verbs and prepositions is governed by a syntactic or semantic principle. If possible combinations are accounted for by general principles of semantic compatibility, then we do not have to say we have idioms. The well-formedness of *arrive at the hotel* vs. the ill-formedness of *arrive to the hotel*, etc. can be explained by the generalization that *arrive* has a meaning of completed motion, and thus it is not compatible with prepositional phrases having the meaning of directional motion, but only expressions of stationary location. Note that *arrive* allows more than the
preposition at, e.g., arrive in the valley vs. *arrive into the valley or *arrive through the valley, arrive on the landing platform vs. *arrive onto the landing platform or *arrive towards the landing platform. Where physical location is involved, I would conclude that arrive operates freely with PPs and is not idiomatic. In arrive at a decision, on the other hand, we may have an idiom.

Verbs such as object, adhere, disapprove and abide allow only a single preposition, and the behavior of the verb and preposition together is semantically that of an idiom; neither arrive nor almost any other verb of motion that I have examined has this property. Arrive should be listed in the lexicon in the same manner as stay, with a strict subcategorization feature which does not select any particular preposition, but simply mentions the category PP, +[__PP].

As I shall demonstrate below, the internal syntactic structure of prepositional phrases is much more varied and like that of verb phrases than is usually supposed. In a substantial number of cases, however, prepositions are incorporatedidiomatically into lexical entries for verbs, and when this happens, the freedom of occurrence of syntactic structures within the prepositional phrase can be limited. The intrusion into the syntactic structure of prepositional phrases by main verbs is parallel to the phenomenon in semantic interpretation where the inherent semantic properties of the preposition are masked out by the idiomatic meaning of the verb and the preposition together. Up is a good example. It can occur transitively with an NP object that can be interpreted as designating some sort of pathway or corridor with lateral limits going in an upward direction.
(83) a. We crawled up the wall.
b. We crawled up the side of the house.
c. *We crawled up the house.

(84) a. The bird flew up the chimney.
b. *The bird flew up the air.
c. *The bird flew up the cloud.

Up not only has the strict subcategorization feature +[__ NP], as in examples such as those above, but also +[__], as in The squirrels scampered up, +[__ PP] as in The birds flew up into the air, or Up into the air flew the birds, and +[__ NP PP] as in They ran up the hill into the woods or Up the hill into the woods they ran. These subcategorization features will be discussed further below. What is of importance here is the range of constructions that can occur within a PP with up as its head. When up is incorporated into an idiomatic expression, however, it typically is allowed no flexibility in the complements it can take. In drive X up the wall, it can have only an NP object with the lexical content the wall. The so-called verb–particle constructions look up, call up, put up, finish up, clean up, etc. are idiomatic expressions that allow up to be used only intransitively.

Another example is on, which can take a variety of syntactic structures as complements, e.g., We traveled on the highway, we traveled on through the woods, we traveled on; however, when it is incorporated idiomatically in the expression blame on, it can occur only transitively with an NP object, e.g., Blame it on the other guy vs. *Blame it on or *Blame it on through the crowd.
3.3 Independence

It remains for me to address myself to the question of what it is that makes a sentence different from a well-formed utterance that is not a sentence. A sentence is a propositionally complete utterance that does not need any externally imposed semantic functions to make it into a coherent piece of communication. In Section 1 I referred to this as the quality of independence. All well-formed utterances have integrity, but only sentences have independence.

Example (1a) of this chapter, The theft of the crown jewels from the queen by the Pink Panther, has integrity, internal well-formedness: there are no REFEREES in the utterance with either the wrong number or the wrong kind of PLAYERS; however, the utterance as a whole is a noun phrase. Noun phrases are classified by the grammar as PLAYERS, which means that they require semantic functions to be supplied to them. Thus, unless it is already clear from the context what the conceptual role of (1a) is, as for example when the noun phrase is used as the title of a newspaper article, then our intuitions as native speakers consider the utterance incomplete as it stands and wait for it to continue until that noun phrase is supplied with a semantic function from some larger linguistic context, e.g., is a crime the inspector still has not been able to solve because he doesn't know the true identity of the thief, was reported in the newspapers, caused a dip in the stockmarket, etc.

Supplying titles (as in newspapers) might fall under the general heading of labelling. Utterances are put physically in juxtaposition with the entities that they have the function of naming. The
utterance involved is most often a noun phrase, as in (1a) above used as it would be as title of a newspaper article, but it can also be a sentence, in what I have called scenario style, e.g., The Pink Panther steals the crown jewels from the queen. The characteristic I have noted of scenario style utterances is that they are always sentences in the present tense, without the usual requirement in the present tense that the event or state reported be interpreted as habitual or durative. Perhaps the interpretation of main clauses as scenario style is related to that of subordinate clauses in the present tense introduced by if or when; there is something dependent about an utterance in scenario style, e.g., in a set of stage directions, The colonel smashes the glass on the floor. There seems to be a kind of label requiring its referent to be in close proximity. The scenario style sentence in the stage directions labels the action of an actor on the stage.

The 'information' structure for labels can be said to be partly linguistic and partly non-linguistic or just physical. The entity onto which the label is predicated is not represented by a linguistic symbol but just by its physical presence.

Imagine the humorous effect of overkill with a jar that has a label reading "This is strawberry jam." instead of simply "Strawberry Jam". This is just the effect I perceive with legalistic pharmaceutical labels, e.g., beginning "This jar contains a solution of ...". It occurs to me that the reason newspaper headlines employ noun phrases instead of sentences is for the psychological effect of something propositionally incomplete. This compels the person on the street to buy the paper and read the article for which the headline is
the label. Note the effect created by the effect of the newspaper vendor, "Extra! Extra! Read all about it! The theft of the crown jewels from the queen by the Pink Panther!" One feels compelled to get the paper and read the article for which the noun phrase is the label in order to complete the structure of the proposition; psychologically it isn't complete until the whole article has been digested. If instead the cry had been a sentence "The Pink Panther has stolen the crown jewels from the queen!" the propositional structure would be perceived as complete. This would be rather like a complete piece of communication from the town crier, and there would be no need to purchase the paper in order to read the article.

Whether or not the NP is supplied a semantic function by interpretive rule to serve as a coherent piece of communication, the native speaker retains the ability to recognize it as one of those constituents that must be supplied with a semantic function, which is to say that it is part of linguistic competence to always recognize NPs and other constituents as PLAYERS. The same is true, it seems to me, of other utterances I have considered. Into the dungeon with him! is a series of two PPs, The son of a bitch! is an NP, Beautiful! is an AP and all of these constituents are recognized as PLAYERS. The same is true, it seems to me, of VPs as in Drag him into the dungeon!, etc., or as in Vygotsky's Coming. The minimum propositional meaning necessary to accept a VP such as Coming, an AP like Beautiful!, a PP like In the garden or an NP like A splendid idea! would appear to be 'predication onto x" with the presupposition that the 'x' is already established in the cognitive context of the utterance. With imperatives
such as Go! or Into the dungeon with him!, it is the second person.
With Beautiful! there is some third person or object established in
the context.

In contrast to utterances of the form VP, PP, PP PP, AP, NP etc.
which always require externally imposed propositional meaning, we
have sentences, such as example (1b) of this chapter, The Pink Panther
stole the crown jewels from the queen, which has semantic content alm-
most identical to example (1a) discussed above, and yet unlike (1a)
does not need any externally imposed propositional meaning to be a
coherent piece of communication. Sentences are recognized by the gram-
mar as not being required to assume the role of PLAYER. The category
symbol S thus has an important function in an interpretive theory: it
is the only symbol with independence. The claim made by a generative
grammar within the framework of interpretive theory should be, it
seems to me, that the possible expansions of the category symbol S are
all and only the utterances which can stand alone as coherent pieces
of communication without there necessarily being any propositional
meaning imposed interpretively on the utterance as a whole.

Finally, what about Yes? Is it a sentence? Under appropriate
circumstances no utterance can be more coherent or more complete. It
is not true that Yes must always be anaphoric, i.e., require linguistic
context such as a question to which it can refer. It can be an answer
to another person who has made an interrogative gesture. One might
want to call such gestures paralanguage.

The problem is that there is no way to classify Yes as a part
of speech because it has no internal structure, it is a one word
utterance, and it cannot be accompanied by other words without a comma. Without having any way of judging from its internal structure what node it is dominated by, it is possible to use the theory of propositional structure outlined here to classify Yes in terms of its function. Obviously, Yes is not a PLAYER, i.e., the kind of constituent which the grammar requires to have a semantic function predicated onto; furthermore, it is not a REFEREE in that it cannot be accompanied by any other constituents which could be said to be serving as its PLAYERS. When accompanied by other constituents in the same utterance, it has to be set off by a comma, which is tantamount to saying that it is equivalent to a clause in and of itself. By a process of elimination then, we arrive at the conclusion that Yes is a sentence, a propositionally complete utterance that does not require any externally imposed propositional meaning. If the assumptions of the theory of propositional structure presented here are correct, then the grammar ought to generate Yes directly as a monomorphemic sentence.

If it were not to be agreed to adopt the slogan of "All and only the well formed utterances", even if utterances such as A cup of coffee, Beautiful!, The idiot!, Not in the garden! and On the porch with my suitcase, please were not to be recognized as belonging to the English language in their own right, and we were going to stick to a sentence-generative grammar, it might still be possible to enlarge the output of the generative grammar of English to include that very important utterance, Yes.
3.4 *Lexical Entries for Verbs Revisited*

While it is clear heads, and in particular verbs, vary in the amount of complement structure that they require in their phrases, and that this is a characteristic to be noted in their lexical entries, it is not so apparent to me what the lexical features should be; in fact, there is a real possibility that this aspect of lexical entries cannot be described in terms of discrete categories. The reason for this is that the larger linguistic context in which the simplex clause occurs can alter the cooccurrence requirements for the main verb of that simplex.

The complexity of the problem can be illustrated with three verbs, *send*, *persuade* and *give*. Each could be said to have propositional meaning involving three arguments, which become manifest in the propositional structure in utterances such as the following:

(85) a. Jack sent the message to Helen.
   b. Fred persuaded Mike to go.
   c. Mike gave ten dollars to the Salvation Army.

At the same time, these verbs allow various of the arguments to go unexpressed:

(86) a. Jack sent the message.
   b. *Jack sent to Helen.

(87) a. Fred persuaded Mike.
   b. *Fred persuaded to go.

(88) a. Mike gave ten dollars.
   b. Mike gave to the Salvation Army.
Only the last of the three verbs allows two arguments to go unexpressed:

(89)  
\begin{align*}
  a. & \text{ *Jack sent.} \\
  b. & \text{ *Fred persuaded.} \\
  c. & \text{ Mike gave.}
\end{align*}

When a manner adverbial is added, the acceptability of the intransitive use of persuade can improve, e.g.,

(90)  
\begin{align*}
  a. & \text{ *Fred persuaded over and over again.} \\
  b. & \text{ Fred persuaded Mike to do things over and over again.}
\end{align*}

(91)  
\begin{align*}
  a. & \text{ ?Fred persuaded effectively.} \\
  b. & \text{ Fred persuades effectively.}
\end{align*}

The generalization seems to be first that manner adverbials contributing to the interpretation of Fred's persuasion as a habitual characteristic of his make the intransitive use of the verb sound better. When the present tense is used as in (91b), intransitive persuade is completely acceptable. Again, this appears to be the case because with the present tense we understand the utterance to express a generalization about what Fred does habitually. Making intransitive persuade a complement to the expression know how to has a similar effect:

(92)  
\begin{align*}
  a. & \text{ Fred knew how to persuade.} \\
  b. & \text{ Fred knows how to persuade.}
\end{align*}

With the right frame of mind, utterances such as the following are acceptable. The right frame of mind seems to be one ready to accept a terse summation of Fred's character.
(93) a. Fred persuades.
   b. I'll tell you what Fred does: he persuades.

None of these contexts succeed in making intransitive send acceptable:

(94) a. *Jack sent over and over again.
   b. *Jack sent generously.
   c. *Jack sends generously.
   d. *Jack knows how to send.

So far, it looks as if we have a manageable situation: there is a prohibition against the intransitive use of send in apparently any context, while the lexical entry for persuade contains a relatively simple condition stating that if the interpretation can be one of a "habitual characteristic" intransitive usage is allowed, otherwise not.

If this were all there were to it, the matter could be handled with lexical entries of essentially standard variety, i.e., with co-occurrence features that do not refer to context outside the simplex. But for reasons which are not altogether clear to me, a simplex such as the one in (89b), Fred persuaded, can be rendered quite acceptable by being placed in a particular kind of larger construction, e.g.,

(95) a. Fred persuaded, but Rockie coerced.
   b. Fred persuades, but Rockie coerces.

All of the examples of this sort that I have found have some sort of parallel clause construction. Again, this kind of context does nothing to improve the acceptability of send.

(96) a. *Jack sent, but Bart received.
   b. *Jack sends, but Bart receives.
The parallel clause construction changes the acceptability of the intransitive use of persuade, but not the one where one of the arguments is expressed and the other missing in the verb phrase, where that combination is ill-formed by itself.

(97) a. *Fred persuaded to go.
    b. *Fred persuaded to go, but Rockie coerced to go.

(98) a. *Fred persuades to go.
    b. *Fred persuades to go, but Rockie coerces to go.

It does not seem that the effect of the parallel clause construction on intransitive persuade can be explained with the generalization previously formulated, since example (95a) in the past tense allows other than a "habitual characteristic" interpretation. That example appears to lend itself to a 'one time only' interpretation, e.g.,

(99) How did Fred and Rockie get Phil to go on the trip with them? Fred persuaded, but Rockie coerced.

In other words, the parallel clause context can be said to be the sole factor accounting for the well-formedness of a simplex which otherwise would be ill-formed. This situation would seem to defy description with any ordinary cooccurrence features, since syntactic environment beyond the simplex must be referred to. The lexical entry for persuade would now seem to require the following: "may not be used intransitively unless it has a 'habitual characteristic' interpretation or is in a parallel clause construction." Whether or not this could be made into a viable feature depends on whether the notion "parallel clause construction" can be formalized.
It would appear that verbs have degrees of independence. In this illustration *give* has the most independence, *send* the least, and *persuade* is somewhere in the middle. It is an open question whether this characteristic can be described in terms of discrete categories.

Ken Miner arrived independently at much the same observation about parallel clause constructions and the problem of defining completeness for verbs, and provided me with the following very convincing examples:

(100)  
   a. *He earns.
   b. He earns and she spends.

(101)  
   a. *I find.
   b. You only search, but I find.

4. Prepositions as Propositional Heads

4.1 The Syntax of Prepositional Phrases: \( PP \rightarrow P (NP)(PP)(S) \)

The lexical heads which define requirements for propositional structure within phrases are what I have referred to as REFEREES. This class includes at least four categories: nouns, verbs, adjectives and prepositions.

The extent to which prepositions are propositional heads in their own right, governing a rich variety of structures divergent in both form and meaning, is not generally appreciated. An interesting case can be made for the claim that the PS rule generative prepositional phrases is similar to the one that generates verb phrases, perhaps \( PP \rightarrow P (NP)(PP)(S) \). To begin with, I believe Emonds (1970a) is
making a useful generalization when he classifies what are tradition-
ally subordinating conjunctions, e.g., because, so, since, after,
before, until, as, as none other than prepositions. As Emonds himself
points out, one can say that the cleft construction allows only NPs and
PPs in their focus position, but this generalization holds only so
long as subordinating conjunctions are classified as prepositions,
e.g., It was [after Margie came] that Sam got the phone call is just
as acceptable as It was [after the picnic] that Sam got the phone call.
This suggest that prepositions may have strict subcategorization
+[_S] as well as +[_NP].

What are called particles in standard transformational theory,
I would maintain, can be better analyzed as intransitive prepositions,
e.g., We threw the garbage out with an intransitive preposition, and
We threw the garbage out the door with a transitive one. If this is
right, then we also must have the feature +[_] for intransitive
usage. See Emonds (1970b) for a number of arguments in support of
this analysis.

Prepositional phrases can themselves be the objects of prepo-
sitions, so that the feature +[_PP] is needed as well, e.g., to
account for the stacking of prepositions in utterances such as Ralph
emerged from back over behind the barn, which I would analyze as having
a prepositional phrase of the form:

(102) [ from [ back [ over [ behind [ the barn ] ] ] ] ] ]
PP PP PP PP NP NP PP PP PP PP

There is good reason to adopt the strict subcategorization fea-
ture +[_NP PP] to account for phrases such as the ones bracketed in
the following examples:

(103)  
   a. He left [with his hat on his head].
   b. [With his luggage in the rumble seat], he drove to Chicago.
   c. [From Bloomington to San Francisco] is a long way.

Considerable support for the features +[___PP] and +[___NP PP] arises from examples such as the following:

(104)  
   a. [Down into the valley] went George.
   b. [Down the hill into the valley] went George.

Emonds (1970a) shows such utterances to be the output of a rule which is one of a special class of preposing rules that can only occur in main clauses, cf., *This is the man who down into the valley went, *Mary hasn't realized that down into the valley went George; furthermore, this class of preposing rules is subject to the constraint that at most one of them can apply per matrix S. For example, one can say When did George go down into the valley? but not When did down into the valley go George? None of these preposing rules may operate when the sentence is an information question. The constraint of one preposing rule per matrix S can be rephrased as follows: at most one major constituent (phrase node) can be preposed per matrix S. Emonds gives ample evidence to show that this is a constraint of great generality in the grammar of English, and so this would argue that the phrases bracketed in (103) are indeed single PP constituents.

Another argument can be provided by the cleft construction:

(105)  
   a. It was [down into the valley] that I wanted to go most.
   b. It was [down the hill into the valley] that I wanted to go most.
Equally, the pseudo-cleft:

(106) a. Where I wanted to go most was [down into the valley].
    b. Where I wanted to go most was [down the hill into the valley].

It would appear that the bracketed strings in the above utterances are single constituents given the assumption that the cleft and pseudo-cleft constructions allow only one constituent to be focused at a time. 13

With this general view, back and away are classified as prepositions. They never take NP objects, e.g., *He went back the city, *He went away the house, but they can be used intransitively, e.g., He went back, He went away, and with PP objects, e.g., He went back to the city, back down the hill, etc., He went away from the house, away to a new job, etc. Both these prepositions are subcategorized +[___] and +[___PP].

Thus, there is evidence that we need the strict-subcategorization features +[___], +[___NP], +[___PP], +[___S], +[___NP PP], at least, to account for the variety of complement structures that can be governed by prepositions. Whether or not an utterance is judged to be complete in the sense of integrity can depend on lexical entries for prepositions just as it can on those of verbs, e.g., (56f) *Mildred looked at is ill-formed because at cannot be used intransitively, while (55f) Mildred looked through is well-formed for many speakers. The lexical entry for through allows it to be used intransitively in syntax despite the fact that it is always understood as transitive in semantic interpretation. Similarly, *John stepped into is ill-formed,
while John stepped in is well-formed. The ill-formed utterances with at and into are instances of not enough PLAYERS. Prepositions also require the right kind of PLAYERS, both in form and meaning. The utterance *Because the weather we stayed home is ill-formed while either Because it rained we stayed home or Because of the weather we stayed home are well-formed. It appears that because does not have the strict-subcategorization feature +[___NP], but it does have both +[___S] and +[___ of NP]. The because of NP usage of this preposition meets the definition of an idiom that I have proposed here in that it requires a strict-subcategorization feature mentioning a particular lexical item instead of a syntactic category in order to insure well-formedness. Following the definition of idiom presented here then, it can be said that prepositions govern idioms just as verbs do.

4.2 The Meaning of Prepositions

If prepositional phrases are not incorporated idiomatically, but rather occur as complements in the usual sense, e.g., as in stay by the house as opposed to abide by the law, then typically prepositions retain their full semantic and syntactic properties and are limited only by the well-formedness of the overall interpretation. Just how narrowly the range of prepositional constructions allowed is depends on how determinate the meaning of the verb is. Compare put and insert:

(107) a. I put the needle on the table.
    b. I put the needle in the drawer.
    c. I put the needle through the hole.
(108) a. *I inserted the needle on the table.
b. I inserted the needle in the drawer.
c. I inserted the needle through the hole.

**Insert** has the meaning of causing something to undergo movement which makes it enter into a volume through an aperture. This would be the case whether or not a prepositional phrase were included, cf., **Insert it!**, which has close to the same meaning as **Put it in!**. The difference between **insert** and **put...in** would seem to be that the former presupposes some sort of relatively narrow aperture, while the latter does not. Thus, the difference between **insert it in the box** and **put it in the box** is the presupposition that only some small opening exists through which to get something into the box, e.g., it has already been closed, but not sealed, in the first case, while in the second there is no such constraint on the interpretation. The box can be completely open, fully closed and even sealed so that it has to be opened up, or anything in between. It is just that **insert** has a more determinate meaning: it allows any locative preposition as long as it does not conflict with its own meaning. **On** has the meaning of contact with a two-dimensional surface, a continuum of space or of time, and this meaning is incompatible with the meaning of **insert**. The flexibility allowed by **insert** can be illustrated by examples such as the following:

(109) a. I inserted the needle behind the table.
b. I inserted the needle above the table.

The phrases **behind the table** and **above the table** simply give spatial orientation with reference to the table. We are free to ima-
gine a three-dimensional substance or container which is entered into
by the needle through a small aperture, and which has the orientation
designated by those PPs. Verbs such as put and insert should be
strictly subcategorized for syntactic categories only, not for any
particular lexical items. The well-formedness of the cooccurrence of
particular lexical items with these verbs would be a matter for seman-
tic interpretation. Following the system of notation for lexical
entries used for steal in the preceding section, we would assign them
both the features [+NP PP][ THEME GOAL], but then it would be
necessary to add notation for insert to the effect that its GOAL must
be interpreted in particular as a volume to which entry is gained by a
narrow aperture. 14

Prepositions themselves impose semantic constraints on the
interpretation of their objects, e.g., the anomaly of *I put the needle
on the room is due to the fact that room has the semantic property of
being a three-dimensional entity accessible only from the inside. Com-
pare the quite acceptable I put the needle on the house. On requires
that its NP objects be interpretable as surfaces and if of a three-
dimensional object, an exterior surface, e.g., as in the interpretation
of I put the needle on the box. If I say I put the needle on the
drawer, we understand a drawer withdrawn from a chest, standing on its
side or upside down so that an exterior surface can have the needle on
it. The only exceptions to this are in idiomatic expressions where
its inherent meaning is masked out: a particular instance of this is
when a verb in effect usurps the semantic power of the preposition
forming what is semantically a two-word verb e.g.,
(110) a. Jack concentrated on the problem.
b. Frederick dotes on Elizabeth.
c. Nick relies on Mike for information.
d. Mark blamed all the trouble on his kid brother.

In each of the above expressions, on has become a special syntactic marker for a verbal complement. In each of the above contexts only on is permitted.

(111) a. *Jack concentrated at the problem.
b. *Frederick dotes to Elizabeth.
c. *Nick relies from Mike for information.
d. *Mark blamed all the trouble over his kid brother.

Significantly, room, normally incompatible with on as its object, can occur as object of on in these expressions. This is because, in the same way that the meaning of a morpheme in an idiom doesn't count in utterance meaning, the inherent semantic properties of on are masked out.

(112) a. Jack concentrated on the room.
b. Frederick dotes on large rooms.
c. Nick relies on specially lit rooms for the effect of his act.
c. Mark blamed his low grades on the room he was studying in.

Besides these verb-preposition idioms, there are more complex idiomatic expressions where on can lose its inherent semantic properties. Roger Lass has brought the following two very interesting examples to my attention: 15

(113) a. We put a reservation on the room.
b. The Mafia put out a contract on Anselmo.

It seems to me that the use of the preposition on in the
examples in (113) has something to do with the lexical entries for the nouns reservation and contract, while at the same time there is good reason to believe that the PPs with on here are verb phrase complements. It is a situation which suggests that even in idiom formation there are significant redundancies.

I find there to be evidence that the nouns reservation and contract can themselves take PP complements with on used idiomatically; in the examples in (114), the PP with on is a part of the NP with reservation at its head.

(114) a. We have a reservation on the room.
    b. The clerk forgot to take care of the reservation on the bridal suite.

The syntactic representation for (114a) should be as follows:

(115)

```
S
   /\         VP
  /   \       /
 NP   NP      /
     /\       /
    V  D  N   PP
   /   /\   /
  We have a reservation on the room
```

On is syntactically a part of the NP with reservation. (114a) is naturally related to a pseudo-cleft like What we need to have is a reservation on the room, but not *What we need to have on the room is a reservation; similarly, it can be naturally related to a cleft like It was a reservation on the room that we needed to have most, but not *It was a reservation that we needed to have most on the room. Similar
examples can be produced for (114b):

(116) a. What the clerk forgot to take care of was the reservation on the bridal suite.
    b. It was the reservation on the bridal suite that the clerk forgot to take care of.

(117) a. What the reporter wrote about was the contract on Anselmo by the Mafia.
    b. It was the contract on Anselmo by the Mafia that the reporter wrote about.

These examples provide firm evidence that the on phrases are dominated by the NPs of which reservation and contract are the heads, provided that it is correct to assume that the pseudo-cleft and cleft constructions can "focus" only one constituent at a time. This appears a well-motivated assumption indeed. In this case if one creates pseudo-cleft and cleft constructions like those in (116) and (117) in all respects except that the on phrases are parsed as VP complements rather than as NP complements, the resulting sentences are not fully acceptable, i.e., *What the clerk forgot to take care of on the bridal suite was the reservation, *What the clerk forgot to take care of the reservation was on the bridal suite, *Where the clerk forgot to take care of the reservation was on the bridal suite, etc.

There is ample evidence, on the other hand, that the PPs on the room and on Anselmo in (113) are sisters to the NPs a reservation and a contract, i.e., complements to the verb and not to the noun in each case. We use the same constructions as evidence.

(118) a. *What we put was a reservation on the room.
    b. What we put a reservation on was the room.
(119) a. *It was a reservation on the room that we put.  
   b. It was on the room that we put a reservation.  
   c. It was the room that we put a reservation on.

(120) a. *What the Mafia put out was a contract on Anselmo.  
   b. The one the Mafia put out a contract on was Anselmo.

(121) a. *It was a contract on Anselmo that the Mafia put out.  
   b. It was on Anselmo tht the Mafia put out a contract.  
   c. It was Anselmo that the Mafia put out a contract on.

The syntax of (113a) should be as in (122), as compared to (115):

```
(122) S
   NP  VP
      .V  NP
          put  a reservation
      PP
          P  NP
              on  the room
```

The expressions put a reservation on (put reservations on, put a special reservation on, etc.) and put out a contract on in (113) are complex syntactically but semantically they operate as single units, which is to say that they are idioms in the same manner as concentrate on and blame...on are idioms, idioms with verbs as their heads. There should be a separate lexical entry put for each of these two expressions that indicates how much of the syntactic environment is to be interpreted as a single semantic unit. The fact that the nouns reservation and contract are also heads of idiomatic expressions with on, but in this case are incorporated as subparts of larger idioms with on phrases as sister constituents is most interesting. This constitutes

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a redundancy that no doubt has importance for language learning, i.e., it is obvious that it would be harder to learn how to use complement structures on the head noun reservation if the well-formed cooccurrences were reservation on NP on the one hand, but put a reservation at NP on the other. It is also true that the expression put a reservation on NP and the expression reservation on NP are related to the verb reserve, cf., Giwon (1967) for an interesting discussion of a number of expressions that pattern like reserve and put a reservation on. There does not appear to be any verb that corresponds to the expression put out a contract on NP, i.e., to contract has a different meaning.

While separate lexical entries are necessary in my analysis for each of the expressions I have claimed are idioms, it is my hypothesis that there is just one preposition on, with an abstract meaning of 'contact with a surface'. Its meaning is highly indeterminate, and is narrowed down in semantic interpretation in combination with other lexical items. In particular, it allows not only a locative interpretation, but a temporal one as well, e.g., as in on Tuesday, where I will argue that it is the inherent semantic property of certain time nouns to be interpreted as temporal planes or surfaces. It is understood as expressing contact with a surface in a spatial sense when it serves as the head of a complement to a locative verb, either one expressing stationary location, e.g., stay on the porch, sitting on the bench, or one expressing motion, e.g., put the box on the table, sit down on the bench. With motion verbs we understand the contact with a surface along which the motion is taking place, e.g., We slid on the
ice, We ran on the track, etc. Whether or not the on phrase is interpreted as the end-point for the motion, or the surface along which the motion is taking place would seem to be a result of the interpretation imposed by the particular verb.

Used intransitively with a verb of stationary location, on can have a locative interpretation. In Keep the luggage on! a locative interpretation appears the only one possible; however in He stayed on, two interpretations are possible, one locative and the other temporal. The temporal interpretation may not be idiomatic. Maintenance of position implies passage of time. The temporal interpretation of on can be thought of as contact with a continuum of time, a plane, across which an event or a state is moving. The same temporal interpretation is possible with Keep the man on and is the usual one when the meaning of the verb is other than that of stationary location, e.g., as in travel on, work on, talk on. Note that the temporal interpretation is compatible with a PP complement to on, as in Keep the man on through the month of April, We travelled on through the night. On through the night travelled the three kings, etc. I can find no acceptable NP complement to on when the interpretation is one of passage of time, only location in time, e.g., on Halloween, etc. Given that there are spatial interpretations of on NP of both location and passage through space with contact with a surface, as in stay on the boat and travel on the water, this amounts to a curious asymmetry, and an insight into the possible meaning of English propositional structures.

The morpheme day allows either in or on as a prepositional head, i.e., in a day, on a day. There seems to be the effect of a
a spatial metaphor: with *in a day*, one tends to think of *day* as a container, that is an extent of time contained by a beginning and an end, while with *on a day* one seems to disregard the extent of time and rather think of a series of planes along a continuum of time, e.g., on Monday, on Tuesday, on Wednesday, etc. If I am correct in this analysis, then there must be something about proper names for days that induces us to conceive of them as a series of temporal planes, rather than as volumes or containers, and conversely temporal volume must be an inherent property for other time expressions, cf., on Thursday, on Christmas, *in Thursday, *in Christmas, *in one Christmas; in a week, in a month, in October, *on a week, *on a month, *on October, etc.; furthermore, we get *in the hour, on the hour and at the hour, but only at 2 PM, not *on 2 PM, *in 2 PM. It is my hypothesis that October has temporal qualities that correspond to a volume Wednesday to a surface, and 2 PM a point, while *day* and *hour* have less determinate meanings.

Prepositions, like other propositional heads, vary in the manner and the degree of determinacy of meaning. I have claimed here that the complicated taxonomy of temporal expressions with PP constructions such as *at 3, on Sunday and in June* can be accounted for by general combinatory rules: the propositional meaning of the preposition REFEREES is imposed on the constituent meaning of the nominal expressions where *3 o'clock* has the temporal properties of a point, *Sunday* of a plane and *June* of a volume. The analysis is theoretically superior because it allows for a minimum of primes, i.e., lexical entries, and a maximum utilization of general combinatory rules. This same analysis allows us to account for the different interpretations
that are possible with the noun day depending on what kind of propositional meaning is imposed on it by a prepositional head. For example, in He wrote the paper in two days, we understand 'duration of time', i.e., the expression two days itself indeterminate between the meaning 'volume' and 'surface', receives the interpretation 'volume' from the REFEREE in; on the other hand, He wrote the paper on two days is somewhat peculiar in that we seem forced to understand that the paper was written twice. This interpretation follows, however, without positing any incidence of an idiom, from the fact that the REFEREE on imposes the meaning 'surface' on its objects, and two days must be interpreted as two surfaces, or two temporal planes.

All else being equal, an analysis that posits less primes is to be more highly valued. Thus, there is a premium on avoiding explanations of utterance meanings that resort to the notion of idiom, just as there is a premium on avoiding homonyms. The theoretical cost of considering e.g., abide by an idiom would appear to be null because abide does not occur as a verb in any other environment in modern English: we only need one lexical entry for the verb abide anyway. It is obvious, however, that a very different situation exists in the case of the prepositions in and on. They can occur as the heads of an unlimited number of expressions. It is my hypothesis that there are no constructions governed by these two prepositions that are idiomatic; they can be incorporated idiomatically into idiomatic constructions governed by verbs, e.g., dote on, etc., but in all cases where they are the REFEREES well-formedness can be accounted for by general combinatorial rules of interpretation.
Given a commitment to a model in which semantic well-formedness is accounted for by the interaction of constituent meaning and propositional meaning, and to the goal of the maximum use of combinatorial rules and the minimum number of primes, there is a way in which certain decisions about the analysis of lexical meaning can be empirically justified. For example, in Section 5 I will give what I believe to be an empirically-based claim concerning the meaning of the nouns earth and world. The fact that different interpretations follow from in the world and in the earth and that on the earth is well-formed while on the world is not can be accounted for as being due to a difference in the inherent meanings of the nouns.

The meaning imposed by the prepositions can be taken as constant and uniform in all their occurrences, provided that they are not incorporated into some larger idiom in semantic interpretation: this is an empirically supported assumption given the enormous number of expressions that can be accounted for in this manner, and especially well-supported when what is at issue is the interpretation of spatial expressions.18

5. The Interplay of Word Meanings: The Sentence as the Syntagmatic Realization of the Lexicon

5.1 Word Meaning an Empirical Issue: The Case of "World" vs. "Earth"

In order for an utterance to have the kind of internal completeness and well-formedness we have referred to as integrity, there must be harmony in the match between constituent meaning and the functional meanings that are imposed on them. The notion the right kind of
PLAYER depends on semantic as well as syntactic criteria. In Chapter III I will argue that the grammar alone cannot account for 'all and only' the possible combinations of semantic primes; on the other hand, semantic interpretation is central to the notion of completeness, in particular where combinations of word meanings are involved.

We have discussed three sources for functional meaning, including the 'syntactically determined' variety like the English NP adjunct construction in George woke up a millionaire, and 'free interpretive rules' like those involved in the interpretation of utterances like A cup of coffee. The great richness of functional meaning in human language, however, is lexically determined: it is due to the interplay of word meanings arranged in syntactic hierarchy. The syntactic hierarchy gives power of certain words over others: phrasal heads impose functional meaning on constituents serving as arguments in the syntagmatic realization of their meaning. This is what we have referred to as the power of REFEREES over PLAYERS.

Languages vary in the order and hierarchy in which they place lexical items, but all have heads that govern the interpretation of constituents around them. It is in this interplay of lexically imposed functional meaning and constituent meaning that the creative power of language is most manifest. Grammars place no absolute limit on the words that can be combined with each other in this fashion: even purposeful mismatches can be used on the spur of the moment to create metaphors, e.g., John is a padlock and Harry is a faucet. The interpretation of metaphors is in turn governed not just by our knowledge of language but by our total intuitive imaginative grasp of the
situation in which a metaphor is uttered. As language there is an infinite variety in life experience and the situations in which people communicate with language, so there is an open-ended quality to the possible interpretations of word combinations. It is in this chemistry of word meanings that language, with its finite lexicon, can generate an unlimited number of new creations, not just recombinations of old stuff.

Given they way that extra-linguistic context can influence the understanding of grammatical structures, it is no wonder that it is difficult to pin down the meaningful properties of utterances that are grammatically determined. This is a problem that grammarians have created for themselves by abstracting the notion of 'language' away from the continuum of the mind. Language is part of the finite but perhaps not discrete analytical capacity of the mind used to dissect and categorize an infinite universe. In reality the analytical chunks that we store as semantic primes fuzz off at the edges and blend and change with perception of new experience and the processes of cognitive creation; nevertheless, as linguists and scientists we must place arbitrary limits on the subject of our study in both space and time and commit ourselves to a model with a finite number of discrete sub-parts. In no other way can we produce testable hypotheses or hope to gain understanding of language and its fluid interaction with the rest of the mind.

The most important object in the study of meaning is the "word - the existing unit of living speech, an integral whole, a miniature bit of art" (Sapir, 1925). Lexicography is the key area of
research from which to build a universal semantic theory.

Word meanings are often submerged in our consciousness; however, with an understanding of the structural principles involved in the interpretation of words in combination with each other, and some good digging, empirical evidence can be brought to bear on a hypothesis concerning the meaning of a word. We have seen a demonstration of this in the discussion in the previous section of the meanings of an important class of REFEREES, prepositions. We have also evaluated hypotheses concerning the meaning of nouns serving as heads of PLAYER constituents. I will present an additional example of this latter sort here. I believe that it demonstrates how we can arrive at an analysis that explains a great many aspects of the semantic behavior of a word in combination with other words, and that probably leads us to a close approximation of the psychological reality of a word meaning.

Charles Fillmore (personal communication) has pointed out that there is good reason to believe that the words world and earth differ in semantic properties that correspond to the concept of space: through the world and through the earth receive different interpretations; we could talk about the distance from the earth to the moon, and about satellites circling the earth, but never about *the distance from the world to the moon or about *satellites circling the world. He has noted that we say in the world, but on the earth and not *on the world, while in the earth receives a different interpretation from in the world.

I conclude that both words have the semantic value of volumes,
but that earth, being the term that corresponds to the contemporary view of the cosmos, designates the three-dimensional sphere we live on the surface of, while world designates the volume within which we live, and includes the surface we walk on, the atmosphere through which we move and all of the heavens above. In other words, under normal circumstances, people live on the outside surface of the three-dimensional earth, and on one of the inside surfaces of the three-dimensional world. The world is conceptually and semantically a several-sided container with no outside surfaces!

The key example for our analysis of world is the anomalous *on the world. Taking the meaning of the prepositions as constants, we can "triangulate" the meaning of the nouns. The hypothesis that world is semantically a volume accessible only from the inside then gains empirical support from the very fact that it produces an anomalous interpretation of on. Recall that when on takes an object which is semantically a volume that we always understand 'on the outside surface of', e.g., on the box, on the house. This is a fact of great generality that can be supported by numerous examples more, including the rather unusual example already discussed, on the drawer. The way we have to conceptualize on the drawer gives good reason to think that our analysis of on is right and given our analysis of on, there is good reason to believe our analysis of world is right. World shares with room the semantic property of being a volume accessible only from the inside: *on the world is anomalous for the same reason as *on the room.

If I am correct in my analysis of expressions such as on
Wednesday and on the earth, what is most important is that I have found a way of accounting for them by regular rules of semantic interpretation so that they do not have to be classified as idioms. My definition of an idiom is that the lexical entry for a head includes mention of specific lexical items, rather than of syntactic categories, and that the head together with the specified lexical items are treated together in semantic interpretation as a single semantic unit.

In my treatment of prepositional phrases that include as complements nouns like Wednesday or earth, on the other hand, I have put forth the view that well-formedness of these expressions is properly accounted for in semantic interpretation where the constituent meaning of the noun is seen in combination with the propositional meaning imposed on it from the preposition. To the extent that the two kinds of meaning are determinate along the same axis, they can be judged for how well they match. The preposition on, for example, does not have a lexical feature for each of the nouns it accepts as complements, e.g., Wednesday but not October, earth but not world. Recall the definition of idiom given in this chapter: making mention of the specific nouns that on selects in its lexical entry would amount to creating multiple idioms. By postulating constituent meanings for the object nouns such that they can be accepted or rejected as objects of on by general combinatory rules, we are avoiding the addition of an enormous number of idioms to the lexicon. Given the overriding goal in linguistic theory for finiteness in the grammatical model, and all other things being equal, an analysis with less idioms — therefore less lexical entries — should be more highly valued.
5.2 Word Meanings in Syntactic Hierarchy

The hierarchical relationship of words determines the way they are interpreted in combination. Words come together to form the major constituents NP, VP, AP and PP, and these in turn are identified by the grammar as PLAYERS, which means that they must each be supplied with a semantic function. The only major constituent that has the option of not taking up PLAYER status is S itself: this is what amounts to that unique quality of independence that only the sentence has. Key words we call REFEREES determine semantic functions for the PLAYER constituents that are apportioned to them by syntactic configuration; their PLAYERS are sister constituents within the same phrase, or else constituents related by configuration as the subject NP is to the VP.

The full account of integrity must take into account the lexical entries for all phrasal heads. Since PLAYERS are phrasal constituents or (optionally) sentences, there are REFEREES within PLAYER constituents which in turn can have their own PLAYERS. Verbs are of greater importance than other heads in most utterances in that they are the top REFEREES; however, I have intended to demonstrate that the lowly preposition has a lexical richness in its own right and the NP objects of verbs, of prepositions and of adjectives can in turn have propositional structure with propositional nouns acting as REFEREES over their own PLAYERS.

The semantics of prepositions is a particularly revealing area because of the intermediate status they usually hold in syntactic hierarchy. That is to say that prepositions are usually part of a PLAYER constituent governed by a higher REFEREE at the same time that
they themselves are acting as REFEREE over PLAYERS in their own phrase. Consider the case of through.

(123) a. *John stayed through the crowd.
    b. John hurried through the crowd.

Through is one of the group of prepositions that we have discussed that are indeterminate as between spatial or temporal interpretations. (123a) is ill-formed because the NP the crowd can only be interpreted spatially: through has a meaning of motion through space or time; here the meaning of the PLAYER constituent through the crowd can only be interpreted as one of spatial motion; the durative verb stay means maintenance of location, the absence of spatial motion, so there is a clash. Hurry on the other hand has a meaning of spatial motion, so the match between constituent meaning and functional meaning is harmonious. The interpretation of (123a) is, schematically, as follows:

(124) S
    NP
    VP
    N V PP
    P NP
    *John stayed through the crowd

Stayed imposes semantic function of 'stationary location' with resulting anomaly.

Through the crowd has a derived reading of spatial motion, serves as PLAYER for the REFEREE stayed.
The crowd is a spatially interpreted PLAYER for the REFEREE through.
It is not, however, that stay is incompatible with the preposition through. There are many quite acceptable sentences with stay through.

(125) a. John stayed through the last act.
b. John stayed through the cold weather.
c. John stayed through the weekend.
d. John stayed through the carnival.

These examples all contain NP objects for through that allow temporal interpretations: the phrase through NP can be interpreted as temporal motion. Durational verbs like stay and keep on the other hand assert maintenance of location which always entails passage of time. It appears that durational verbs include both spatial and temporal arguments in their propositional meaning, hence examples such as the following:

(126) a. John stayed in the igloo through the weekend.
b. Roger kept the bull in the barn through the winter.

The spatial arguments must be stationary and the temporal arguments can be motional. (125d) is particularly interesting, because carnival can be interpreted either spatially or temporally, e.g.,

(127) a. Bill is behind the carnival.
b. The party is after the carnival.

Here the prepositions are more determinate: behind allows only a spatial interpretation, while after allows only a temporal one. Through the carnival is indeterminate as a whole phrase between a temporal and spatial interpretation because both the REFEREE and the PLAYER are indeterminate in this regard. The only way the interpreta-
tion can be made more determinate is by having a more determinate semantic function imposed from above. This is the case when the phrase through the carnival becomes a PLAYER for a REFEREE that determines either a spatial or a temporal interpretation.

(128)  a. We stayed through the carnival.
       b. We ran through the carnival.

Discovering the parameters along which words have inherent semantic value and the extent to which that meaning is determinate is an area of research where empirical evidence is available to validate hypotheses. In order for such research to progress, however, there has to be an understanding of how word meanings combine: the hierarchy provided words by constituent structure trees appears to be the proper complement for the notion of REFEREES and PLAYERS. The standard theory conception of deep structure syntax, the kind of constituent structure trees that we would want generated by context free phrase structure rules, to be referred to in syntactic cooccurrence features for lexical items - these now classical ideas in generative grammar turn out to be extremely relevant and useful for semantics, particularly where word meanings are concerned.
CHAPTER III: GRAMMATICAL INDETERMINACY

1. Ellipsis

1.1 Some Definitions

In Chapter II I discussed grammatical structure in terms of REFEREES and PLAYERS: REFEREES are phonetically realized lexical items that function as operators establishing the correspondence between syntactic structure and propositional meaning; PLAYERS are subparts of syntactic structure that are assigned semantic functions, so that each one becomes the syntactic manifestation of an argument in a proposition; structurally determined propositional meaning is governed either by a REFEREE, as is the case with the noun phrases in John gave Bill a book, or by a syntactic construction, as is the case in the adjunctive NP construction in John came back from visiting Henry a crook.

In all this, it is important to emphasize that I have been talking about phenomena with direct physical manifestation. I have employed a notion 'deep structure', closely related to that of standard transformational theory, as the level at which REFEREES assign semantic functions to PLAYER constituents. (In standard theory the concept of 'deep structure' is more abstract than mine largely because deletion rules are allowed there which I am excluding.) I consider deep structure to be the least marked, "ideal" word order for a language — for English at least, this is the order found in ordinary declarative utterances. It is in this order that phrases are intact and that co-occurrence restrictions can be defined for the heads of phrases once
and for all. It is just in deep structure, therefore, that the correspondences between syntactic constituents and semantic functions can be succinctly defined in the lexical entries for phrasal heads.

The more marked word order of constructions such as are found in interrogative, emphatic or topicalized utterances are derived from the deep structure order by permutation rules. Here phrases are often dismembered: remnants are spread apart from each other on the derived trees. In *Which counselor did Bill say that John reported that Mary would prefer for her son to talk to?*, to *which counselor* is a PLAYER for the REFEREE talk. Even in this case, however, note that the PLAYER has physical manifestation. By definition, a PLAYER has phonetic representation.

Here we will explore aspects of meaning which have no direct physical manifestation, but which nevertheless are part of language. In effect, we will be examining the linguistic value of silence. I will continue to develop the idea of grammatical indeterminacy introduced in Chapter I: the portion of utterance meaning which is elliptical I will say is indeterminate rather than ambiguous. While the notion 'possible completion' will continue to be of interest, I will take a stand against sentence reduction as a means of generating elliptical utterances. Rather than truncated versions of larger utterances, elliptical utterances are to be viewed as being only as determinate in their meaning as their phonetically represented constituents make them, and no more.

**Definition:** In the view I will adopt here, there are two kinds of ellipsis, *constituent ellipsis* and *functional ellipsis*; these
correspond to two primary facets of the syntagmatic organization of meaning, constituents on the one hand, and the semantic functions that are assigned to them on the other. We have constituent ellipsis whenever there is no phonetically realized constituent corresponding to an argument in the propositional meaning of an utterance, as in Henry explained. (Of course, much then hinges on the notion 'argument', as we shall see.) We have functional ellipsis whenever there is a PLAYER constituent with nothing in what is phonetically realized in the utterance to determine its semantic function, as in Benson and Hedges uttered across the counter in a concession where cigarettes are sold.  

When someone says Benson and Hedges across a counter there is grammatical ideterminacy in the choice of a semantic function: only the compatibility of the constituent meaning with functional meaning limits the choice. As two friends part, one might say to the other, without any previous linguistic context 2 o'clock, meaning something on the order of 'I'll see you at 2 o'clock' or 'Don't forget your dentist appointment at 2 o'clock'. The semantic function attached here is, let us say, 'the time at which X'. It is a safe bet that this semantic function would never be acceptable applied to Benson and Hedges, and that this is because there is a semantic clash between the constituent Benson and Hedges and a temporal semantic function. But the choice of semantic function is otherwise open-ended from the point of view of the grammar.

When someone says Benson and Hedges, it may be clear from the extra-linguistic context that a purchase is intended, or alternatively an act of begging, a robbery, an inventory, or umpteen other kinds of
events. In each case the linguistic faculty can be used to make the noun phrase Benson and Hedges a PLAYER within the kind of propositional meaning we associate with verbs like sell, give, steal, count, etc., by some sort of 'free' interpretive rule. But there is no structural grammatical device determining which semantic function compatible with the constituent meaning is to be assigned to this noun phrase; it is rather cognition in a larger sense. In this sense, then, the grammar's role in assigning a semantic function in such a case is random.

Benson and Hedges is a noun phrase. As such it is necessarily viewed as a PLAYER constituent and requires a semantic function. On its own, the best the grammar can do is give its constituent meaning, 'a brand of cigarettes...etc.' and recognize that it requires a semantic function: this is the information the linguistic faculty gives as an output for the rest of cognition to deal with. Thus, I continue to emphasize the view that language is included in a larger cognitive faculty that has non-linguistic means it can use to fill in what language has left out of a message.

To put the matter differently, I am using the term indeterminacy for those instances where the overtly manifested grammatical structure does not determine an aspect of meaning, and it is rather a matter where extra-linguistic context must be taken into account. Ambiguity, by contrast, will be used for cases where two or more grammatically determined meanings converge on the same phonetic output, e.g., two constructions converge to make two meanings possible for Flying planes can be dangerous, and two lexical meanings converge to make two meanings possible for, The carpenter has several vices.
Ultimately, determinacy and indeterminacy concern extension or appropriate referential use. The observation has often been made that some words have wider potential referential use than others: just so, the noun phrase *a piece of furniture* is less determinate in meaning than *a sofa or a rocking chair* (cf., Binnride, 1970). In talking about ellipsis, I will be discussing indeterminacy on the level of the syntagmatic organization of meaning, where semantic functions and constituent meaning combine. Here, too, we can see that we come down to referential use in the final analysis. The set of events that can appropriately serve as referents for an utterance like *Benson and Hedges* is much more inclusive than one like *Give me some Benson and Hedges, Count the Benson and Hedges*, etc.

The impression should not be given that elliptical utterances are any less rule-governed than non-elliptical ones: it is only that they are less determinate. *Bill sent the book* is elliptical because there is no overt manifestation of the argument GOAL (of physical motion) implicit in the meaning of *send*. We understand that there is a GOAL involved in the event, but what GOAL it is is not in any way grammatically determined.

What should be emphasized here, however, is that there are two important ways that this kind of ellipsis is rule-governed: first, syntactic criteria for integrity - for example, note that *Bill sent the book* is well-formed while one like *Bill put the book* is not; second, semantics - note that the possible referents for the argument GOAL belong to a restricted set (i.e., its extension is well-defined), the set of all those entities that can satisfy the truth conditions
for the meaning 'GOAL of physical motion'; this set amounts to all those entities that could be named in the possible completions of Bill sent the book, e.g., Jane, California and the mountain since Bill sent the book to Jane, etc. are well-formed, but not sincerity, hysteria, or the time between sunrise and high noon, since *Bill sent the book to sincerity, etc. are ill-formed. The set of events that can appropriately serve as referents for John sent the book is more inclusive than for John sent the book to Bill. John sent the book has a less determinate meaning than John sent the book to bill, but both are rule-governed.

This is the case, too, with functional ellipsis, as in Water!: many semantic functions might apply, but not, for example, AGENT, EXPERIENCER, or any other one might posit that presupposes attributes of animacy or intelligence. In the case of constituent ellipsis, the semantic function is already specified by the overtly manifested grammatical structure. The semantic function defines the possible referents for this part of the utterance; in the case of functional ellipsis, only those functions can be applied which are compatible with the grammatically determined meaning in the constituent that is overtly manifested.

All of the foregoing in this section is definitional, and will have validity only inasmuch as it leads to a revealing analysis of linguistic behavior.

In closing this definitional section, I should point out that the kind of meaning in which ellipsis appears to play a role by no means exhausts the catalogue of semantic structure types. The notion
'propositional meaning' developed in Chapter II is what is germane here, and this notion does not include such important aspects of meaning as quantification or modality. The distinctions in meaning that arise in pairs like *Everyone loves everyone* and *Everyone loves himself* or *John will come* and *John might come* have been considered only tangentially for this study. They are perhaps only marginally related to what can go on in ellipsis.

1.2 Constituent Ellipsis and the Grammatical Notion 'Argument'

Whenever an act of larceny is reported, e.g.,

(1) a. A theft has occurred.
   b. A robbery has occurred.
   c. A burglary has occurred.

we understand three entities to have been involved in a particular relationship: a thief, a victim and some booty. The thief deprives the victim of a possession by illegal means. There must have been an event perceivable as having something like the following structure:

(2) LARCENY:

   VICTIM → BOOTY → THIEF

   THIEF TAKES INITIATIVE
   ILLEGAL CHANGE OF POSSESSION

The thief, the victim and the booty may not be identified in the report, but we know that if the report is true, then all three exist. This core to the meaning 'larceny' is in effect a set of truth conditions. If the situation referred to in any of the utterances in
(1) lacked one of the key elements, e.g., there was a potential thief and a potential victim, but nothing was stolen, or someone took something that didn't belong to anyone (there was no victim), then the report would be false.

Eschewing many problems with which the description of meaning is fraught, I am going to define as argument a subpart of propositional meaning capable of syntactic manifestation. 'Larceny' will serve as a paradigm example. The three subparts of meaning that I have discussed can correspond to subparts of the syntactic structures governed by words with this meaning, e.g.,

(3) a. The theft of the crown jewels from the queen by the Pink Panther brought a drop in the stockmarket.
b. The Pink Panther stole the crown jewels from the queen.

We saw a discussion of (3b) in Chapter II. In (3a) we see a parallel phenomenon. The three aspects of the meaning 'larceny' are discrete subparts of the syntactic structure, in (3b) subparts of the sentence, in (3a) subparts of the subject noun phrase. A situation exists in semantics akin to that in phonology where there is no obvious cut-off point in the amount of detail possible in a description which is linguistically pertinent; however, when we tie the notion 'argument' to 'possible syntactic manifestation', we arrive at at least a working definition.

If we say that the meaning 'larceny' has three arguments, then it will follow that we have an instance of constituent ellipsis every time a word carrying that meaning is expressed without there being the same number of PLAYERS as there are arguments. Thus, the utter-
ances in (1) are elliptical, and those in (3) are not.

In the view I have adopted, the propositional meaning in (2) is an inherent part of the lexical items such as theft and steal and not of the tree structure which dominates the lexical item. The most abstract syntact representation of (1a) would be simply as follows:

(4)

```
S
  NP     VP
    D   N  V  PP
      a theft has occurred
```

The noun theft is REFEREE within the subject noun phrase. It has propositional meaning with three arguments, but in this case, no PLAYERS and so it is an instance of constituent ellipsis.

The syntactic representation for the non-elliptical sentence (3a) would be as follows:

(5)

```
S
  NP
    D N PP PP PP
      the theft of the crown jewels from the queen by the Pink Panther brought down the stockmarket
```

The fact that speakers of English understand the crown jewels to be BOOTY in this utterance, the queen a VICTIM and the Pink Panther
a THIEF is due to the propositional meaning carried by the head noun theft. As a first approximation, we can say that the lexical item has the following structure:

(6)

and that as semantic functions, BOOTY, VICTIM and THIEF are spread in semantic interpretation from the head noun to its complements within the phrase. The subtree for the subject noun phrase of (5) goes from (7a) to (7b):

(7) a.

b.
If the head noun theft in subject of (4) were changed from theft to purchase, so that we got instead:

(8) The purchase of the crown jewels from the queen by the Pink Panther made the headlines.

the constituent structure tree (5) would be changed only by virtue of that one lexical item. The meaning, on the other hand, would change considerably. Instead of being viewed as BOOTY, I will say that as object of purchase the crown jewels would be a COMMODITY; instead of a VICTIM, the queen would be a SELLER; instead of a THIEF; the Pink Panther would be a CUSTOMER.

Whenever a transaction takes place, we understand four entities to be involved, a SELLER, a CUSTOMER, a COMMODITY and MONEY. For the transaction to take place, the COMMODITY has to pass from the SELLER to the CUSTOMER, and the MONEY has to pass in the opposite direction. In the case of a word like purchase, we understand the CUSTOMER to take the initiative; with sale it is the SELLER. All words with transactional meaning have as extensions (possible referents) the universal set of events perceivable as having the following structure:

(9) TRANSACTION:

\[ \text{SELLER} \xrightarrow{\text{COMMODITY}} \xleftarrow{\text{MONEY}} \text{CUSTOMER} \]

The lexical structure for the noun purchase (as regards its propositional meaning) can be represented crudely as follows (we omit showing that the CUSTOMER is the one taking initiative):
Thus, in semantic interpretation, we would move from representation (11a) to (11b):

(11) a. 

Tree representation (11b) is a projection from (11a). It is (11a) that is primary in the view I am presenting here. The essential difference between the meanings of (4) and (8), with theft and purchase respectively, can be seen in tree representations (7a) and (11a). Now while the constituent structure for (4) and (8) is identical, the latter meets my definition of constituent ellipsis, while the former
does not. In the case of (8) with purchase there is a fourth argument MONEY for which there is no PLAYER in the syntax. A non-elliptical variant of (8) would be as follows:

(12) The purchase of the crown jewels from the queen by the Pink Panther for $500,000 made the headlines.

$500,000 is understood as the MONEY used in the transaction that passes from the CUSTOMER to the SELLER. Since there is no such argument in the propositional meaning for theft, using a phrase such as for $500,000 to expand (4) would produce an anomaly for most speakers:

(13) *The theft of the crown jewels from the queen by the Pink Panther for $500,000 made the headlines.

If (13) is acceptable at all it is with for $500,000 interpreted not as a PLAYER for theft, but as a PLAYER for an adjunctive construction of purpose modifying the whole proposition that theft governs, i.e., The Pink Panther did it for $500,000. For those whose dialects do not allow adjuncts of purpose in noun phrases of this sort, this is an instance of too many PLAYERS, on the same order as *The hour elapsed the tree. In any case, there is no lexically determined semantic function for for $500,000 when theft is the head noun.

If one wanted to contend that TIME and PLACE are always a part of the semantic structure of an utterance, then we would have many more instances of what I have defined as constituent ellipsis. John gave the book to Bill in Chicago last Wednesday would be non-elliptical, but John gave the book to Bill would be constituent ellipsis. This is independent of the question of whether the TIME orientation of the
event is understood as point location in time or duration of time.

The notion of 'argument' as a subpart of propositional meaning that is capable of syntactic realization is one that begs for universal delimitation. It may be that there are some semantic features that are always arguments in human language, but others that are language specific, drawn from a universal pool of possible arguments. I have little basis for a generalization at this point. So far, I have been impressed by the similarity in arguments from language to language.

The phrase with which I have defined the grammatical notion 'argument', 'possible syntactic manifestation', is itself open to several interpretations, and, as will become apparent, I intend the least strict interpretation here. An extreme example will be useful at this point.

In Shopen and Konaré (1970) the facts of Sonrai passive verbs are described: in Sonrai almost any transitive expression such as 'John broke the window', or 'The rock broke the window' has a corresponding passive sentence, much as in English, but with the big qualification that there is no 'passive agent'. There is no way to say in Sonrai 'The window was broken by John' or 'The window was broken by the rock', only 'The window was broken'. In the case of the Sonrai passives I would say that there is an argument CAUSE, even though it can never be realized syntactically in that construction. I do so because of the great many other Sonrai constructions where CAUSE can be manifested syntactically. The window was broken is an example of constituent ellipsis in either English or its Sonrai translation. In Sonrai this constituent ellipsis is obligatory, in English optional.
Thus, 'possible syntactic manifestation' is to be taken in a broad sense — i.e., 'possible in the language' rather than 'possible in the utterance type' or 'possible in constructions governed by a particular lexical item'. Sonrai passives exclude expression of 'agent' functions categorically, but these can be called arguments because they occur overtly in other utterance types. Similarly, even though, as we shall see, the BOOTY can never be manifested syntactically when the REFEREE is the noun burglary, we will say BOOTY is always an argument with expressions of larceny because its syntactic manifestation is possible in other contexts. With progress in developing a universal semantic theory we will no doubt be able to supply a more rigorous and revealing definition of 'argument'.

1.3 Obligatory Ellipsis in English

In Chapter II we saw that the complexity of propositional meaning associated with a REFEREE was not a gauge of the syntactic complexity required for the kind of internal well-formedness I have called integrity. In most dialects of English, it appears that one can say Henry explained, but not *Henry expected, Fred promised, but not *Fred persuaded, Jack gave, but not *Jack sent, Ralph borrowed, but not *Ralph loaned. All of these utterances, it would generally be agreed, have more arguments in their propositional meaning than there are PLAYERS in the syntax, but only some of them are well-formed. Those which are ill-formed are instances of too few PLAYERS. An array of examples such as these shows that the capacity for constituent ellipsis
is in great part an idiosyncratic property of lexical entries.

Well-formed utterances such as Henry explained, Fred promised, A theft has occurred and A purchase has occurred show that constituent ellipsis is possible within the bounds of integrity; further explorations will show that constituent ellipsis is sometimes necessary. This is to say that there are sometimes subparts of meaning that we will want to include under the notion 'argument' which cannot be represented by PLAYERS.

Returning to the nouns of larceny, we see an instance where there are REFEREES that require constituent ellipsis, i.e., do not allow PLAYERS to represent all the arguments of their propositional meaning (the judgements of many English speakers):

(14) a. The theft of the crown jewels from the queen by the Pink Panther brought down the stock market.
    b. ??The robbery of the crown jewels from the queen by the Pink Panther brought down the stock market.
    c. *The burglary of the crown jewels from the queen by the Pink Panther brought down the stock market.

In my dialect, and those of many English speakers I have consulted, the only PLAYER which all three of these nouns of larceny, theft, robbery and burglary, allow is the one representing the THIEF:

(15) a. The theft by the Pink Panther brought down the stock market.
    b. The robbery by the Pink Panther brought down the stock market.
    c. The burglary by the Pink Panther brought down the stock market.

I have found no speakers that allow a PLAYER for the BOOTY associated with the noun burglary, i.e., no one seems to accept The
burglary of the jewels..., The burglary of the payroll..., etc. The 
judgements I have encountered can be summarized as follows:

\[
\begin{aligned}
\text{(of the) } & \quad \text{(from) } & \quad \text{(by the) } \\
\text{The theft} & \quad \checkmark & \quad \checkmark & \quad \checkmark \\
\text{The robbery} & \quad ?* & \quad ?\checkmark & \quad \checkmark \\
\text{The burglary} & \quad * & \quad ?* & \quad \checkmark \\
\end{aligned}
\]

brought down
the stock
market.

There are additional intricacies concerning the nouns of
larceny which need not detain us here for long. Some speakers will
not accept The robbery from the queen, but will accept The robbery of
the queen where the VICTIM is concerned. In place of the VICTIM him-
self, robbery allows expression of the PLACE associated with the VICTIM
from which the BOOTY is taken, but here there are peculiar restric-
tions. In my dialect it is OK to say The robbery of the bank, but for
some reason less good to say The robbery of the Bursar's office (unless
the Bursar's office is the BOOTY). The full account would be quite
lengthy. But the important point for this discussion is already
established. If it is agreed that the notion of BOOTY, VICTIM and
THIEF are semantic properties of these three nouns; further, if it is
agreed that BOOTY, VICTIM and THIEF should appear in some consistent
fashion as subparts of the meaning of these three nouns (as arguments,
using a predicate calculus formalism), then we have shown that there
exist cases of obligatory constituent ellipsis.

Other examples are not hard to find. In some dialects there
is an intransitive verb to thieve. One can only say John thieves
for a living or the like. BOOTY and VICTIM are unexpressible, e.g.,
*John thieves pocket books for a living.
A convenient example is provided by the agential nouns writer and poet. The agents designated by these nouns are both understood to cause something to come into existence: specifically, a writer creates any kind of literary art, while a poet creates poetry. Only one allows the expression of an object, etc.,

(17) a. He is a writer of sonnets.
    b. *He is a poet of sonnets.

(18) a. John is the writer of those sonnets.
    b. *John is the poet of those sonnets.

Yet anaphorically, poet as well as writer can have an understood object,

(19) Who did that beautiful book of sonnets and etchings?
    -My friend Tom was the poet, and a girl named Susan Wright did the etchings.

The ill-formed utterances with *the burglary of the jewels,
*John thieves pocket books, *He is a poet of sonnets, etc. are further instances of too many PLAYERS, but of a new sort. Here the PLAYERS which are disallowed correspond to arguments in the meaning of the REFEREE: governing the construction.

1.4 Lexical Entries for REFEREES and a Notation for Obligatory Constituent Ellipsis

I will assume that it is reasonable to attribute a common core of meaning such as is diagrammed in (2) to the three nouns of larceny, theft, robbery and burglary, and I will proceed to formalize the
notion 'obligatory ellipsis'. That is, I will present a notation for lexical entries in which I can show that these three nouns have the same three arguments, but different capacity for the syntactic realization of these arguments. This is an appropriate point at which to make a slight excursion to expand the formalism for lexical entries introduced so far. In what follows I draw from Shopen and Konaré (1970), and from ideas gained from a reading of the manuscript for Ray Jackendoff (forthcoming). In particular, I am grateful to Jackendoff for the idea of making general use of a predicate CHANGE, for change of state and motional predicates alike.

Gruber characterizes motion predicates in terms of a THEME, the entity which is moving, a SOURCE, the point from which the motion eminates, and a GOAL, the point at which the motion terminates. We can avail ourselves of these notions by incorporating a predicate CHANGE in lexical entries having three arguments. In the proposition (CHANGE x, y, z), we will say that the first term x is understood as the THEME, the second y as the SOURCE and the third z as the GOAL. For Gruber, THEME, SOURCE, and GOAL, as well as other functional terms, were labels on prelexical trees. For us, on the other hand, they will be terms in the lexical items themselves, and the term symbols x, y, z, etc. will be used as subscripts to syntactic cooccurrence features to show the correspondences between deep structure grammatical relations and the subparts of porpositional meaning.

I will be using the label 'argument' in two senses: I will continue to say things such as "The verb give takes three arguments" where in fact I am talking about what could be called 'surface
arguments'; at the same time, I will also talk about semantic predicates as having arguments. In the latter case, it could be said that I am talking about 'deep arguments'. As we shall see, the number of 'surface arguments' is frequently less than the number of 'deep arguments'. This is because propositional meaning for a single lexical item can often involve more than one semantic predicate. To begin with a simple case, consider the non-agential and intransitive use of the verb of motion **slide**:

(20) The log slid from the bushes to the bottom of the ravine.

The log is the THEME of motion, the bushes the SOURCE and the bottom of the ravine the GOAL. Semantically, I will use the notation:

(21) 

```
[CHANGE x y z]

PHYSICAL MOTION
MOVE EASILY WITH CONTINUAL SURFACE CONTACT
```

Example (20) can be parsed semantically as follows, using the terms from the semantic description:

(22) The log slid from the bushes to the bottom of the ravine.

\[
\begin{array}{c}
\text{x} \\
\text{y} \\
\text{z}
\end{array}
\]

There is a small step in abstraction from (22) to the lexical entry for **slide**. I will say that the syntactic cooccurrence feature for **slide** in its intransitive usage ought to be:

(23) [NP ___ (PP)*]
The asterisk in the expression \((PP)^{\ast}\) is borrowed from automata theory and means 'any number of'. Thus, there may be no PPs, or any number of them.

To show that the THEME is realized in subject position, and that SOURCE and GOAL can optionally be realized in prepositional phrases that come to the right of the verb we can use the terms of the semantic structure again as subscripts:

\[(24) \ [NP \quad (PP)^{\ast}] \]
\[\quad x \quad y, z\]

I assume that general conventions will make from the unmarked preposition compatible with the function SOURCE and to the same for GOAL. A good deal of what is used in individual entries here appears to me redundant, but I will leave the statement of redundancies for a further study. Now we are ready to present an approximation of a lexical entry for the intransitive, non-agential slide. The ordinary spelling slide will stand for its phonological representation.

\[(25) \quad slide, \ +V\]
\[\quad [NP \quad (PP)^{\ast}] \]
\[\quad \quad x \quad y, z\]
\[\quad [CHANGE \ x \ y \ z] \]
\[\quad PHYSICAL MOTION \]
\[\quad MOVE EASILY WITH CONTINUAL SURFACE CONTACT\]

We will have an instance of constituent ellipsis when one of the arguments for slide, which is to say one or more of the terms of the semantic structure, is not realized syntactically, e.g.,\(^3\)
(26)  a. The log slid.
    b. The log slid to the bottom of the ravine.

Now we can proceed to more complex cases. Still in intransitive usage, agential interpretations are possible for slide, e.g.,

(27) John slid from the bushes to the bottom of the ravine.

The analysis of the notion 'agent' is fraught with difficulties (see footnote 14, Chapter 1 for a possible representation). The aspect of meaning that I will seize on here is the general notion of 'cause'. There are different kinds of causes, but I will ignore the distinction here. We can see that John can be the cause of his sliding under one interpretation of (27). The sentence passes standard tests for 'agency', e.g., it can be expanded by manner adverbs like carefully, purposefully. Agency is one kind of CAUSE, and instrumentation is another. I will deal only with the gross category 'cause' here.

I will incorporate a predicate CAUSE that has two arguments. In the propositional notation (CAUSE x, y) we are to understand that the first argument x is the cause of the second y. In place of a term like y, we can have a whole proposition serving as the second argument. What we want to say about the interpretation in view here is that John is the cause of the change in which he takes part. We will say that he is the first argument for the predicate CAUSE, and that the semantic structure in (21) is the second argument. The complex semantic structure is as follows:
(28) \[[\text{CAUSE } x \ [\text{CHANGE } x \ y \ z]]\]

PHYSICAL MOTION
MOVE EASILY WITH CONTINUAL SURFACE CONTACT

Here we see that the same term which is the cause of the motion is also the one which is moving. (27) parsed semantically is as follows:

(29) \text{John slid from the bushes to the bottom of the ravine.}

As opposed to (22) with log in subject position, when we place \(x\) under the subject here we are saying that it fulfills two semantic functions: it is not only the THEME of physical motion, but the direct cause of that physical motion. Of course this interpretation with \(\text{John}\) is optional. (27) could also be interpreted as (20) was. We have in this interpretation a complex surface argument, one that corresponds to more than one semantic function. The more complex lexical entry for intransitive \text{slide} would look now as follows:

(30) \[[\text{slide}, +V]\]

\[[\text{NP } \text{(PP)*}]\]

\[x \ y, \ z\]

\((\text{CAUSE } x \ [\text{CHANGE } :x \ y \ z])\)

PHYSICAL MOTION
MOVE EASILY WITH CONTINUAL SURFACE CONTACT

Note that both parentheses and square brackets are used here. The parentheses amount to a collapsing notation showing that a causative interpretation is optional. In effect \((\text{CAUSE } x \ [\text{CHANGE } x \ y \ z])\) stands for two interpretations, the one in (21), \([\text{CHANGE } x \ y \ z]\)
(non-causative), and the one in (28), [CAUSE x [CHANGE x y z]]
(causative).

The transitive use of slide leads to a fairly obvious analysis, given what precedes.

(31) John slid the log from the bushes to the bottom of the ravine.

Here John has an orientation which is indeterminate spatially. What is asserted of him here is that he is the cause. (32a) appears the appropriate semantic notation and (32b) the semantic parsing of (31):

(32) a. [CAUSE w [CHANGE x y z]]
b. John slid the log from the bushes to
   w  x y
   z
   the bottom of the ravine.

Here is the lexical entry for transitive slide:

(33) slide, +V

[NP NP (PP)*]

w  x  y, z

[CAUSE w [CHANGE x y z]]

PHYSICAL MOTION:

MOVE EASILY WITH CONTINUAL SURFACE CONTACT

Several other kinds of verbs with complex surface arguments are worth noting here. In the agential interpretation of (27), the subject NP is both the CAUSE and the THEME. We can also have instances where a subject NP is CAUSE and SOURCE, others where it is CAUSE and GOAL. An obvious example of the former is give.

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(34) John gave a necktie to Bill.

Following Gruber we can call verbs where the subject is SOURCE 'left to right' verbs, since the motion moves from a left hand syntactic element to a right hand one.

Semantic notation for give will use the same term for the CAUSE and the SOURCE:

\[
(35) \quad \text{[CAUSE } y \ [\text{CHANGE } x \ y \ z)] \\
\quad \text{POSSITIONAL MOTION}
\]

- The semantic parsing of (34):

(36) John gave a necktie to Bill.
\[\begin{array}{ccc}
  y & x & z \\
\end{array}\]

The lexical entry for give:

\[
(37) \quad \text{give, +V} \\
\quad \text{[NP } y \ (NP) \ (PP)] \\
\quad \text{[CAUSE } y \ [\text{CHANGE } x \ y \ z)] \\
\quad \text{POSSITIONAL MOTION}
\]

The converse case to give is obtain, with an agential interpretation:

(38). The New York Times obtained the Pentagon Papers from a former aide to MacNamara.

Here the semantic representation should show that the subject NP is not only CAUSE, but GOAL as well:
(39) \([\text{CAUSE } z \ [\text{CHANGE } x \ y \ z]]\)

POSSITIONAL MOTION

Applied to (38) we get the following:

(40) The New York Times obtained the Pentagon Papers
from a former aide to MacNamara.

We can call such verbs 'right-to-left' since the motion is from a right hand syntactic element to a left hand one (cf. Gruber, 1967 for useful lists of left-to-right and right-to-left predicates). The lexical entry for the agential use of obtain:

(41) \([\text{obtain}, +V] \ [
  [\text{NP } z \ [\text{NP } x \ [\text{NP } y]]\]
  [\text{CAUSE } z \ [\text{CHANGE } x \ y \ z]]\]
  \[\text{POSSITIONAL MOTION}\]
\)

In all expressions of larceny the CAUSE of the act of larceny is also the GOAL of possessional motion. The semantic structure:

(42) \([\text{CAUSE } z \ [\text{CHANGE } x \ y \ z]]\)

POSSITIONAL MOTION
BY ILLEGAL MEANS

Following our observations in the previous subsection, and the notational conventions adopted here, an important difference between the lexical entries for the nouns of larceny, theft, robbery and burglary will be the terms from the semantic structure that appear as

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subscripts to the syntactic cooccurrence feature. (Of course there
are other differences, too, but not relevant to the notion of ellipsis.)
I will exclude consideration of possessive constructions such as The
Pink Panther's theft of the jewels from the queen, and simply refer
to a syntactic cooccurrence feature such as the following for these
nouns:

(43) [D ___ (PP)*]

Using this more abstract notation, the BOOTY is the THEME of
possessional motion, the VICTIM is the SOURCE and the THIEF is both
the GOAL and the CAUSE. In the dialect where theft allows syntactic
expression of all three surface arguments, robbery has obligatory
ellipsis of the BOOTY, and burglary obligatory ellipsis of both the
BOOTY and the VICTIM, a first approximation of the lexical entries for
these nouns would appear as follows:

(44) a. theft, +N, [D ___ (PP)* ]
    x, y, z
    [CAUSE z [CHANGE x y z ]]
    POSSESSIOINAL MOTION
    BY ILLEGAL MEANS

b. robbery, +N, [D ___ (PP)* ]
    y, z
    [CAUSE z [CHANGE x y z ]]
    POSSESSIOINAL MOTION
    BY ILLEGAL MEANS
1.5 The Musical Chair Phenomenon (Explaining the Verb Explain)

The situation sometimes arises where a REFEREE has more arguments than can be expressed syntactically, i.e., its possible number of PLAYERS is exceeded by the number of arguments. Such is the case with the verb explain. I will take here the sense of that verb where to explain something means to communicate to someone what has caused it, e.g.,

(45) John explained the flat tire to Bill.

There are three arguments in (45): the SOURCE and CAUSE of the explanations (John), the problem being explained (the flat tire) and the GOAL of the communicative act (Bill). There is another argument that is covert, and that is the explanation itself. We can justify calling it an argument, because it can be manifested syntactically:

(46) John explained to Bill that there had been nails on the driveway.

On the one hand, the sense of (46) is different from that of (45) in that the 'explanation' has been foregrounded, and the 'problem' backgrounded, but, on the other hand, we shall see that there is good
reason to believe that the same basic meaning of explain is involved in both examples, with the same four arguments. Compare the elliptical effect of (46) to the non-elliptical sense of the corresponding sentence with said, John said to Bill that there had been nails on the driveway.

The striking fact about explain is that if one tries to express both the problem being explained and the explanation itself, the resulting expression lacks integrity by virtue of having too many players.

(47) *John explained the flat tire that there had been nails on the driveway.

Various extra syntactic shenanigans are possible as a means of getting all four arguments in. If one defines manner constructions as being ones that correspond to interrogation with how, then either (48a) or (48b) would be instances of manner constructions. They are natural responses to the question How did John explain the flat tire?

(48) a. John explained the flat tire to Bill by saying that there had been nails on the driveway.
b. John explained the flat tire to Bill with the statement that there had been nails on the driveway.

In either of these two utterances the argument 'explanation' corresponds to a player, the that S construction. But in contrast to (46) just above, the that S construction is not a player for the verb explain. Rather, it is a player for the referee say and statement. The verb explain, having four arguments but a maximum of only three players, always is associated with constituent ellipsis in the
constructions it can directly govern. On the other hand, using a circumlocution such as the manner expressions above, the total utterance in which explain occurs may be non-elliptical.

While various 'manner' constructions are being used in (48) to overcome ellipsis of one of the arguments of the main verb, this is by no means a necessary state of affairs. There is good reason to characterize manner constructions as optional 'adjuncts' that modify the meaning of the main verb, but are not governed by it. The verb die takes one surface argument (cf. below, subsection 1.7 on change of state verbs) and yet we can say things like John died trying to climb Mt. Everest or John died from an overdose of sleeping pills, either of which would answer the question How did John die? We understand that climbing the mountain or the overdose of sleeping pills was the cause of John's death. CAUSE appears to be one of the semantic functions determined by manner constructions.

The semantic function CAUSE is to be interpreted from the manner construction itself and not from the lexical entry for die. It involves syntactically determined functional meaning, rather than the lexically determined variety, cf. Section 2 of Chapter II.

If this view is correct, then we can say that (48a) and (48b) receive semantic interpretation as follows: the manner construction creates a link between e.g., saying that there had been nails on the driveway and the nucleus of the clause. This subpart of the utterance is understood thereby to be the means of explaining the flat tire. Once the adjunct is related to the nucleus governed by the verb explain, the semantic function 'explanation' can be attached to it.
In the final reading, the phrase that there had been nails on the driveway can be understood with the same semantic function attached to it as in a simpler construction, such as the one in (46). The nucleus governed by explain is elliptical, but with the manner adjunct, the utterance as a whole is not elliptical.

Of particular interest is an utterance such as the following:

(49) As for the flat tire, John explained to Bill that there had been nails on the driveway.

Here all four arguments are included by virtue of a topicalization construction. Because the flat tire can be interpreted as an argument for explain, the overall effect of (49) is one of a clear, self-contained meaning. By contrast, consider:

(50) As for the flat tire, John went to Indianapolis.

Out of context, (50) has an effect of mystification. This is because there is no way to consider the flat tire as an argument for the verb go. The topicalization construction here leads to a very indeterminate semantic link between the flat tire and the rest of the meaning in the utterance. The grammatically determined meaning in (50) is simply that the flat tire is somehow the topic of John's going to Indianapolis. The term 'topic' appears quite appropriate here. The clause John went to Indianapolis is a 'comment' on the flat tire. This extended notion of 'topic-comment' will be taken up again in Section 2 of Chapter IV.

With imagination, the reader can come up with an acceptable interpretation of (50): John is the only person who can fix the flat
tire and he has gone to Indianapolis; alternatively, John took the
tire to Indianapolis to be repaired. The connection can be much more
elaborate: we are trying to solve a crime; outside in the street,
remnants of a flat tire are discovered that match the type of tire
John has on his car; that would make John a suspect except that he had
already gone to Indianapolis. Harder to decipher would be something
like:

(51) As for the flat tire, John scored 87 on the geography test.

One can make a parlor game out of such instances of semantic
indeterminacy: where this topicalization construction is concerned
an acceptable context can always be found. The only requirement seems
to be that in the construction of the form As for X, Y, the X be
interpretable as being in some vague sense a relevant comment on what
is expressed in the Y. In the case of (51) we can imagine that John
had been promised a bonus of several dollars on his allowance if he
scored over 90 on the geography test. Now that he has scored only 87,
it is clear that he won't get that extra money. This is relevant to
the flat tire, we can say, because we had been hoping for John to pay
to have it repaired. Now, however, we cannot ask him to pay, because
he has no more money than usual. This is a 'far-fetched' but possible
context and one that can make (51) acceptable.

The most obvious interpretation of (49) As for the flat tire,
John explained to Bill that there had been nails on the driveway would
appear to proceed as follows: the topicalization construction requires
the phrase the flat tire to be understood as relevant to the main
part of the utterance. The verb explain has an extra argument available and this is extended to the flat tire as the easiest means of joining all together in a conceptually satisfying whole. The flat tire is understood as the 'problem' being explained.

It should be emphasized that we arrive at a connection between the flat tire and the verb explain by virtue of the topicalization construction; the flat tire is governed by that construction, and not by explain. We have seen that when we try to put the flat tire ('the problem') in the main part of the clause together with the other three arguments, we get an ill-formed utterance, e.g., example (47). The only way the phrase as for the flat tire can be associated with the main part of the clause in (49) is in initial position with a comma. It can be inserted parenthetically, but with a sustained intonation it is not acceptable in any other position:

(52)  a. *John explained to Bill that there had been nails on the driveway as for the flat tire.
     b. *John explained to Bill as for the flat tire that there had been nails on the driveway.
     c. *John explained as for the flat tire to Bill that there had been nails on the driveway.

I conclude then that explain can govern at most only three PLAYERS directly even though it has a meaning with four arguments. This is what I refer to as the musical chair phenomenon: as in the game, there are more participants than there are positions available. The lexical entry for explain will have to include a particular kind of disjunction to capture this musical chair property.

We will limit ourselves to the sense of explain where what is understood is the communication of a particular kind of assertion from
one person to another. In this abstract motion, the THEME is itself a proposition of the form [CAUSE x w], meaning 'x is the cause of w'. At the heart of the meaning of explain that we are concerned with then is the following propositional structure:

(53)  
\[
\begin{align*}
\text{[CHANGE [CAUSE x w] y z]} \\
\text{ABSTRACT MOTION} \\
\text{COMMUNICATION}
\end{align*}
\]

This says that the assertion 'x is the cause of w' moves from y to z. To complete the representation of this meaning of explain, (53) will be embedded in a larger proposition that shows that the SOURCE of this communication (y) is also the one that takes initiative and causes it to happen (explain is thus like give in that the subject is a complex surface argument functioning as both SOURCE and CAUSE):

(54)  
\[
\begin{align*}
\text{[CAUSE y [CHANGE [CAUSE x w] y z]]} \\
\text{ABSTRACT MOTION} \\
\text{COMMUNICATION}
\end{align*}
\]

One of the possible syntactic realizations of this propositional meaning is, as we have seen, one which backgrounds the 'explanation' (the term x just above), but foregrounds the 'problem' (the w) as the direct object, e.g., example (45) semantically parsed:

(55)  
\[
\begin{align*}
\text{John explained the flat tire to Bill.} \\
\text{y w} \\
\text{z}
\end{align*}
\]

This usage of the verb explain corresponds to the syntactic cooccurrence feature [NP ___ (NP) (PP)]. According to my analysis, this sense of explain allows intransitive usage, hence both the NP and
the PP after the verb are shown as optional. (NB. the anaphoric force Did John explain the accident? - Yes, he explained. But if the question is Did John explain that Bill had fallen asleep?, the same answer is not possible, cf. footnote 4 of this chapter.) The other syntactic realization of the semantic structure in (54) is of course the one in which the 'explanation' is foregrounded in the form of a that S construction and the 'problem' is backgrounded, e.g., example (46) semantically parsed:

(56)  \[
\text{John explained to Bill that} \\
\text{there had been nails on the driveway.}
\]

This usage corresponds to the syntactic cooccurrence feature [NP ___ (PP) that S]. Using the terms from the semantic structure as subscripts and the standard notation for disjunction, we can say that the lexical entry for explain should include the following:

(57)  \[
\left\{ \begin{array}{c}
\text{(NP)} \\
\text{(PP)} \\
\end{array} \right\}
\]

Here then in this disjunctive notation we have a formalization of what I have called the musical chair phenomenon. It shows the distribution of \(w\) and \(x\) to be in this special sense complementary. \(w\) can be realized syntactically if the top line is chosen, \(x\) if the bottom line is chosen, but not both at once. Putting together all that we have discussed for the lexical entry for explain we should have a representation such as the one that follows:

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1.6 Portmaneteau PLAYERS

It is possible for the constituent meaning of a single PLAYER to satisfy more than one argument for a REFEREE. The verb explain, analyzed just above, provides a convenient example: with three PLAYERS, four arguments are expressed.

(59) a. John explained to Bill that the flat tire occurred because there had been nails on the driveway.
    b. John explained to Bill that nails on the driveway had caused the flat tire.

The that S PLAYER expresses an explanation which itself reiterates the problem. It is easy to see how hierarchical notation could be provided in the lexical entry for explain so that the whole proposition ('the explanation' in a more inclusive sense) [CAUSE x w] could be referred to with a single term that could then be listed as a possible correspondence for the that S construction.

The propositional meaning for the sense of explain we have been discussing is as in (60a). We will use an additional term y to refer to the complex argument for the predicate CHANGE as a single unit, hence (60b).
(60) a. [CAUSE y [CHANGE [CAUSE x w] y z]]
b. [CAUSE y [CHANGE [CAUSE x w] y z]]

Now there are two levels on which the semantic structure can be parsed. We repeat as (61a) example (46), parsed as it should be with one of the terms of the semantic representation ellipted: (60a) is sufficient for this. Then as (61b) we present example (59a) parsed with the alternate set of terms provided in (60b).

(61) a. John explained to Bill that there had been nails y z x on the driveway.

b. John explained to Bill that the flat tire occurred y z because there had been nails on the driveway.

When we use the term u in (61b) we are saying in effect that a single syntactic constituent corresponds to a complex semantic expression with several terms in it: in this case, both the x and the w of the predicate CAUSE are realized in this single syntactic element. In this sense the sentential complement is a portmanteau PLAYER. Our revised lexical entry for explain will then include the following:

\[
\begin{align*}
&\text{(62) } [\text{NP } \underline{\text{PP}} \text{ that } S] y z \{x\} \\
&[\text{CAUSE y [CHANGE [CAUSE x w] y z]] u]
\end{align*}
\]

This shows that there are two ways in which the sentential complement can be interpreted. Altogether, our analysis of the lexical entry for explain is as follows:
Another musical chair verb lends itself to the same kind of portmanteau correspondence: the verb answer. I am grateful to Barbara Partee for getting me interested in the verb answer in this respect. Conceptually, there are four entities involved when someone answers: there are two people communicating; one of them performs a communicative act, e.g., a question, and the other gives the answer. That all four are arguments (in the sense I have given here) can be demonstrated by the fact that each can be realized syntactically:6

(64) a. John answered Bill.
   (the 'answerer', and the 'communicative partner')
   b. John answered the question.
      the signal, the gesture, etc.
      the order, command, etc.
      the invitation to go to the party.
      the suggestion that Harry was disloyal.
      the criticism, the attack, etc.
      the letter, telegram, etc.
      (the 'answerer' and the 'communicative act')
   c. John answered that Quito was the capital of Ecuador.
      John answered "Quito is the capital of Ecuador".
      (the 'answerer' and the 'answer')

It is difficult to express all four arguments at once. Answer usually allows only two PLAYERS and at most three PLAYERS can be
manifested in ordinary clause construction:

(65) a. *John answered the question to Bill.
    b. *John answered Bill the invitation.
    c. *John answered the invitation that he would be glad 
       to come.
    d. John answered to Bill that he would be glad to come.

With what appears to be in each case a topicalization con-
struction, certain combinations are possible that would not be other-
wise:

(66) a. To the invitation, John answered that he would be 
    glad to come.
    b. As for the invitation, John answered that he would 
    be glad to come.
    c. *John answered to the invitation that he would be 
    glad to come.
    d. *John answered to the invitation.

A portmanteau PLAYER is possible by use of various construc-
tions with the noun phrase. It is usually the case that wherever 
the 'communicative act' is realizable, the person responsible for it 
can be included too.

(67) a. John answered the teacher's first question.
    b. John answered the letter from Susan.
    c. John answered the criticism that his opponent had 
directed towards him.

It is of interest that even in the examples of (67) we still 
have ellipsis: even with portmanteau PLAYERS answer allows only three 
of its four arguments to be manifested in ordinary clause construction. 
The portmanteau PLAYERS allow us to express the 'answerer', the 
'communicative act' and the 'communicative partner', but the 'answer' 
is still not expressed. Only with a syntactically governed adjunct
and a portmanteau PLAYER is it possible to get all of the arguments of
answer manifested syntactically.

(68) a. To the teacher's first question, John answered that
       Quito was the capital of Ecuador.
   b. *John answered (to) the teacher's first question that
       Quito was the capital of Ecuador.

(69) a. John answered the letter from Susan by saying that he
       thought she was doing the right thing.
   b. *John answered the letter from Susan that he thought
       she was doing the right thing.

(70) a. As for the criticism that his opponent had directed
       towards him, John answered that he was proud to have
       been a hippy.
   b. *John answered the criticism that his opponent had
       directed toward him that he was proud to have been
       a hippy.

If the 'communicative act' is named only indirectly, a pos-
sessive construction no longer has the portmanteau effect. In the (b)
examples below Bill cannot be interpreted as responsible for the
communicative act. 7

(71) a. John answered Bill's telephone call.
    b. John answered Bill's telephone.

(72) a. John answered Bill's knock.
    b. John answered Bill's door.
1.7 Change of State and Inchoative Expressions

The notion of a predicate CHANGE with three arguments, a THEME, a SOURCE and a GOAL would appear to be widely applicable to all sorts of meaning. Besides the sorts of meaning discussed by Gruber, physical motion (roll, move, go, etc.), abstract psychological motion (teach, learn), possessional motion (give, receive, get) and transactional motion (buy, sell) there are other important kinds of meaning for which the notion is quite as apt. Note the following examples of what Gruber calls 'durational verbs'. There is not any motion through space expressed, but correspondingly there is motion through time. 8

(73) a. The rain lasted from Friday to Monday.
    b. John stayed in the igloo from December to March.

(74) a. The rain lasted through the weekend.
    b. John stayed in the igloo through the weekend.

Change of state verbs lend themselves to the same analysis, though this is not always so obvious. By definition, a change of state verb presupposes a before state, and asserts an after state (cf. Fillmore 1970). We will consider the before state the SOURCE, the after state the GOAL, and the entity undergoing the change of state the THEME. The following are utterances involving change of state expressions with the familiar syntactic manifestation of CHANGE:
(75) a. The light turned from green to red.
b. Martha grew from an unknown backstreet entertainer
to a famous celebrity.
c. From a once thriving metropolis, Gotham City dwindled
to a mere whistlestop hamlet.
d. From a gentle creature fond of flowers and shady trees,
Ferdinand became the fiercest bull in Valencia.

In ordinary simples clauses, become does not allow the expres-
sion of a SOURCE, e.g.,

(76) a. *Ferdinand became the fiercest bull in Valencia from
a gentle creature.
b. *Ferdinand became from a gentle creature to a hater
of men.

Yet (75d), with a topicalization adjunct, expresses the
SOURCE or 'before state' in a perfectly coherent fashion. There is
nothing elliptical about (75d), it would seem, and it would appear to
be reasonable to conclude that a 'before state' is always an inherent
part of the meaning of become. If we say that the SOURCE is a sur-
face argument for become then ordinary uses of that verb such as the
one that follows will be instances of a kind of constituent ellipsis:

(77) Ferdinand became a hater of men.

Intransitive change of state expressions such as become, turn,
dwindle and grow, provided they have non-agential interpretations,
would in this analysis have lexical entries that include the following:

(78) \[
\begin{array}{c}
\text{[CHANGE x y z]} \\
\text{CHANGE OF STATE}
\end{array}
\]

There are change of state verbs that almost never allow the
expression of either the SOURCE or the GOAL, e.g., die and corresponding causative verbs such as kill, murder, slaughter and assassinate. The before state or SOURCE here is the state of being alive, and the GOAL is the state of death; however, these states cannot usually be expressed:

(79) a. *John died from alive to dead.
b. *Bill killed John from alive to dead.
c. *John died from an honorable life to an ignominious death.
d. *Bill killed John from an honorable life to an ignominious death.

One might think that the GOAL for die can be expressed using the noun death with some sort of a modifier.

(80) John died an ignominious death.

The overriding interpretation of death, however, is as the act of dying, not the state of being dead. We only get the latter interpretation in what seems to be rather literary usages such as In death his face had a serenity it never had in life. Perhaps no word exists in ordinary English for 'the state of being dead'.

The SOURCE can appear via a temporal construction, on the other hand:

(81) a. John died an ignominious death after an honorable life.
b. After an honorable life, John died an ignominious death.

Change of state verbs in all the languages that I am acquainted with carry in their constituent meaning a good deal of fine differentiation about the nature of the 'before' and 'after states',

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cf. the discussion of change of state verbs in Fillmore 1968b, 1970. Following Fillmore, we can discuss change of state verbs in terms of presupposition and assertion. The before state is always presupposed and the after state is always asserted. If I say The quiffle boiled, the 'before' state of the "quiffle" is presupposed to be 'liquid' and its 'after' state is asserted to be either 'bubbling liquid' or 'vapor'. If we say The quiffle didn't boil, we still know that the "quiffle" is something liquid (thus, this information is presupposition by the usual definition). Compare how much we know about the before and after states of an intransitive change of state verb's subject when a non-sense noun is used:

(82)  
  a. The quiffle bent.  
  b. The gnarf folded.  
  c. The oniuke crumpled.  
  d. The quiffle wrinkled.  
  e. The glarf shattered.  
  f. The waripple evaporated.  
  g. The gnarf melted.

By contrast, physical motion verbs give us little information in and of themselves about SOURCES and GOALS other than that they are locations. We can tell a lot about what quiffles, gnarfs and waripples are when a change of state verb is used, but when a verb of physical motion is used only that it is concrete (non-abstract). In general, verbs of physical motion discriminate instead between different kinds of motion. Notice how little we can tell about the inherent properties of quiffles, etc. with the following verbs of physical motion, but how much meaning is made discrete about the kind of motion involved.
(83) a. The quaffle moved.
b. The gnarf slid.
c. The oniuke rolled.
d. The quaffle fell.
e. The glarf bounced.
f. The warpple arrived.
g. The gnarf came.

A reason for the difficulty in expressing SOURCE and GOAL for change of state verbs like kill could well be that SOURCE and GOAL are absolutely specified in the constituent meaning of the verb already. One would usually not have cause to add any information beyond what has been specified in the constituent meaning of the verb. When a verb of physical motion is used with only one PLAYER as John ran, we say that this is an instance of constituent ellipsis because no information has been given as to which SOURCE and GOAL were involved (other than the specification that they were physical locations); when one says John died, we already know a great deal about the SOURCE and GOAL.

The definitions I have supplied thus far lead to the conclusion that John died is also an instance of constituent ellipsis, but I should hasten to add that it is an ellipsis that has virtually no effect in terms of information conveyed. The more information about REFEREE's surface arguments is supplied in its constituent meaning, the less consequence there is in terms of information content when there is constituent ellipsis.

Change of state expressions contrast with expressions of abstract location in the same way as expressions of spatial motion contrast with expressions of spatial location. In the first of each pair the semantic predicate CHANGE is appropriate and in the second,
the semantic predicate LOCATION. Two 'states' are involved in the
CHANGE expressions and only one 'state' in expressions of LOCATION.

(84) CHANGE OF STATE & ABSTRACT LOCATION
   a. The light turned from green to red. [CHANGE x y z]
      \[x\hspace{1em}y\hspace{1em}z\]
   b. The light was red. [LOCATION x y]
      \[x\hspace{1em}y\]

(85) SPATIAL MOTION & SPATIAL LOCATION
   a. John moved from the kitchen to the living room.
      \[x\hspace{1em}y\hspace{1em}z\] [CHANGE x y z]
   b. John was in the living room. [LOCATION x y]
      \[x\hspace{1em}y\]

Activity predicates would appear to lend themselves well to
analysis as expressions of abstract location. Thus, both John was
busy and John was working, where the top REFEREE is be will be repre-
sented semantically by the predicate LOCATION. The 'activity' is
itself the abstract location, the second argument of the predicate.

(86) [LOCATION x y]
   a. John was busy.
      \[x\hspace{1em}y\]
   b. John was working.
      \[x\hspace{1em}y\]

Activity verbs ought themselves to carry the predicate LOCA-
TION in their lexical entries. When used intransitively, their
clauses will be in a rather trivial sense elliptical, elliptical be-
cause the argument LOCATION (y) is not manifested syntactically. This
is a trivial kind of ellipsis, because so much of the nature of the
abstract location is already specified in the constituent meaning of
the activity verb.
(87) \[\text{[LOCATION x y]}\]
   a. John worked.
   \[x\]
   b. John slept.
   \[x\]

Note that on occasion there can be a PLAYER to correspond to the second argument, giving further specification as to its nature.

(88) a. John worked the day shift.
   \[x\]
   \[y\]
   b. John slept the kind of sleep that comes after a hard day's work in the open air.
   \[x\]
   \[y\]

It appears to me that one of the dividends of such an analysis is that it allows us to articulate an analysis of various kinds of adverbial adjuncts that can be added onto the nucleus governed by the main verb.

(89) a. John worked for three hours.
   b. John slept peacefully.

In (89a) we have an adjunct describing the length of time of the activity. In (89b) a manner adverb describes the kind of activity, i.e., the work was for three hours and the sleep was peaceful. It seems an interesting way of looking at adverbial adjuncts to say that they are modifying various of the subparts of the semantic structure governed by the main verb, and the notion 'argument' is then relevant in that regard.

An 'inchoative' expression is very much like a change of state expression: instead of a change of state there is a change of activity. All of the following expressions would, it seems to me, best be called
'change of activity' or 'inchoative' expressions, rather than 'change of state'. NB. the semantic parsing.

(90) \[ \text{[CHANGE } x \ y \ z] \]

a. \( x \) John began to \underline{work}. \( x \)

b. \( x \) John fell \underline{asleep}. \( z \)

c. \( x \) John launched into his \underline{campaign for governor}. \( z \)

d. \( x \) John got to \underline{working overtime} on the weekends. \( z \)

The SOURCE in most inchoative expressions is usually ellipted, but note that in each of the examples in (90) some other activity is understood to have preceded the one that is asserted. It is possible through the use of various adjunctive constructions to specify the SOURCE activity.

(91) a. After relaxing most of the day, John began working.

b. Having thought about the problem for several hours, John fell asleep.

By extending Gruber's notions of semantic predicates, we can arrive at descriptions of useful generality. Most important here, we are able to articulate the extent to which various expressions are elliptical.

1.8 Functional Ellipsis

So far, this discussion in this section has centered on constituent ellipsis. It will be recalled that there is constituent ellipsis whenever there is a grammatically determined argument which
is not realized as some sort of syntactic constituent. The other
way in which there can be ellipsis is when there is a phonetically
realized PLAYER constituent without any grammatically determined argu-
ment to which it can correspond in the semantic interpretation.

In Chapter II, it was pointed out that the independence of
sentences (to use Jespersen's term in the passage quoted in Chapter II)
corresponds to the fact that they do not have to be interpreted as
PLAYERS. They can stand alone without being required to have any
semantic function attached to them: thus, the difference between the
same propositional meaning expressed in a sentence as opposed to an
NP, e.g., John died vs. John's death. Let us say that the syntactic
structure of these two utterances is as follows:

(92) a.

```
    S
   /\  
  NP VP
  /\  /\  
 N V N
  
  John died
```

b.

```
    NP
   /\  
  D N
   /\  /\  
 NP NP
  /\  /\  
 N N
  
  John's death
```

We would want our grammar to show that except for tense, the
internal semantic value of these two constituents, the S and the NP,
is the same. But from without there is a difference: the utterance
with the NP requires a semantic function in order to be acceptable.
(92b) is necessarily then an instance of functional ellipsis.

It should be noted that (92a) can receive an externally
imposed semantic function, too. Just as sentences in English can
occur as PLAYERS in larger grammatically determined constructions,
e.g., Bill reported that John died, so a sentence uttered in isolation can receive interpretation with a higher semantic function. Depending upon the popularity John enjoyed among those communicating, the report of John's death in sentential form could be interpreted as a source of joy or sorrow without anything else being said; it could have other significance, too. It could also serve as part of a larger discourse, e.g.,

(93) A. John died.
    B. (Silence)

(94) A. John died.
    B. The community's morale will disintegrate.

It seems altogether reasonable to say that the ability to link two utterances in a dialogue is due in part to the linguistic faculty. But we should be perfectly clear: unless there is some grammatical connector like therefore, even so, etc. the determination of which semantic function is attached to A's remark (94) is grammatically determined only in one sense. Whatever semantic function is attached to John died must be semantically compatible with the constituent meaning of that utterance when it is viewed as a PLAYER, e.g., John died could not be a THEME of physical motion. But with that limitation stated, we must say that the choice of semantic function is not grammatically determined. A number of different conceptual connections are imaginable for the two parts of the dialogue in (94), and in (93) there is no larger linguistic context at all. Some larger aspect of cognition is at work filling in what language has not made explicit.
Because it is a PLAYER, John's death must be considered an instance of functional ellipsis. John died, on the other hand, is an S, and so does not have to be assigned PLAYER status, but it may be. All PLAYERS without semantic functions are instances of functional ellipsis. Perhaps all utterances in discourse where grammatical devices like therefore, but, because, etc. are not used as connectors are instances of functional ellipsis.

For all cases of functional ellipsis, the grammar must have recognized a constituent C as a PLAYER P and perceived that it is not yet associated with a semantic function F. To each PLAYER constituent P without a structurally determined (lexically or syntactically determined) semantic function, the grammar assigns a random semantic function F. We then have a non-elliptical interpretation P + F. The grammar goes through the process it follows in the interpretation of all utterances, that of matching the constituent meaning of the PLAYER constituent P with its functional meaning F; it renders a judgement as to the well-formedness or semantic integrity of the combination. The appropriateness of the semantic function for the situation at hand, by contrast, must be judged by extra-linguistic cognition. We can see this process schematically as follows:
(95)  

**SEMANTIC INTERPRETATION OF FUNCTIONAL MEANING**

\[
\begin{align*}
\text{a. } & C \rightarrow P & \text{GRAMMAR RECOGNIZES A CONSTITUENT AS A PLAYER.} \\
\text{b. } & P \rightarrow P+F & \text{GRAMMAR ASSIGNS SEMANTIC FUNCTION. IF THERE IS NO LEXICAL OR SYNTACTIC DETERMINATION OF THIS FUNCTION, THE CHOICE IS RANDOM.} \\
\text{c. } & P+F \rightarrow \{+, *, ?\} & \text{JUDGEMENT IS MADE AS TO THE SEMANTIC INTEGRITY OR INTERNAL WELL-FORMEDNESS OF MATCH BETWEEN THE SEMANTIC VALUES OF P+F. THIS IS A GRAMMATICAL JUDGEMENT.} \\
\text{d. } & P+F \rightarrow \{+, *, ?\} & \text{JUDGEMENT IS MADE AS TO APPROPRIATENESS OF P+F FOR THE CONTEXT IN WHICH IT IS USED. THIS JUDGEMENT IS BEYOND THE SCOPE OF THE GRAMMAR.}
\end{align*}
\]

It should be clear then that in case step (95b) is random the only constraint the grammar places on the possible semantic function F of P_+ F is (95c), the judgement as to semantic integrity or internal well-formedness.

2. **The Descriptive Inadequacy of Deletion Rules**

2.1 **Definite Ellipsis**

In this section I wish to demonstrate that grammars using deletion rules to generate all well-formed elliptical utterances give a false account of linguistic competence, and extend the power of linguistic theory unjustifiably. The key evidence is the phenomenon of definite ellipsis, where it is easy to show that deletion operations would have to be non-recoverable.
Of the following examples, the first is indefinite and the second is definite ellipsis.

(96) a. Bill got a letter today.
    b. Tommy refused.

Both of these sentences meet our definition of 'constituent ellipsis' by having arguments for which no PLAYER constituents are present on the surface. In the case of the sentence with get, there is a SOURCE argument that is ellipted: several non-elliptical paraphrases are possible in which the original sentence is augmented by the addition of a prepositional phrase containing an indefinite pronoun, from someone, from somebody, from somewhere or from someplace, e.g.:

(97) a. Bill got a letter from someone today.
    b. Bill got a letter from somewhere today.

Neither speaker nor hearer are necessarily assumed to know the referent from the SOURCE argument ellipted in (96a) Bill got a letter today: there is no set of referents established in the common focus of both speaker and hearer corresponding to the SOURCE argument that is exhaustively or uniquely referred to. It is just in this sense that the ellipted argument is indefinite.

The sentence (96b) Tommy refused, on the other hand, has an ellipted argument the referent for which the speaker assumes to be in common focus for the hearer as well as himself, and the assertion of the sentence exhausts or uniquely refers to the set of referents
corresponding to that argument. It is in this sense that Tommy refused is definite ellipsis.

Taking refuse as a verb of negative abstract motion, I will say that there is a GOAL ellipted in Tommy refused, i.e., that which Tommy refused to do. This sentence cannot be paraphrased by non-elliptical sentences where the GOAL is represented by a PLAYER constituent with an indefinite pronoun. The following is not a paraphrase:

(98) Tommy refused to do something. (# 96b)

I will show more precisely how (98) is not a paraphrase of (96b) in section 2.3. Paraphrase relations are one kind of evidence for the difference between indefinite and definite ellipsis. Another kind of evidence to this effect concerns the notion 'natural sequence' in a discourse. A natural response to an instance of indefinite ellipsis might be an information question interrogating the ellipted argument; this is the same situation that would hold where response is made to an utterance with an indefinite pronoun. Instances of definite ellipsis, on the other hand, are like utterances with personal pronouns. Information questions interrogating the arguments corresponding to definite ellipsis or definite (personal) pronouns form an unnatural sequence. They show that the speaker misjudged the extent of shared knowledge with this listener and that the listener needs information that the speaker assumed he already had. Consider the information questions in the following dialogues, as to whether or not they follow the initial statements naturally:
(99) INDEFINITE ELLIPSIS

Bill got a letter today.
    -Who did he get it from?  (a natural sequence)

(100) DEFINITE ELLIPSIS

Tommy refused.
    -What did he refuse to do?  (an unnatural sequence)

The contrast between these two kinds of ellipsis is comparable to that between indefinite and definite (personal) pronouns.

(101) INDEFINITE PRONOUNS

a. Bill got a letter from someone today.
    -Who did he get it from?  (a natural sequence)
b. Tommy refused to do something.
    -What did he refuse to do?  (a natural sequence)

(102) DEFINITE PRONOUNS

a. Bill got a letter from him today.
    -Who did he get it from?  (an unnatural sequence)
b. Tommy refused to do it.
    -What did he refuse to do?  (an unnatural sequence)

The fact that we have indefinite ellipsis with get and definite ellipsis with refuse is due to lexical properties of those REFEREES themselves. Both can govern constructions with either definite or indefinite pronouns, but the two have distinct values for the definiteness of the ellided arguments we have examined. We will see more below about the grammatical factors that determine the definiteness of constituent or functional ellipsis.10
2.2 Anaphoric and Deictic Ellipsis

Instances of definite ellipsis such as *Tommy refused* are similar to utterances with personal pronouns, in that they can be used either anaphorically or deictically: it is the former if there is an antecedent for the ellipted argument within the linguistic context (within the sentence in the case of a sentence-generating grammar), the latter if there is no antecedent and the speaker relies on knowledge shared with the hearer or the obviousness of the identity of the referent within the perceivable physical context for the utterance. The deictic device 'points' to what is already uniquely identified in the extra-linguistic (or extra-sentential) context.

Taking a clause-internal definition of ellipsis, we can say that the clause *Tommy refused* is elliptical and allows an anaphoric interpretation in the following sentence:

(103) When Mother told him to clean up his room, Tommy refused.

The antecedent for ellipted argument in the anaphoric interpretation of this sentence is *to clean up his room*. Like all other definite non-reflexive expressions, expressions with definite ellipsis do not have to be interpreted anaphorically. There is another interpretation possible where some other referent for the ellipted argument in *Tommy refused* is already in common focus, a referent not given previous mention within the context of the sentence. This interpretation will be called deictic. I will define deictic as any grammatical device that points to a referent not given previous mention in the linguistic context, where bound on linguistic context for a sentence—
generating grammar is the sentence itself. A larger context in which (103) could easily receive a deictic interpretation of this kind could be as follows:

(104) When is it that Tommy would not agree to go to school?  
     - When Mother told him to clean up his room, he refused.  
     On other days he went to school gladly.

There are parallel cases with personal pronouns, e.g.,

(105) a. When the dormitory counselor walked in the room, 
     Mary kissed him.  
  b. How did John's girlfriends get him into so much 
     trouble?  
     - When the dormitory counselor walked into the 
     room, Mary kissed him.

It is not difficult to construct a situation in which Tommy refused could be used deictically with no previous mention of the referent for the ellipted argument in the whole discourse, which is to say where the status of the referent is completely non-linguistic at the time of an utterance but nevertheless in common focus. Imagine a situation such as the following: knowing that Mother had again been about to tell Tommy to clean up his room, two close acquaintances might have the following dialogue:

(106) What happened this time?  -Tommy refused.

2.3 Definite Ellipsis vs. Indefinite Pronouns

It is essential to see that there is a semantic difference between definite ellipsis and corresponding non-elliptical structures with indefinite pronouns, i.e., a difference which ought to be
characterized in the grammar: this point bears on the main conclusion of this section, which is that there is no means available within the current theory of grammar of generating all well-formed elliptical utterances by deletion rules. It is generally accepted that deletions must be recoverable. In order for deletions to be recoverable, they would have to involve indefinite pronouns (cf. Katz-Postal 1964), but if for some elliptical utterances there are no paraphrases with indefinite pronouns, it follows that recoverable deletions are not always possible.

If the nomenclature definite ellipsis is valid, then it should follow that indefinite expressions do not constitute true paraphrases in either the anaphoric or the deictic uses of this phenomenon. Consider the examples with Tommy refused:

(107) When Mother told him to clean up his room, Tommy refused to do something. (≠ 103)
( 103) When Mother told him to clean up his room, Tommy refused.)

(108) What happened this time? Tommy refused to do something. (≠ 106)
( 106) What happened this time? Tommy refused.)

The difference in meaning between the pairs (103)/(107) and (106)/(108) is one of implication. (103) implies (107), and not vice versa. (106) implies (108), and not vice versa. In order to see that this is so, we would do well to consider the empirical significance of implicational relationships in the interpretation of sentences.
Philosophers have discussed pairs of sentences such as the following (cf. Tienson 1970):

(109) a. I believe that John left.
b. I know that John left.

Knowing implies believing, but not vice versa. If one knows something, he necessarily believes it, but if he believes it, he does not necessarily know it. If someone knows that John left but says (109a) I believe that John left, the speech act appears perverse and intentionally misleading. In general, if someone says I believe X, the hearer assumes that the speaker does not know X. The hearer makes this assumption because of a rule of languages use to the effect that in all cases where the information being communicated is relevant to the hearer's view of the situation, the speaker is expected to make the 'strongest' statement possible, where "A is stronger than B" is equivalent to saying "A implies B" (A ⊃ B).

The ability that people have to make consistent judgements about speech acts according to this rule of language use is a nice example of cognitive processes that go beyond grammatical competence and yet which govern linguistic behavior: the notion 'strongest statement possible' entails a preview of what a speaker knows about a situation as well as the grammatical structure that he chooses to employ; however, the basis for these judgements is the grammatical notion of implication. It is very much a matter of semantic competence to understand that if it is true that Y knows X then it must also be true that Y believes X. This concerns the meaning of the verbs know and believe. It follows that native speaker judgements on the well-
formedness of speech acts in respect to the rule of language use just
presented provide empirical evidence for the nature of their semantic
competence. 11

Consider the following pair of sentences:

(110) a. When Eldridge walked into the room, Susan spoke
to someone.
b. When Eldridge walked into the room, Susan spoke
to him.

If the speaker knew that the person Susan spoke to was Eldridge
but said (110a), no falsehood would be uttered, but one has the dis-
tinct impression that the speaker is being purposely misleading.
Hearing (110a), one has the distinct impression that Susan must have
spoken to someone else, anyone but Eldridge himself. This is because
of the rule of language use referred to above. The hearer assumes that
if it was Eldridge that Susan spoke to, that the speaker would say the
'stronger' sentence (110b).

So much for a case where a definite (personal) pronoun may be
involved in anaphora. The situation with ellipsis anaphora is exactly
parallel. If the speaker knows that what Tommy refused to do was to
clean up his room, and yet said (107) When Mother told him to clean up
his room, Tommy refused to do something, the hearer would have reason
to believe that he had been misled. A conversation such as the
following would be altogether plausible:

(111) When Mother told him to clean up his room, Tommy refused
to do something.
-What did he refuse to do?
To clean up his room.
-Why didn't you say so?!!
The hearer would expect the speaker to have said rather (103)

When Mother told him to clean up his room, Tommy refused or a non-
elliptical variant with a definite pronoun:

(112) When Mother told him to clean up his room, Tommy refused
      {so} to do {it}.

Definite expressions have in common the meaning 'referent
uniquely established in common focus for the speaker and hearer'. They
lend themselves to an anaphoric as well as deictic usage because an
antecedent in the same sentence can perform exactly the function of
uniquely establishing a referent in the common focus of speaker and
hearer. Indefinite expressions, on the other hand, are indeterminate
as to the cognitive status of their referents. 12

The definite expressions imply their indefinite counterparts.
If it is true that Tommy refused to do something definite (e.g., clean
up his room), it is also true that he refused to do something. The
contrary does not hold. From the statement Tommy refused to do some-
thing it does not hold necessarily that he refused to do something
uniquely identified for speaker and hearer. This relation between
definite and indefinite expressions must be a semantic difference, for
all we have to go on in making judgements of this kind is our knowledge
of the meaning of the grammatical structures involved. 13

It is my claim that both (103) and (112) allow anaphoric
interpretations:
(113) a. When Mother told him to clean up his room, Tommy refused. (103) = When Mother told him to clean up his room, Tommy refused to clean up his room.

b. When Mother told him to clean up his room, Tommy \{so\} refused to do [it]. (112) = When Mother told him to clean up his room, Tommy refused to clean up his room.

The fact that, in the situation where the speaker knows what Tommy refused to do, the use of (103) does not strike the hearer as being misleading is consistent with my claim that (103) has the same semantic value, 'definite', as (112); more important, the fact that (107), the corresponding sentence with an indefinite pronoun, does strike the hearer as misleading in this situation while (103) does not supports my claim that there is a semantic difference between those two. The facts are neatly accounted for if semantic interpretation assigns the feature 'definite' to (103) as well as to (112).

It is the aforementioned rule of language use that accounts for the appropriateness of (103) or (112) (definite ellipsis and definite pronoun respectively) in the situation outlines, as well as the inappropriateness of (107) (indefinite pronoun); however, the grammar supplies a necessary input to this rule of language use, which is the implicational relationships that hold between the sentences. If the elliptical sentence (103) is assigned exactly the same semantic feature 'definite' as the non-elliptical sentence with a definite pronoun (112), then it can be said that the same implicational relationship holds between (103) and (107) as between (112) and (107).

The same argument can be applied to cases where an elliptical expression like Tommy refused is used deictically. In an instance where two interlocutors have in common focus the knowledge that Mother
had been about to tell Tommy to clean up his room, and one knows that Tommy refused to do just that, either of the following would be appropriate and would satisfy the rule of language use.

(114) a. What happened this time?  Tommy refused to do it.
    b. What happened this time?  Tommy refused.

If in the same situation the response -Tommy refused to do something would be misleading, e.g.,

(115) What happened this time?  Tommy refused to do something.
    What did he refuse to do?  To clean up his room.
    Why didn't you say so?!!

The fact that Tommy refused is appropriate in this situation while Tommy refused to do something is not is evidence of a semantic difference between the two.

I conclude that for either anaphoric or deictic uses of the kind of expressions that I have called definite ellipsis, non-elliptical expressions with indefinite pronouns are not paraphrases, and that it would not be possible to derive the former from the latter by deletion rules.

2.4 The Grammar of Definite Ellipsis

The difference in the interpretation of 'definiteness' in the two instances of ellipsis in (96), Bill got a letter today and Tommy refused, resides ultimately in the lexical entries for the verbs get and refuse, whatever other grammatical apparatus is envisaged. It will be necessary to have sufficient information in the lexical
entries for verbs and other REFEREE constituents so that it is not only clear whether constituent ellipsis is possible in relation to various arguments, but also, if there is ellipsis, whether the ellipsis is definite or indefinite.\textsuperscript{14}

The relevant portion of the lexical entry for \texttt{get} could be presented as follows:

\[
\begin{align*}
\text{(116)} & \quad \text{get, } +V \; [\text{NP} \quad \text{NP} (\text{PP})] \\
& \quad z \; x \; y \\
& \quad [\text{CHANGE} \; x \; y \; z] \; \text{physical motion} \\
& \quad y = '\text{indefinite}' \; \text{when ellipted}
\end{align*}
\]

The lexical entry for \texttt{refuse} ought to include the following information (INF = 'infinitive'):\textsuperscript{15}

\[
\begin{align*}
\text{(117)} & \quad \text{refuse, } +V, \; [\text{NP} \quad (\text{INF})] \\
& \quad x \quad z \\
& \quad [\text{CAUSE} \; x \; [\text{NOT} \; [\text{CHANGE} \; x \; y \; z]]] \; \text{abstract motion} \\
& \quad z = '\text{definite}' \; \text{if ellipted}
\end{align*}
\]

There are a large number of verbs which govern definite ellipsis. None of the following examples allow indefinite interpretations for the ellipted argument:\textsuperscript{16}

\[
\begin{align*}
\text{(118) a.} & \quad \text{John agreed.} \; (\text{complied, consented, approved, accepted, promised, cooperated, volunteered, insisted}) \\
\text{b.} & \quad \text{Bill disagreed.} \; (\text{objected, disapproved, quit, deserted}) \\
\text{c.} & \quad \text{Al overheard.} \; (\text{peeked}) \\
\text{d.} & \quad \text{Ed understood.} \; (\text{misunderstood, replied, digressed, guessed}) \\
\text{e.} & \quad \text{Don began.} \; (\text{started, continued, proceeded, persisted, finished, intruded, entered, emerged, escaped, left})
\end{align*}
\]
(119) a. We suspected John. (blamed, indicted, accused, asked, forgiving, coerced, forced, persuaded, compelled, convinced, nominated, elected)
b. We expelled Bill. (eliminated, excluded, excommunicated, excused, exempted, chose, warned, extricated, rescued, thanked)
c. We used a hammer.

(120) John was impressed. (baffled, astonished, surprised, delighted, disgusted, fascinated, offended)

The verb explain (cf. the discussion of explain and the 'musical chair' phenomenon in Section 1 of this chapter) is particularly interesting. If the 'problem' is expressed and the 'explanation' is ellipted, that ellipted argument is indefinite; however, if the 'explanation' is expressed and the 'problem' ellipted we have definite ellipsis.

(121) a. John explained the flat tire to Bill.
   (indefinite ellipsis of the 'explanation')
b. John explained to Bill that there had been nails on the driveway.
   (definite ellipsis of the 'problem')

Prepositions can govern definite ellipsis too, e.g., John walked in (across, on, out, up, down) (cf. the discussion of intransitive prepositions in Section 4 of Chapter II).

Nouns with propositional meaning can also govern definite ellipsis. Consider the anaphoric and deictic force in the noun phrases with refusal:

(122) a. The sargeant's order to Harold to return to duty met with a refusal.
b. The sargeant ordered Harold to return to duty and Harold would not do it. The sargeant used the refusal to get Harold demoted.
In both cases refusal can be understood as a refusal by Harold to return to duty. Other cases of ellipsis with noun phrases that are in fact definite have already been discussed in Section 1 of this chapter, e.g., the definite ellipsis (which strictly speaking has deictic force within a sentence-generating grammar) of the noun phrase the poet in what was example (19):

(123) Who did that beautiful book of sonnets and etchings?
    My friend Tom was the poet and a girl named Susan Wright did the etchings.

All examples discussed so far are instances of constituent ellipsis. While instances of constituent ellipsis can be either definite or indefinite, all instances of functional ellipsis are definite, e.g.,

(124) a. A cup of coffee.
    b. The bus.
    c. The Pink Panther.
    d. Five dollars.

Such utterances are in fact acceptable only when there is a semantic function in common focus for speaker and hearer that can be applied to these PLAYER constituents. It is an innovation to extend the semantic feature 'definite' to semantic functions, but given the assumptions and conclusions made so far here, this is an altogether natural step.
2.5 Definite Ellipsis and Contextually Determined Meaning

Sometimes the definiteness of an instance of constituent ellipsis depends upon contextual factors as well as upon the lexical entry for the REFEREE governing the ellipted argument. It would appear that the verb agree governs ellipsis that is definite in virtually any situation in which it is used intransitively. The verb disagree, on the other hand, may sometimes be interpreted as governing indefinite ellipsis.

(125)  
a. Howard agreed  
b. Howard disagreed.

(126)  
a.?*Howard likes to agree.  
b. Howard likes to disagree.

Both sentences in (125) are definite ellipsis in my judgement.  
(126b) is indefinite ellipsis because of the meaning determined contextually by likes while (126a) is for me unacceptable: the reason would seem to be that likes imposes a generic and therefore indefinite interpretation on the complement while agree requires a definite interpretation.

Refuse, like agree, always requires a definite interpretation when it governs ellipsis.

(127)  
a. Howard likes to agree with what people say. (indefinite) 
b. ?*Howard likes to agree. (definite)

(128)  
a. Howard likes to refuse to do what people ask of him. (indefinite) 
b. *Howard likes to refuse. (definite)
The lexical properties of some REFEREES make them susceptible to influence from contextual meaning. In the case of verbs such as agree and refuse, however, definiteness is apparently absolute for all cases of ellipsis.

When the REFEREE governing ellipsis is a noun, the definiteness of the ellipsis can be influenced by the article that precedes the noun. Compare:

(129) a. A burglary has occurred.
   b. The burglary has occurred.

In (129a) an act of larceny is referred to with the covert understanding of the three arguments, a thief, a victim and some booty; these three arguments are ellipted; the ellipted arguments are indefinite just as is the noun burglary. In (129b), on the other hand, the definite article with burglary establishes the assertion that the act of larceny is in common focus between speaker and hearer: the three ellipted arguments thereby can be interpreted as definite. However much the interlocutors know in detail about the identity of the thief and the victim, or what it was that was stolen, the act of larceny as a whole is uniquely identified and thus the elliptical arguments within the overall meaning 'larceny' may be definite too. The ellipted arguments fro burglary could be definite when burglary itself is indefinite, on the other hand. A consequence of this difference is that (129b) can be extended by another clause with personal pronouns referring deictically to the three arguments of the act of larceny; this is not possible with (129a). Consider the situation where the Pink Panther is going to steal the crown jewels from the queen:
(130) a. *A burglary has occurred: he took them from her this afternoon.
b. The burglary has occurred: he took them from her this afternoon.

In this connection it is interesting to note the relation of definiteness to what the Kiparskys (1967) call 'factiveness'. One of the verbs that they list as allowing complement sentence structures that are either factive or non-factive is report. (131a) is factive in that it presupposes that the information in the complement sentence is about something that is presupposed to have happened and to be conceded by the hearer (or reader) as well as the talker (or writer) to have happened. (131b), on the other hand, is non-factive: the speaker takes no responsibility for whether the information in the complement sentence refers to some real event or not: the responsibility for the truth of the report lies entirely with the subject of report:

(131) a. The newspapers reported the enemy's suffering a heavy defeat.
b. The newspapers reported the enemy to have suffered a heavy defeat.

The Kiparskys account for the difference in form and meaning between two such examples as this by the presence or absence of the noun fact in the underlying object of the verb. But now note that we get the same contrast in semantic interpretation according to whether or not a definite article is present in an object noun phrase:

(132) a. The newspapers reported the burglary.
b. The newspapers reported a burglary.
In (132a) the speaker takes responsibility for the factiveness of the act of larceny, while in (132b) he does not. Having the act of larceny in common focus between speaker and hearer as it is in (132a) is closely related to the meaning 'factive'. One interpretation of the facts is that 'definiteness' implies 'factivity'. On closer examination, however, it appears that 'factivity' is just a particular instance of 'definite' and that the two terms are semantically equivalent. This is the conclusion that follows if it is agreed that the factive (131a) The newspapers reported the enemy's suffering a heavy defeat would be uttered in situations where the speaker assumes the hearer accepts the reported event as a fact too, i.e., that the event is in 'common focus'. 17

2.6 The Generation of Elliptical Utterances

One might propose that (96a) Bill got a letter today be derived from one of its non-elliptical paraphrases by a deletion rule:

(133) a. Bill got a letter from someone today. 
     Bill got a letter today.

b. Bill got a letter from somewhere today. 
     Bill got a letter today.

The rule could be called 'indefinite pronoun deletion', but with the understanding that more is involved than the deletion of indefinite pronouns. In this case the preposition from is deleted too.

The rule would have to be constrained so as not to operate on any and all instances of indefinite pronouns. Lexical rule features would be necessary, e.g.,
   \[\ldots\]
   Ed put the book.

   b. Carl forced someone into the car. 
   \[\ldots\]
   *Carl forced into the car.

Even with the verb get, a complicated state of affairs exists.

The following deletion would have to be disallowed because the resul-

ting structure has a different meaning.

(135) Bill got someone from the kitchen to the living room.

\[\ldots\]
Bill got from the kitchen to the living room. (\#)

Not all prepositional phrases with indefinite pronouns are

subject to this rule when get is the main verb:

(136) Bill got a letter to someone today.

\[\ldots\]
Bill got a letter today. (\#)

But while to someone would not be deletable with get it would

be deletable with other verbs, e.g.,

(137) Bill sold a car to someone yesterday.

\[\ldots\]
Bill sold a car yesterday.

None of these complications present insurmountable problems,

and it appears that all instances of indefinite ellipsis could be

generated by some sort of rule of indefinite pronoun deletion, and

still have each deletion operation be 'recoverable' in a manner con-
sistent with Katz and Postal (1964), and subsequent developments in

the theory of generative grammar. Referring to the lexical entry for

get, it would be possible to discern that from had been deleted in

(96a) Bill got a letter today; as for the indefinite pronoun deleted,
one could refer to a short list of indefinite pronouns somewhere in
the grammar, where a convention would be observed that these indefi-
nite pronouns are the only nominals that can be deleted.

By contrast, consider the situation that would exist if in-
stances of definite ellipsis were deprived by deletion rules. Deletion
rules would have to be used for definite ellipsis as well if one took
the position that any elliptical utterance in the language is ellipti-
cal only on the surface, and that all 'messages' communicated by
language are generated non-elliptically in their underlying represent-
tation. The danger is that instances of definite ellipsis would all
be infinitely ambiguous and that the power of the grammar would be
increased beyond a point of any interest, e.g.,

(138) What happened this time?
Tommy refused to clean up his room.
    to sign the petition.
    to look at the data that you
    suggested I show him in order
to get his appraisal of the
current state of the research
project that is being conduc-
ted by...
    ...

Tommy refused.

In cases of anaphoric ellipsis, one could constrain the power
of the grammar by making deletion governed by an identity principle:

(139) a. When Mother told him to clean up his room, →
Tommy refused to clean up his room.
    When Mother told him to clean up his room,
    Tommy refused.

b. When Mother told him to clean up his room, →
Tommy refused to get out of bed.
The instances of deictic ellipsis remain, however. With no antecedent present in the sentence, no grammatical principle can be used to constrain the power of the deletion rules, at least with the present current set of assumptions about grammatical theory.

There is a way out if one wishes to preserve the deletion principle at all costs. Postal (1966) states what is the standard theory position on the deictic use of personal pronouns, and that is that they be generated directly in underlying representations rather than being introduced superficially so as to replace other lexical material. In the deictic or non-coreferential interpretation of the following sentence (where he ≠ Schwartz), he is generated directly in the underlying representation.

(140) Schwartz says he's sick.

Since expressions which are instances of definite ellipsis can be paraphrased by non-elliptical expressions with definite pronouns, it could be proposed that definite (personal) pronouns and perhaps deictic pronouns like there and here be added to the list of deletable items and that instances of definite ellipsis be derived by a rule of 'definite pronoun deletion', e.g.:

(141) a. Tommy refused to do it. → Tommy refused.
    b. Bob deserted us. (them, you, etc.) → Bob deserted.
    c. We extricated Bill from there. → We extricated Bill

I will call the solution employing the rules of indefinite and definite pronoun deletion the deletion analysis. In order for the deletion analysis to be descriptively adequate in its present
conception, it has to be the case that for every instance on constituent ellipsis there exists the appropriate paraphrase with a pronominal expression. There would appear to be evidence that this is not always the case. Consider the verbs explain and agree.

The verb explain allows no pronoun to stand for the argument that I have referred to as the 'explanation' itself. When ellipted, this argument is indefinite and so one would expect a paraphrase with something to be possible; however, in the following sentence something refers to the 'problem' being explained.

(142) John explained something to Bill.

A grammar employing deletion rules can resolve descriptive difficulties by increasing the power of the deletion rules, in one of several ways. One means would be to say that the rule of indefinite pronoun deletion removes the constituent by saying something in the case of explain, e.g.,

(143) John explained by saying something \[\text{John explained}\]

It would follow that in an important set of cases explain is used in complex sentences even though surface form is that of a simplex.

In the meaning of the verb agree there is an argument which when ellipted has definite meaning and cannot be represented by a pronoun.
(144)  a. John agreed with Mary that Lionel would be a nice name for the baby.
b. John agreed with Mary on a name for the baby. (≠ 144a)
c. Mary said that Lionel would be a nice name for the baby and Lionel agreed with her.
d. *Mary said that Lionel would be a nice name for the baby and Lionel agreed with her.
e. *Mary said that Lionel would be a nice name for the baby and Lionel agreed with her on it.

There is not an expression employing a definite pronoun that can stand for the that S constituent in (144a), the 'opinion' being agreed on.

A means around both the explain and agree difficulty would be to have underlying pronominal expressions that must be deleted: in other words, we would increase the power of the deletion analysis by positing derivations that must be recognized by these rules as obligatorily cases.

(145) INDEFINITE PRONOUN DELETION

Lexical entry for explain says rule must apply when something stands for the argument 'explanation'

John explained something → John explained. (OBLIG)

(146) DEFINITE PRONOUN DELETION

Lexical entry for agree says rule must apply when it stands for the 'opinion' being agreed upon

John agreed with Mary it → John agreed with Mary. (OBLIG)

The cases of obligatory ellipsis including the musical chair phenomena with explain and answer discussed in section 1 of this chapter would be further instances where the deletion rules would be obligatory, e.g.,
(147) a. A burglary of something à A burglary (OBLIG)
b. A poet of something à A poet (OBLIG)
c. John explained it to Bill that there had been nails on the driveway. à John explained to Bill that there had been nails on the driveway. (OBLIG)
d. John answered them that he would be glad to come. à John answered that he would be glad to come. (OBLIG)

All of this amounts to working out the details of the deletion analysis so that it succeeds in generating the data we have been discussing. A full range of lexical rule features would specify when ellipsis is possible (cf. He promised vs. *He expected), whether ellipsis can be definite or indefinite, and whether ellipsis is obligatory or optional.

We must inquire now if it is worth the trouble it is causing to defend the principle that all sentences are non-elliptical in their underlying representations.

The deletion analysis of constituent ellipsis augments the power of the grammar without adding to its capacity for describing linguistic behavior. In fact, it obscures the nature of ellipsis. It is not our knowledge of syntax that tells us that sentences like Tommy refused, Bob deserted or We extricated Bill are instances of definite ellipsis; neither does our knowledge of syntax tell us that Bill got a letter today, Bill sold a car yesterday or John explained the flat tire are instances of indefinite ellipsis; it is our knowledge of the meaning of the meaning of the verbs in these sentences that tells us this. Since in any analysis the essential facts concerning ellipsis will have to be included in the lexical entries for REFEREES, going through the motions of creating non-elliptical deep structures...
and then applying deletion rules to get surface form would seem to be a pointless and misleading complication.

As was pointed out in section 2.5 just above, the definiteness or indefiniteness of ellipted arguments sometimes depends on the linguistic context in which a REFEREE is used. Hence, the deletion analysis would have to be constrained by even more than rule features in lexical items governing ellipted arguments. Howard disagreed (125b) is necessarily definite, while Howard likes to disagree (126b) has a predominately indefinite interpretation. The situation for the deletion analysis would be as follows:

(148) DEFINITE PRONOUN DELETION


b. Howard likes to disagree with it. →

(149) INDEFINITE PRONOUN DELETION

a. Howard disagreed with something. →

b. Howard likes to disagree with something. → Howard likes to disagree.

Here in effect an interpretation of the overall structure in which pronouns are used would have to be made before the deletion rule could be applied. The situation with disagree and other verbs which are sensitive to linguistic context for the semantic interpretation of their ellipted arguments argues even more strongly that the ellipsis phenomenon is essentially a semantic one, and that deletion rules changing one kind of syntactic structure into another are not appropriate analytical devices.
Instead of the deletion analysis I will propose what I call the interpretive analysis: the deep structure representations for Bill got a letter today (96a) and Tommy refused (96b) need be no different from the surface representations. The lexical entries for the verbs provide the essential information for semantic interpretation:

(a)

\[(150)\]

\[
\begin{array}{c}
S \\
NF \\
V \\
NP \\
ADV \\
\end{array}
\]

Bill got a letter today

\[
\text{get, }+V, [\text{NP } \_ \_ \text{ NP (PP)}] \quad \text{[CHANGE } x \ y \ z \text{] physical motion} \quad y = \text{'indefinite' when ellipted}
\]

(b)

\[
\begin{array}{c}
S \\
NF \\
V \\
NP \\
\end{array}
\]

Tommy refused

\[
\text{refuse, }+V, [\text{NP } \_ \_ \text{ (INF)}] \quad \text{[CAUSE } x \ [\text{NOT [CHANGE } x \ y \ z\text{]] abstract.motion}} \quad z = \text{'definite' if ellipted}
\]

In cases the larger linguistic context bears on the semantic interpretation of ellipted arguments as with the verb disagree, interpretive rules would have to compute the overall semantic properties of trees taking into account the lexical entries for REFEREES and the

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wider context as well. Such context sensitive rules lie beyond the 
scope of this study, but are surely an important part of competence. 
In principle, the best account of ellipsis would be a unified one which 
applied the same principles of analysis to all kinds of ellipsis, in- 
cluding those derivations where context beyond the simplex is critical. 
Doing away with the principle of 'deletion under identity', e.g., 
in the generation of sentences with anaphoric ellipsis interpretation 
such as (103) When Mother told him to clean up his room, Tommy refused 
would have profound consequences for the grammar. For example, stress 
would have to be analyzed interpretatively rather than generatively 
(to see why this would be so see Bresnan's 1971 contribution to the 
generative account of stress which bears closely on the theory of 
ellipsis). What I have attempted to show here is that the deletion 
analysis cannot be applied successfully to all cases of constituent 
elipsis. At the same time I wish to advocate the hypothesis that all 
instances of constituent ellipsis can be accounted for and explained 
without deletion rules and by natural interpretive rules. 

So much for the generation of constituent ellipsis. The case 
for an interpretive analysis is strongest for functional ellipsis, 
con. subsection 1.8 in this chapter. To provide non-elliptical deep 
structures for utterances which constitute instances of functional 
elipsis, e.g., A cup of coffee, John's death, would require deletion 
rules of such power that the analysis would become uninteresting. The 
syntax of these utterances is no more than what appears on the surface. 
The grammar recognizes them as PLAYER constituents requiring semantic 
functions in order to be well-formed semantically. The function is
'definite'. As I showed in subsection 1.8 of this chapter, the grammar supplies a semantic function at random. Semantic interpretation judges whether the function and the inherent meaning of the constituent are compatible. This is a grammatical judgement. Extra-linguistic cognition judges whether the total meaning of the utterance with the semantic function is appropriate for the context (since the context is entirely extra-linguistic). Such utterances are not ambiguous, they are just indeterminate in the choice of a semantic function.

Chapter I gave evidence to show that deletion rules alone would not suffice to insure the generation of all and only the well-formed utterances of English that were less than sentences. In this section we have shown that deletion rules obscure the nature of ellipsis even when the elliptical utterances are complete sentences from a syntactic point of view.

2.7 Incorporation

It remains for us to consider the principle of 'incorporation' such as was proposed by Gruber (1965) as an alternative to the interpretative analysis that I have advocated here for constituent ellipsis. This approach would avoid the need for deletion rules, and would in important respects be similar to the analysis I have advocated here.

Gruber (1965) introduced the notion of incorporation along with the notion of prelexical semantic configurations: these two ideas have been central in the development of generative semantic theory. The base component generates semantic representations rather
than syntactic ones in Gruber's model, and then semantic representations are converted by prelexical transformations into trees appropriate for lexical insertion. Lexical items may 'incorporate' complex subparts of trees. It would be a simple matter to extend the notion of incorporation to account for constituent ellipsis. As an example, consider the various noun phrases that might be generated with the head noun theft as REFEREE, e.g.,

(151)
\begin{align*}
a &. \text{The theft of the jewels from the queen by the Pink Panther} \\
b &. \text{The theft from the queen by the Pink Panther} \\
c &. \text{The theft of the jewels by the Pink Panther} \\
d &. \text{The theft of the jewels from the queen} \\
e &. \text{The theft by the Pink Panther} \\
f &. \text{The theft from the queen} \\
g &. \text{The theft of the jewels} \\
h &. \text{The theft}
\end{align*}

In rudimentary fashion, we can say that the prelexical semantic representation underlying all these noun phrases is on the order of the following (ignoring details such as determiners):

(152)
\begin{center}
\begin{tikzpicture}
  \node {PROPOSITION}
  \node [below] {PREdicATE}
  \node [below] {ARGUMENT}
  \node [below] {ARGUMENT}
  \node [below] {ARGUMENT}
  \node {Larceny}
  \node {Booty}
  \node {Victim}
  \node {Thief}
\end{tikzpicture}
\end{center}

In order to produce the non-elliptical (151a), each subpart of the semantic representation (152) would extend to a syntactic and lexical representation:

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In order to produce elliptical utterances the lexical node N would be made to incorporate various portions of the semantic representation, e.g., for (151b), (151e) and (151h):

(154) a.

(154) b.
In cases such as (151c), (151d), (151f) and (151g) where the underlying order displayed so far is inappropriate for the incorporation of ellipted arguments, prelexical rules would rearrange the order, e.g., for (151g):

An advantage of this approach over the deletion analysis is that the only lexical material present in abstract representations is that which shows up on the surface. The incorporation model shows that propositional meaning can underlie lexical items just as well as larger stretches of syntactic material; however, it has an important
defect: propositional meaning is shown to underlie lexical items only in cases of ellipsis. There is no complexity of propositional meaning underlying the non-elliptical (151a), cf. its representation in (153); representation (154c) for fully elliptical (151h), on the other hand, shows theft to represent the full propositional meaning with three arguments. The formalism gives the false impression that theft represents more of the meaning of LARCENY as it has less PLAYERS in the syntax. There would not seem to be any way of alleviating this awkwardness within the incorporation model. The defect arises from the attempt to represent all propositional meaning in a base where the functional meaning of REFEREES and the constituent meaning of PLAYERS are represented on a single dimension.

In Chapter II I gave evidence to show that constituent meaning and functional meaning interact in important ways to produce the overall meaning of utterances. Theft always has the meaning of LARCENY with its three arguments associated with it, whatever syntactic development there is of this meaning within the phrases it governs. When an argument is not elliptical, there is a PLAYER with constituent meaning that interacts with the functional meaning of the REFEREE theft. In the theft of the smoke we are obliged to interpret smoke as BOOTY, i.e., as belonging to someone, as becoming the possession of someone else. As I showed in Chapter II an indeterminate REFEREE like the preposition through can be made to receive a more determinate semantic interpretation by the influence of the constituent meaning of its PLAYERS. Thus, through the crowd is spatial while through the weekend is temporal. In the incorporation model
this interplay would appear to be ignored.

The most serious problem with the incorporation model is the assumption that there can be a generative model, a finite set of rules for generating all and only of an infinite set of outputs, that starts with semantic representations and proceeds from there to syntactic form. The next section will constitute a challenge to this belief.

3. Why 'All and Only' is not a Possible Goal for Semantics

3.1 Messages

I will argue that the way word meanings build up the meaning of whole utterances is not fully determinate, so that 'all and only the well-formed sentences' is not a possible goal for semantics. This has direct implications for the theory of ellipsis: if I am right, it follows that a deletion analysis for the full range of elliptical utterances would misrepresent the nature of grammatical competence.

In order to put the problem in perspective, I will refer to the notion of 'message'. I will say that in each communicative act involving language there is a 'message' that passes from speaker to hearer which includes the grammatical signal and a conceptualization of its referential use. An acceptable message is one in which there is an acceptable referential use, in some 'world', for the grammatically determined meaning. By acceptable referential use I include the possibility of metaphorical interpretations, e.g., for John is sleeping where both the speaker and hearer know that John is not truly sleeping at the moment of the utterance, but where some creative
extension of the meaning of sleeping is intended. Thus, even if it is false that "John is sleeping", the sentence could still be the signal for an acceptable message.

I take it as a premise that a necessary criterion for the acceptability of a message is completeness: a message is complete when referential use is established for each constituent and each semantic function, including instances where constituent or function is ellipted. Thus, in all acceptable messages there is a match between the referent for each constituent and the referent for some semantic function, whether or not these are constituents and functions that are ellipted. Consider the sentence:

(156) Those grapes are sweet.

We can express a hypothetical referential use of the constituent meaning of grapes and the semantic function of the predicate sweet by Ven diagrams. The particular grapes referred to by the deictic expression those grapes can be represented by the symbol x. For the straightforward interpretation of (156) then, we have the following message:

(157) Those grapes are sweet

\[
\begin{array}{ccc}
G & x & S \\
\end{array}
\]

By contrast, consider the constituent ellipsis of Sweet! and the functional ellipsis of Those grapes!
At least one of the possible interpretations for (158a) **Sweet!** has the referential use represented by the overlapping sets, one drawn as a solid circular line and the other as a dotted line; there is a similar representation for the message corresponding to (158b) **Those grapes!** In each case the solid line represents the referent for the unit of meaning signaled by a phonetically realized constituent; the dotted line represents the referent for the constituent (158a) or the function (158b) that is ellipted.

Out knowledge of the word meaning of **sweet** tells us that it is a REFEREE, that it takes an argument, and thus it is a grammatically determined aspect of the interpretation of (158a) **Sweet!** that it is an instance of constituent ellipsis; our grammatical knowledge tells us that the constituent **Those grapes!** in (158b) is a PLAYER constituent, thus requiring the assignment of a semantic function, and so it is a grammatically determined aspect of the interpretation of that utterance that it is an instance of functional ellipsis.

The completeness established by the dotted lines in (158) corresponds to people "knowing what they are talking about", i.e., when someone says (158a) **Sweet!**, in order for it to be an acceptable message, it is necessary for it to be known what it is that is
"sweet"; when someone says (158b) Those grapes! it is necessary for it to be known what is being said about "those grapes".

Linguistic competence never determines the specific referential use to which language is put. It is always perception and cognition outside of linguistic competence that does that, e.g., English has only one lexical item snowflake and there is a potentially infinite number of referential uses to which it can be put. This is the well-known indeterminacy of language in referential use that makes language so useful; however, the possible referential use of a linguistic form is generally assumed to be determined by the grammar: the meaning of snowflake consists of a set of truth conditions that are assumed to define the possible referential use of that word. The particular grapes that are being talked about in the utterances (157) Those grapes are sweet or (158b) Those grapes! are not identified by the grammar, but, it is assumed, the grammar determines and sets an outer limit on the possible referential use of that noun phrase.

The issue which ultimately affects the theory of ellipsis is whether possible referents are grammatically determined for constituents or functions that are ellipted, in other words whether there is a meaning that is grammatically determined for each instance of ellipsis. I will take the negative side and my argument will take the following form: the possible acceptability of matches between functions and constituents is in general not grammatically determined; matches between functions and constituents where one or the other is ellipted form a proper subset E of the set M of all matches between
functions and constituents; since $M$ is not grammatically determinate, neither is $E$.

3.2 Metaphors

There are two kinds of metaphor which could be termed grammatically determined and referentially determined metaphor respectively. As an example of the former, one similar to the well-known "a grief ago" by Dylan Thomas, consider the following:

(159) I think I met you during Cambodia

The preposition during carries the presupposition that its object has duration of time as is the case with events; Cambodia, on the other hand, has the meaning 'place'. The hearer knows that the speaker knows that Cambodia is a place without duration of time and so he is forced into a metaphorical mode of interpretation. Cambodia, a member of the set $P$ of places must somehow be extended creatively into the set $T$ of entities that have duration of time. Conversely, one could say that properties of the set $T$ are extended onto Cambodia. The speaker has some creative extension in mind, some way in which Cambodia is like an entity that has duration of time, and the hearer knows that he is supposed to use his imagination to come up with some creative extension of his own. The content of the metaphorical interpretation can hardly be said to be determined by the grammar: the speaker relies on shared knowledge with the hearer of historical
events. Anyone reading the example in (159) near the year 1970 would understand at once that what is being referred to are the tumultuous events in the spring of that year when the United States invaded Cambodia. Cambodia becomes a label for an event, and the event in turn has duration of time.

What happens with (159) is typical of all grammatically determined metaphors in that we see that there is REFEREE precedence: whenever there is a clash between the meaning of a REFEREE and one of its PLAYERS, the PLAYER has to accommodate itself to the meaning of the REFEREE, and never vice versa. This much of the metaphorical process is grammatically determined.

The first strike against 'all and only' as a goal for semantics comes right here: grammatically determined metaphor is an instance of the systematic use of semantic anomaly; however, the 'anomalous' sentences that result are no less part of language than sentences free of semantic anomaly. It would be to misunderstand the place of language in the general cognitive apparatus to conclude that these sentences are in any sense not a part of language. The notion 'semi-grammatical' appears to not be applicable to semantic phenomena like metaphor. Apart from this concern, there appears to be serious question whether 'semi-grammaticality' is a formally characterizable notion. If we allow anomalous matches of functional meaning and constituent meaning, on the other hand, then we are admitting that semantics is not a device for determining what is and what is not in the language, and 'all and only' is not a possible goal.

The question of when anomaly in the match between functional
meaning and constituent meaning leads to an acceptable metaphorical interpretation is not one that can be answered by the grammar. There is no grammatical criterion that bears on the question as to whether there is even a limit to which anomalous combinations could lead to acceptable metaphors. In the year 1971 during Cambodia is a good metaphor, and maybe during South Dakota is not, but the grammar can surely not supply us with that information. It would not appear then that the grammar can define a special subclass of anomalous matches between functional and constituent meaning as 'well-formed metaphors' and allow them in as part of the language, while excluding all other anomalous matches. The case of grammatically determined metaphor alone then demonstrates that semantics cannot define 'all and only the well-formed sentences of a language'.

The second kind of metaphor, referentially determined metaphor, is equally significant. In this kind of metaphor there is no clash between units of meaning that are grammatically determined, but rather between a single unit of grammatically determined meaning and its intended referent. Such would be the case if while watching two blubbery wrestlers on TV one were to exclaim:

\[
(160) \quad \text{Look at those cows!}
\]

```
\begin{center}
\begin{tikzpicture}
  \node [circle, draw] (C) at (0,0) {C};
  \node [circle, draw] (X) at (0,-1) {\text{(x)}};
  \draw [->] (X) to (C);
  \end{tikzpicture}
\end{center}
```

It is not true that the referents (x) are cows. The speaker intends for the hearer to follow him in some sort of creative extension of the properties of the set of cows C onto the referent x being
talked about: there is some way in which the referents are 'like' cows. The precise content of the metaphorical interpretation cannot be specified by the grammar. Since I have said that it is blubbery wrestlers that are being talked about we can presume that fatness is one of the qualities that is being predicated onto the referents, but other qualities come to mind that could also be intended. When the grammar does determine a meaning we have a 'dead metaphor', and in effect a special lexical entry. Perhaps weasel has become a dead metaphor: probably more people know the metaphorical extension usually intended for weasel than what a real weasel is. The essence of a metaphor is to combine two things together that do not usually go together to create something new, so a live metaphorical meaning is one not yet a part of the grammar.

There is no way that the grammar can tell when the utterance in (160) is intended to have metaphorial interpretation. The match between referent and meaning tells us this. The grammar sets up truth conditions for what a bear is; if they are not satisfied, if it is false that what is being talked about is a bear, then a metaphorical interpretation is the only one possible. The grammar thus determines the criteria for deciding whether or not metaphorical interpretation is intended: truth conditions. The grammar does not, however, give us criteria for deciding whether a metaphorical interpretation will be acceptable for a given situation! We come to the same point: metaphor provides us with an important class of cases where the grammar does not determine the possible acceptability of interpretation.
3.3 Irony

Irony can be grammatically or referentially determined. Two examples of grammatically determined irony follow:

(161) a. They assassinated a nobody!
    b. The prisoners were lenient toward their captors.

There is a direct contradiction in each sentence. (161a) would receive an acceptable interpretation in a situation where an attempt had been made to assassinate a president but a mayor of a well-known city had been killed instead. The verb assassinate presupposes an important public figure as its object. A mayor of a well-known city is such a figure, but in the situation just described, with a scale of important figures that includes presidents, one might be led to make this remark: compared to a president, a mayor is a nobody. (161b) could receive an acceptable interpretation among people in sympathy with the prisoners’ cause in some of the recent prison revolts where temporarily prisoners had power over their captors and had the opportunity to impose punishment for injustices that had been committed by the captors.

The affect of irony is achieved by the contradictions within the matches of functional and constituent meaning. A nobody is a PLAYER for the REFEREE assassinate and the constituent meaning of the former directly contradicts a part of the functional meaning of the latter. The prisoners and their captors are PLAYERS for the REFEREE lenient: those noun phrases in turn each contain heads that are themselves REFEREES. Prisoners takes their captors as a PLAYER
in the coreferential interpretation, and captors takes the prisoners as its PLAYER. The propositional meaning governed by lenient says the prisoners have power over their captors. The propositional meaning governed by the nouns captor and prisoner says their captors have power over the prisoners: contradiction.

A moment’s reflection should be enough to convince one that a complex kind of real world situation must be conceived of in order for such sentences to be acceptable. Cognition other than linguistic competence is necessary to determine possible acceptability of utterances. Again, I would say that it would be to misunderstand the place of language in the general cognitive apparatus to conclude that because sentences such as those in (161) are semantically anomalous they are in any sense not a part of language. It would appear that irony of this kind is different from metaphor in that we are to understand referents to be simultaneously two things at once. The one assassinated in (161a) is an important public figure and a nobody both: two different points of view are involved. The prisoners in (161b) are to be understood as simultaneously having power over their captors and being controlled by them. Metaphor hinges on a unit of meaning that is not true for the situation at hand. Both metaphor and irony, however, are kinds of speech which show that 'all and only' is not a possible goal for semantics.

We could have referentially determined irony whenever meaning asserted for a referent contradicts expectations. Imagine a silent Charlie Chaplin movie (no linguistic context!) where a poor fellow who is literally a nobody is murdered by the police at some mass
demonstration in view of a million people. The circumstances are such that the very act of the police murder transforms him into a important public figure, a hero. At this instant, one might exclaim An assassination! This would be ironic. It is true that at the moment of his murder, he became an important public figure, but it is also true that he was a nobody, just the kind of person one would not expect to become an important public figure. It is the match between the referent and the unit of meaning that makes the interpretation ironic. In complex fashion, it appears that the truth conditions of assassination are simultaneously being satisfied and denied. The grammar determines the truth conditions, but it doesn't determine the match with the referential situation that makes the ironic interpretation possible. The grammar, furthermore, cannot provide the criteria for the possible acceptability of ironic interpretations, not, that is, unless there is a grammatical means of characterizing the notion 'violation of expectations'.

3.4 The Selection Problem

Fillmore (1970) makes the point that in a sentence such as I broke the dog, it is not our knowledge of language so much as our knowledge of the world that determines acceptability. The verb break presupposes that its object is "rigid" in some of its dimensions, but whether or not dogs can ever be rigid is not a question that our knowledge of word meaning can tell us. He says:
"... One could make these observations seem more formal, of course, by writing 'rigidity' with an initial capital letter and postulating it as a semantic feature of certain nouns, but I believe it would be quite misleading to do so. It seems very unlikely to me that anything is gained by treating these particular 'selectional' properties of break (and bend, fold, etc.) in terms of semantic features that are assignable in any natural way to 'other words.' It is rather that the verb 'presupposes' that the 'real world objects' named by the nouns that occur with it have certain 'physical properties.'" (page 129)

"... The treatment of the selectional properties of verbs cannot be carried out in a non-ad hoc way, it seems to me, by seeking features on nouns which do or do not violate restrictions associated with particular change-of-state verbs. In fact, it looks very much as if for a considerable portion of the vocabulary of a language, the conditions determining the appropriate use of a word involve statements about properties of real world objects rather than statements about the semantic features of words." (page 131)

If Fillmore is right, as I believe he is, then there is a profound consequence: 'all and only the well-formed sentences of a language' is not a possible goal for semantics. A substantial portion of the semantic structure of language is made up of the matching of the functional meaning of REFereES and the constituent meaning of PLAYERS. If semantic principles cannot define the possible acceptability of these matches, then this means that a language cannot be generated semantically. The notion 'generative semantics' would seem then to be an anomaly. A semantically-based grammar could never be generative in the sense of having a finite number of rules for generating a well-defined set that is potentially infinite. Semantically based grammars could either be random generators with infinite outputs, or taxonomic studies of the form-meaning relationships of some sentences.

Semantics cannot, I believe, generate all and only the well-
formed sentences of a language any more than phonetics can. Both semantics and phonetics ought to be interpretive: many semantic and phonetic features are systematic and lend themselves to the formulation of interesting rules; however, trying to exhaustively define a language in terms of semantics or phonetics appears to be of necessity impossible. Language diffuses itself onto unsystematic and indeterminate detail at both the physical and the cognitive extremes of its structure.

The cognitive property that makes the meaning of the word noodle distinct from that of spaghetti is surely not a systematic part of the semantic structure of all nouns and there is little likelihood of having much close agreement among different speakers as to exactly what the difference in meaning is between these two words. This amounts to indeterminacy as to the referential extension of word meanings.

The same kind of indeterminacy exists in the aspects of meaning that are matched with each other in propositional structure. The meaning of break has a referential extension that includes presupposition about what kind of object can be broken, but exactly what real world objects will qualify is not determinate. The meaning of nouns that are potential objects for the verb break also have referential extensions that are not fully determinate, so that a certain amount of creativity is necessary when speakers decide whether or not to call a real world object dog.

When it comes to matching the meanings of break and dog, the possible acceptability of that combination as a unit of meaning is
determined by the total cognitive apparatus, including memory, perception and imagination, and not just the linguistic faculty alone.

3.5 Generative Syntax

These considerations have convinced me that Chomsky was right in the first place when he advocated a generative syntax. It appears to me that we can gain a great deal in our understanding of language by abstracting the abstract principle of form we call syntax and defining all and only the well-formed sentences of a language in those terms. Native speakers have firm judgements on the syntactic form of sentences because syntax is analyzable as a closed system: syntax doesn't diffuse itself into the limitless detail of articulation or acoustic affect on the side of phonetics or the open-ended nature of cognition and imagination on the side of semantics.

People communicate with less than perfectly well-formed syntactic structures quite often. A non-native speaker of English might well get prepositional usage mixed up and Look the picture!, Believe on me! or Listen at the music!; native speakers of English can usually supply coherent interpretations to such utterances attaching the intended semantic function from REFEREE to PLAYER, but they also recognize that there has been a violation of integrity, that the form of the PLAYERS is wrong, and supply the correct form.

Differences in syntactic form between dialects are commonly noticed by native speakers even when they do not impede communication; more important, one can pinpoint what the difference is. In southern Indiana I have heard sentences like We are the people you ordered
the wood off of and We do most of our work of a night around here.

Syntactic differences between dialects are discrete, while phonetic ones very often are not. You either say order off of or order from, or some other combination of words, but there is no blend or overlap where a form is partly like one word and partly like another. By contrast, Labov (1969) has found it necessary to describe phonetic differences between dialects not in terms of discrete properties but in terms of the percentage of time that a certain sound distinction is made.

Differences between dialects or idiolects on the level of semantics will probably always be beyond the reach of any but the grossest kind of formal description; the reason for this is that the cognitive value attributed to linguistic forms depends on a very fluid interaction between the mind and the universe as a whole.

It would appear that the abstraction of syntax, the ordered representation of words, is the proper target for which to define goals in terms of 'all and only'. It is not unreasonable to make a syntactic description a finite set of rules for generating a well-defined and potentially infinite output. Phonetic and semantic rules of interpretation should be used to capture the systematic correspondences between sound and meaning, with syntax as a fulcrum between the two. The closing paragraph from Syntactic Structures is very apt:

"... it appears that the notion of 'understanding a sentence' must be partially analyzed in grammatical terms. To understand a sentence it is necessary (though not, of course, sufficient) to reconstruct its representation at each level... In other words, one result of the formal study of grammatical structure is that a syntactic framework is brought to light which can support semantic analysis. Description of meaning
can profitably refer to this underlying framework, although systematic considerations are apparently not helpful in determining it in the first place. The notion of 'structural meaning' as opposed to 'lexical meaning', however, appears to be quite suspect, and it is questionable that the grammatical devices available in language are used consistently enough so that meaning can be assigned to them directly. Nevertheless, we do find important correlations, quite naturally, between syntactic structure and meaning; or, to put it differently, we find that grammatical devices are used quite systematically. These correlations could form part of the subject matter for a more general theory of language concerned with syntax and semantics and their points of connect." (Chomsky 1957, pp. 107 and 108)

Ellipsis of functional meaning of constituent meaning as in A cup of coffee or Henry explained is just one of the ways in which the formal structures of language is semantically indeterminate. If one wanted to maintain the pretense that the possible acceptability of utterances in their referential use is strictly determined by the grammar, then it would follow that elliptical utterances ought to be analyzed as ambiguous; from there it would be natural to have deletion rules that derive elliptical utterances always from non-elliptical sentences. I have attempted to show, however, that language is indeterminate in general on the side of meaning. I do not believe that it is possible to attain a well-defined notion of 'semantic well-formedness' that is equivalent to possible acceptability in referential use. The latter depends on the mind as a whole, including imagination, and not just on our knowledge of language. The natural way to analyze elliptical utterances would appear to be to attribute as much semantic value to them as is carried by the forms that appear on the surface and no more. This should be accomplished by having the syntax generate
just the structure which achieves phonetic interpretation, and have
this structure undergo semantic interpretation at some appropriate
level.
CHAPTER IV: THE SYNTAX AND SEMANTICS OF ELLIPTICAL EXPRESSIONS

1. The Words as Prime in Syntax

1.1 What is at Stake for the Theory of Ellipsis

In the first section of this chapter I will present an argument for the word as prime unit of syntax, an argument that all words, including inflectionally related ones should be lexical entries and that their relatedness be accounted for by paradigms that act as redundancy rules on the content of the lexicon.

This is a crucial point for the 'interpretive analysis' that I have advocated for ellipsis because of utterances such as Needs an oil-change, doesn't it? If the inflection on needs is to be the result of agreement with some larger syntactic environment via affix-hopping and number agreement transformations, then the elliptical utterance will have to be derived by deletion from a non-elliptical underlying representation. If on the other hand needs is a lexical entry just like need and number agreement is accounted for by an interpretive rule, the elliptical utterance can be generated without recourse to deletion rules. The principle of the transformational derivation of inflected words stands in direct conflict with the view of ellipsis which I present here. If I am right about ellipsis, then all words, including inflected ones, must be lexical entries.

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1.2 Incomplete Conjugations

The verbs *go* and *come* can be followed by the base forms of other verbs in a quite productive fashion, e.g.,

(1) The cabinet members go eat every day at 12:15.

(2) No one should go complain to the headmaster unless there is good reason.

(3) We will come swim in your pond one of these days.

(4) Please come pick up your laundry.

There is, however, a striking asymmetry in the paradigms that arise for expressions like *go eat* and *come swim*. Consider:

(5) a. We go eat.
    b. They go eat.
    c. I go eat.
    d. You go eat.
    e. *He goes eat.
    f. *He go eat.
    g. *He go eats.
    h. *He goes eats.

It turns out that expressions such as *go eat* have conjugations that are incomplete in all and only those cases where inflection is required within the two verb sequence itself. Note the saving effect of do-support, e.g.,

(6) a. *The prime minister goes eat every day at the same time.
    b. Does the prime minister go eat every day at the same time?
    c. The prime minister doesn't go eat every day at the same time.
    d. The prime minister does too go eat every day at the same time!
(7) a. Did they go borrow the money right away?
   b. *Yes, they went borrow it. (same for you, we, etc.)

(8) a. Fred didn't go look up the information.
   b. Mike did go look it up.
   c. *Elmer went look it up too.

Any construction relieving the two-verb sequence go borrow, etc. of inflection can be acceptable.

In the following three examples, the meaning is virtually the same but the form differs:

(9) a. *He usually went get the paper before supper.
   b. He would usually go get the paper before supper.
   c. He used to go get the paper before supper.

The ban on inflection is absolute, so that there are no acceptable participial expressions like gone eat or going eat, and while there is an infinitive to go eat, there is no gerundive going eat:

(10) a. *They have already gone eat.
    b. *I met them as they were going eat.
    c. *They have been going eat together for a long time.

(11) a. He wants to go eat his lunch right now.
    b. *He insists on going eat his lunch right now.

Sam Keyser has pointed out (personal communication) that in the so-called 'subjunctive' construction complete conjugations of expressions like go eat are fully acceptable: this is of course because there is no inflection on the base form of the subjunctive verb. The verb insist governs both 'indicative' and 'subjunctive'' THAT IS
constructions, e.g., I insist that George works hard and I insist that George work hard. Predictably, if we make go eat the verbal expression in the subordinate clause, only the subjunctive will be acceptable:

(12) a. *I insist that George goes eat with Marge.
    b. I insist that George go eat with Marge.

Despite the fact that the past participle come is homophonous with the base form come, only the latter is acceptable in this kind of construction, interesting support for the claim that an inflection is an inflection whether or not it has phonological consequences:

(13) a. They often come sleep at our house.
    b. *They have often some sleep at our house.

I will call the two-verb sequences that are found in expressions like go eat, go borrow the money, come sleep at our house and come pick up the laundry the GO EAT construction. Although judgements vary considerably among informants, all that I have consulted accept at least go in this construction; I have found a number of idiolects, my own included, where it is natural to use not only go and come in this construction, but hurry, run, stay, sit and try as well. The following examples are representative of these idiolects and they show that privilege of occurrence in the GO EAT construction is an idiosyncratic property of lexical items not to be accounted for by any general semantic, syntactic or phonological principle. All informants consulted accept at least some of the (a) examples, while the negative judgements in the (b) examples have been unanimous:

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(14) a. Run hide in the woods! (also Hurry, Go or Come)  
   *Crawl, *Sneak, *Swim)

(15) a. Why don't you stay watch the sunset with us? (sit)  
b. *Why don't you remain watch the sunset with us?  

(16) a. He'll try get a parking spot near the entrance  
b. *He'll attempt get a parking spot near the entrance.  
   (*endeavor, *strive, *aim)

1.3 Two Deletion Analyses Declined

Incomplete conjugations, the earmark of the GO EAT construction, are a spectacular anomaly. The language learner acquires new verbs with very sparse data and case use them in complete conjugations without having heard them conjugated. It is a commonplace demonstration of the creative power of language that given a new stem, a child can produce correctly inflected forms without having heard them before: this shows that he knows the rules for generating paradigms independently of the paradigms for any particular expressions. It must be asked what prevents the language learner from generalizing to make all conjugations complete. The fact that *He goes eat is rejected cannot be due simply to his not having heard anyone else say it before; there must be some added complexity in the grammar that prevents the unacceptable parts of the conjugation from being generated. Less output in this case is evidence for a more complex grammar. 1
Following Lyons (1969), I will call an inventory of inflectionally related forms with the same stem a lexeme. Thus, go, goes, went, going and gone constitute the lexeme go. Members of a lexeme are typically in complementary distribution. It is significant, therefore, that go remains in complementary distribution with all of the inflected members of the go lexeme even in the GO EAT construction: there is no He go eat contrasting with He goes to eat. This fact is consistent with the view that go in the GO EAT construction is the same form that serves as the stem for goes; went, going and gone. If this is the case, then we have a situation where one member of a lexeme has a privilege of occurrence that its co-members do not have. This, I believe, is the significance of the GO EAT phenomenon.

As a means of accounting for the data in a way that captures the notion 'related sentence type', there are two analyses involving optional deletion rules that might be proposed. Either would present GO EAT expressions as truncated surface representations of some other expressions pattern. The affect of either of these analyses would be to make it appear that GO EAT expressions have conjugations which are incomplete only on the surface. The question is, of course, whether the sentence types in question are really as "related" as this kind of analysis implies. I will argue in the negative: I believe either analysis would lead to incorrect descriptive results, and, what is more serious, that this kind of approach beclouds the great significance of the incomplete conjugations.

The least likely deletion analysis would involve a rule of to-deletion, so that the source of all V1 V2 GO EAT expressions would
be an expression of the form \( V_1 \) to \( V_2 \) with one of the GO EAT verbs in initial position. Thus, \( \text{Go} \) dance would be derived from \( \text{Go} \) to dance.

Since the \( V_2 \) of any expression \( V_1 \) to \( V_2 \) is always uninflected, it would remain to constrain the deletion rule to operate only when the \( V_1 \) is uninflected, i.e., ordered after AFFIX-HOPPING.

(17) TO-DELETION (optional)

\[
\begin{array}{cccccc}
X & - & V & - & \rightarrow & V & - & X \\
1 & 2 & 3 & 4 & 5 & \longrightarrow & 1 & 2 & \emptyset & 4 & 5
\end{array}
\]

Conditions:
(a) \( 2 = \text{go}, \text{come}, \text{run}, \text{hurry}, \text{stay}, \text{sit} \) or \( \text{try} \)
(b) \( 2 \) does not include "AFFIX"

The gross defect in this approach is that the \( V_1 \) to \( V_2 \) construction does not mean the same thing as the GO EAT construction. In the \( V_1 \) \( V_2 \) GO EAT construction the \( V_1 \) is to the \( V_2 \) as a modifier is to a head. Thus, in They go dance we have a statement about dancing that varies only slightly in meaning from They dance, but a great deal from They go. The contrast in meaning with the \( V_1 \) to \( V_2 \) construction can be easily demonstrated:

(18) a. They go to buy vegetables every day, but there never are any vegetables.

b. *They go buy vegetables every day, but there never are any vegetables.

They go buy vegetables asserts that the purchase takes place, while They go to buy vegetables does not. In (18a) the statement that the desired commodity is not available does not conflict with the meaning of the first clause, but in (18b) there is a contradiction. We could not make (18a) the course for (18b) unless we want to allow transformations to change meaning in an unprecedented way.
A more likely hypothesis would be and-deletion, making $V_1 \, V_2$
GO EAT expressions optional surface variants of expressions of the
form $V_1 \, \text{and} \, V_2$. All of the GO EAT verbs lend themselves to a subor-
dinating modifier-to-head interpretation in this construction. Com-
pare Go and eat with Eat and go: in the former, either a coordinating
or a subordinating interpretation is possible; in the latter only a
coordinating interpretation is possible. In Go and eat in Tom's car
there is an ambiguity as to what takes place in Tom's car; this ambi-
guity does not arise in Eat and go in Tom's car. Any non-stacked
GO EAT expression can be at least roughly paraphrased by a $V_1 \, V_2$
expression, e.g., They go buy vegetables and They go and buy vege-
tables. Thus, the following might be proposed, ordered after AFFIX-
HOPPING:

(19) AND-DELETION (optional)

\[
\begin{array}{cccccc}
X & - & V & - & \text{and} & - & V & - & X \\
1 & 2 & 3 & 4 & 5 & & & & \end{array}
\]

Conditions: (a) 2 = go, come, run, hurry, stay, sit or try
(b) neither 2 nor 4 include +AFFIX

An initial objection to this hypothesis might be that minor
rules of this sort, applying to only sevel lexical items, are devices
far too powerful for the output obtained, like using a 10-ton truck
to carry a few buttons. Keep in mind that there are countless expres-
sions of the form $V_1 \, \text{and} \, V_2$ that would not undergo this rule, e.g.,
They lie and cheat but *They lie cheat. Still, there is nothing in
the metatheory at present to preclude such an algorithm, so it will
have to stand or fall on its internal merits.
Charles Bird has pointed out to me an important argument against the and-deletion hypothesis: it is that the V1 and V2 construction with modifier-to-head meaning cannot stack the way the GO EAT construction can, e.g.,

(20) a. Come go eat with us. (example from Bonnie Kendall)
     b. Come and go eat with us.
     c. *Come and go and eat with us.

(21) a. Come go sit have a drink with us.
     b. *Come and go and sit and have a drink with us.

(22) a. He should run go tell his brother.
     b. *He should run and go and tell his brother.

(23) a. Why don't you hurry go try get your tape recorder?
     b. *Why don't you hurry and go and try and get your tape recorder?

The only way to salvage the and-deletion rule at this point is by making it obligatory just in case there are too many ands. This makes the rule look very unnatural: the (a) examples in (20) - (23), acceptable to many speakers I have checked with, would have to have ill-formed sentences as their sources. Worst of all is the fact that the analysis makes it look as though the modifier-to-head subordinating meaning of the GO EAT construction has some natural affinity to and-conjunction.

Actually, it seems most likely that the unacceptability of the utterances with too many ands is due precisely to a conflict between the meaning of and and the subordinating modifier-to-head meaning. It is not unreasonable to suppose that and has an inherent meaning 'coordination': this is why and-conjunction can go on indefinitely.
when one gives a coordinate list, e.g., Eat and burp and drink and laugh and hiccough and sing and giggle and joke and dance. Whether the actions are to be understood as simultaneous or sequential, all the verbs are heads and semantically parallel, none is modifier to another. It appears that the inherent meaning of and can be over-ridden once by a subordinating meaning in the V1 and V2 sequence, but any more than once the meaning 'coordination' is too pronounced and creates a clash.

It must be seriously questioned just how "related" the two expression types V1 V2 and V1 and V2 really are. I will turn now to some more particular observations about meaning and concentrate on go and come. I am indebted here to Dwight Bolinger, who has pointed out to me a number of ways in which the meanings of these two expression types differ. When we try paraphrasing V1 and V2 with go and come in initial position by V1 V2 an important difference emerges. Compare:

(24)  a. The trucks come and pick up the garbage every Monday.
     b. The trucks come pick up the garbage every Monday.

Go and come ordinarily allow either an agential or a non-agential interpretation, but in GO EAT expressions the interpretation must be agential. The (b) example here is acceptable because we can associate The trucks with an agent. But cf.

(25)  a. Pieces of drift wood come and wash up on the shore.
     b. *Pieces of drift wood come wash up on the shore.
(26)  a. Our sewage might go and pollute the town water supply.  
      b. *Our sewage might go pollute the town water supply.

(27)  a. The smoke fumes go and inebriate the people upstairs.  
      b. *The smoke fumes go inebriate the people upstairs.

I take this as an instance of the same lexical items allowing 
different ranges of interpretation depending on the context: poly-
semous context-sensitive lexical entries as in traditional lexi-
ocography. The advocate of an and-deletion rule, though, would I think 
want to take this data as evidence of multiple lexical entries and 
talk about "the two verbs go", "the two verbs come", etc. saying 
that only the agential go and come undergo and-deletion. But there 
is more meaning difference than this. Observe the following set of 
examples:

(28)  a. They go from the kitchen to the living room.  
      b. They go to the living room.  
      c. *They go from the kitchen.

The notion of goal or end point of motion predominates over 
that of the source or starting point in the meaning of go: it is 
possible to say simply They go, but if the source is expressed, the 
goal must be too. This observation is key to understanding the data 
that follows:

(29)  a. They deliberately go and occupy the land.  
      b. They deliberately go occupy the land.

The object of occupy (in its inchoative sense) is the goal or 
end point of motion. Thus, there is no clash between go and occupy 
the land any more than there is between go and to the living room in
(28b). But compare the same examples with the vacate in place of occupy.

(30) a. They deliberately go and vacate the land.
    b. *They deliberately go vacate the land.

The object of vacate is the source or starting point of motion. Thus, in (30b) there is a clash between the meaning of go and vacate the land similar to the one between go and from the kitchen in (28c). (29a), on the other hand, is quite acceptable to most speakers and this is because there is not so tight a nexus between V1 and what follows in the V1 and V2 construction as there is in the V1 V2 construction. So also:

(31) a. They deliberately go and abandon their comrades.
    b. *They deliberately go abandon their comrades.
       (cf. same examples with join)

(32) a. They deliberately go and back out of the agreement.
    b. *They deliberately go back out of the agreement.
       (cf. same examples with enter into)

(33) a. They deliberately go and leave their wives behind.
    b. *They deliberately go leave their wives behind.

(34) a. They deliberately go and relinquish their right to a trial by jury.
    b. *They deliberately go relinquish their right to a trial by jury.

I have presented these observations on stacking and on meaning to argue that GO EAT expressions are not truncated surface variants of some other expression type. Whatever position one takes on the underlying representation of expressions like go buy vegetables,
the challenge to the grammarian is to account for them as instances of a construction type with independent status in the grammar. In this light, the incompleteness of GO EAT conjugations becomes all the more intriguing.

Even if they did not produce incorrect descriptive generalizations, these deletion analyses would bring us no closer to explaining why *Does he go swim?* can easily be answered with a complete negative sentence, but not with an affirmative one. Each of the proposed transformations (17) and (19) would have to be constrained with an *ad hoc* condition barring the deletion in case the regular rules for main verb inflection required an affix on the GO EAT verb. Rather than being explained, the problem is underscored.

1.4 Simplicity: an Empirical Issue

We do not know how efficiently the mind works, but in view of the complexity of language on the one hand, and the rapidity of child acquisition of language on the other, it has been reasonable to assume maximum simplicity in our model of linguistic competence — that is until and unless there is empirical evidence to the contrary. The incomplete conjugations of the GO EAT construction, this peculiar half-way situation where the syntagmatic and paradigmatic dimensions of the grammar are out of phase with each other, provides this kind of evidence to the contrary.

If base forms can have different freedom of occurrence from inflected forms, different *syntax*, then the prime for syntax should
be the word and we ought to have separate lexical entries for the base form and the inflect forms. This means doing away with the rule of affix-hopping and greatly increasing the size of the lexicon. Some other device besides the affix-hopping rule has to be instituted to capture the relatedness of members of the same lexeme, some sort of redundancy rule on the content of the lexicon. This device would be the equivalent of the traditional notion 'paradigm'.

It should be stressed that adding paradigms to the grammar is an added complexity. Up until now, it has been assumed that inflectional paradigms were an artifact of certain kinds of analysis by grammarians, but not a part of either competence or the acquisition of competence: it has been possible to think that the child masters the rules for generating all and only the well-formed sentences without even noticing the paradigms. The fact that modals have no participial forms, for example, can be accounted for automatically in a grammar where modals are never generated in the first place in the contexts where they would be required to have participial inflection; for the child to take stock of the paradigms would necessitate additional intellectual effort along lines that would appear to in no way contribute to the creative power of language.

Inflectional morphology is predictable from syntax in that for a given part of speech in a given context the syntactic rules will always define what inflectional affixes will be present, inflection for number on English nouns, inflection for number agreement with the subject noun phrase on the first verb of the English verb phrase provided it is a non-modal, inflection for gender, number and case on
Russian attributive adjectives agreeing with the head noun that commands them, etc. Note that derivational morphology cannot be said to be predictable from the syntax in the same way. Where inflection is involved the syntagmatic aspect of the grammar is sometimes made to seem perfectly regular at the expense of some complex and abstract morphophonemics. With this price paid, however, the grammar is immensely simpler and need include only syntagmatic principles: paradigmatic principles can be said to be accounted for automatically at the same time.\(^2\)

This is how it works most of the time, but when the classification of a part of speech is indeterminate, as with go, always a main verb, but sometimes like some other kind of word (adverb, modal?), the syntagmatic is constrained by the paradigmatic and we get incomplete conjugations. The GO EAT construction is not recognized by the grammar as a bona fide main verb construction, and only the base form has privilege of occurrence there. Inflected forms of verbs do not occur in V1 position perhaps just because they look too much like main verbs. It appears that the paradigmatic organization of inflectionally related words is an everpresent parameter of the grammar, but that we only get confirmation of its existence in an unusual situation such as the one at hand.

If inflectional paradigms are a part of competence, then it is possible that they play an important role in language acquisition too. While they do not contribute much to the innovative power of the grammar, they are more palpable than rules that account for recursive syntagmatic properties. Their value as a learning aid for older
children and adults in foreign language classes is well known, and they are among the first things that the linguist field worker looks for. But one searches in vain in the transformational model for the inflectional paradigms so common in traditional pedagogical grammars. They are no where to be found.

One of the gems in Chomsky's *Syntactic Structures*, which has remained an outstanding illustration of the descriptive elegance that can be gained with transformations, has been the analysis of the English verb auxiliary system with the affix-hopping rule. Besides describing the correct order of verbs and affixes for a large portion of the possible clause types in English, this analysis has had the virtue of representing the unity of the native speaker's knowledge of lexemes. Only base forms are included in underlying representations, and inflected verb forms come out in surface structure, a by-product of syntactic derivations. Once the lexicon was given formal status in the model this was recognized as a considerable gain in simplicity, because the affix-hopping analysis made it possible to include only the base forms of verbs as entries. It seems to have been generally assumed that inflection in all parts of speech would be handled transformationally (although the basis for this assumption is not immediately apparent when forms such as noun plurals are involved). This amounts to the strongest hypothesis as far as inflectional morphology is concerned: that no inflected forms are included as entries.

The principle of including only base forms in the lexicon was extended to derivational morphology as well, particularly in Lees
(1960). Again, this was a way of capturing the unity in the native speaker's knowledge, not only of syntax, but of vocabulary as well. It became possible to conceive of the strongest possible hypothesis for the simplicity of the lexicon, given the morpheme as a prime, and that is that base forms are the only lexical entries and that all productive and semi-productive processes of affixation (all those where morphemes with psychological reality are involved) are accounted for by post-lexical transformations. If affixes are to be lexical entries as well, they only have to be listed once: there will be no entries of the form base + affix.

Important work that has been done subsequently by Chomsky (1968) and Jackendoff (1969) has cast doubt on the principle of generating derivational morphology by post-lexical transformations. Chomsky showed that in a substantial number of cases the idiosyncratic properties of meaning and cooccurrence in English deverbal nouns could not be accounted for on the basis of lexical entries for verbs, and Jackendoff gave a comparable demonstration for adjective-based adverbs in English. This work provided an empirical basis for the hypothesis that post-lexical transformations cannot change node labels.

Of course, derivational morphology does not always change node labels: in Shopen and Konaré (1970), we considered derivational morphology in Sonrai where verbs are derived from other verbs in semi-productive and productive processes, particularly direct and indirect causative verb formation; we showed that these processes could not be accounted for in post-lexical transformations and put forth the hypothesis that all derivational morphology must be contained in the
lexicon. This represents a kind of intermediate position on the simplicity of the lexicon that says that there are two kinds of entries involving bases, (i) base forms, and (ii) derivationally affixed forms of the form base + derivational affix. Note that inflectionally affixed forms are still excluded. There is a logic to this: choices of inflectional affixes can be defined as obligatory in terms of syntactic contexts, choices of derivational affixes cannot. The latter are idiosyncratic and if transformational derivations were used all rules would have to be lexically governed.

The GO EAT phenomenon provides an argument for an even less 'simple' lexicon. In order to construct a grammar that generates all and only the well-formed GO EAT expressions, the obvious fact to be noted is that the base forms have a privilege of occurrence that the other members of their lexemes do not, e.g., go as opposed to goes, went, going and gone. These are different words and from a naive point of view it is not surprising that they have different syntax; however, given that they are inflectionally related words, this is a very awkward fact for transformational theory to deal with.

In order to respect the dictum 'no inflectionally affixed forms in the lexicon', one could attempt using a negative cooccurrence feature to constrain lexical insertion, e.g., go, - [-AFFIX ___ V]. This says that go cannot be inserted in a context with an affix to its left (affixes are to the left of the bases to which they are to be attached at the point of lexical insertion in the analysis that involves a post-lexical affix-hopping rule) and a verb immediately to its right. The right hand side of this environment might have to be
more complex, but this is beside the point: whatever the form of such a feature, it would fail in the standard transformational model of English because of the do-support phenomenon. If the affix to the left of go is TENSE and do support occurs, triggered by an optional preposing rule, then the output will be perfectly acceptable, e.g., Only on Mondays does he go visit his parole officer vs. *He goes visit his parole officer only on Mondays. Even if all the movement rules that trigger do-support were made obligatory, no strictly local cooccurrence feature would correctly constrain lexical insertion of the GO EAT base forms.

The most conservative way to constrain the model would be to make affix-hopping a lexically governed rule, assigning what Lakoff (1965) would term a negative absolute exception feature to the base forms of GO EAT verbs, e.g., "ill-formed if structural description for affix-hopping rule is met IF in V1 position in a sequence _V1 V2 where V2 is uninflected." Such a rule feature would be a way of capturing the correct output, but its complicated nature, N.B. the IF clause, plus the unfortunate loss of generality when the affix-hopping rule becomes lexically governed, makes it a questionable solution.

One could consider the use of an output condition, e.g., "a sequence _V1 V2 is ill-formed if V2 is uninflected and V1 is inflected provided that V1 carries the feature [+GO EAT]." Any such condition would have to be constrained so as not to apply with help in V1 position, cf. I help wash the dishes, He helps wash the dishes, He is helping wash the dishes, etc. Such an output condition would also succeed in a technical sense, but I would view it as a terminological
variant of the rule feature solution above; more important, neither the rule feature solution nor the output condition solution is well motivated since each one obscures the obvious fact that we have syntactic irregularity here which is the property of certain words, not morphemes.

There are other incomplete conjugations in English that create similar problems. Weather verbs such as rain, drizzle, sleet and snow are no doubt governed by a semantic principle. Another kind of incomplete conjugation involves one of the GO EAT verbs, try, i.e., when it is followed by and in a subordinating construction V1 and V2 such as was discussed in subsection 1.2, e.g.,

(35)  a. We try and escape.
      b. They try and escape.
      c. I try and escape.
      d. You try and escape.
      e. *He tries and escapes.
      f. *He try and escapes.
      g. *He tries and escape.
      g. *He try and escape.

(36)  a. Does he try and escape?
      b. Yes, he does. *He tries and escapes.
      c. The other one doesn't try and escape.
      d. He does too try and escape!

(37)  a. Did he try and escape?
      b. Yes, he did. *He tried and escaped.
      c. The other one didn't try and escape.
      d. He did too try and escape!

(38)  a. *He's trying and escaping by digging a tunnel.
      b. *He has tried and escaped by bribing the guard.

Recall, in connection with the discussion of stacking in subsection 1.3, examples (20) – (23). Try is exceptional in that only
when it occurs in combination with other verbs, can there be more than one subordinating and in the same expression. Instances of try and V2 and V3 and VI and try and V3 are the only acceptable expressions of this form where the meaning is a subordinating one, e.g., Try and go and eat with Bill, Go and try and get your camera. This suggests that the sequence try and has become idiomatic and is perceived as a single unit of meaning. This hypothesis could in turn explain the incompleteness of the conjugations with try and: try combines with and to form an idiomatic unit, but none of the other members of the same lexeme do; no other means are provided for concatenating members of the try lexeme with and V2 in a modifier-to-head relationship.

Whatever the explanation, this incomplete conjugation would present the same kind of difficulty for the standard transformational model. Any of the solutions possible would once again obscure the fact that we have a syntactic idiosyncracy that is a property of a word, where try, tries, etc. are different words and have different syntax.

In the present state of affairs, the grammar gives an unnecessarily complex view of what a word is: on the one hand, words are entered as lexical entries when just bases or bases plus derivational affixes are involved, but on the other hand, when inflectional affixes are involved, they appear only in surface structure after the post-lexical transformations have applied. This is one way of capturing the fact that the form of some words is more predictable from syntax than others, but we are left without a unified notion of word, which is intuitively perhaps the single most accessible unit of linguistic analysis to speakers of natural languages.³
The incomplete conjugation of GO EAT expressions and of expressions with try and provides an argument for a model of competence where the prime for syntax is the word, where the most abstract syntactic representations are appropriate for the inclusion of words. The observation and analysis made to this point, if correct, leads to the conclusion that all members of main verb lexemes are lexical entries in their own right, and in short that the notion 'lexical entry' is, very simply, equivalent to the notion 'word'. Thus, we can account in the lexicon for the special privilege of occurrence that the base forms of GO EAT verbs have that the corresponding inflected forms do not.

There is abundant evidence in many languages of historical change on the level of words. Lexemes themselves display evidence of this kind: every time a lexeme has suppletive forms, e.g., be and were, go and went, it is because of the reanalysis of the syntactic and semantic value of words, often involving the break up of earlier lexemes. It is only by making all words lexical entries, including the members of lexemes, that the model can account for this important kind of change.

If the affix-hopping rule is discarded from the transformational grammar of English, then some new principle must be employed in the grammar to explain the unity in the native speaker's knowledge of his vocabulary, the relative ease that must exist in learning lexemes, the most closely related of vocabulary items, words the affixation of which is most redundant and predictable from the syntax. But this is exactly what we do for the grammar if we give formal status to master
paradigms for lexical categories: they serve as redundancy statements about the content of the lexicon.

The fact that the lexicon has been proved to be less than maximally simple where derivational morphology is concerned does not mean that the psychological unity of derivationally related vocabulary has been denied: although not as great as with inflectionally related words, there is unity nevertheless, e.g., create, creative, creatively, creation and probably even creature have psychological unity such that the native speaker recognizes a common stem create in all these words. The extent to which the phonological rules involved in their derivation can be shown to be general is support for this idea.

Shopen and Konaré (1970) propose a convention called a Word Structure Condition (WSC), a kind of redundancy rule to capture the unity of the native speaker's knowledge of derivational morphology. The part of the WSC convention that is original is that it captures redundancy in the aspect of sentence construction that is governed by words, the part of lexical entries for propositional heads such as verbs, nouns, adjectives and prepositions that governs syntactic cooccurrence within their phrases and establishes correspondences between semantic functions and the constituents serving as arguments. 5

The advantage of extending the notion of lexical redundancy as has been suggested by Jackendoff and by Shopen and Konaré is that derivationally affixed words can be lexical entries in their own right and can have their idiosyncracies properly registered, while at the same time the high degree of predictability between the base form and the derived form is captured. It amounts to a means of formalizing
the 'cost' to the grammar of lexical entries: the more predictable they are the less costly. It amounts, moreover, to a means of explaining the relative ease with which some parts of the vocabulary can be learned as opposed to others. The WSC convention can account, to give an example, for how it is that once the language learner knows an intransitive Sonrai verb and how to use it in a sentence, it is much easier for him to learn the corresponding causative verb and the way to use it in a sentence: predictably as in English, the NP that occurs in subject position for a non-causative intransitive verb, occurs in object position for the corresponding causative verb, while the subject of the causative verb is understood as the cause of the action, and so on. Given the intermediate hypothesis on the simplicity of the lexicon, there are two ways in which the relatedness of words should be accounted for: (i) by redundancy conventions in the lexicon where derivational morphology is involved and (ii) where inflectional morphology is involved, by post-lexical transformations.

Now, it appears that we should adopt the weakest hypothesis concerning the lexicon, putting all words in as entries in their own right; in order to attach less cost to the inclusion of related words, where the syntax, semantics and phonology of one can be predicted from that of another, we should again enrich the theory of lexical redundancy for this purpose. If we do this, we can bring the account of the interrelatedness of words into a single kind of convention in the grammar.

A word structure condition could conceivably have any of the kinds of statements outlined in Stanley (1967) under the title morpheme.
Structure Condition. In Shopen and Konaré (1970) each one of our generalizations took the form of 'if...then' statements: given a lexical entry of the form x, one can expect to find another of the form y. Master paradigms for verbs would be a kind of word structure condition, statements of mutual entailment or equivalence, e.g., given a main verb present participle, one expects to find a past tense form with the same base, and vice versa; in the same manner, each cell in the paradigm can be said to entail the existence of every other cell. Under one set of assumptions, the paradigm for main verbs could be presented simply as follows:

<table>
<thead>
<tr>
<th></th>
<th>(39) MAIN VERB PARADIGM:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>BASE</td>
</tr>
<tr>
<td>b.</td>
<td>BASE + Z</td>
</tr>
<tr>
<td>c.</td>
<td>BASE + D</td>
</tr>
<tr>
<td>d.</td>
<td>BASE + ING</td>
</tr>
<tr>
<td>e.</td>
<td>BASE + EN</td>
</tr>
</tbody>
</table>

In this way the grammar is showing how it is that once a child has learned a new verb with one member of the lexeme presented as data, e.g., gargle as in You have to gargle now, he can easily produce some other member of the lexeme he has never heard before, as in He never gargles, I have already gargled, etc. We have found evidence for the psychological reality of paradigms and now we see that in the kind of model which our analysis has lead us to, where the word is the prime for syntax, paradigms fulfill a central function as generalizations about the structure of the lexicon.
1.5 The Syntax of Words

If the prime for syntax is the word, the most abstract syntactic representations will be closer to the surface than has usually been assumed; in many instances some other algorithm besides post-lexical transformations will have to be found to represent the notion 'related sentence type'. Those who might adopt the principle word = lexical item could still disagree on what this algorithm should be.

In generative semantics, starting with Gruber (1965), emphasis has been placed increasingly on prelexical transformations; those who tend, as I do, toward a grammatical model with projection rule, will I believe, develop greater interest in the words themselves, and in a richer theory of the syntagmatic properties of words such as can be captured in the lexicon.

I have argued that the way word meanings interact to build up the meaning of whole utterances is not fully determinate, so that 'all and only the well-formed sentences' is a possible goal for grammatical theory on the side of form only. To put it differently, the possible acceptability of an utterance as a unit of meaning is determined by the total cognitive apparatus, including memory, perception and imagination, and not just by the linguistic faculty alone, so that the grammar cannot be expected to determine the set of all and only the utterances which people will accept as having an acceptable meaning for any given situation.

In some cases, as I have pointed out, a semantic reading of anomaly or contradiction is essential to the communicative act, as is
the case with any live metaphor, or in ironic sentences like They assassinated a nobody or The prisoners were lenient toward their captors each of which are comprehensible when one imagines simultaneous but divergent concepts expressed in a single sentence. Sentences such as these have the conceptual effect of partially completed jig saw puzzles. The semantic reading in this case is only part of what is involved in the process of understanding sentences, and it would be to totally misunderstand the place of language within the general cognitive apparatus to conclude that because they are anomalous semantically they are in any sense not part of the English language.

Sometimes the semantic value of a sentence corresponds to a reasonable definition of well-formedness. For example, *The table elapsed or *He stayed until behind the picnic are semantically anomalous, perhaps to an absolute degree, and it is a safe bet that there is not possible situation in which they could be acceptable as units of meaning; however, there are other cases where the grammar alone can give neither a "yes" nor a "no" answer as to well-formedness, e.g., The ostrich wasn't reported until 2 a.m., I think I met you during Cambodia, Kent, Ohio and Jackson, Mississippi warn us of the repression that is to come or Fillmore's (1970) I broke the dog. The grammar cannot give a "yes" or "no" answer as to well-formedness because the presuppositions imposed by verbs and prepositions are not commensurate with the meanings of the noun phrases on which they are imposed. Heads impose presuppositions on other constituents as truth conditions on their acceptability, and very often we refer to other
aspects of cognition besides our knowledge of language to see if those conditions are fulfilled.

This is essentially the point made by Fillmore (1970), who says: "The treatment of the selectional properties of verbs cannot be carried out in a non-ad hoc way, it seems to me, by seeking features on nouns which do or do not violate restrictions associated with particular change-of-state verbs. In fact, it looks very much as if for a considerable portion of the vocabulary of a language, the conditions determining appropriate use of a word involve statements about properties of real world objects rather than statements about the semantic features of words." Cf. Section 3, Chapter III.

I conclude that while syntax can be generative, semantics cannot, and that the best we can hope for is the generation of all and only the well-formed syntactic structures which are then submitted to semantic interpretation, the output of which is not a decision on well-formedness, but a set of truth conditions for the rest of cognition to deal with.

Since, in my view, there is no feasible definition of a semantically-well-formed sentence, there can be no prelexical semantic representation underlying syntactic representations. The parallel between this conclusion and the concluding discussion in Chomsky's *Syntactic Structures* is obvious. In my view, Chomsky was right in this matter from the start, and the hope for an exhaustive and systematic definition of a language from the side of semantics has lead to misadventure. If I am right, semantic representation and prelexical transformations will not be a possible means of capturing the notion
'related sentence type', and the means that I am proposing to this end is not a notational variant to any viable alternative.

The words used in a pair of related sentences can be same or different. In cases where the words are always the same in two related sentence types and only their order changes, transformations appear a perfectly appropriate device for capturing their relatedness, as in what Emonds (1970a) calls directional adverb preposing, Out of the house stomped John as related to John stomped out of the house, or extraposition of relative clauses, e.g., I met a man yesterday who looks just like your uncle as related to I met a man who looks just like your uncle yesterday; on the other hand, when the tokens of related sentence types involve different words, current analyses frequently synthesize words by combining morphemes transformationally. If the word is the prime of syntax, this practice of synthesizing words by post-lexical transformations should be disallowed.

It is a universal characteristic of languages that constructions can be divided between those governed by lexical entries for phrasal heads (verbs, adjectives, nouns, prepositions or postpositions, which I call REFEREES) and those which are not. I will call the former nuclear and the latter non-nuclear. Examples of the latter would include the declarative and interrogative sentence types in English or constructions involving sentence-modifying constituents. The great majority of cases where related sentence types involve different words involve nuclear constructions, e.g., causative and corresponding non-causative construction types, actives and passives, and a whole host of constructions where analyses have been proposed with trans-
formationally derived subjects and objects.

Typically, nuclear constructions have syntactic configurations of a sort that ought to be generated by PS rules anyway: this is the important observation made by Emonds (1970a) in his distinction between structure-preserving and root exception transformations. Also, nuclear constructions are all governed by syntagmatic information in the lexical entries for heads in current analyses, i.e., either by cooccurrence restrictions governing lexical insertion or by rule features governing transformational derivations. The relatedness of nuclear constructions involving different words can be captured by lexical redundancy conditions that refer to the syntagmatic information in lexical entries for heads. The English passive is a case in point.

The unity of passives and actives is an obvious part of the competence of English speakers. Given the active form of a main verb lexeme used in an active construction, there is a high probability a past participle form with the same base can be used in a passive construction, and vice versa; the existence of one entails that of the other. A language learner can use a new verb in a well-formed active clause after having heard it used only passively, and so on. This kind of relatedness can be represented in a word structure condition. Most simply, such a WSC convention can refer to just the syntactic cooccurrence features which must be a part of lexical entries for verbs anyway.

Active transitive verbs can be said to meet the following description, where V signals 'verb base' and where all non-variable
symbols are members of the same simplex clause:

(40) V (+AP) in the environment [NP₁ X ___ NP₂ X]

Passive verbs can be identified with a similar statement:

(41) V + EN in the environment [NP₂ X be ___ (by NP₁) X]

To say that there is a mutual entailment between active and passive verb forms, and active and passive clauses, we can say that (40) predicts the existence of (41) and vice versa. If passive verbs are lexical entries just as active ones are, this represents a statement about the content of the lexicon of great generality:

(42) THE ACTIVE–PASSIVE WORD STRUCTURE CONDITION:
V(+AP)/[NP₁ X ___ NP₂ X] ___ V+EN/[NP₂ X be ___ (by NP₁) X]

This says that given a lexical entry containing the information on the left side of the equivalence sign, there is another with the information on the right side and the same V, and vice versa. There are some exceptions to this generalization, e.g., resemble and (for many speakers) get do not occur in the passive, but exceptions of this kind can be handled quite appropriately in this approach as a gap in the lexicon; an incomplete set of lexical entries, such as a lexeme that does not conform to the active–passive word structure condition, is more costly than one that does.

The lexical entries for verbs and other propositional heads, REFEREES, will establish the correspondence between NP₁, NP₂, etc. and the semantic functions, AGENT, INSTRUMENT, SOURCE, GOAL, THEME, etc.
that are part of the propositional meaning inherent in that lexical item. In (42) above, it is to be understood that whatever semantic function is attached to the NP2 in the active is also attached to it in the passive, and so on.

The decision as to how to represent the active-passive relationship has important consequences for the analysis of the GO EAT construction. If go eat came from a simplex sentence in underlying representation, then it would be possible to use a PS rule such as has been argued for on independent grounds by Emonds (1970a) VP → V VP, giving go a syntactic cooccurrence feature +[___ VP]; however, given the assumption of a passive transformation, it would appear that GO EAT expressions have to be derived from underlying complex sentences, presumably with a rule of equi-NP deletion, as the following examples demonstrate:

(43) a. Why doesn't our doctor examine you?
b. Why don't you come be examined by our doctor?

With this analysis, the deep structure for the sentences in (43) would presumably include the following:

(44) a. [Our doctor come [our doctor examine you] ]
   S S S S
b. [You come [our doctor examine you] ]
   S S S S

The passive, equi-NP analysis does not make the correct predictions about well-formedness, however. Observe the following:
(45) a. Shoppers come eat pastries here every day.
b. *Pastries come be eaten by shoppers here every day.

If we decompose the anomalous (45b) into the presumed complex sentence representation in deep structure, we get the following:

(46) \[ \begin{array}{llll}
S & \text{[Pastries come} & [\text{shoppers eat pastries}] & \text{here every day]} \\
S & S & S & S
\end{array} \]

Each simplex is well-formed on its own:

(47) a. Pastries come here every day.
b. Shoppers eat pastries.

Thus, the problem of explaining the ill-formedness of (45b) remains. In my analysis, (45b) is a simplex sentence in underlying representation and its ill-formedness is due to the fact that the quasi-modal construction always imposes an agential interpretation, cf. the discussion of examples (26) - (29) in subsection 1.3 just above.

We can adopt the active-passive word structure condition (42) and stipulate that in all GO EAT expressions the deep structure subject NP will serve as the subject of the GO EAT verb as well as of the verb that follows it. This will require no extra formalism in the grammar, since the simplest statement anyway is to say that in all their occurrences, go, come etc. have their meaning predicted onto a subject. The active-passive word structure condition accounts for the alternation examine/be examined in (43) while the lexical entry for come accounts for our understanding our doctor and you respectively as the subject of that verb. With this analysis, we can make the more
convincing generalization that e.g., *They go visit Bill* and *They go to Bill's house* are both simplex expressions, and that the reanalysis that has lead to the GO EAT expressions has had to do with cooccurrence restrictions within the simplex.

(48) a. 

```
S
   NP
      V
```

They go visit Bill

b. 

```
S
   NP
      VP
         V
```

They go to Bill's house

If all members of lexemes are lexical entries, then it would appear that the correct order of affixes and verbs will have to be accounted for by cooccurrence restrictions within lexical entries: modals cannot be preceded by another verb in the same simplex and require that verbs following them be uninflected, main verbs cannot in general be followed by another verb in the same simplex, have requires that verbs following it be past participles, be present or past participles, a verb inflected for tense cannot be preceded by another verb in the same simplex, past participles cannot be followed by past participles, present participles cannot be followed by present participles, and so on.

Respecting the word as the prime for syntax still leaves open the question as to whether grammars can be constrained so that lexical transformations precede all other transformations without loss of generality, as is proposed by Chomsky (1970). Further, one should inquire whether grammars can be constrained so that only those lexical
items which occur in surface structure are inserted in underlying representations, in other words whether rules which delete lexical items can be excluded from the theory of grammar.

An appropriate problem to consider at this juncture is the status of do as a helping verb. It has the role of preserving well-formed word order in related construction types which are non-nuclear, i.e., not governed by lexical heads, which means that the word structure convention could not be made available in this case as a means of representing the relatedness of the construction types. Given the principle word = lexical item, all members of the do lexeme including does and did would have to be lexical entries in their own right. In all those derivations where in the present analysis do occurs on the surface because subject-tense inversion has taken place, it looks as though this word is part of the definition of well-formed surface structures, but not well-formed deep structures: recall that one cannot predict from deep structure in every case whether subject-tense inversion will take place because not all the preposing rules that trigger it are obligatory, e.g., consider Only on Mondays does he visit his parole officer as well as Only on Mondays does he go visit his parole officer.

If the helping verb do occurs in an affirmative declarative sentence where subject-tense inversion has not occurred, it must receive emphatic stress or the sentence is unacceptable, e.g., He DOES know her. There is no generally agreed upon analysis of emphatic stress in all its possible manifestations, but it would seem that whatever the principle is, it is one that operates on surface
structures. On the other hand, the incidence of emphatic stress must be determined by a syntactic mark of some kind, at least if the assumption is going to be maintained that phonology is purely interpretive on the syntax. Assuming a late transformational rule that marks constituents that are to receive emphatic stress, the question arises as to whether or not it could be made obligatory on e.g., does in He does know her. Note that if it cannot, there would then have to be an output condition that marks He does know her as ill-formed just in case does is not marked for emphatic stress. A do/does/did-deletion rule would be of no avail, since it would produce the ill-formed *He know her. My tentative conclusion is that all words could be inserted in underlying representations but that capturing the notion 'related sentence type' may require the use of output conditions.

It appears that constraining the syntax to the use of words as primes would create new problems for the theory of grammar, but that it would be a considerable step forward if sufficient arguments of the kind given here could be presented to show conclusively that this constraint is an accurate characterization of language. One of the most important benefits to this constraint would be that it would lead to new kinds of empirical issues.
2. Agentless Passives

2.1 Agentless Passives as an Instance of Constituent Ellipsis

The first of the following two examples has a kind of constituent ellipsis that the second does not.

(49) a. The fireworks are being ignited.  
    b. The fireworks are igniting.

Example (49a), an agentless passive, expresses the existence of a cause, while (49b) does not. Whatever physics and chemistry say about such events as having causes, it appears that linguistically, the event in (49b) is understood to be a spontaneous event. There can be no doubt that agentless passives meet the definition of ellipsis given in Chapter III. Not only is CAUSE widely expressed in English, it can be expressed in just this construction, as the following completions for (49b) show: 7

(50) a. The fireworks are being ignited by those men.  
    b. The fireworks are being ignited by the heat.

By comparison, Sonrai passives are instances always of obligatory constituent ellipsis: that is, the passive construction in Sonrai is always agentless. The semantic contrast exists between the following Sonrai translations of English (51a) (intransitive active) and (51b) (agentless passive); however, for (51c) (a full passive) there is no corresponding Sonrai utterance:
(51) ENGLISH SONRAI

INTRANS.
ACTIVE a. The window broke. Feneter di ba.
AGENTLESS window the break (past)

PASSIVE b. The window was broken. Feneter di bandi.
FULL window the break +
PASSIVE c. The window was broken + passive suffix
by John.

In Shopen and Konaré (1970) it was argued that the Sonrai passive should be generated directly by phrase structure rules, and that its predictability next to the active construction be captured by a word structure condition (Section 1, this chapter). This is the same position that will be adopted for English passives. The Sonrai case raised the issue of ellipsis and the relatedness of actives and passives. With the English analysis we will be dealing not only with these issues, but with the relatedness of full passives and agentless passives, and several other assumptions about the grammar of English.

In general here, I have taken a position against sentence reduction as a proper analysis of constituent ellipsis. The covert complexity of an elliptical utterance like John bought the book, as opposed to a non-elliptical one like John liked the book is a semantic and not a syntactic one. The two utterances have precisely the same constituent structure on the surface, and there would not appear to be any motivation for saying that the utterance with buy has more complex syntactic structure than the one with like at any level of abstraction. The elliptical effect of the utterance with buy is due to the fact that this verb has a semantic structure with more arguments associated
with it than the one associated with buy. If the claim made in Chapter II is correct that the propositional meaning associated with verbs must be represented in their lexical entries rather than on trees, then there is nothing lost by adopting the analysis proposed here for John bought the book: it is generated without deletion rules and the elliptical argument is represented as part of the lexical entry for the main verb. Nothing appears to be lost in this case, and if the arguments of Chapters I and III concerning the theoretical and descriptive adequacy of deletion rules (or lack of same) are valid, it would appear that a good deal would be gained by our interpretive approach.

When we turn to agentless passives, however, like The fireworks are being ignited, it is a different state of affairs. It seems that under current assumptions in transformational theory a good deal would be lost if a straightforward application were made of the theory presented here, and agentless passives were derived without deletion rules. We would be saying that (49a) The fireworks are being ignited is elliptical while (49b) The fireworks are igniting is not by virtue of differences in the lexical entry for the main verb. But there are no lexical entries for passive verb forms as distinct from active ones in the standard analysis. Inflectionally related forms are derived transformationally. Passive expressions are generated essentially from active ones by transformation, and the passive transformation is the classic example of the use of transformations to capture the notion 'related sentence type': the original justification in Chomsky (1957) had to do with the simplification of the lexicon. The cooccu-
rence restrictions for passive verbs could be predicted on the basis of the ones for active verbs; the lexicon need contain only the syntagmatic information for the active verb forms. In order for the analysis here to go through, there must be justification for the great increase to the size of the lexicon that our analysis entails, and there must be an alternative way to represent the notion 'related sentence type' where actives and passives are concerned. In addition to these issues, there is a subsidiary one which would be brought on by our analysis: doing away with the passive transformation would entail also doing away with the raising rule of the sort that has been posited together with the passive rule in the derivation of utterances such as John was expected to come to the party.

2.2 The Relation Between Agentless Passives and Full Passives

We will address ourselves first to the relation between agentless passives and full passives. In Katz-Postal (1964) the former is to be derived from the latter by a rule that deletes a meaning-bearer constituent. In order to constrain the power of deletion rules, Katz and Postal limit the possibility of the deletion of the passive agent to just those cases where the PP to be deleted is developed as by someone or by something. In this way, the deletion is 'recoverable', i.e., the source of the output structure is limited to a finite and small subset of the possible expansions possible through application of the PS rules and lexical insertion. Alternatively, we can say in the terms developed here that possible completions that can be used as a derivational source for an agentless passive like The fireworks
are being ignited are limited to just two: The fireworks are being 
ignited by someone, and The fireworks are being ignited by something.
Here is their proposed underlying representation for Almost all the 
contestants have been chosen:

(52) Sentence
    Noun Phrase       Verb Phrase
    Auxiliary         Main Verb
    Verb              Noun phrase
    Determiner        Noun

some one Present have en choose almost all the contestants by Passive

One might assume that, given the advent of choice by computer, 
one more interpretation is possible for Almost all the contestants 
have been chosen—and one more only, and that would be one with 
something in subject position in deep structure instead of someone; 
furthermore, that in general agentless passives are limited to inter-
pretations paraphrasable with either by someone or by something. When 
more examples are considered, however, we find that this is not the 

case. First, there are uses of agentless passive which have anaphoric 
force, e.g., an obvious interpretation of the following:

(53) Elizabeth knew that her date was an East German spy, so 
she was surprised that she was not questioned about her political views.

Given the rule of some/any suppletion, an underlying by someone 
would become by anyone, and with the Katz–Postal analysis (53) would 
be derived from (54) by the rule of indefinite pronoun deletion:
(54) Elizabeth knew that her date was an East German spy, so she was surprised that she was not questioned by anyone about her political views.

But this is not the only interpretation. There is another, at least as obvious, where the one she would have expected to question her is the East German spy himself. Using an unstressed personal pronoun instead of ellipsis anaphora produces what many have noted is a less than fully acceptable variant of (53), i.e., with stress indicated: 8

(55) Elizabeth knew that her date was an East German spy, so she was surprised that she was questioned by him about her political views.

However, much (55) is acceptable in its form, there is no question that the agentless passive (53) is perfectly acceptable, and that the meaning of (55), where the unstressed him is coreferential with East German spy, is a possible interpretation of (53). The only way in which (53) could be derived from a full passive would be by some sort of a rule of deletion under identity, in principle like a rule that is designed to replace full noun phrases with anaphoric personal pronouns. 9 Other examples that allow anaphoric interpretation:

(56) a. It was a terrible earthquake: the Pacific Palisades cliffs were pushed into the ocean.
    b. Although Jimmy was often disobedient towards his counselors, he was never punished. (anaphoric)

One might think that the power of deletion rules could be constrained if the passive instances were limited to either indefinite pronoun deletion or deletion under identity; however, this is not the
full picture. Agentless passives have deictic as well as anaphoric uses: this is to say that there is a specific intended referent for the ellipted argument established in the extra-linguistic context (no antecedent in the linguistic context) and the grammatical structure points to it. Returning from her date, Elizabeth might open a dialogue with her roommate as follows:

(57)  
**Roommate:** How did it go?  
**Elizabeth:** I am surprised I wasn't questioned about my political views.

Assuming the roommate shares with Elizabeth common knowledge about the identity of the man who has just escorted her to the door, the most obvious interpretation of the agentless passive in (57) points to that person. Deictic interpretations are also possible with the following examples:

(58)  
a. It is plain what kind of human resources they have in that province. The harvests are always completed ahead of schedule.  
b. I don't want to be disturbed. Get the hell out of here!  
c. Let it stand as a warning that the last trouble-maker who came in this bar was thrown out on his ear.

In subsection 2.4 of Chapter III, it was pointed out that some verbs impose a definite interpretation on ellipted arguments and examples of agentless passives of this sort were given. With no antecedent in the linguistic context, it would appear that only deictic interpretations are possible for the following.
(59) a. John was impressed.
b. John was baffled.
c. John was astonished.
d. John was surprised.
e. John was delighted.
f. John was disgusted.
g. John was fascinated.
h. John was offended.

(60) a. John was surprised by something, so I asked him what had surprised him.
b. *John was surprised, so I asked him what had surprised him.

There are many examples of agentless passives where the ellipsed argument has a specific intended referent and no antecedent in the linguistic context, so that paraphrase with by someone or by something is not possible. In some cases the effect can be deictic as in (57) and (58); sometimes, the referent can be simply assumed, e.g.,

(61) a. Henry IV was not written with as much concern for historical detail as Richard III.
b. Guernica was painted as a protest to fascist atrocities in Spain.

Variants of the examples in (61) expanded with the phrase by someone are not acceptable paraphrases to anyone who knows about the plays of Shakespeare and the fact that Picasso painted Guernica:

(62) a. ??Henry IV was not written by someone with as much concern for historical detail as Richard III.
b. ??Henry IV was not written by anyone with as much concern for historical detail as Richard III.
c. ??Guernica was painted by someone as a protest to fascist atrocities in Spain.

One might attempt to retain deletion as the principle for deriving all agentless passives by positing underlying definite
pronouns that are deleted on the surface: one could claim that for those who share knowledge of Shakespeare and Picasso, the ellipted agents in (61) are definite expressions. Aside from the theoretical objections raised in Chapter III to a general rule of definite pronoun deletion, the trouble is that with the interpolation of by him, the resulting utterances seem quite awkward; this might be due to the general unacceptability of unstressed personal pronouns in passive agents, but even the corresponding actives are not good paraphrases of the agentless passives in (61). The agentless passives could start a dialogue freely; this is not the case with either the full passives with by him, or the corresponding actives with he in subject position.

(63) a. ?Henry IV was not written by him with as much concern for historical detail as Richard III.
b. He didn't write Henry IV with as much concern for historical detail as Richard III.

(64) a. ?Guernica was painted by him as a protest to fascist atrocities in Spain.
b. He painted Guernica as a protest to fascist atrocities in Spain.

One could stipulate that deletion of underlying definite agents: by him, by them, by it, etc. is obligatory. But this in itself does not save the analysis since the meaning of the supposed source for the agentless passives is not the same. Imagine the following utterances spoken with no preceding linguistic context:

(65) a. Germany was defeated. (from Emonds 1970)
b. The harvest was completed on schedule.
c. The bathroom was flooded.
d. The soil was eroded.
All of the examples in (65) have in common the property of not being paraphrasable by any full passive, whether the ellipted argument is thought of as definite or indefinite.

(66)  a. ?Germany was defeated by someone.
      b. ?Germany was defeated by them.

(67)  a. ?The harvest was completed on schedule by someone.
      b. ?The harvest was completed on schedule by them.

(68)  a. ?The bathroom was flooded by something.
      b. ?The bathroom was flooded by it.

(69)  a. ?The soil was eroded by something.
      b. ?The soil was eroded by it.

The indefinite pronouns are unacceptable in these contexts for what I believe are semantic reasons. Even if one did not view the meaning of the ellipted argument in Germany was defeated as definite (for example, we didn't know which conflict was being referred to), by someone could not be added because the agent of such an event must be some social group or nation and someone does not lend itself to such an interpretation; a similar explanation holds, I believe, for The harvest was completed on schedule. Someone cannot be interpreted as referring to the kind of collective social group that carries out a harvest (the term harvest does not apply to one-man vegetable gardens). The unacceptability of The bathroom was flooded by something seems to have to do with a semantic clash between the kind of argument presupposed in the verb and the meaning of the indefinite pronoun. The soil was eroded by something is unacceptable because something is
not interpretable as a large natural force, which is the argument presupposed by the verb.

There is then a substantial set of agentless passives that could not be generated by a rule of deletion under identity (because there is no antecedent in the linguistic context), and which are not paraphrasable by full passives containing pronouns. To save the day, one might propose that just in these cases there be a special set of proforms (carrying just the semantic information, different from the meaning of pronouns that occur on the surface) which are removed by an obligatory deletion rule. But this, I think, is a reductio ad absurdum. This would be a case of absolute neutralization, and what would be done in effect is to posit a set of constituents to represent meaning which is properly a part of the agentless passive construction itself.

We would seem to have a set of agentless passives then, the recalcitrant group just referred to, where agentless passives must be generated without lexical material representing the agent which is to be later deleted. The alternative offered by Chomsky (1965) with an empty node in the deep structure for agentless passives is yet to be considered; however, we can conclude now that there is a set of agentless passives which cannot be generated from underlying full passives (where 'full' means lexically filled structures). Since agentless passives cannot always be generated from full passives, the question arises as to whether they ever should.

The claim implicit in the standard analysis seems to be that the functional meaning of a passive with an ellipted agent is under-
stood in terms of an underlying syntactic structure where that agent is not ellipted. If some agentless passives receive correct semantic interpretation without syntactic representation of that argument, then this shows that linguistic competence includes the ability to understand the functional meaning of this elliptical structure without reference to one of its completions: either we have a grammar with two profoundly different means of representing functional meaning that coexist side by side, or there is only one and no agentless passives are generated by deletion of an agent constituent.

There is a particularly interesting case where an agentless passive is acceptable where a full passives is not. It involves the get passive construction rather than the one with be. 10

(70) Q. How did the fireworks get ignited?
     A. John did it.

(71) Q. How did the fireworks get ignited?
     A. They got ignited by John.

(72) When I inquired how the fireworks had gotten ignite, I was told that John had done it.

(73) *When I inquired how the fireworks had gotten ignited, I was told that they had gotten ignited by John.

The passive construction with get has to be interpreted as an achievement, either positive or negative. In (71) and (72) the achievement is already defined within an information question. As is the case with all information questions, the entire clause is presupposed except the constituent that is being interrogated. Thus, the achievement (for those associated with the fireworks), ignited is already
presupposed when the answer comes. *by John* in these contexts can only be interpreted as an argument for *get* and *get* has no semantic function to assign to such a constituent. The *get* passive can of course be a full one, but in that case the agency expressed has to be understandable as a part of the achievement.

(74) a. Bill got promoted by his boss.
b. Karl got sent on a dangerous mission by his commanding officer.
c. The fireworks got ignited by John again. The nitwit!
d. The manuscript got accepted by a topflight publisher.

What seems most significant here is that there are contexts where agentless and full passives differ in acceptability, even though they have the same functional meaning. In *The fireworks got ignited* the ellipted CAUSE is understood as a part of the functional meaning nevertheless, just as much as it is in *The fireworks got ignited by John* (cf. (74c), an acceptable occurrence); the difference between the two is solely along the parameter of constituent ellipsis, the presence or absence of a constituent to which the semantic function CAUSE can be assigned. The semantic difference between the two consists in the presence or absence of constituent meaning to match the functional meaning. There is evidence here that this is a kind of semantic difference that has consequences for cooccurrence. Good reason then why there should be a difference in the underlying representation for agentless as opposed to full passives. (See also the discussion of passives with surface structure subject of *there*, footnote 25).
2.3 The Use of Empty Nodes

None of the arguments just presented against the deletion of a meaning-bearing constituent in the derivation of agentless passives would mitigate against the analysis for agentless passives suggested in Chomsky (1965). Deriving passives from actives, Chomsky provides an underlying representation for the clause The man was fired in which there is no meaning-bearing constituent corresponding to the ellipted argument (although there is the preposition by):

(75)

Chomsky doesn't comment on the use of an empty node in this representation, much less its significance for a theory of ellipsis; however, one can see that within the framework of the theory outlined in Chomsky (1965), empty nodes in deep structure would be the logical manner to represent constituent ellipsis. Semantic functions are said to be defined by grammatical relations, the configuration of constituents within the tree; by having a deep structure grammatical relation \([\text{NP}, S]\) (NP immediately dominated by S), subject of S, but not supplying any constituent meaning (no lexical items) within the NP in question, Chomsky provides the equivalent of the analysis advocated.
here. In The man was fired, the part of the elliptical meaning that is determinate within the grammar is the semantic function itself: we understand that there is a cause for what happens to the man; which cause it is is not determinate except that it must be one that meets the presuppositions of the verb. The man was fired by the review board is a possible completion, but not *The man was fired by the square root of 3. But the presuppositions are a property of the verb itself and not of the NP constituent that Chomsky has left empty.

Chomsky, however, does not explain what his intent is in the analysis represented in (75), and I am only inferring what I think the treatment of constituent ellipsis in agentless passives would have been in the 1965 theory. In Chapter II I took the position that the standard theory of grammatical relations was descriptively inadequate to account for semantic functions: the correspondences between the syntactic grammatical relations and semantic functions appear to be many-to-one in both directions.

Charles Bird's (1970) point is worth recalling: NPs such as Toscanini's symphonies of Beethoven by RCA with three different instances of the semantic function AGENT demonstrate that unique deep structure grammatical relations cannot be provided for each semantic function. Gruber's (1965) analysis of semantic functions makes it clear that any interesting theory which one might want to make superceded his will have to be able to assign more than one semantic function to a single syntactic constituent, thus a difference between the verb pairs teach/learn and lend/borrow and sell/buy is that while the subject of each is an AGENT, they each also carry another semantic
function, either SOURCE or GOAL. No syntactically motivated deep structure could provide unique grammatical relations for each semantic function. Chomsky himself suggested this in the same study in which he formulated the theory of grammatical relations (1965, pp. 161-163).

I concluded in Chapter II that the correspondence between syntactically motivated deep structure grammatical relations on the one hand, and the arguments of the propositional meaning on the other, would be properly represented within lexical entries; furthermore, in Chapter III, constituent ellipsis was analyzed as a case where there is an argument in a lexical entry without a corresponding syntactic constituent. An alternative and I think adequate means of representing functional meaning has been presented. There is no semantic motivation for the empty NP node in (75), although one might argue that there is a syntactic one. Staying with the principle of deriving passives from actives, a logical alternative to the analysis in (75) would be one with no syntactic material at all in deep structure subject position, a subjectless sentence, which would then get a derived subject on the surface:

(76) a. 

```
(# - S - #

  Predicate Phrase

     AUX  VP
       /   /
      y NP
        /   /
       Det N
         /   /
      past the S' man by passive
```

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Some other justification for retaining the deep structure subject NP in (75) would have to be found besides the semantic one that can be deduced from the (1965) theory.

Emonds (1970a) has followed Chomsky's (1965) lead in the analysis of agentless passives, but within the framework of his structure-preserving theory of transformations, where principled use is made of empty nodes for a whole range of English constructions. His deep structure representation of the agentless passive Germany was defeated is as follows:

(77)

One might suppose that Emonds' analysis is consistent with the standard theory analysis of functional meaning, that the empty NP node in its configuration immediately dominated by S is representing the semantic function which is understood elliptically in Germany was defeated. But this cannot be the case. Emonds does address himself to implications of his use of empty nodes for the theory of
functional meaning, but since his work has such interesting consequences for pure syntax, it is important to consider what those implications are.

Emonds has syntactic, not semantic, motivation for his use of empty nodes. The deep structure empty nodes are generated by the PS rules in positions which are independently motivated, and serve as recepticals for movement transformations. No movement transformation except a root exception (movement rule applying main clauses only) can move a major node (NP included) unless there is an empty node of the same category waiting there to receive it. This then is the motivation for the empty NP node in (77). The trouble with a derivation like the one in (76) is that it has an NP wrenched out of a deep structure position and placed arbitrarily up in thin air.

Emonds' theory provides a constrain on the possible structural changes for transformations. In the transformational derivation of agentless passives the NP that is moved up from object position in the VP ends up in a position that is natural and independently motivated, subject position. A representation like (77) would be consistent with a claim that one might want to make to the effect that English sentences always have subjects. 11

It is important to note that some modification of the standard theory of functional meaning would have to be made within Emonds' framework. In general in his analyses, empty nodes do not have significance for semantic interpretation. Consider Emonds' deep structure representations for the full passive Germany was defeated by Russia and the sentence involving the rule of there-insertion in its
derivation, There may be some children riding horses.

(78) a.

\[
S
\quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad \xxx

There is in each one of these representations an NP node which is not lexically filled, but which does not correspond to any apparent functional meaning. The standard theory of functional meaning, based on syntactically defined grammatical relations, could be maintained for only the lexically filled nodes. What then of the lexically empty node in (77) if there is going to be any consistency in the definition of primitives in this theory, that node cannot have significance for semantic interpretation. That means that the semantic function that is not manifested by a surface constituent in Germany was defeated will have to be represented by a formalism other than the standard theory grammatical relation. This is probably the case for any instance of constituent ellipsis. It would appear that empty nodes cannot be used for both the structure-preserving
constraint on transformations as Emonds intends them, and for a representation of constituent ellipsis.

The analyses of agentless passives in Chomsky (1965) and Emonds (1970a) both employ the device of an empty node and in so doing avoid the deletion of a meaning-bearing constituent. These analyses thus avoid the severe semantic problems created by the Katz-Postal (1964) analysis where a meaning-bearing constituent (either by someone or by something) is deleted. There may be syntactic motivation for the use of empty nodes in deep structure, however, but there is no hope of accounting for the semantic phenomenon of constituent ellipsis in that manner. At least, this is the only conclusion possible on the basis of the arguments in Chapter II and III.¹² We must then ask why there should be an empty node at all in the deep structure representation.

The only motivation for the empty node analysis, in light of what we have seen, would be to preserve a formal similarity between the deep structure representation of agentless passives, and that of other sentence types, in particular that of actives. The deep structure configuration from Chomsky (1965) in (75) and Emonds (1970a) both have the same configuration, in terms of major categorical nodes if not of lexical items, as that of an active transitive sentence. Passive verb forms used in agentless passives can then be derived from active verb forms and the only lexical entries needed are those for the active verb forms. The cooccurrence restrictions and meaning of passive verb forms can be predicted on the basis of the active ones. But the derivation
in (76) where there is a subjectless sentence as the deep structure representation of an agentless passive accomplishes exactly this end. Cooccurrence restrictions for deep structure subjects are non-existent in the type of analysis proposed by Chomsky or Emonds anyway, because they posit no meaning-bearing subject constituent for agentless passives. The only justification for the use of an empty NP subject in the deep structure of an agentless passive that there appears there could be would be the theoretical value in being able to say that all English sentences have underlying subject: this in turn allows Emonds to make agentless passive formation a structure-preserving rule.

2.4 The Relation Between Passives and Actives

The alternative approach put forth in the first section of this chapter avoids the awkward problems created for standard theory by constituent ellipsis. Passives and actives can be shown to be related to each other by a word structure condition which shows that syntagmatic properties of passive verbs to be predictable from those of active verbs and the syntagmatic properties of active verbs to be predictable from those of passive verbs. Passive verb forms are included in the lexicon along with active verb forms and passive structures are generated directly by PS rules. The increase in the number of lexical primes and in the number of sentence types generated in deep structure is not a costly one for the theory, because passives and actives are so highly predictable the ones in terms of the others.
Joe Emonds (personal communication) has pointed out the parallel situation that exists with passive adjectives, e.g., broken as when there is a stative interpretation of The window was broken. Many stative adjectives have the form of past participles: they are homophonous with verb forms and closely related in meaning, and yet they could not be derived from the verbs by transformation in standard theory. The stative past participle adjectives would have to be lexical entries in their own right. There would have to be some kind of lexical redundancy convention to show the relatedness of these adjectives to the corresponding verbs, Emonds points out, and if this is the case for passive adjectives, then the notion of a lexical redundancy rule of this sort is established in principle, and there is no reason why the passive verbs could not be analyzed in the same way. The WSC convention proposed in Shopen and Konaré (1970) could be applied to both the passive adjectives and the passive verbs.

A systematic difference between agentless passives and their corresponding active expressions is the ellipsis in the former of the constituent that shows up in subject position in the latter. In the case of the passive adjectives there is not only a lack of an agent constituent, but a lack of the argument in the semantic structure. Consider the semantic difference between the passive verb broken and the corresponding adjective.

(79) The window was broken by 5 o’clock.

If the passive verb is being used in (79), we understand that a change took place at 5 o’clock (i.e., the enchoative meaning) and
that there was a cause for it. This semantic structure is represented by the formula.

(80) \[[\text{CAUSE } s \ [\text{CHANGE } s \ y \ z]]\]
    of st.

where, as we have said in Chapter III, there is a convention that the argument \(x\) is understood as the \textsc{theme} of the change, \(y\) as the before state (\textsc{source}) and \(z\) as the after state (\textsc{goal}). The constituent meaning of the verb specifies the nature of the before and after states: in this case, there is a change from a solid, whole state, to one with discontinuities.

In the case of the passive adjective, we understand that at 5 o'clock the window was in the state of having discontinuities: no change or cause is asserted. This kind of stative meaning can be represented by a semantic predicate \textsc{location} \(x\ \text{z}\), where the first argument is to be understood as the \textsc{theme} being located and the second the \textsc{location} itself. This would constitute the semantic structure of all stative predicates. The semantic relation between causative verbs and stative adjectives like \texttt{break}, \texttt{broken} (verb) and \texttt{broken} (adjective) is that at the core of their meaning they share identical arguments: the \textsc{goal} argument for the verb is essentially the same as the \textsc{location} argument for the adjective. The basic semantic properties in the \(z\) of (80) can be predicted from the \(z\) of \textsc{location} \(x\ \text{z}\), and vice versa. There is then a kind of mutual entailment:

(81) \[[\text{CAUSE } \ldots \ [\text{CHANGE } x \ y \ z]] \equiv [\text{LOCATION } x \ z]\]
The terms x and z on either side of this expression can by
convention be understood to be identical. There are other differences
in meaning between causative verbs and past participle adjectives,
but this shows a core that is predictable. To characterize the
classes of lexical entries, we must add phonological syntactic
information. We can refer to the active transitive verb as basic and
characterize the class of verbs that lend themselves productively to
the derivation of passive adjectives as follows:

(82) ..., +V, [NP \( \underbrace{\text{NP } x} \)], [CAUSE ... [CHANGE x y z]]
of st.

Semantically, we specify only that there is a change of state predi-
cate and a cause, and that the THEME of the change of state shows up
as the direct object. This then represents a substantial class of
verbs. The class of passive adjectives could be characterized as
follows:

(83) \( v^{\text{EN}}, +A, \underbrace{\text{NP be } x} \), [LOCATION x z]

The expression \( v^{\text{EN}} \) is meant to represent the phonological
shape of the adjective, a verb stem with a past participle suffix.
The word structure condition to relate the class of lexical entries
in (82) and (83) is as follows:
(84) THE PASSIVE ADJECTIVE WORD STRUCTURE CONDITION:

Active transitive causative $\equiv$ Passive adjectives on change of state verbs the same stem

$V / [\text{NP ___ NP X}][\text{CAUSE...}[\text{CHANGE x y z}]] \equiv \frac{V+\text{EN}}{+A} / [\text{NP be ___ X}][\text{LOCATION x z}]

This says that the class of lexical items identified on the left entails the existence of the class of lexical items identified on the right, and vice versa. There are exceptions, e.g., the corresponding stative adjective for the verb close is closed but for open it is open; there is no stative adjective for a change of state verb the GOAL of which does not endure, e.g., ignite. There are meanings in the verbs that are not carried over to adjectives, e.g., surprise means catch someone unaware psychologically, but there can also be the added nuance of a physical attack - the stative adjective surprised, as in John was very surprised has only the basic psychological meaning. There are adjectives such as miffed and disgruntled with no corresponding verbs. The statement in (84), however, is one of great generality and one that shows what could be called the unmarked structure of the lexicon. The change of state verbs and adjectives that conform to this generalization can be said to be less costly than the ones that do not. It explains how when one has learned a new transitive change of state verb, e.g., quaffle as in John quiffled Bill meaning 'John made Bill healthier by feeding him organically grown vegetables', that without having heard it used as a stative adjective, he can do so with ease, e.g., Bill appears quite quiffled to me, and I have always been very quiffled myself.

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There have been few attempts to characterize passive adjectives by a transformational derivation from verbs (cf. Peterson 1966), and for the reason that standard theory transformations constitute a formalism that is not suited to represent a relation of this kind. Yet, this is a productive relationship that begs for a natural characterization.

Passive verbs are easier to relate to active ones by transformation, but the evidence presented here on agentless passives (far more common in speech than full passives, it is my impression) shows that there is doubtful value in deriving actives from passives in an important set of cases. If we adopt the active-passive word structure condition presented in section 1.5, a more natural characterization can be gained for all passive verbs, and the manner in which passive verbs are related to active verbs will be the same in principle as the way passive adjectives are accounted for. At the same time the grammar would then be providing a unified account of ellipsis. The ellipsis of *The fireworks are being ignited* would be the same in principle as *Henry explained* or *John bought the book*, not in any way a syntactic complexity, but rather as an aspect of semantic structure for which there is no corresponding syntactic constituent.

2.5 Raising

A lexicalist analysis of passives entails an attack on the transformational rule of raising such as has been posited by Rosenbaum (1967) and subsequent scholars in the derivation of utterances such as:
(85) John was expected to come to the party (by everyone).

The relevant aspects of the derivation are as follows: the first point, and the only substantial one at issue for the raising analysis, is that expect is analyzed as having a single deep structure object, a sentential complement of which John is the subject. John is raised from the lower clause to become the superficial object of expect, and from there the passive can apply:

(86) a. 
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(86) a. 
```

Since John is not a part of the clause in which the passive occurs until after the raising rule has applied, passives of this sort, and by implication, all passives, have to be generated by transformational rule ordered after the raising rule. A critical review of the justification for a raising rule is therefore in order.

Any raising analysis has two logical legs to stand on: first, arguments for why a certain element must be considered a constituent of a lower clause in deep (or "remote") structure; second, arguments
for why this same element must also be considered a constituent of a higher clause at a later point in the derivation. There are then two logical alternatives to the raising analysis posited for (85). On the one hand, it might be argued that, given the premises for natural grammar, there is no logical necessity for John in (85) to be a part of the higher clause before the passive and other rules apply; on the other hand, it might be argued that John is never a part of the lower clause, that he is always in the same simplex as expect. I will argue that only the latter is compatible with any desirable lexicalist analysis of the passive.

The first alternative is reported to have been proposed recently by Noam Chomsky. In effect, the structural description of the passive transformation would remain unaltered in its left-to-right reading, e.g.,

\[(87) \quad NP - (AUX) - V (\text{Prep}) - NP - X\]

\[1 \quad 2 \quad 3 \quad 4 \quad 5\]

In the case of the so-called accusative plus infinitive construction, the scope of this structural description would be allowed to extend down into a subordinate clause. Part 4 of the S. D. could be the subject of an embedded infinitive complement sentence, so that the rule could properly apply to (88b) as well as to (88a):
(88) a.

```
(88) b.

  S
   /\  \\    \
  NP V  NP
     \  |
      V  |
     /\   |
    NP S   |
       \  |
        S   |
           \|
            NP
```

If this approach were taken for the passive transformation, it would also have to be taken for other rules that have been assumed to be restricted to simplexes in their scope, those which account for oblique case marking on personal pronoun objects of verbs, reflexive pronouns and reciprocal pronouns, e.g.,

(89) a. Everyone expected him to win.
    b. *Everyone expected that him would win.

(90) a. He expected himself to win.
    b. *He expected that himself would win.

(91) a. They expected each other to win.
    b. *They expected that each other would win.

Structures such as these have been taken as evidence that expect does indeed have a direct object in its own simplex in the surface structure of the accusative plus infinitive construction. The alternative envisaged here replaces 'simplex' as the domain for
these phenomena to 'simplex and the accusative plus infinitive con-
struction'. Unless supporting arguments can be drawn from other
grammatical phenomena, this seems a less desirable position than
the standard theory analysis which includes a raising rule.

It is important to recognize that this hypothetical alterna-
tive is no more compatible with the lexicalist analysis of passives
advocated here than the standard analysis. The Active-Passive Word
Structure Condition of section 1 in this chapter is repeated here
for reference:  

(92) THE ACTIVE-PASSIVE WORD STRUCTURE CONDITION:

\[ V^{(+AF)}/[NP_1 X^{(Prep)} NP_2 Y Z] \equiv V^{+EN}/[NP_2 X^{BE(+AF)}^{(Prep)} Y^{(by \ NP_1)} Z] \]

The notation in this convention refers entirely to material
contained in lexical entries for verbs. These lexical entries in
turn have syntactic cooccurrence features which do not extend beyond
the simplex sentence. Variables are included in the WSC only because
we wish to characterize a class of lexical entries. In Chapter II
it was taken as axiomatic that syntactic cooccurrence features in
lexical entries did not extend in scope beyond the simplex. Such a
limitation on the scope allowed to lexical entries as operators in
interpretive rules for semantic interpretation is of primary impor-
tance. It was demonstrated that a great deal of grammatical phenomena
could be accounted for quite naturally this way. Should anyone wish
to challenge the limitation of scope on lexical entries, the burden
of proof should be on him.
One could use the formalism in (92) in a quite different manner, rather like the distributional statements of Harris (1964). Here the cooccurrence features to the right of the slash lines could be taken not as the properties of lexical entries, but as classes of deep structure trees, where the variables are allowed to extend beyond the boundaries of simplex sentences just as those in the S.C. for the passive transformation in (87). Again, I find that the burden of proof lies on the person who finds that distributional statements of such power are a necessary part of the theory of grammar.

The WSC in (92) shows two NPs serving as PLAYERS for the verbs and shows that they occur in different left to right orders. Describing the active and passive forms of expect with this formalism has a most important implication: it assumes that the NP serving as object to the active and subject to the passive (NP₂) corresponds to an argument in the propositional meaning of expect. Here is where we conflict with the standard theory raising analysis at the other of its two logical legs: our theory includes as axiomatic (for reasons supplied in Chapter II) the view that functional meaning is determined in a syntactically motivated deep structure at just the point where syntactic cooccurrence is determined for propositional heads (REFEREES), furthermore, that the semantic functions and syntactic cooccurrence features are restricted to syntactic notion 'simplex'. This is also either explicit or implicit in standard theory. Since we are claiming that the passive construction is in all its manifestations governed in deep structure within the simplex
by the lexical entry for the passive verb, it is incumbent on us to show that e.g., John in (85) must be in the same deep structure simplex as expect; the same must hold true for the deep structure representation of its corresponding active as well:

(93) Everyone expects John to come to the party.

Four kinds of arguments have been posited for raising in accusative plus infinitive constructions, for the claim that e.g., John in (85) or (93) is the underlying subject of the embedded clause with come to the party and not an underlying clause mate of expect: (a) cooccurrence within simplexes; (b) the derived subjects there and it; (c) scope; and (d) truth value synonymy. We will consider them in order.

2.6 Cooccurrence Within Simplexes as Justification for Raising

The transformational analysis of passives is entailed by the inclusion of a raising rule in the derivation of accusative plus infinitive complement structures, but the raising analysis in turn is entailed by the analysis of numerous constructions that can occur within these complements. Such is the interrelatedness of transformational analyses, like rows of dominos that can fall in either direction.

As a case in point, consider idioms involving the noun heed.

(94) a. They paid heed to the warning.
    b. They took heed of the warning.
Pay heed and take heed of share approximately the same meaning as the verb heed. The distribution of the noun heed is otherwise severely limited. The occurrence of the noun heed must be constrained by the grammar. All would agree that there should be some kind of lexical entry for the idioms pay heed to and take heed of and that occurrence of heed in most other environments ought to be ruled out. The next step is to point out that heed can occur as the surface structure object (in the active) or subject (in the passive) of expect and other verbs governing the accusative plus infinitive construction, e.g.,

(95) a. We expected heed to be paid to the warning.
b. At last, heed is expected to be paid to the dangerous storm signals on the horizon.

Under the standard analysis, the cooccurrence of heed is accounted for in its deep structure configuration, e.g., one version for (95a):

(96)

Here we see heed as the deep structure object of pay; however, under the analysis proposed here, the deep structure representation
would be required to include *heed as object of *expect. Consider for the moment the closest standard theory analysis consonant with this requirement, and that is one such as *is assigned to *force, which will require a rule of Equi-NP Deletion to operate before the final output is generated:

\[(97)\]

\[
S \\
NP \rightarrow \text{We expected} \text{ heed someone pays heed to } \text{ the warning}
\]

The occurrence of *heed in the lower clause would be easily enough accounted for, but the one in the main clause is a different story. *Heed cannot ordinarily occur as object of *expect:

\[(98)\]

a. *The boss ordinarily expects heed from his subordinates. 
b. *The boss expects heed to grip the employees. 
c. *The boss expects heed to be made to his directives.

The utterances in (95) are well-formed because of the presence of paid in the infinitive complement, and those in (98) ill-formed because of an absence of the verb pay or take. *Expect appears to be neutral in regard to *heed. Under our analysis the best one can say of *expect in regard to *heed is that it can take *heed as its direct object provided that pay or take occur in an appropriate infinitive construction in the same construction.
In standard theory there is the assumption that cooccurrence restrictions must be satisfied within the simplex, and so such a complicated statement of cooccurrence is intolerable. In the theory advocated here, however, this kind of situation is not to be viewed as a problem. Cooccurrence restrictions on lexical items are defined in our theory for simplexes just as in standard theory, but when constructions are elliptical on the surface we take a different approach. Whereas standard theory will assume that elliptical constructions are always grammatically determinate in their elliptical meaning and so put in constituents that are deleted, we take an opposing view. We have showed that there is good evidence that language doesn't work that way. Elliptical constructions like agentless passives and subjectless infinitives can be grammatically indeterminate in their elliptical meaning. Unless we want to allow infinite power to deletion rules, we can't account for all the possible interpretations through deletion rules. Our procedure is thus to look within the simplex first to satisfy cooccurrence restrictions, and if there is ellipsis to look at the rest of the linguistic context. If there is still ellipsis, the grammar gives an indeterminate output and leaves interpretation open for the rest of cognition to deal with.

The infinitive phrase of the sort that occurs in the accusative plus infinitive construction is analyzed in deep structure as it appears on the surface, an elliptical subpart of an utterance: within the infinitive phrase itself there is an instance of constituent ellipsis, a verb phrase looking for a subject. We could recapitulate arguments similar to those presented for the agentless passive as to
why subjectless infinitives should be generated directly by the PS rules instead of undergoing a rule of subject deletion. 17

The lexical entry for expect gives the information necessary to determine which constituent is to be understood as the subject of the infinitive. There follow two examples and their deep structure syntactic representations (IP will indicate 'infinitive phrase'):

(99) a. John expects Bill to leave.
b. John expects to leave.

(100) a.  
\[ S \]
\[ NP \]
\[ VP \]
\[ V \]
\[ NP \]
\[ IP \]
\[ VP \]
\[ John \]
\[ expects \]
\[ Bill \]
\[ to \]
\[ leave \]

b.  
\[ S \]
\[ NP \]
\[ VP \]
\[ V \]
\[ IP \]
\[ VP \]
\[ John \]
\[ expects \]
\[ to \]
\[ leave \]

The lexical entry for expect governs the interpretation of the syntactic representation, so that Bill is understood as the subject of leave in (100a) John expects Bill to leave and John in (100b) John expects to leave. A sketch of the lexical entry for expect is now in order.

The semantic structure for expect, like that for other verbs of cognition will employ a semantic predicate COGNITION x y, where
the first argument is the THINKER and the THOUGHT ('THINKER x has THOUGHT y'). The THOUGHT must be an anticipated state or event. The simplest semantic structure occurs when the complement to the verb is simply the expectation (the THOUGHT) itself. This interpretation is possible with single object constructions, either that S or a direct object NP.

(101) a. John expected that Bill would remain in Cairo.

\[ \frac{x}{\text{John}} \frac{y}{\text{Bill would remain in Cairo}} \]

b. John expected the defeat of Mohamed Ali by Fraser.

\[ \frac{x}{\text{John}} \frac{y}{\text{the defeat of Mohamed Ali by Fraser}} \]

(102) expect, +V, [NP \{NP [that $S$]] [COGNITION $z$ $u$]

\[ \frac{z}{\text{expect}} \frac{y}{\text{+V}} \frac{x}{\text{[NP [that $S$]]}} \frac{u}{\text{[COGNITION $z$ $u$]}} \]

\[ \text{u = 'anticipated state or event'} \]

The proposition with COGNITION can have complex structure within expect, so that the argument THOUGHT is itself a proposition. One possibility is when expect takes a double object construction, one of which is a SOURCE. Here the anticipated event is a CHANGE where the THEME (the direct object NP) moves toward the THINKER. The subject NP is then not only THINKER but also GOAL. There is the added option of the THINKER viewing the anticipated event as his 'due'.

(103) a. John expected \{trouble\} from the company.

\[ \frac{x}{\text{John}} \frac{y}{\text{[that S]}} \frac{z}{\text{[trouble]}} \]

b. John expected \{many trouble-free miles\} out of his VW.

\[ \frac{x}{\text{John}} \frac{y}{\text{[that S]}} \]

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Another possibility, and the one that brings us to the infinitive construction, is when the double object construction includes an infinitive phrase or a prepositional phrase of the usual sort interpretable as a LOCATION. In the corresponding intransitive construction, either a noun phrase or an infinitive phrase is allowed but not a prepositional phrase. When the construction is transitive the direct object NP is located, when intransitive the subject.

(105) a. \( \text{John} \) expects \text{Bill} at the party.
   \[ z \quad w \quad v \]
   
   b. *\( \text{John} \) expects \text{Bill} to the party.
   
   c. \( \text{John} \) expects \text{Bill} on the boat.
   
   d. *\( \text{John} \) expects \text{Bill} onto the boat.

(106) a. \( \text{John} \) expects \text{Bill} to stay.
   \[ z \quad w \quad v \]
   
   b. \( \text{John} \) expects \text{Bill} to leave.

(107) [NP ___ NP [IP]] [COGNITION w [LOCATION w y]]
   \[ x \quad w \quad v \]
   
   u = 'anticipated'

(108) a. \( \text{John} \) expects to stay.
   \[ z \quad v \]
   
   b. \( \text{John} \) expects to leave.
   
   c. *\( \text{John} \) expects at the party.
   
   d. *\( \text{John} \) expects on the boat.
   
   e. \( \text{John} \) expects misery.
   \[ z \quad v \]
   
   f. \( \text{John} \) expects a good time.
(109) \[ \text{NP} \quad \{ \text{IP} \} \quad \text{[COGNITION z [LOCATION z v]]} \quad \text{u} = \text{'anticipated'} \]

Putting all this together, we can get the following lexical entry for \textit{expect}:

(110) \textit{expect}, +V

\[
\begin{align*}
\text{[NP} \quad \{ \text{NP} \} \quad \text{[COGNITION z u]} \quad \text{u} = \text{'anticipated state or event'}
\end{align*}
\]

\[
\text{In (b) + 'z views x as his due'}
\]

There is of course a corresponding lexical entry for the passive verb \textit{expected} (as predicted by the active-passive WSC) where the semantic structure would be assigned appropriately to the passive word order.

I have gone into the lexical entry for \textit{expect} with this much detail in order to be able to incorporate one further observation which is of central importance in the justification for considering the accusative plus infinitive construction with \textit{expect} a double object construction in deep structure. It concerns the non-synonymy of utterance pairs such as the following.

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(111) a. Lloyd expects an eligible young Republican to escort his daughter to the reception.
b. Lloyd expects his daughter to be escorted to the reception by an eligible young Republican.

(112) a. Lloyd expects some of his subordinates to be at the reception.
b. Lloyd expects there to be some of his subordinates at the reception.

To begin with, there is in most utterances with expect a sense in which the subject of the verb considers what is forthcoming as his due. Compare an utterance like John expects rain with ordinary stress, to the same one with emphatic stress, John EXPECTS rain. Thus, in a sense in which the pairs of utterances in (111) and (112) can be understood as paraphrases of each other, we can understand that the event expressed in the complement structure is in each case something that Lloyd considers his 'due'. In this case there is perhaps some unnamed entity that Lloyd holds responsible for providing him with his due, or perhaps he just sees it as in the nature of things.

If we think of Lloyd as an imperious fellow, it is easy to see that there is a distinct reading possible for each of the above examples where the direct object of expect is animate. Lloyd can be conceived of as expecting the anticipated event as his 'due'. There is thus an intermingling of parts (b) and (c) of the lexical entry (110). Most important, when the direct object is animate, there is a strong sense in which Lloyd can be thought of as holding that entity responsible, or as the SOURCE of what is his 'due'. Three of the examples (111) and (112) lend themselves to a close paraphrase
by another construction not yet examined here (the that S can be in
the subjunctive in my dialect).

(113) a. Lloyd expects it of an eligible young Republican
that he (will) escort his daughter to the reception.
b. Lloyd expects it of his daughter that she (will) be
escorted to the reception by an eligible young
Republican.19
c. Lloyd expects it of some of his subordinates that
they (will) be at the reception.
d. *Lloyd expects it of there that there (will) be some
of his subordinates at the reception.

In order to capture this interpretation of the accusative
plus infinitive construction,20 we will use an expanded version of
the semantic structure given in (110b).

\[[\text{COGNITION } z \ [\text{CHANGE } x \ y \ z]]\]

In effect, it amounts to building the semantic structure of (110c)
into (110b) and making \text{THEME} of the predicate \text{LOCATION} (the direct
object \text{NP}) the \text{SOURCE} for the \text{CHANGE}. The first argument for \text{CHANGE}
\((x)\) is replaced by an entire proposition:

\[[\text{CHANGE } [\text{LOCATION } y \ v] \ y \ z] \]

\(x\)

This means that what is coming from \(y\) to \(z\) is the state of affairs
described by the proposition '\(y\) is located at \(v\)'. All together the
semantic structure is as follows:

(114) \[[\text{COGNITION } z \ [\text{CHANGE } [\text{LOCATION } y \ v] \ y \ z]]\]

\(x\)

\(u = \text{'anticipated'}\)

\(z\) views \(x\) as his 'due' and holds \(y\) responsible
This together with the correspondence to the syntactic structure gives us an additional part of the lexical entry:

\[
\begin{array}{c}
\text{(115) } [\text{NP } \underline{\text{PP}} \text{ [IP]} ] [\text{COGNITION } z [\text{CHANGE } [\text{LOCATION } y \text{ } v] y \text{ } z]] \\
\hline
\text{u } = \text{ 'anticipated'} \\
\text{z views } x \text{ as his 'due' and holds } y \text{ responsible}
\end{array}
\]

In this sketch of a lexical entry for expect it should be clear it can provide adequate notation for the determination of the subject of an infinitive phrase in either the transitive or intransitive use of the verb, and with deep structure syntactic representations no more abstract than those in (110); moreover, if our observations about the meaning of expect are correct, it should be clear that heed or any other surface structure direct object in the accusative plus infinitive construction must be direct object in the deep structure as well. The meaning associated with part (115) of the lexical entry can be associated with (116a) but not (116b):

\[
\begin{array}{c}
\text{(116) } a. \text{ Lloyd expects his children to take heed of the pastor's advice.} \\
\text{b. Lloyd expects heed to be taken by his children of the pastor's advice.}
\end{array}
\]

\[
\begin{array}{c}
\text{(117) } a. \text{ Lloyd expects it of his children that they take heed of the pastor's advice.} \\
\text{b. *Lloyd expects it of heed that it be taken by his children of the pastor's advice.}
\end{array}
\]

There could of course be independent reasons for the unacceptability of (117b), but it is suggestive that there is a paraphrase such as (117a) for (116a) but not for (116b). There is then a
semantic interpretation of the accusative plus infinitive construction where the surface structure direct object receives a semantic function and corresponds to a distinct part of the semantic structure. This is true whenever that direct object is animate and can be thought of as being held responsible for something. In order for the semantic function to be assigned to it, it must be a discrete constituent within the simplex governed by the verb expect in deep structure, the point at which semantic functions are assigned to syntactic constituents. If this is the case whenever the 'accusative' constituent of the accusative plus infinitive construction is interpretable as animate, then by implication it must be so in all instances of the accusative plus infinitive construction with expect. There is no syntactic motivation, for example, for assigning one syntactic description to the main clause of just above and another to that of (117b) in regard to their primary constituency.

The cooccurrence of heed can be accounted for in no more complicated fashion here than in the standard analysis. The subjects of infinitive complements are indeterminate within the infinitive phrase itself. The larger linguistic context may or may not determine what the subject is. In this case the lexical entry for expect does. Heed is acceptable as the subject for an infinitive phrase such as the one in (116b) to be taken by his children of the pastor's advice but not ones like that in (98c) to be made to his directives.

Following Chapter II, the lexical entry for the idioms pay heed to and take heed of would be registered in lexical entries for the verbs pay and take that made explicit mention of the noun and
preposition that completed the idiom in each case, within the syntactic cooccurrence features. The following would be included in lexical entries for pay and take thus establishing pay heed to and take heed of as indivisible units of meaning (though complex syntactically). The appropriate semantic characterization would follow:

\[(118) \]
\[
\begin{align*}
\text{a. } \text{pay, } &+V [\text{NP } [\ldots \text{heed}\ldots] \text{ [to NP]}] \ldots \text{ 'to heed'} \\
&\text{NP} \quad \text{NP} \quad \text{PP} \quad \text{PP} \\
\text{b. } \text{take, } &+V [\text{NP } [\ldots \text{heed}\ldots][\text{of NP}]] \ldots \text{ 'to heed'} \\
&\text{NP} \quad \text{NP} \quad \text{PP} \quad \text{PP}
\end{align*}
\]

This says that when take or pay is inserted in this environment it takes on the idiomatic meaning indicated in combination with the noun and preposition explicitly specified in the syntactic cooccurrence feature. There are corresponding passive idioms, predicted by the active-passive WSC. The principle would be the same:

\[(119) \]
\[
\begin{align*}
\text{a. } \text{paid, } &+V [\ldots \text{heed}\ldots] \text{ BE } [\text{to NP} \text{ (by NP)}] \ldots \\
&\text{NP} \quad \text{NP} \quad \text{PP} \quad \text{PP} \\
\text{b. } \text{taken, } &+V [\ldots \text{heed}\ldots] \text{ BE } [\text{of NP} \text{ (by NP)}] \ldots \\
&\text{NP} \quad \text{NP} \quad \text{PP} \quad \text{PP}
\end{align*}
\]

When the passive verbs are inserted in the environment indicated, then they are bound into an idiomatic interpretation. The deep structure syntactic representations for the examples in (95) follow:
The infinitive phrases in and of themselves are elliptical since they provide no subjects for their main verbs. Subjects are assigned to the infinitive phrase verbs, however, by the lexical entries for the active and passive forms of *expect* governing the construction as a whole. When *heed* is assigned as subject to the passive verb *paid* then the portion of its lexical entry (119a) is brought into play, and the expression is necessarily interpreted idiomatically.

It will come about that repeated application of interpretive rules will have to be applied in order to connect an infinitive phrase with its grammatically determined subject. *The hour is ripe* is an
idiot that could be used in standard theory to justify raising in the
same way that idioms with heed are. Although the NP the hour occurs
elsewhere freely in form, it has unique occurrence with the predicate
be ripe as part of the sound-meaning correspondence of that idiom.
Thus its interpretation as an idiom could be said to provide evidence
for raising e.g., in

(121) The hour is expected to be ripe.

How, the argument would go, can we explain the idiomatic
interpretation of hour if it is a deep structure clause mate of
expect rather than deep structure subject of a sentence with be ripe?
But be ripe (actually ripe would carry the idiomatic information in
lexical entry) would be assigned its subject the lexical entry for
the passive verb expected, and the idiomatic interpretation would go
into effect. The same would be the case with the following example;
it is only that several more steps would be involved:

(122) The hour is believed to be reported to be expected
to be ripe.

The deep structure representation would be practically like
its surface structure one. In successive steps three infinitive
phrases would have their subjects grammatically determined. The
passive expressions to be expected to be ripe would have its subject
determined from lexical entries above; the passive verb expected
would in turn make the NP that had been determined as its subject
the subject of to be ripe.
Basically, the acceptability of various predicates with a
subject heed is no different from any other case, e.g., the wall is
acceptable with to be washed or to crumble as in John expects the
wall to crumble, etc. but not with to be frightened or to think as
in *John expects the wall to be frightened. There is a distinctive
aspect to the use of heed and that is that this noun is practically
unusable except as part of the idioms with take or pay. The reason
that (98c) *The boss expects heed to be made to his directives would
seem to be that heed is uninterpretable in this context. A possible
way of accounting for this is to have no lexical entry for the noun
heed by itself, but only to include it in the entries for the idioms
in which it participates. Alternatively, there could be a lexical
entry for heed but where it would be indicated that it is for the most
part uninterpretable unless in semantic interpretation it is made a
part of an appropriate expression with pay or take, and then reference
could be made to the lexical entries for the idioms with those verbs.
In this way the marginal uses of the noun heed outside those idioms
could also be accounted for.

The same reply would be given to any argument in favor of
raising which pointed to the assumption that a certain grammatical
process was limited to simplex sentences, e.g., reflexive and recip-
rocal pronouns as in They expected John to shave himself or John and
Bill were believed to be reported to be expected to be acknowledged
to hate each other. Each infinitive phrase is indeterminate in
itself as to what its subject is. The larger structure determines a
subject and so also completes the various constructions, reflexive,
reciprocal, etc. The interpretive approach accounts for the same facts as a raising analysis and permits a descriptively adequate account of other matters that the standard analysis cannot: here we capture the indeterminacy of subjectless infinitives and agentless passives, and capture the difference in meaning in accusative plus infinitive pairs such as John expects the doctor to examine Bill, and John expects Bill to be examined by the doctor (cf. the discussion of the meaning difference between the pairs in (111) and (112)).

2.7 THERE as Subject

In a variation on the kind of argument examined in the previous section, constructions such as the following can be used to justify raising in the accusative plus infinitive construction, and so to rule out an interpretive-lexicalist analysis of passives. NB there:

(123) a. There is some beer in the refrigerator.  
    b. There is a party at 8 o'clock.  
    c. There is a junta governing the country.  
    d. There have been several professors fired for their political views.  
    e. There were campers too tired to carry their napsacks.  
    f. There is a pentagon official John likes very much.  
    g. There was an epidemic of sleeping sickness.

These expressions can occur as complements in the accusative plus infinitive construction:

(124) a. There is expected to be some beer in the refrigerator.  
    b. There is expected to be a party at 8 o'clock.  
    c. There is believed to be a junta governing the country.  
    d. There are reported to have been several professors
fired for their political views.
e. There were admitted to be campers too tired to
carry their napsacks.
f. There is said to be a pentagon official John likes
very much.
g. There was known to be an epidemic of sleeping sickness.

The there subject of these expressions provides the advocate
of raising with a one-two punch. First, there as a noun phrase, like
heed, occurs in only a small number of simplex constructions.23
Under current assumptions, restricting the introduction of there
subjects to a small number of simplexes is to be highly valued. This
in itself would be sufficient motivation for creating the complex
constructions in (124) by derivations that included a rule to raise
there into clauses with expect, believe, etc. as main verbs.24 Then
cooccurrence of there as a noun phrase in surface structure in terms
that made mention of the verb be and the few others that take there
subjects in simplexes, but not expect or any other verbs that are
associated with there in complex constructions. Instead of including
mention of this latter (and much larger) group of verbs, there is
the raising rule instead.

In the previous subsection on heed, we showed how the inter-
pretation of functional meaning in deep structure would automatically
account for constituents of highly restricted cooccurrence without
increasing the number of lexical items that had to be mentioned in
distributional statements. In place of a raising rule, we have a
more powerful interpretive procedure that finds PLAYERS for elliptical
clauses. This new approach is independently motivated because of the
general indeterminacy of elliptical clauses like subjectless
infinitives and agentless passives (subsection 2.2); however, with there subjects, there is an additional challenge to our theory, because in the standard analysis, there aren't any there subjects in deep structure, they are introduced by post lexical transformations! The deep structure interpretive procedure that accounted for the cooccurrence of heed will be of no avail unless it can be demonstrated that there is an alternative analysis of there subjects at least as plausible as the transformational one which has them introduced in deep structure.

I will demonstrate here that not only is there such an analysis, one which would be compatible with conclusions already drawn about passives and related constructions, but that this analysis is descriptively adequate in ways that the standard theory one cannot be. I will begin with a critique of the transformational analysis and then proceed to what I believe is the better analysis.

The transformational analysis for there subjects has been proposed to account for the relatedness and presumed synonymy of pairs such as the following:25

(125) a. Some beer is in the refrigerator.
    b. There is some beer in the refrigerator.

(126) a. A junta is governing the country.
    b. There is a junta governing the country.

The standard derivation of (125b) proceeds in principle as follows:
(127)

There is assumed to be a 'dummy' or 'empty' constituent (fulfilling a syntactic function but having no semantic value), so that the (a) examples just above are taken to be basic and the (b) examples are derived from them transformationally. This is consonant with a particular version of transformational grammar where only meaning-bearing lexical items are introduced in deep structure; however, this principle is now in doubt.

Emonds (1970a) has presented convincing evidence that there are deep structure representations with the word order exemplified by It surprised Bill that John left: the 'explitive' it in subject position has long been regarded as an 'empty' or 'dummy' constituent on the same order with there, and yet it appears that the deep structure subject is just this it. Bresnan (1970), in addition, has given persuasive evidence that complementizers such as that and the infinitive to must be deep structure constituents: complementizers have been the example par excellence of 'empty' constituents. Be that as it may, the use of transformations to capture the notion 'related sentence type' has as a goal the reduction of the number of underlying constructions: among the proliferation of surface structure constructions, a good number are to be viewed as surface structure variations of a smaller number of basic underlying constructions. Forced to
choose between the (a) and the (b) patterns in (125) and (126), anyone would feel the (a) one to be the most 'basic' (most sentences do not have 'dummy' subjects), and so (b) is viewed as a surface variant of (a). A version of the standard derivation of example (124a) shows how a lexicalist‐interpretive analysis of the passive is incompatible with the standard analysis of there subjects.  

(128) a. S 
   \[ NP \quad \text{VP} \]
   \[ V \quad \text{S} \quad \text{VP} \quad \text{PP} \]
   \[ \text{someone expects} \quad \text{some beer is in the refrigerator} \quad \text{by passive} \]

b. S 
   \[ NP \quad \text{VP} \]
   \[ V \quad \text{S} \quad \text{VP} \quad \text{PP} \]
   \[ \text{someone expects there is some beer in the refrigerator} \quad \text{by passive} \]

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c. SECOND CYCLE: RAISING

\[ S \]
\[ NP \]
\[ V \]
\[ NP \]
\[ S \]
\[ V \]
\[ NP \]
\[ PP \]
\[ P \]
\[ NP \]

\text{someone expects there is some beer in the refrigerator by passive}

d. SECOND CYCLE: PASSIVE (\& COMPLEMENTIZER INSERTION)

\[ S \]
\[ NP \]
\[ AUX \]
\[ V \]
\[ S \]
\[ V \]
\[ NP \]
\[ PP \]
\[ P \]
\[ NP \]

\text{there is expected to be some beer in the refrigerator by passive}

e. INDEFINITE NP DELETION:

\text{there is expected to be some beer in the refrigerator}

The transformational analysis of \text{there} subjects is based on the assumption that for each simplex of the form (129), there is a synonymous one of the form (130):

\[(129) \quad \text{NP} \quad \{ \text{VP} \}
\quad \{ \text{PP} \}
\]

a. There was a boy eating an apple.
b. There have been several professors fired for their political views.
c. There is a nice song on the radio.
d. There were some berries ripe enough to eat.
(130) \[ \text{NP} \quad +\text{Indef} \quad -\text{X} \quad -\text{BE} \quad -\text{AP} \]

a. A boy was eating an apple.
b. Several professors have been fired for their political views.^
c. A nice song is on the radio.
d. Some berries were ripe enough to eat.

(129) is viewed as an optional transform of (130). An immediate problem is that there is a productive construction with constituent structure different from that indicated in (129) and for which no apparent source exists. This has been referred to as the existential there construction.

(131) \[ \text{THERE} \quad -\text{X} \quad -\text{BE} \quad -\text{NP} \]

a. There is a Pentagon official John likes very much.
b. There is an epidemic of sleeping sickness!^c.
c. Q. Where could we have a cup of coffee?  
   A. There's the Student Union.
d. Q. Is there a good place to work around here  
   that is air conditioned?  
   A. There's the library.

(132) \[ \text{*NP} \quad -\text{X} \quad -\text{BE} \]

a. *A Pentagon official John likes very much is.
b. *An epidemic of sleeping sickness is.
c. *The Student Union is.
d. *The library is.

Emonds (1970a) derives (131) by a structure preserving permutation, e.g.,
The empty NP in the underlying representation, Emonds points out, can satisfy the requirement that be has for some sort of complement (i.e., it cannot be used intransitively). Thus, even though we cannot say that the existential there construction is an optional transform of some other pattern occurring on the surface, it has a constituent structure in its underlying representation like that for constructions that do occur on the surface, e.g., (NP - X - BE - NP) John is a doctor.27

(134) THERE INSERTION

\[
\begin{align*}
\text{NP} & \quad \text{X} \\
1 & \quad 2 & \quad 3 & \quad \text{AP} & \quad - & \quad 5 \\
\text{NP} & \quad \text{THE} & \quad \text{RE} & \quad 2 & \quad 3+1 & \quad 4 & \quad 5
\end{align*}
\]

Conditions:

(a) 1 and 3 are clause mates
(b) If 4 is not null, 1 = +Indef
(c) If 4 is null, this rule is obligatory, otherwise optional
(d) If 4 = AP, it must be 'heavy'28

The descriptive inadequacy of the transformational analysis concerns both meaning and syntax. First, meaning: Terry Moore has pointed out to me what he calls the in medias res effect of starting a sentence with an indefinite NP. This effect can be avoided when
a construction with a there subject is used instead. Consider each of the following as utterances beginning a dialogue.

(135) a. A man is packing a suitcase.
     b. There is a man packing a suitcase.

(136) a. A blister is on my thumb.
     b. There is a blister on my thumb.

The (a) utterances cause a 'double take' on the part of the reader or listener. It is necessary to conjure up in one's imagination a scene with dramatis personae which is somehow prior to the utterance in order to accept it. The existence of the referents indicated by indefinite NPs is not presupposed: the use of an indefinite NP as a subject appears to conflict with what is the unmarked semantic value for subject position, i.e., 'topic', where 'topic' is that among the presupposed entities established in a dialogue context that is having new information ('comment') predicated onto it (cf. section 4, Chapter I for discussion of the notion 'topic' in regard to passives). Using a construction with a there subject does two things: it gets the NP out of subject position, and it adds a deictic and existential effect, pointing to the indefinite NP and asserting its existence. It would appear that there is not 'empty' after all, and that it retains some of its semantic force when it functions as subject.

Sometimes the use of a there subject appears absolutely necessary for acceptability when the logical subject is an indefinite NP. Prepositional phrases are usually involved in these cases, and the most striking cases are with temporal expressions.
(137) a.?*A party is at 8 o'clock.
b. There is a party at 8 o'clock.
c. The party is at 8 o'clock.

(138) a.?*A thunderstorm was Tuesday evening.
b. There was a thunderstorm Tuesday evening.
c. The thunderstorm was Tuesday evening.

(139) a. *8,542 traffic fatalities have been this year.
b. There have been 8,542 traffic fatalities this year.
c. The 8,542 traffic fatalities have been this year.

Locative phrases:

(140) a.?*A danger of floods is in the Missouri Valley.
b. There is a danger of floods in the Missouri Valley.
c. The danger of floods is in the Missouri Valley.

(141) a.?*An insufficient food supply is in the disaster area.
b. There is an insufficient food supply in the disaster area.
c. The insufficient food supply is in the disaster area.

(142) a. *An important difference in meaning is between these two constructions.
b. There is an important difference in meaning between these two constructions.
c. The important difference in meaning is between these two constructions.

As a stopgap measure, one could attempt to save the transformational analysis in (134) by adding one of the following conditions:

(143) ADDITIONAL CONDITION ON THERE INSERTION (134):

(e) If 4 = PP, the rule is obligatory
(e') If 4 = +Temporal or +Locative, the rule is obligatory
But it can be demonstrated that either of these conditions would be too strong. There is something having to do with semantic field properties, it would appear, that governs the acceptability of indefinite NPs in subject position. Compare the following:

(144)  a. There is a man named Nicholas in Paris. You should go see him.
       b. A man named Nicholas is in Paris. You should go see him.

(145)  a. There is a volcano named Vesuvius near Naples. You should go see it.
       b. A volcano named Vesuvius is near Naples. You should go see it.

But again, it is hardest to use indefinite NPs before the copula when a prepositional phrase follows. The progressive construction, or any finite verb phrase for that matter, is easier:

(146)  a. A volcano is near Naples.
       b. A volcano is erupting.
       c. A volcano erupted.

The examples (144) and (145) might lead one to believe that animate versus inanimate is the distinction here. But it is not so simple. (Examples from Agnes Shopen.)

(147)  a. There is a sentence on the blackboard. Go read it.
       b. A sentence is on the blackboard. Go read it.

(148)  a. There is an important sentence on the blackboard. Go read it.
       b. An important sentence is on the blackboard. Go read it.
The NP an important sentence appears to be considerably more acceptable as subject than simply a sentence. I am far from understanding the principle involved here. There appears to be a property that some indefinite NPs have that others do not that we can call 'instant focusability'. If the subject NP has this property, as clearly all definite NPs do, then it can in and of itself attain the existential force to establish itself in common focus between speaker and hearer. If not, the construction with the deictic force of a there subject must be used.

The difference in meaning attained by the use of a there subject cannot be easily accounted for if it is introduced by a post-lexical transformation. Various emendations could be made to the grammar to patch things up, but with little that is compatible with current transformational grammar. The meaning of these constructions ought rather to be represented in the lexical entry for the main verb that governs them, be. The following is a first approximation at the lexical entry for be, which accepts the standard assumptions concerning the constituent structure of the utterances in (129).

We will characterize first the uses of be without there as a subject. We use here again the predicate LOCATION. It would appear that this meaning of LOCATION is quite abstract and indeterminate in the verb be itself, and that it is understood as physical location, set membership, identity or predication not in terms of different verbs be, or different meanings of that verb, but rather the semantic value of what follows be.
(149) a. \[ \text{[NP } X \quad \text{AP} ]\text{[LOCATION } x \quad y] } \\
\text{[VP]} \\
\text{[PP]} \\
x \quad y \\
\text{VP must have a participial head, etc. (See footnote 29, part 2)}

b. John is a student. \[ \text{[NP } X \quad \text{NP]}\text{[LOCATION } x \quad y] \]
\[ x \quad y \]
c. John is the student.
\[ x \quad y \]
d. John is writing his thesis, \[ \text{[NP } X \quad \text{VP]}\text{[LOCATION } x \quad y] \]
\[ x \quad y \]
e. John is criticized by the press.
\[ x \quad y \]
f. John is in the kitchen. \[ \text{[NP } X \quad \text{PP]}\text{[LOCATION } x \quad y] \]
\[ x \quad y \]
g. John is in shock.
\[ x \quad y \]
h. John is happy to be here. \[ \text{[NP } X \quad \text{AP]}\text{[LOCATION } x \quad y] \]
\[ x \quad y \]

For the pattern in (131) we will add a predication \text{EXIST x} ("x exists"): 

(150) a. \[ \text{[NP } X \quad \text{AP} ]\text{[EXIST } x] \text{& [LOCATION } x \quad y] \]
\[ x \quad y \]
There 'deixis' 
AP must be 'heavy' (see footnote 28) 
VP must have a participial head, etc. (see footnote 29, part 2)

b. There is a student writing his thesis.
\[ x \quad y \]
\[ \text{[NP } X \quad \text{VP]}\text{[EXIST } x] \text{& [LOCATION } x \quad y] \]
There 'deixis' 
c. There was a student criticized by the press.
\[ x \quad y \]
d. There was a student in the kitchen.
   \[ \text{NP} \quad \text{x} \quad \text{y} \]
   \[ \text{[NP} \quad \text{X} \quad \text{+Indef PP][EXIST } x] \quad \& \quad \text{[LOCATION } x \quad \text{y}] \]
   'deixis'

e. There was a student in shock.
   \[ \text{NP} \quad \text{x} \quad \text{y} \]

f. There were a lot of students very happy to be here.
   \[ \text{NP} \quad \text{x} \quad \text{y} \]
   \[ \text{[NP} \quad \text{X} \quad \text{+Indef AP][EXIST } x] \quad \& \quad \text{[LOCATION } x \quad \text{y}] \]
   'deixis'

In addition to the two parts of the lexical entry for \textit{be},
we must also characterize the pattern in (131). Here only the
predicate \text{EXIST} is in play.

(151) a. \[ \text{NP} \quad \text{X} \quad \text{NP}[\text{EXIST } x] \]
   'deixis'
b. There was an old man who lived in a shoe.
   \[ \text{x} \]
c. There are two reasons why we should support this
   proposal.
   \[ \text{x} \]
d. Q. Where could we cool off?
   A. There's always the swimming pool.
   \[ \text{x} \]

Altogether, this first approximation at a lexical entry for
\textit{be} gives us the following:31
(152) be, +V, +AUX

| [NP X __ [AP] [LOCATION x y] (a) |
| [NP [V | PP] X __ [AP] [EXIST x] & [LOCATION x y] (b) |
| [NP X __ NP] [EXIST x] (c) |

In (a) and (b) VP must have a participial head, etc., (cf. footnote 29, part 2) In (b) AP must be 'heavy' (cf. footnote 28)

The appropriate degree of relatedness is captured in this lexical entry. The two aspects of language, form and meaning, have equal status in such a lexical analysis: we show a correspondence and do not claim either the form (the order) or the meaning to be prior or more basic. The core of the meaning in (a) is shared in (b), but the syntactic manifestation is different and there is an added aspect of meaning. (c) is more related to (b) than to (a).

One could make (a) 'basic' and derive (b) and (c) by transformation from (a) having appropriate conditions on form and a post transformational semantic interpretation to account for the different meaning, but what would be gained? This is not the kind of difference in meaning that ought to be analyzed in surface structure. Deep Structure is the appropriate place to capture this kind of functional meaning. The kind of meaning that Jackendoff (forthcoming) deals
with in surface structure is not functional meaning, it is the kind of meaning that depends crucially on the notion of scope and left to right word order. By making parts (b) and (c) integral to the lexical entry and introducing these patterns in deep structure we are able to account for the differences in functional meaning in a way consistent with standard theory. On the other hand, introducing these patterns in deep structure does not demand a more complex set of PS rules. As Emonds (1970a) has demonstrated, the creation of expressions with there subjects is structure preserving in the sense that the constituent structure is independently motivated and needed in the output of the phrase structure rules anyway.

If further evidence is needed for the difference in semantic properties between constructions with there subjects and the corresponding ones without them, there is more available. One kind of meaning difference concerns auxiliary verb constructions preceding be.

(153) a. A man named Nicholas has been in East Bengal. You should get him to write your story for you.
b. *There has been a man named Nicholas in East Bengal. You should get him to write your story for you.

I am not able to articulate the difference in meaning between (153a) and (153b), but I present it as proof by demonstration that a difference does indeed exist when the perfect construction is involved. It is not that the perfect construction prohibits the use of a there subject, since perfectly acceptable instances of just this combination exist (cf. 138b). Even the sentence in (153b) is acceptable in a different context:
(154)  a. There has been a man named Nicholas in East Bengal for thirteen years now. Do not send another one.
    b. There already has been a man named Nicholas in East Bengal. You will have to find another name.
    c. There has been a man named Nicholas in East Bengal since 1544. Keep up the tradition!

Two more examples:

(155)  a. Some of my subordinates have to be on duty.
    b. There have to be some of my subordinates on duty.

(156)  a. Some of my subordinates may be off duty.
    b. There may be some of my subordinates off duty.

There is an interpretation that each of the (a) examples allow which is not possible with the (b) examples. It concerns the 'VP scope' interpretations that the expressions have to and may allow, 'necessity' and 'permission' respectively. In the (a) examples in this interpretation we can understand some of my subordinates to refer to a particular subset of individuals, where obligation or lack of it applies specifically to them and not to other "subordinates". This is what is referred to as the '+SPECIFIC' interpretation of an indefinite NP. This interpretation is not possible (when have to means 'necessity' and may 'permission') in the (b) examples:

(157)  a. Some of my subordinates have to be on duty: their names are John, Bill, Henry and Mike; it doesn't matter what Sylvester does.
    b. *There have to be some of my subordinates on duty: their names are John, Bill, Henry and Mike; it doesn't matter what Sylvester does.
(158)  a. Some of my subordinates may be off duty: their names are John, Bill, Henry and Mike. But tell Sylvester he has to stay on.
b. *There may be some of my subordinates off duty: their names are John, Bill, Henry and Mike. But tell Sylvester he has to stay on.

This kind of meaning difference does not necessarily mitigate against a transformational derivation for *there subjects, since this is not a difference in functional meaning; it is rather the kind of modal meaning that Jackendoff (forthcoming) has given an interesting account of in surface structure in terms of the left to right order and hierarchial arrangement of constituents found there. I say "not necessarily", however, because the best account of the semantic distinction pointed out here may turn out to include the deictic meaning particular to the constructions with *there as one of the determining factors. The observations just presented at least show that the constructions with *there subjects have different semantic properties than the corresponding ones without them.

Another important grammatical difference between these two constructions is one of relevance to the primary point of interest here: the passive construction. This is another instance where if the passive construction is going to be used, it has to be agentless (cf. the discussion of a similar instance with the *get passive in section 2.2 of this chapter). When an expression with a *there subject is serving as complement to an accusative plus infinitive construction, and the latter is going to be passive, it cannot be well-formed unless it is an agentless passive.
(159)  a. The press expected a woman to be among the president's nominations for circuit judge.
b. A woman is expected by the press to be among the president's nominations for circuit judge.

(160)  a. The press expected there to be a woman among the president's nominations for circuit judge.
b. *There was expected by the press to be a woman among the president's nominations for circuit judge.
d. There was expected to be a woman among the president's nominations for circuit judge.

(161)  a. Ecologists believe pesticides to be destroying our food supply in the sea.
b. Pesticides are believed by ecologists to be destroying our food supply in the sea.

(162)  a. Ecologists believe there to be pesticides destroying our food supply in the sea.
b. *There are believed by ecologists to be pesticides destroying our food supply in the sea.
c. There are believed to be pesticides destroying our food supply in the sea.

(163)  a. The president acknowledged there to be a housing shortage.
b. *There was acknowledged by the president to be a housing shortage.
c. There was acknowledged to be a housing shortage.

I reason that the unacceptability of the (b) examples in (160), (162) and (163) is due to a semantic principle, and this because I see no conceivable syntactic principle that could account for it. If it is correct that the anomalous examples are instances of semantic ill-formedness, then this is very likely due to the semantics of the there constituent itself.

If we had the standard analysis of the passive, and there were always an underlying agent, then agent deletion would have to be made obligatory just in case the subject turned out to be there.
This would insure the correct outputs, but would confuse the account of the meaning. The argument associated with the ellipted agent constituent is not always understood as indefinite in constructions such as these. Note the anaphoric interpretation possible:

(164) This administration has created the worst credibility gap yet: there hasn't yet been acknowledged to be a housing shortage.

Semantic evidence has been presented to support a lexicalist analysis of constructions with there subjects. In (152) we saw a lexical entry for be that would include an account of the distinctive semantic properties of these constructions; however, in that analysis we simply accepted the standard assumptions concerning constituent structure. Upon closer examination of constructions with be and there subjects, it turns out that there is reason to doubt these assumptions: in particular, there are several good reasons to suppose that most if not all of the sentences we have been examining have simply the following constituent structure:

(165)

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S
   NP
     V
   VP
     NP

There (AUX) BE
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- a student writing his thesis
- a rock discovered by a geologist
- campers too tired to walk
- a Pentagon official John likes
- an epidemic of sleeping sickness
- the library
- a student in shock
- ...etc.
This is a significant point for our discussion, because if (165) is the correct constituent structure, then transformational derivation of the structures of (129) from those of (130) would be much less natural from a syntactic point of view: all the more reason then to introduce there subjects in deep structure.

What is at issue here is hierarchical structure. We have sentences of the form (166):

\[
\text{(166) THERE - X - BE - (D) N AP}
\]

In order for the standard transformational derivation to be natural from a syntactic point of view, the underlined portion of (166) must have a major constituent break in it, that is the constituent structure must be along the lines of (167a) rather than (167b):

\[
\text{(167) a. S \quad \text{b. S}
\]

\[
\text{NP \quad \quad V \quad NP \quad VP \quad \quad NP \quad \quad V \quad NP \quad VP \quad PP \quad AP}
\]

\[
\text{THERE X BE \quad \quad THERE X BE}
\]

Only (167a) could be argued in any intuitively obvious way to come from (168) via transformation:
If the desired output were (167b), then the transformation would have to first attach constituent #1 as the right sister of #3 (under the VP), and then take constituent #4 and move it down to become the right daughter of #1 (so that, as in (167b), #4 is no longer dominated by VP, but by the NP under the VP); this is a kind of tree reconstruction for which there is little precedent. By giving arguments for (167b) as the surface structure, I am giving evidence against (168) as deep structure for the kind of construction at issue here.

The first argument has to do with the dislocation of constituents from their normal position in these structures. The there expressions do not allow dislocations that their presumed source expressions do. Consider the dislocation of NP or PP objects of VPs, APs and PPs which are in turn subparts of the larger structure:

(169) a. i.  

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(169) a. ii.  

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(170) RELATIVE CLAUSES

a. i. *This is an apple that there was a boy eating.
   (There was a boy eating an apple)
   ii. This is the apple that a boy was eating.
       (A boy was eating the apple)

b. i. *This is the problem that there are many congressmen conscious of.
    (There are many congressmen conscious of the problem)
   i'. *This is the problem of which there are many congressmen conscious.
   ii. This is the problem that many congressmen are conscious of.
       (Many congressmen are conscious of the problem)

c. i. *This is the man that there was an assassin out after.
    (There was an assassin out after the man)
   i'. *This is the man out after whom there was an assassin.
   ii. This is the man that an assassin was out after.
       (An assassin was out after the man)
   ii'. *This is the man out after whom an assassin was.
The ill-formedness of (170c ii'), the last example above, will not concern us here. None of the (i) examples are remotely acceptable, while there are corresponding (ii) examples which are perfectly acceptable in all cases except this last mentioned one. It must be asked what grammatical principle can constrain the (i) cases. The hypothesis I propose is that the dislocations in (ii) are prevented by a kind of complex NP constraint which prevents the dislocation of constituents from within NP complement or modifier structures, that the constituent structure for the there constructions is (167b) with a single complex NP object to be, an NP complex in the sense that it includes complements or modifiers of the head noun. This complex NP constraint is of an intricate nature which apparently involves semantic as well as syntactic principles: there are many counter-examples to a generalization based on strictly a configurational definition; while not being able to state the constraint in detail, I believe I can show that the account of the facts in (170) lies in this direction.

To begin with, the lexical strings that my hypothesis would claim to be single NP constituents do in fact occur elsewhere as NP constituents:

(171) a. A boy eating an apple came by the house.
   b. Many congressman conscious of the problem have tried to convince the president something should be done.
   b'. The many congressman conscious of the problem have tried to convince the president something should be done.32
   c. The assassin out after Bill was arrested.

Secondly, when these expressions occur as objects in other VPs, there is the same impermissibility of movement of the NP or PP constituents:
(172) a. *This is the apple that John reprimanded a boy eating.
   (John reprimanded a boy eating an apple)
   b. *This is the problem that John spoke to many congressmen conscious of.
   (John spoke to many congressmen conscious of the problem)
   b'. *This is the problem of which John spoke to many congressmen conscious.
   c. *This is the man that the police arrested the assassin out after.
   (The police arrested the assassin out after Bill)
   c'. *This is the man out after whom the police arrested the assassin.

The hypothesis of a complex NP constraint (constraining movement from the syntactic structure in (167b)) is most secure where VPs and APs are concerned (cases (169a) and (169b)); it is less so with PPs (167c). The unacceptability of NP or PP objects moved from VPs or APs that are part of a clause with a THERE subject as in (169a) and (169b) is quite general.

(173) a. i. *This is the idea that there were some young people influenced by.
   (There were some young people influenced by the idea)
   i'. *This is the idea by which there were some young people influenced.
   ii. This is the idea that some young people were influenced by.
   ii'. This is the idea by which some young people were influenced.
   iii. *This is the idea that John met some young people influenced by.
   (John met some young people influenced by the idea)
   iii'. *This is the idea by which John met some young people influenced.
b.  
  i. *These are the paintings that there were some visitors looking at.
     (There were some visitors looking at the paintings)
  i'. *These are the paintings at which there were some visitors looking.
  ii. These are the paintings that some visitors were looking at.
      (Some visitors were looking at some paintings)
  ii'. These are the paintings at which some visitors were looking.
  iii. *These are the paintings that Bill guided some visitors looking at.
      (Bill guided some visitors looking at some paintings)
  iii'. *These are the paintings at which Bill guided some visitors looking.

c.  
  i. *This is the statue that there are a lot of people proud of.
     (There are a lot of people proud of a statue)
  i'. *This is the statue at which there are a lot of people proud.
  ii. This is the statue that a lot of people are proud of.
      (A lot of people are proud of a statue)
  ii'. This is the statue of which a lot of people are proud.
  iii. *This is the statue that we know a lot of people proud of.
      (We know a lot of people proud of the statue)
  iii'. *This is the statue of which we know a lot of people proud.

d.  
  i. *This is the policeman that there was a councilman angry at.
     (There was a councilman angry at a policeman)
  i'. *This is the policeman at whom there was a councilman angry.
  ii. This is the policeman that a councilman is angry at.
     (A councilman is angry at a policeman)
  ii'. This is the policeman at whom a councilman is angry.
  iii. *This is the policeman that the reported interviewed a councilman angry at.
      (The reporter interviewed a councilman angry at a policeman)
  iii'. *This is the policeman at whom the reporter interviewed a councilman angry.
The (ii) examples are uniformly acceptable, where the VP or AP affected by the dislocation is not dominated by an NP (the configurations numbered (ii) in (169)). The (iii) examples are uniformly unacceptable where there is no doubt that the VPs and APs in question are dominated by NP; therefore, the hypothesis presented here that (167b) is the correct syntactic representation for the THERE constructions, if not proven, can be seen at least to be consistent with the unacceptability of the (i) examples. It would be better for there to be more evidence in favor of this hypothesis. It turns out that in regard to the constructions with APs there is an additional argument.

It is necessary for an AP in a THERE construction to be 'heavy' in some sense. It appears that this 'heaviness' is the property required of APs dominated by NPs and to the right of the head noun. It must be added that not just any NP in any position can carry all such 'heavy' APs. There are two kinds of 'heavy' APs: those that include complement structures must occur with NPs to the right of the head noun, and this configuration, in turn, is possible in a wide range of positions in which NPs can occur:

(174)  

a. There weren't many people sincere in their intentions.
b. Many people sincere in their intentions have met disappointment.
c. John is aware of many people sincere in their intentions.
a'. *There weren't many people sincere.
b'. *Many people sincere have met disappointment.
c'. *John is aware of many people sincere.

It would be a simple matter if this were the only kind of 'heaviness'; however, there is a second kind which appears to be
semantic. Here a simple AP with just the head adjective can occur after the head noun. Some but not all NP positions will accommodate this construction:

(175) a. There were priests drunk!
    b. Priests drunk would send John up the wall.
    c. *Bill spoke to priests' drunk.

This sort of AP is much more acceptable if there is a quantifier in the NP.

(176) a. There were fifteen campers sick.
    b. Fifteen campers sick would be a disaster.
    c. *The nurse cared for fifteen campers sick.

The semantic principle appears to be at least in part one of being able to interpret the resultant NP as an externally perceivable event.

(177) a. There were a lot of customers angry.
    b. A lot of customers angry would make a bad impression on the control commission.

(178) a. *There were a lot of customers resentful.
    b. *A lot of customers resentful would make a bad impression on the control commission.

Whatever the semantic principle involved here is in full, I believe there is a substantial correlation between the kind of 'heaviness' required in APs occurring in the THERE construction, and those occurring after head nouns inside NPs. If this is correct, then we have an additional argument in favor of hypothesis (167b).
There remains the case where PPs are involved (case 169ci).

Here, it turns out that dislocation of the prepositional object NP or of the PP is frequently quite acceptable in the THERE construction; at the same time, the dislocation is possible in other environments too.

(179) a.  i.  This is the room that there was a rat in.
      (There was a rat in the kitchen)
   i'.  This is the room in which there was a rat.
   i'' . This is the room where there was a rat.
   ii.  This is the room that a rat was in.
      (A rat was in the kitchen)
   ii'.  *This is the room in which a rat was.
   ii''. ?This is the room where a rat was.
   iii.  This is the room that John can't stand a rat in.
      (John can't stand a rat in the kitchen)
   iii'.  This is the room in which John can't stand a rat.
   iii''. This is the room where John can't stand a rat.

b.  i.  That is the time that there is a party (*at).
      (There is a party Tuesday evening/at 8 o'clock)
   i'.  That is the time at which there is a party.
   i''. That is the time when there is a party.
   ii.  *That is the time that a party is (at).
      (*A party is Tuesday evening/at 8 o'clock)
   ii'.  *That is the time at which a party is.
   ii''. *That is the time when a party is.
   iii.  That is the time that John likes a party.
      (John likes a party at 8 o'clock)
   iii'.  That is the time at which John likes a party.
   iii''. That is the time when John likes a party.

c.  i.  That is the country that there will be an excursion to.
      (There will be an excursion to that country)
   i'.  That is the country to which there will be an excursion.
   i''. That is the country where there will be an excursion.
      (? = i')
   ii.  *That is the country that an excursion is to.
      (*An excursion is to that country)
   ii'.  *That is the country to which an excursion is to.
   ii''. *That is the country where an excursion is.
c. iii. That is the country that John enjoyed an excursion to.
   (John enjoyed an excursion to that country)

   iii'. That is the country to which John enjoyed an excursion.

   iii''. That is the country where John enjoyed an excursion.
   ( ? = iii')

   d. i. That is the listener that there is a letter from.
   (There is a letter from a listener)

   i'. That is the listener from whom there is a letter.

   ii. *That is the listener that a letter is from
   (*A letter is from a (the) listener)

   ii'. *That is the listener from whom a letter is.

   iii. That is the listener that John read a letter from.
   (John read a letter from a listener)

   iii'. That is the listener from whom John read a letter.

Since there is a general freedom for dislocation of PPs and NP objects within PPs which are in turn complements to head nouns in larger NPs, we have only slender evidence (cf. 170c) for the hypothesis where structure (169c8) is concerned. But we have good reason to suppose that the hypothesis is correct where VPs and APs are concerned, structures (169ai) and (169b1).

We can conclude at the very least that hypothesis (167b) is correct when VPs and APs are involved, and that for these cases the standard transformational analysis is extremely unlikely. This means that at least we should revise the lexical entry for be in (152) so that part (b) applies only when PPs are involved. Alternatively, part (b) could be done away with altogether, and all THERE constructions would be governed by part (c) of the lexical entry, the part that corresponds to configuration (167b). Then the predication taking place from e.g., the VP onto the indefinite NP as in There is a boy eating an apple is determined in the NP structure a boy eating an
apple rather than in the lexical entry for be. The meaning determined by be in all THERE constructions would be simply EXIST.

There is semantic evidence for a lexical analysis of all THERE constructions with be, and syntactic evidence in that direction for most of them. I conclude that the existence of utterances such as those in (124) with there subject in passives of accusative plus infinitive constructions is no basis for a counter-argument against our lexical analysis of the passive.

In utterances such as those in (124) the following there will be generated as deep structure subject in the position it occupies on the surface, and will by the functional meaning determined by the main verb in each clause be traced interpretively down to the subject-less infinitive with be; there, the lexical entry for be will take over. Since there is determined by the higher verbs to be the subject of the infinitive phrase with be, the part of be’s lexical entry that makes explicit mention of there as subject is brought into play and we understand the special idiomatic meaning of the THERE construction.
(183) There is reported to be believed to be said to be expected to be a junta governing the country.

LEXICAL ENTRY FOR PASSIVE VERB
reported makes its subject (there)
subject of its infinitive complement (to be believed...)

LEXICAL ENTRY FOR PASSIVE VERB
believed makes its subject (there)
subject of its infinitive complement (to be said...)

LEXICAL ENTRY FOR PASSIVE VERB
said makes its subject (there)
subject of its infinitive complement (to be expected)

LEXICAL ENTRY FOR PASSIVE VERB
expected makes its subject (there)
subject of its infinitive complement (to be...)

LEXICAL ENTRY FOR be
is brought into play:

[NP X _ NP][EXIST x]
There x 'deixis'

(The NP a junta governing the country is asserted to exist)
2.8 Command

Postal (1970) points out that "Backwards Equi" (NP Deletion) constitutes an argument for the existence of a raising rule. This directly impinges on our analysis of the passive, because of examples such as the following.

(182) Going to San Francisco is expected to turn Bill on to good taste and good living.

The subjectless gerundive complement in subject position for the sentence as a whole, going to San Francisco, an instance of constituent ellipsis, allows only one interpretation. It is Bill who is going to San Francisco. The constituent ellipsis of the complement is grammatically resolved in the larger structure.

Coreferential subjects of complements have been analyzed with deletion rules (Postal 1970a for the most recent and complete account) and without them (Jackendoff forthcoming where empty nodes play a role), but all accounts include the well-known principle of command from Langacker (1969). Backwards coreferential subject interpretations for what are on the surface subjectless complements are supposed to be possible only when the antecedent commands the complement structure. Clearly in (182) the antecedent Bill does not in surface structure command the gerundive, at least in the current conception. The antecedent can be put even farther down by the now well worn concatenation of infinitive phrases as in Going to S. F. is reported to be expected to turn Bill on ..., etc.
I view this as no real counter-argument to our analysis of the passive and our position against raising. The lexical entry for \textit{expect} determines a subject for its infinitive complement; in the case of the passive form \textit{expected}, it is the subject of the main clause that is also the subject of the infinitive phrase. The notion of 'command' can be revised to account appropriately for subjects determined from without in complex complement constructions where the complement in and of itself is elliptical, as well as in non-elliptical clauses. The complement to \textit{turn Bill on to good taste and good living} can have its subject determined for it from quite a bit higher up on the tree, but once that subject is determined, there would be the same elegance to the notion 'command' to say that \textit{Bill} commands the subject at that point. Then the determination of the obligatory interpretation of coreference would follow automatically, just as it would in (183):

(183) Going to San Francisco will turn Bill on to good taste and good living.

2.9 Truth Value Synonymy

Rosenbaum (1967) distinguished between two kinds of accusative plus infinitive constructions. He used 'truth value synonymy' as a criterion for deciding their deep structures. The pair of sentences in (184), according to Rosenbaum's analysis, have truth value synonymy; those in (185) do not.
(184) a. John expected the chairman to interview Mary.
    b. John expected Mary to be interviewed by the chairman.

(185) a. John forced the chairman to interview Mary.
    b. John forced Mary to be interviewed by the chairman.

The sentences in (184) are assigned virtually the same deep structure:

Since, it is claimed, (184a) and (184b) have truth value synonymy, it is not necessary for the deep structure to provide any more differentiation than the presence or absence of the PASSIVE trigger morpheme: the semantic projection rules will produce the same semantic interpretation for the two sentences and their difference in surface form will be accounted for by transformations.

Deep structure analysis (186) is in conflict with our lexical analysis of passives, since we claim that all passives have subject NPs that correspond to deep structure object NPs for the corresponding
active verbs. **Expect** doesn't have the appropriate NP as object in (186) for either of the following:

(187) a. The chairman was expected by John to interview Mary.
    b. Mary was expected by John to be interviewed by the chairman.

Rosenbaum's argument entails three assumptions which I think are erroneous. I would like to take them up in turn:

(188) a. If two sentences have truth value synonymy, they have the same truth conditional structure.  
    b. If two sentences have the same truth conditional structure, they have the same semantic value.  
    c. If two sentences have the same semantic value, they have the same underlying representation.

By **truth value synonymy** I understand the following: if (a) is true then (b) must be true, and vice versa. I will for the moment concede that this is the case for (184), although the conclusion is far from certain. Now it is quite possible that two sentences can have truth value synonymy but not have the same internal semantic structure, where truth condition is an important prime of semantic structure. Consider the following:

(189) a. John is a bachelor.  
    b. John has never been married.

Certainly, these two have truth value synonymy; however, there is reason to believe that their internal semantic structure is different.
(190) a. John is a bachelor because he can't stand the ceremony.
   b. John has never been married because he can't stand the ceremony.

   Bachelor has as a truth condition never having had a wife, but apparently it only entails not having been through the wedding ceremony. The verb marry, on the other hand, has participation in a ceremony as a truth condition. If this is correct, we can understand why (190a) is so much less acceptable than (190b). It would appear that we need a notion of entailment and equivalence among truth conditions as a part of semantic theory. As another example consider the following pair (from Barbara Partee, personal communication):

(191) a. The Pirates defeated the Tigers.
   b. The Tigers lost to the Pirates.

   Again, there is no question but that if one of these is true the other is also; however, the truth conditions of one, there is good reason to believe only entail those of the other. Take the specific context of baseball games: (191a) places as a condition on its possible referents that the Pirates scored more runs than the Tigers; this of course entails that the Tigers scored less runs than they did, but the two notions are different in their internal structure in the same way as John is taller than Bill/Bill is shorter than John, and many other pairs. By confusing truth value synonymy with the particular truth conditions of the internal semantic structure of utterances, one is left without a means of explaining the relative acceptability of examples such as the following.33
(192) a. Frank is a Pirate fan, so he is glad they defeated the Tigers.
   b. Frank is a Pirate fan, so he is glad the Tigers lost to them.

A context in which the loss of the Tigers to the Pirates has already been mentioned would make (192b) fully acceptable, but the fact remains that (192a) needs no special context: it could begin a discourse, while it would be difficult for (192b) to do so. An additional difference between (191a) and (191b) is that the grammatical relations are different, e.g., the Tigers constitute the subject of the active verb lose, but the object of defeat, a distinction that has important grammatical consequences: whether or not grammatical relations have semantic relevance should still be viewed as an open question. Another example in regard to assumption (188b) involves the distinction between subject and object. Observe the ambiguity of the following (pointed out to me by Jerry Morgan):

(193) Next week we will be visiting relatives.

In one interpretation, we are going to be relatives who are visiting (where the right sister of be is an NP), while in the other we are going to be visiting people who are our relatives (where the right sister of be is a VP).

Certainly in their most obvious interpretations, these two structures have truth value synonymy, but the truth conditional structure is not the same. In the case where it is asserted that we are going to be relatives of a certain sort, we understand that it is as we are visiting that we are going to be fulfilling that role.
From this the most obvious inference is that we are going to be relatives *vis a vis* the people we are visiting. Call this the most obvious interpretation of the NP structure. The other case is the VP structure with *visiting* at the head. Here it is explicitly stated that the people we are going to be visiting are somebody's relatives, and the most obvious inference is that these are going to be our relatives.

In either the NP or the VP structure it is possible to arrive at an interpretation where we are visiting relatives of ours. It should be emphasized, however, that in either structure, this exact interpretation includes an inference, an aspect of what is understood that is not strictly determined grammatically. Consider the NP structure: here it is a truth condition that we are going to be somebody's relatives; imagine that we are members of a family where there is someone (an uncle) who is in the diplomatic service. He is ambassador to the Kingdom of Oz, and in the Kingdom of Oz there is a custom that relatives of foreign emissaries come and pay a special visit to the King and Queen whenever they pass through the country. We have just arrived in Oz and next week that is just what we are going to be doing: in our role as relatives of a foreign emissary, we are going to be making the traditional visit to the royal family, we are going to be visiting relatives (relatives - of an ambassador - who are visiting - the King and Queen). In this circumstance the people who we are visiting are not our relatives. Such an interpretation is possible, because there is not a truth condition strictly
determined in the NP structure that the people that we are visiting be our relatives.

In the VP structure it is a truth condition that the people we are going to be visiting are going to be somebody's relatives; but again it is only the most obvious guess that they are our relatives. Imagine that we are volunteer workers at a veterans administration hospital, assisting emotionally disturbed returning GIs to readjust to civilian life. One of the things we do is visit the relatives of the patients in the hospital to inform them of the progress their sons, husbands, fathers, etc. are making and to prepare them for the eventual return of the patients to home life. Here it could be said that next week we are going to be visiting relatives, relatives in this case of our patients. This is a possible interpretation because the VP structure does not determine a truth condition that says that the people we are visiting have to be our relatives. Thus we see that there are different truth conditions: in the NP structure it is determined that we are going to be acting in the role of being somebody's relatives; in the VP structure it is determined that the people we are going to be visiting are going to be somebody's relatives. Extra truth conditions can be optionally added, and in one of the possible combinations of obligatory and optional truth conditions we get truth value synonymy for the two structures. It should be clear, though, that truth value synonymy is a far cry from having the same truth conditional structure.
Language has many pairs of sentences that have truth value synonymy without having the same truth conditional structure. The following are obvious examples.

(194) a. John sold a car to Bill.
     b. Bill bought a car from John.

(195) a. Mike lent Peter five dollars.
     b. Peter borrowed five dollars from Mike.

In the second assumption (188b) we have an issue that may be just a matter of terminology; however, it is an area where I believe that a distinction in terminology is important. The example I will discuss brings us to the central issue of this section 2, the relation between actives and passives. Pairs of sentences such as (196) or (197) would appear to have not only truth value synonymy but the same truth conditional structure:

(196) a. The chairman interviewed Mary.
     b. Mary was interviewed by the chairman.

(197) a. The farmer milked the cows.
     b. The cows were milked by the farmer.

It will be recalled, however, that in Chapter I Section 4 it was pointed out that there is an important difference in semantic structure:

(198) a. Even though he was tired, the farmer milked the cows.
     b. Even though they were tired, the farmer milked the cows.
(199)  a. Even though they were tired, the cows were milked
       by the farmer.
b.??Even though he was tired, the cows were milked by
       the farmer.

The low acceptability of (199b) is due to the fact that the
passive requires that its subject be interpretable as TOPIC (that
among those things which are presupposed that is being 'talked about'),
and while it is possible to create a context in which the cows are
TOPIC at the same time that there is a preposed concessive clause
talking about the farmer, it is an extremely convoluted context
indeed. This was illustrated in I.4. It is possible that any of the
first three examples in (198)-(199) could begin a discourse, but it is
hard to conceive of a situation where (199b) could. An elaborate
context is not necessary for either of the actives in (198) because
the active does not have the same inflexible requirement that its
subjects be interpretable as TOPIC. The same assymmetry arises in
the following paradigm:

(200)  a. When he arrived, the chairman interviewed Mary.
b. When she arrived, the chairman interviewed Mary.

(201)  a. When she arrived, Mary was interviewed by the chairman.
b.??When he arrived, Mary was interviewed by the chairman.

The preposed clause talking about the chairman (I consider
only the coreferential interpretation) is presupposed material. It
is difficult, with no advance preparation, to imagine how the chair-
man could be presupposed and yet Mary the TOPIC. If I tell a story,
however, about Mary out job hunting, so that she is not pre-
supposed but the entity that we are talking about above all others,
and say that she had to go to some effort to get the chairman to come
to his office and then say (201b), it becomes acceptable: the arrival
of the chairman is presupposed, yet the story is being told with
Mary as the TOPIC. In the actives in (200) the preposed clause has to
be presupposed in the same manner, but there is no strain when the
subject of the main clause is not the same person as the one referred
to in the preposed clause. (200b) is just as acceptable as (200a).

Noting that passives are different from actives in this
respect makes it possible to understand the more limited acceptability
of passives in a range of contexts: 34

(202)  a. John is happy because he kissed Mary.
      b. John is happy because Mary kissed him.

(203)  a. John is happy because he was kissed by Mary.
      b. John is happy because Mary was kissed by him.

(204)  a. Q. What happened to the barn?
       A. Lightning struck it.
       A'. It was struck by lightning.

           b. Q. What happened to that flash of lightning?
       A. It struck the barn.
       A'.??The barn was struck by it.

One may question whether the rule that passive subjects be
TOPIC is a part of the grammar. It most certainly must be if we want
to have any hope of accounting for the asymmetry in acceptability of
active-passive paradigms such as have been presented (198)-(204).
Yet is this rule a truth condition? Here we are concerned not with
the physical event being referred to, the referrent for the passive
in each case, but rather to the cognitive structure of the linguistic
event itself. In ordinary language the word \textit{true} could be used naturally enough here: it must be true that the subject of a passive is viewed as TOPIC in order for it to be acceptable. This is not, however, the usual way to use the term 'truth condition'.

It appears to me appropriate to reserve the term 'truth condition' for the intensions (possible referents) of units of meaning, but then we will also need another term that applies to grammatically determined conditions on the cognitive structure of linguistic events (cf. 1.4 for other such conditions, e.g., that in information questions all is presupposed except what is interrogated as in the joke \underline{When did you beat your wife last?}). The distinction between FOCUS and PRESUPPOSITION in Chomsky (1969) is of this nature. For this notion I propose the term 'appropriateness condition'. Given the usual sense of the term 'truth condition' then, we can conclude in respect to (1.88b) that semantic structure consists of both truth conditions and appropriateness conditions, that it does not follow that sentences having the same truth conditions have the same semantic structure, e.g., active-passive pairs.

The final assumption (1.88c) represents the strong form of generative semantics, that if two sentences have the same semantic value they have the same underlying representation. If the semantic structure of a sentence is exhaustively characterized by truth conditions and appropriateness conditions, then it is conceivable that there are two sentences which differ syntactically but share the same truth conditions and appropriateness conditions, e.g.,
(205) a. Two plus three equals five.
b. Three plus two equals five.

(206) a. John and Bill left.
b. Bill and John left.

(207) a. John strikes me as pompous.
b. I regard John as pompous.

Whether or not these pairs share the same semantic structure is an open question. In the first two, exactly the same lexical items are used and only left to right order varies. In the last there is a difference in lexical material as well, but it might be nevertheless that truth conditions and appropriateness conditions match perfectly.

McCawley (1968) cites exactly the example of order of conjuncts as an instance where the grammar would have equivalence classes of different underlying representations with the same meaning. Unless some consistent meaning can be shown to be attached to order of conjuncts - it would no doubt be an appropriateness condition rather than a truth condition if anything - it would appear that McCawley's example is a well chosen one and that his proposal is a necessary one. No basis exists for calling either of the pain in (206) more basic, so that the only way to give the pair the same deep structure is to have an unordered base. Then, however, some principle would have to be educed to motivate putting John first in (206a) as opposed to putting Bill first in (206b). For this and many other reasons, I conclude that order is a prime in language and that unordered bases are of no value.

(205) and (207) are perhaps similar cases. In the case of
difference in semantic structure could be established by showing that the grammatical relation subject (in active sentences) had a constant semantic value different from that of object. Understanding that, however, they might have to be related to each other as equivalent. The assumption in Postal (1970a) that for all psychological verbs the underlying subject is always the 'experiencer' does not seem motivated empirically, cf. Kimball (1970). It would seem that neither word order is more basic, the one with strike where the experiencer is in object position, or the one with regard where the experiencer is in subject position. To derive one from the other would seem to complicate the grammar rather than simplify it. The close similarity between strike and regard is semantic and not syntactic.

With this discussion in mind, I would like to return to the pair of sentences in (184), which I repeat here:

(208) a. John expected the chairman to interview Mary.
   b. John expected Mary to be interviewed by the chairman.

If the foregoing discussion is correct then even if these two sentences had the same semantic structure, it would not follow axiomatically that they should have the same underlying representation. Thus, even if they were semantically identical (truth conditions and appropriateness conditions), if the two differed syntactically in ways that could be used to motivate a different deep structure for each, this motivation in and of itself could be enough. The relation between actives and passives, in particular where the object of the first is always the subject of the second, constitutes such an
argument, provided our argument about the need for generation in
deep structure of agentless passive in particular and passives in
general goes through.

Secondly, even if it were shown that (208a) and (208b) had
the same truth conditions, it wouldn't follow necessarily that they
had the same semantic structure. They could still differ in appro-
priateness conditions, as indeed they do, at least where the comple-
ment structures are concerned: the main clauses of (208) are both
active, but the complement structure of (208a) is active while that
of (208b) is passive. Following our analysis, Mary has to be TOPIC
of the complement structure in (208b). The following set of examples
(with a slight alteration in the main clause for clarity), shows this
is so. (210b) is the crucial example.

(209)  a. Even though he was tired, I expected the chairman
to interview Mary.
b. Even though she was tired, I expected the chairman
to interview Mary.

(210)  a. Even though she was tired, I expected Mary to be
interviewed by the chairman.
b. ??Even though he was tired, I expected Mary to be
interviewed by the chairman.

One could counter that the PASSIVE trigger morpheme of the
standard analysis of the passive differentiates the deep structures
and that the projection rules can impose the appropriateness condition
TOPIC on Mary with this difference in deep structure as input;
however, at this point we are admitting a difference in deep structure
for the pair in (208) that is semantically motivated.
Consider the possibility of a distinction in appropriateness conditions that would necessitate a differentiation in the deep structure for the main clauses of (208a) and (208b). This would come about if it were shown that the grammatical relation object carried consistent meaning that could be seen to exist in these sentences, some kind of focusing that occurs for the chairman in (208a) and for Mary in (208b). The main clause passives that correspond to (208a) and (208b) respectively do differ in appropriateness conditions:

(211) a. The chairman was expected by John to interview Mary.
    b. Mary was expected by John to be interviewed by the chairman.

John is the main clause TOPIC in (211a) and Mary in (211b). A paradigm like that in (209)-(210) can be produced to prove this. This is reason for having different deep structures for (211a) and (211b) and for these in turn to be different from their corresponding actives. Again, this could be said to be already a part of standard theory inasmuch as there would be a PASSIVE trigger in the main clause too. But our analysis is consistent with these facts too, since the deep structure subjects for all four sentences in (208) and (211) are different.

In the theory envisaged here, there is captured in deep structure the kind of meaning that can be mapped onto the constituents which figure in cooccurrence features for propositional heads, and the NP subject of passives is certainly such a constituent. Along with whatever other functional meaning is assigned to the subject of a passive verb, there is always the meaning TOPIC as well. A
redundancy rule can state that this aspect of meaning is present in the lexical entries for all passive verbs. This redundancy rule would amount to the kind of a generalization about an aspect of meaning consistently associated with a construction type that was discussed in I.4.

Of course, if the chairman and Mary are going to be deep structure subjects in (211a) and (211b) respectively, and we are going to capture the relatedness of actives and passives in a word structure condition, then these constituents have to be deep structure objects of the main verb in (208) and Rosenbaum's analysis in (186) has to be out. (The decision to generate passives lexically would rule out (186) as a representation for (208b) because of the passive in the complement structure.)

Thirdly, it should be said that even if the pair in (208) have truth value synonymy, they don't necessarily have the same truth conditional structure. We have conceded that active-passive pairs have the same truth conditional structure; therefore, (208a) does not differ from (208b) in truth conditions in respect to their complement structures. But these sentences have main clauses too. They tell not only about an event involving the chairman and Mary, but first and foremost about a cognitive experience for John in terms of this event. In (208a) John has an expectation that amounts to a predication onto the chairman, while in (208b) it is onto Mary. In section 2.6 of this chapter we gave an analysis in the lexical entry for expect in which the 'accusative' of the accusative plus infinitive construction is a separate term in the semantic structure. Two
interpretations are possible for each member of the pair (208) according to our analysis; that provided by (110c) is the most straightforward:

\[(212) = (110c)\]

\[
\text{expect, } +V \ [\text{NP } z \text{ NP } w \{\text{IP} \} \text{ [COGNITION } z \text{ [LOCATION } w \text{ v} \})]
\]

\[u = '\text{anticipated state or event}'\]

(208) a. \(\text{John expected the chairman to interview Mary.}\)

\[z \quad w \quad v\]

b. \(\text{John expected Mary to be interviewed by the chairman.}\)

\[z \quad w \quad v\]

In (208a) the chairman is shown as the THEME of the predicate LOCATION, while in (208b) it is Mary. Support for the view that the chairman and Mary play different roles in these examples can be found in the fact that (208a) lends itself to paraphrase by (213a) and not (213b), while it is the reverse for (208b): \(25\)

(213) a. John expected it of the chairman that he would interview Mary.

b. John expected it of Mary that she would be inter-viewed by the chairman.

Thus, availing ourselves of the paraphrase to make an informal description, in (208a) it is a truth condition that John expected something of the chairman, while in (208b) he expected something of Mary: the two have different truth conditions. Given that that which is expected of these two people (the infinitive phrase itself, or in the paraphrases in (213) the THAT S construction) is an active-passive pair related by the active-passive WSC, and given that such
pairs have the same truth conditions, it follows that John could not
at the same time logically expect what he expects of the chairman and
expect the negative of what he expects of Mary, i.e.,

(214)*John expected the chairman to interview Mary and (but)
he expected Mary not to be interviewed by the chairman.

We will assume for the moment that language has to be logical.
It does not follow, however, that just because John expected some-
thing of Mary, he must have expected something of the chairman. As is
well known, the variable scope of negation with verbs like expect
makes two interpretations possible for (215a) paraphrased by (215b)
on the one hand and (215c) on the other.36

(215) a. John didn't expect the chairman to interview Mary.
b. John expected the chairman not to interview Mary.
c. It is not the case that John expected the chairman
to interview Mary.

In the interpretation of (208a) paraphrased by (208b), it is John's
having the expectation that is negated, not the event of the interview.
With this interpretation of the negated clause intended, consider
the following:

(216) John didn't expect the chairman to interview Mary but
he expected Mary to be interviewed by the chairman
(because she is so highly motivated and knows her way
around). That is why he was not surprised when the
interview took place.

This might not be the kind of thing that someone would readily
say (cutting such a fine logical distinction), but it is not contra-
dictory.
We can summarize this part of the discussion somewhat more formally. Call $x$ and $y$ the active and passive counterparts in the infinitive phrase. We say that they have the same truth conditions; then, if one is true so is the other—they are equivalent in terms of truth ($x \equiv y$). It follows that the conjunctions of (217) are logically permissible, while those of (218) are not:

(217) a. $(J \text{ expect } x \text{ of } C) \& (J \text{ expect } y \text{ of } M)$
b. $\text{NOT} \quad (J \text{ expect } x \text{ of } C) \& \text{NOT} \quad (J \text{ expect } y \text{ of } M)$
c. $\text{NOT} \quad (J \text{ expect } x \text{ of } C) \& (J \text{ expect } y \text{ of } M)$
d. $(J \text{ expect } x \text{ of } C) \& \text{NOT} \quad (J \text{ expect } y \text{ of } M)$
e. $(J \text{ expect } \text{NOT} \ x \text{ of } C) \& (J \text{ expect } \text{NOT} \ y \text{ of } M)$

(218) a. $*(J \text{ expect NOT} \ x \text{ of } C) \& (J \text{ expect } y \text{ of } M)$
b. $*(J \text{ expect } x \text{ of } C) \& (J \text{ expect NOT} \ y \text{ of } M)$

In (217a) and (217e) the equivalence of $x$ and $y$ is not violated because they are either both affirmed or both negated. In (217b)-(217d), $x$ and $y$ are not touched by negation, and what is negated is simply whether John had a certain expectation. In (218) on the other hand the equivalence of $x$ and $y$ is violated because in each case one is negated while the other is not.

Now I wish to question whether the grammar ought to rule out (218) (and (214)). After all, in these structures, we are getting inside John's expectations, and are expecting them to be logically consistent with each other. If we want to account for how we can distinguish between expectations that are logically consistent that is one thing: certainly language is useful in this way. But if we are talking about what are possible sentences of English, that is
another. (219) seems perfectly natural and a part of the English language.

(219) What an illogical fellow John is: he expected the chairman not to interview Mary, but he expected Mary to be interviewed by the chairman.

It would seem that we would have to allow this sentence unless we are going to arbitrarily limit grammar to the study of language being used to talk about people who are perfectly sane and logical. 37

(220) John expected the chairman not to interview Mary but he expected Mary to be interviewed by the chairman.

Now if this is correct, then we have demonstrated not only that (208a) and (208b) have different truth conditional structure, which in itself would justify different deep structures for their main clauses (given the assumption that deep structure is where functional meaning is represented), but we have also demonstrated that the two do not have truth value synonymy. There is a world certainly where (220) could be true, indeed plenty of people like the John in the sentence who hold logically incompatible expectations. The author should place himself among the first on the list.

To sum up, we can say that we have shown:

(221) a. Two sentences can have truth value synonymy without having the same truth conditional structure (J is a bachelor and J has never married).
b. Two sentences can have the same truth conditional structure and still have different semantic structure (The farmer milked the cows and The cows were milked by the farmer which differ not only by a truth condition but by an appropriateness condition).
c. Two sentences can have the same semantic value but not the same underlying representation (John and Bill left and Bill and John left).

For the main clauses of (208a) and (208b) (= 184a and 184b) we have shown that:

(222) a. They do not have the same truth conditional structure.
    b. They do not have truth value synonymy.

It would appear then that not only is Rosenbaum's claim about a pair such as (184) false, so that his justification for deep structure (186) in this regard non-existent, but that the semantic facts mitigate against (186): the semantic facts show that there is internal semantic structure to the expectation itself in the accusative plus infinitive construction with expect and that the main clauses for (208a) and (208b) should be differentiated in deep structure. This then is support for our analysis, and leaves the way open for our lexical analysis of the passive which we justify on independent grounds:

(223) DEEP STRUCTURES FOR (208a) AND (208b):

```
  S
 / \      /
NP   VP
 /  \\
V   NP
|   IP
|   /
|  VP
|  |
John expected the chairman to interview Mary
```
(224) DEEP STRUCTURES FOR (187a) AND (187b):
2.10 Lexical Entries for Passive Verbs

Given (224) as deep structure for the main clause passives corresponding to main clause actives in (223), we are committed to (a) a lexical entry for the passive verb expec ted, and (b) a Word Structure Condition (WSC) showing that the passive verb is predictable from its corresponding active and vice versa. I will first consolidate the lexical entry for the active verb as far as it was presented in 2.6 (110 and 115 combined):

\[(225) \text{expect}, +V\]

\[\begin{array}{c}
\text{[NP \text{that} \text{S}]}\text{[Cognition} \ z \ u] \\
\text{[NP \text{PP}] [Cognition} \ z \ [\text{Change} \ x \ y \ z] \ u \\
\text{[NP \text{PP}]} [\text{Cognition} \ z \ [\text{Location} \ w \ v] \ u \\
\text{[NP \text{PP}]} [\text{Cognition} \ z \ [\text{Change} [\text{Location} \ y \ v] \ y \ z] \ u \\
\text{[NP \text{ NP}]} [\text{Cognition} \ z \ [\text{Location} \ z \ v] \ u \\
\end{array}\]

\(u = \text{'anticipated state or event'}\)
\(In \ (b) \ and \ (c') + 'z \ views \ x \ as \ his \ due'\)

The active-passive WSC (44 in section 2.5) predicts that there will be a passive construction for every transitive active construction with a noun phrase object, with that NP in subject position.
Each line of the lexical entry for the active expect allows for just such an NP. 38

(226)  \textbf{expected}, +V

\[ \text{[NP BE \_\_ (by NP)] [COGNITION z u \_\_] (a)} \]
\[ u \quad z \]
\[ \text{[NP BE \_\_ PP(by NP)][COGNITION z [CHANGE x y z]] (b)} \]
\[ x \quad y \quad z \quad u \]
\[ \text{[NP BE\_\_ (by NP)(IP)][COGNITION z [LOCATION w v]] (c)} \]
\[ w \quad z \quad v \quad u \]
\[ \text{[NP BE\_\_ (by NP)(IP)][COGNITION z [CHANGE[LOCATION y v] y z]](c') (d)} \]
\[ y \quad z \quad v \quad x \quad u \]
\[ \text{[NP BE \_\_ (by NP)] [COGNITION z [LOCATION z v]]} \]
\[ v \quad z \quad u \]

\( u = \text{'anticipated state or event'} \)

In (b) and (c) \( + z \text{ views x as his due} \)

Subject NP = TOPIC

(227) a. The defeat of Ali by Fraser was expected (by some).

\[ u \quad z \]

b. A raise has been expected from the company (by the employees) for a long time.

\[ x \quad y \quad z \]

c. i. John is expected (by everyone) to come to the party.

\[ w \quad z \quad v \]

ii. John is expected (by everyone) at the party.

\[ v \quad z \quad v \]

c'. i. John is expected (by everyone) to come to the party.

\[ y \quad z \quad v \]

ii. John is expected (by everyone) at the party.

\[ y \quad z \quad v \]

d. A good time was expected (by everyone).

\[ v \quad z \]

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In accordance with our observation that passive subjects are necessarily interpreted as TOPIC, we have added this information as an appropriateness condition: this is the one aspect of the semantic characterization of the passive that is different from that of the active. All the truth conditions of the active apply to the passive. The semantic templates are exactly the same. As is appropriate we see that the primary difference between the passive and the active is in the syntax, not the semantics.

I will revise the active-passive WSC to incorporate the information on TOPIC:

(228) ACTIVE-PASSIVE WORD STRUCTURE CONDITION:  
\[ V(+AF)/[NP_1 \underline{X} (Prep)NP_2 Y Z] \equiv V+EN/[NP_2 X BE(+AF)\underline{Y}(by \ NP_1)Z] \]
\[ NP_2 = TOPIC \]

Again, it is to be understood that the same functional meaning assigned to \( NP_1 \), \( NP_2 \) and other constituents in the active configuration are assigned to them in the passive. On the side of the passive, we add the information that \( NP_2 \) must be interpreted as TOPIC.

The parentheses around the passive agent constituent shows that constituent ellipsis is always possible there. In this way agentless passives can be related naturally to full passives and in turn to actives and it is possible to generate them directly without need for deletion rules, and the incorrect claims such deletion rules lead to concerning the extent to which the meaning of agentless passives is grammatically determined.
3. Conclusion: The Role of Transformations

I have argued consistently in this work against deletion rules as a means of accounting for ellipsis. Most attention has been placed on constituent ellipsis, e.g., agentless passives and subjectless infinitives, but the same position is advocated in respect to functional ellipsis. The argument has been essentially two-fold: on the one hand, it has been demonstrated that various productive 'sentence fragment' patterns are not fragments of sentences but constructions with form and meaning characteristics all their own such that they ought to be generated directly by the grammar - there is no way to generate them by simply deleting portions of sentences; on the other hand, it has been shown that the full range of elliptical meaning is indeterminate from the point of view of the grammar, so that all the possible meanings could not be accounted for in underlying representations unless we wanted to allow non-recoverable deletions, and unconstrained power for deletion rules.

It has been shown that in the case of constituent ellipsis, that the functional meaning which is grammatically determined has to be registered in lexical entries for propositional heads (REFEREES) anyway so that covert syntactic structure is not well-motivated. In standard theory lexical entries for propositional heads must refer to the functional meaning in terms of cooccurrence features, even while building a representation of that functional meaning into the syntax, and I have argued that this is doing the same thing twice. Since constituent ellipsis leads to grammatically indeterminate meaning, the syntactic representation of the ellipted constituents in
underlying form is not only unmotivated but leads to incorrect descriptive results. Thus, we come to a grammar where those constituents which are phonetically manifested are the ones generated, and a richer theory of interpretive rules is employed to determine utterance meaning on the basis of the phonetically realized form, and the lexical entries for the words that are phonetically realized.

There is a logical alternative to the approach advocated here which is worthy of note: employ deletion rules when the ellipted meaning is grammatically determined, but not when it is grammatically indeterminate. Subjectless infinitive phrases are a case in point. They are elliptical in and of themselves, but sometimes subjects are determined for them in the larger grammatical structure.

(229) a. It would be unwise to quit the job now.
    b. John promised Bill to quit the job now.

In (229b) the infinitive phrase to quit the job now has its subject determined for it in the main clause: the lexical entry of the REFEREE promise assigns its own subject as subject of the infinitive phrase. Standard theory uses a lexically governed rule of Equi-NP Deletion to generate such a sentence, where the deep structure contains the infinitive phrase as part of a full embedded sentence with a second occurrence of John as its subject. Under instructions from the lexical entry for promise a check is made to see that the main clause and subordinate clause subjects match and then the subordinate clause subject is deleted under identity. In (229a), on the other hand, there is no grammatically determined subject
for the infinitive; furthermore, the most obvious interpretations are not limited to indefinite pronouns. Under this alternative approach, the infinitive would be generated without a subject in (229a), but with one in (229b).

My objection to such an alternative approach would be based on a desire for consistency. Since in some cases infinitives have to be generated without subjects (as they appear on the surface), I adopt the view that in and of themselves they are always indeterminate, that when they are generated they demand a subject to be supplied from without, and sometimes the subject is supplied in the linguistic context, and sometimes not. Note that using a rule of Equi-NP Deletion in (229a) amounts to doing the same thing twice, because in any case the lexical entry for promise must contain the information that the subject of the main clause is also the subject of the infinitive phrase.

The demand for consistency is also involved in the conclusion I have drawn from the study of so-called 'sentence fragments'. If there are some productive sentence-fragment patterns that must be generated without deletion rules, and the interpretive component of the grammar is going to be equipped to account for them, then it follows that in principle sentence fragments should be generated without deletion rules, so that we have a grammar of all and only the well-formed utterances instead of all and only the well-formed sentences.

Our approach to ellipsis has lead to a richer theory of lexical entries, particularly where propositional heads are concerned.
The standard theory approach has been to regard lexical items as the building blocks of syntax, where their syntagmatic properties are reflected simply as coocurrence features. The higher tree structure itself represents the syntagmatic organization of meaning. In contrast, we have viewed syntax as essentially the syntagmatic realization of the lexicon, where most functional meaning is determined within lexical entries for REFEREES rather than by higher structure. At the same time we have taken the position that the word is the prime in syntax. For us, phonetically words determine the syntagmatic aspects of meaning and very often aspects of that meaning are left indeterminate by the grammar and a larger cognitive faculty that includes grammar takes over.

Our approach runs counter to a great deal of standard theory that we have not discussed here because of limitations of time and space. In a grammar that accounts for all and only the well-formed utterances, and essentially without deletion rules, it will be necessary for all syntagmatic aspects of utterance construction that fall under the notion 'coocurrence' to be accounted for interpretively. 'Order' is properly accounted for by context free PS rules, order of the sort that ought to be represented in deep structure, and transformations can account for permutations, deviations from the unmarked order displayed in the base. This will be the essential role of transformations.

Case marking will have to be generated freely and then checked for well-formedness by interpretive rules: otherwise, deletion rules will be necessary to account for the well-formedness of
utterances of the sort pointed out in Ross (1969):

(230) a. Somebody from Kankakee is going to be invited to the party by Ralph, but they don't know who (*whom).
b. Ralph is inviting somebody from Kankakee to the party, but they don't know whom (*who—in some dialects).

Stress and intonation will have to be generated freely and checked for well-formedness by interpretive rules, or again deletion rules will be necessary. Bresnan (1971) has shown that application of the nuclear stress rule before deletion in a standard theory underlying representation will account for the stress contrast pointed out by Newman (1946):

(231) a. George has PLANS to leave. (leave transitive)
b. George has plans to LEAVE. (leave intransitive)

The stressed leave is understood as the last major constituent of the clause, the unstressed one as having an understood object after it. This is an observation of profound consequences, and one which in the light of the observations and conclusions made here demonstrates that all markers of syntagmatic organization such as case marking and intonation contours must be generated directly, and their well-formedness in terms of cooccurrence must be accounted for by interpretive rules.

Relegating transformations to essentially one role, that of carrying out permutations, and taking away from them the power to delete constituents or to create words (consider the word the prime), has raised the question of how to account for the notion 'related sentence type'. This notion has consistently referred to sentences
that have different syntax but shared meaning. Since most of these related sentence types are nuclear, which is to say governed by REFEREES, such as main verbs and adjectives, another device besides transformations is available as a result of our interpretive theory of propositional meaning, and that is the notion of a word structure condition proposed in Shopen and Konaré (1970). Syntagmatic organization of meaning is governed within lexical entries in these cases, and predictable features governing constructions in lexical items can be treated as redundancies. We can predict that if a new transitive active change of state verb 'to royce' comes into the English language, that there will also be a passive 'to be royced' and a stative adjective, e.g., 'very royced'.

Emonds (1970a) has distinguished between structure preserving transformations, those the output of which could have been generated by PS rules anyway, and non-structure preserving transformations. He points out that the latter variety are extremely limited: those dealing with major nodes (NP, S, PP, AP and VP) that are non-structure preserving can apply almost nowhere except main clauses; furthermore, there is restriction even in main clauses as to how much the tree generated by PS rules can be altered, i.e., only one preposing rule allowed per main clause (That John was ill was obvious, but *When was that John was ill obvious).

It is interesting to note that every one of Emonds' structure preserving rules are lexically governed, while the non-structure preserving ones, in particular the Root Exceptions, are not. It would
appear that, quite apart from other considerations, word structure conditions can capture the relatedness of multiple patterns governed by the same lexical item with the same adequacy as transformations. In both cases there is shown to be a redundancy. All the patterns would be generated directly in the base (Emonds shows that the PS rules need to generate these structures anyway) and their predictability would be accounted for by WSCs. This approach has the advantage of allowing us to capture the subtle differences in meaning that usually exist in these 'related patterns', while still showing that there is a predictable core. Dative Shift is a case in point.

Varying proposals have been made to relate pairs such as the following transformationally:

(232) a. John gave the book to Bill.
     b. John gave Bill the book.

(233) a. John sent the check to Bill.
     b. John sent Bill the check.

There is certainly a core of meaning held in common. Note that deriving (b) from (a) in these pairs entails the deletion of a REFEREE and is thus suspect under our theory. It turns out that in important cases not all the meaning is the same in these two patterns. (Cf. Green 1971)

(234) a. John sent the box to California.
     b. *John sent California the box.
(235)  a. John taught French to Bill, but Bill didn't learn anything.
   b. *John taught Bill French, but Bill didn't learn anything.

(236)  a. *John gave some flak to Bill.
   b. John gave Bill some flak.

The consistent feature that characterizes these cases is that when the indirect object immediately follows the main verb, it has to be understood as being affected by the action, not just being a GOAL as it is when it follows to. The constituent meaning of give and other verbs extends the meaning of 'recipient' to the NP following to, so that in most cases there is no perceptible difference in the meaning of its two patterns; however, there are a number of idioms with give, such as the one in (236), that have a meaning of affecting someone with some vigor, and it is perhaps no accident that just the (b) pattern is used in these instances. It appears that a substantial core of meaning is the same in the (a) and (b) patterns, but that the (b) pattern carries an additional distinctive nuance. This fact can be captured in a transformational analysis only if transformations are allowed to change or add to functional meaning in diverse ways, a prospect not to be welcomed. If both the (a) and the (b) patterns are generated directly, and both are governed by features in the REFEREEES, the distinctive non-related aspects of meaning can be recorded properly in the lexicon, while the predictable related aspects of meaning can be recorded there too, but at least cost because of a WSC.

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A hypothesis worth considering is that all of Emonds' structure preserving transformations are not transformations at all, and that in place of these transformations we have a richer theory of the lexicon with WSCs where appropriate to account for redundancies in the syntagmatic realization of word meaning. That would leave his Root Exception Transformations, all essentially permutation rules that have only minor affect on the shape of words and are not lexically governed, and Minor Movement Rules. These last two kinds of transformations account for marked word order, the kind of word order that we do not want to be generated by PS rules. We have shown in some detail the case for taking this approach to the Passive and THERE Insertion, and Dative Shift is another instance.

The analysis we have made of ellipsis has led to a theory of generative grammar where transformations have a much reduced role and where the word has regained a position of primary importance.
CHAPTER I

1. (page 3) The distinction between linguistic and 'encyclopedic' knowledge is best viewed as a polar one, I believe. The two kinds of knowledge overlap, with extremes at both ends, e.g., the rules for English and Arabic word order are more linguistic than encyclopedic, while recipes for sukiyaki and apple pie are more encyclopedic than linguistics; however, there is a good deal of overlap. It is good to remember that the famous French encyclopedia of the 18th century edited by d'Alambert and Diderot was viewed as a kind of dictionary. The full title was Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers.

2. (page 6) I have the following personal communication from Roger Lass: "...I can tell Scruggs or Ralph Stanley normally from any other banjo players. On one level there's something that might be 'conceptual' in the sense of being specifiable in some terms -- i.e. 'R.S. plays too close to the bridge.' But in another sense, take e.g. Scruggs playing Earl's Breakdown and Walter Hensley's note-for-note imitation; here the two versions can be discriminated by a kind of auditory 'image' -- I know what Scrugg's 'touch' is like. But is this a 'concept'?..." My answer is yes, because the "auditory image" can be used to make discrete and consistent judgements. Lass illustrates beautifully that some concepts are verbalizable and others are not.

3. (page 13) The status of phonological processes, particularly those internal to the word, need not be affected by the conclusions drawn here. Syntagmatic phonological processes extending beyond the word, on the other hand, most certainly are, e.g., the Nuclear Stress Rule and Bresnan (1971). If the arguments here against the analysis of constituent ellipsis by deletion rules are correct, then the Nuclear Stress Rule must be interpretive, cf., esp. Chapter IV, Section 3.

4. (page 15) Note that there is agreement with predicate nominals in a sense that there is not with NPs of other sorts. Predicate nominals agree with the subject NP in full sentences. But if one is going to leave predicate nominals unmarked for number in the underlying representation of full sentences and then fill in that feature by an agreement rule, what about the so-called sentence-fragment pattern of What idiots!, etc.? Idiots is just as much a predicate nominal here as in What idiots they are!. Is one going to have two different ways of deriving predicate nominals: with specification for number upon lexical insertion in the derivation of sentence fragments, but without such a feature in the derivation of full sentences? This would certainly destroy the generality of the analysis. If instead predicate nominals are always inserted into syntactic structure with specification for number and then checked for their agreement with a subject NP (or...
object NP after e.g., consider, We consider them idiots) by an interpretive rule if there is a subject NP, we can generate them all in the same way. In all cases they have number as an inherent feature, and in all cases they are matched with their context: with their linguistic context if they are being predicated onto an NP within the linguistic context, if not the referential context.

5. (page 16) Note that they can receive other interpretations besides imperative, e.g. they can be understood as short answers to questions as in Q— Where did his hat go? A— Off with his head! (didn't it?) or Q— Where did she go? A— Into the dungeon with him! (didn't they?); with rising intonation they can be interpreted interrogatively; however, I will focus this discussion on the most obvious imperative interpretation, which is the one in this case where the incomplete sentence could not be said to be simply a truncated version of a complete sentence.

6. (page 18) Of course (7) constitutes an unlikely set of completions, and probably because if (2g) is to be interpreted as a command, then the pattern in (8) is the unmarked, the obvious interpretation. If a non-imperative interpretation is imposed, however, then the possible completions are all straightforward expansions of the incomplete sentence, e.g., (Where did you go? I went) into the dungeon with him, (Where did they put Lucy? They put her) into the dungeon with him. If completions were all straightforward expansions of this sort, and deletion rules were all that was necessary to derive the shorter utterances, the central argument of this chapter would vanish. But this is not the case.

7. (page 19) Off, down, up and out in (2a)-(2d) are intransitive prepositions in my analysis, as are all the words that Fraser calls "particles". I would posit Out his head off! as the underlying representation. A more general account can be given to possible orderings of NPs, Ps and manner adverbials in this framework. The idiosyncratic meanings that Fraser notes for many so-called particles present no problems in principle different from those posed by the idiosyncratic meanings of transitive prepositions occurring after verbs like look and blame. (cf., Fraser 1965) cf., the discussion of prepositions in Chapter II below, and Emonds (1970b) for arguments that particles are intransitive prepositions.

8. (page 20) Some speakers, I have discovered, require to between say and a reported command of this sort, but many others do not. As we will see below, there is quite productive use of say and reported commands where the commands contain no verbs (thus ruling out an infinitive construction), e.g., He said out of his house.

9. (page 26) The crucial examples (16b, c) vs. (17b, c). (16b) might occur where one is listing good talkers.
(i) a. What a good TALKER Henry is!—Yes, and what a good
talker your friend BILL is!
b. *What a good TALKER Henry is!—Yes, and what a good
talker your friend BILL!

For (16c)

(ii) a. What a good MUSICIAN Henry is!—Yes, and what a good
TALKER your friend BILL is!
b. *What a good MUSICIAN Henry is!—Yes, and what a good
TALKER your friend BILL!

10. (page 28) It seems to me that when one utters full epithets as
predications on things rather than people with this grammatical con-
struction then this is a kind of personification. If one’s care doesn’t
start, to say The damn nuisance! appears quite odd to me, but the
personifying expression The son of a bitch! appears altogether
appropriate and acceptable.

11. (page 32) Bird has pointed out a closely related incomplete
pattern with a different meaning, e.g., N.B. the possible contrast in
meaning between the following two:

(i) What about a cup of coffee?
(ii) How about a cup of coffee?

The second allows an 'invitation' interpretation, while for some
speakers the first does not; on the other hand, there is a reading in
which the two can be synonymous, as in the context:

(iii) The next problem is the best kind of food to use to get
the victim to swallow the poison.
(a) What about a cup of coffee?
(b) How about a cup of coffee?

In this context both the What about NP? pattern, and the How about
NP? pattern, seem to be topicalizing a cup of coffee for a question
which if verbalized would be on the order of Do you think it would work?

Notice that the 'invitation' interpretation is possible with defin-
ite expressions too in the pattern How about NP?. My hypothesis is
that any NP can be used, the constituent meaning of which is acceptable
in conjunction with the notion of an invitation, e.g.,

(iv) How about the zoo?
(v) How about the chess game we started yesterday?

12. (page 35) If the utterance is an 'S', then that highest (root)
S node is exempt from the requirement for a role to play in the
propositional structure. This is the essence of the independence of
sentences which will be a major subject of discussion in Chapter II.
By 'role' in propositional structure, I do not mean a necessarily
meaning-bearing one. In Chapter II a characterization of idioms is
given where several syntactic elements join as a single unit of
meaning; there are various ways in which constituents can fulfill purely formal roles in propositional structure. There is a lack of coherence when no role can be assigned to a constituent, e.g., the dog in *The hour elapsed the dog.

13. (page 35) The alternative would be the uninteresting one of allowing two different derivations for those structures, one involving the transformational creation (with second lexical look up for pronouns) of tags and reflexives when 'antecedents' are present in the sentence, and another involving direct generation when such antecedents are not present. This data lends further support to the interpretative approach to reflexivization in Jackendoff (1969 and forthcoming).

14. (page 36) The primitives used here for semantic representation are tentative, and of course in need of scrutiny with much more data in mind than just that which is relevant to the class of English imperatives under discussion here. What is desired is not just a system of primitives abstract enough to systematically describe the semantic structure of any utterance in one language, but of any utterance in any natural language, a system of semantic notation comparable to universal phonetics.

There are different kinds of direct causes. Fillmore (1968) makes the distinction between AGENT and INSTRUMENT. Gruber (1965) makes the distinction between INSTRUMENT (The rock broke the window), CAUSATIVE AGENT (John broke the window) and PERMISSIVE AGENT (John let Bill break the window), the first two of which could be called direct causes, but the last one not. A number of systems of representation come to mind for capturing such distinctions. I find the notion of semantic molecules and atomic propositions most appealing; in personal communication with George Lakoff I find that he has also been working with the idea of molecules and atoms.

The "I" and the "YOU" in representation (38), are I think what Gruber would call CAUSATIVE AGENTS. We could say that this notion is represented by two atomic propositions, one with the predicate RESPONSIBLE, which would in turn include one with the predicate CAUSE. INSTRUMENT in turn would be a single proposition with the predicate CAUSE, and PERMISSIVE AGENT would be a single proposition with the predicate RESPONSIBLE. Thus:

```
"CAUSATIVE AGENT"

RESPONSIBLE x PROP
   CAUSE x PROP

"PERMISSIVE AGENT"

RESPONSIBLE x PROP

"INSTRUMENT"

CAUSE x PROP
```

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In Chapters III and IV I will show further how complex semantic representation of this sort can be used in an interpretive theory of propositional structure. In lexical entries for verbs Ray Jackendoff (forthcoming) has adopted much the same approach.

Since the purpose of this paper is to argue for one form of grammatical description over another, I will keep the formalism as simple as possible and use simplified representations like the one in (38). I am well aware, however, that exactly in order to deal with theoretical questions, such as the ones I am addressing myself to in this paper, we need to know much more about universal semantics. I am trying to direct my research along two fronts at once: metatheory (of which this paper is an example of sorts); and description. In the former I make the most rudimentary assumptions about semantic primitives possible for the sake of a clear exposition, while in the latter I am trying to find principled means for deciding how finely differentiated the primitives should be from each other, and what in fact the primitives should be.

15. (page 40) Paul Schachter (personal communication) has pointed out that Not so quiet!, Not so noisy!, etc. exemplify a very productive command pattern. His observation can be extended to manner adverbs: while Not carefully!, Not slowly!, etc. are awkward, Not so carefully!, Not so slowly!, are perfectly natural as commands. Intensifiers split in the command context, Not too quiet! Not too slowly! can be interpreted as imperatives, but Not quiet enough!, Not slowly enough! are comments, not commands -- so also with the comparable utterances with very. I do not know why intensifiers should have this effect, but these facts illustrate further the richness of the grammar of so-called "sentence fragments".

16. (page 50) A matter worth pointing out at this juncture concerns certain locative APs which can occur in the same slot as locative PPs in a number of constructions. A verb like put is usually assumed to be subcategorized +[NP PP], never +[NP AP]. Yet, observe the following: it illustrates the relativity of the PP/AP distinction,

(i) a. Put that shrubbery as close as possible to the house!
   b. Put the screen farther from the projector!

When we talk about PPs in the pattern of "Into the dungeon with him!" we also must make note of locative APs:

(ii) a. As close as possible to the house with that shrubbery!
    b. Farther from the projector with the screen!

17. (page 59) In Chapter III a more thorough discussion of the representation of propositional meaning will be given in connection with lexical entries for verbs. There the use of a predicate CHANGE xyz will be generalized to characterize physical motion as well as change of state expressions (following Jackendoff -- forthcoming), 'x changes from y to z'. A less rudimentary analysis than that in (79)
could include the predicate CHANGE instead of DIRECTION. Whether or not they are asserted, all expressions of change of location assume a SOURCE and GOAL both.

18. (page 60) One of the most striking characteristics of this construction, when it has the interpretation assigned in (80) is that the moving object (the THEME of motion in Gruber's terms) is to the right of the PP that expresses the location in respect to which the motion takes its direction. In any of the possible completions, the left to right order would have to be the other way around: this is why derivation of this pattern by sentence reduction would have to include a metathesis rule. I am arguing here against such a derivation, my most important argument being the indeterminacy in the meaning of this pattern as opposed to those of its possible completions. I should point out, however, a fact brought to my attention by Arnold Zwicky (personal communication): for him, and other speakers I have subsequently discovered, the permissible interpretations of coreference could be used to argue in favor of a sentence reduction analysis. I had myself considered coreference data but I had found interpretations such as those pointed out by Zwicky unacceptable. But since I have since found others who can accept Zwicky's interpretations, this is no isolated matter. Zwicky gets data such as the following (for me all of the following are unacceptable -- underlining means coreferential):

   (i) a. Into his dungeon with the King!
      b. *Into the King's dungeon with him!

   (ii) a. On his roof with John!
      b. *On John's roof with him!

   One could argue that the rules of pronominalization would be simplified of the underlying order of constituents were the opposite from that on the surface. This fact in itself is not compelling enough evidence for me to give up my position. It is, after all, not the only case of backwards pronominalization that resists analysis by a metathesis rule, cf., "As for his hat, John lost it." vs. *"As for John's hat, he lost it."

19. (page 63) The characterization of the with phrase in this interpretation is actually a quite complex matter. Note first that it matters whether the preceding preposition is motional. Consider Into (In) the dungeon with George and the following:

   (i) a. They threw Henry into the dungeon with George.
      b. It was with George that threw Henry into the dungeon.
      c. It was into the dungeon that they threw Henry with George.
      d. *It was into the dungeon with George that they threw Henry.
(ii) a. They threw Henry in the dungeon with George.
   b. It was with George that they threw Henry in the dungeon.
   c. It was in the dungeon that they threw Henry with George.
   c. It was in the dungeon with George that they threw Henry.

(id) is out except when with George is understood as a restrictive modifier on dungeon; (iid), on the other hand, is quite natural and suggests that in the dungeon with George is itself a single constituent, a PP -- more on constituent structure in PPs in Chapter II. (ib) and (iib) allow a co-AGENT interpretation not possible in the command, as do (ic) and (iic). Into the dungeon with George! in either interpretation in (83) allows George to be just a co-THEME of motion. In the dungeon with George! allows this reading, and in addition the one in (iid) where George is part of the locative expression.

20. (page 65) Austen points out that expressions with over and under lend themselves to instrumental interpretations, while those with above and under never do, cf.,

   (i) a. We roasted corn over the fire.
   b. We roasted corn above the fire.

   (ii) a. We roasted corn under the broiler.
   b. We roasted corn below the broiler.

At least part of the explanation for the difference pointed out by Austen may lie in the fact that above and below are determinate in an aspect of meaning which over and under are not, and that is that the former always force the interpretation 'separation' or lack of contact; the latter do not have to be interpreted this way, e.g., in the following examples it is in no case possible to understand 'contact' when above and below are used. Over and under are less determinate in this regard: whether or not 'contact' can be understood seems to depend on other elements in the utterance, in particular the verb.

   (iii) a. They crawled over the bridge. (SEPARATION OR CONTACT)
   b. They crawled above the bridge. (SEPARATION)

   (iv) a. They crawled under the bridge. (SEPARATION OR CONTACT)
   b. They crawled below the bridge. (SEPARATION)

   (v) a. We put the blanket over his shoulders. (SEPARATION OR CONTACT)
   b. We put the blanket above his shoulders. (SEPARATION)

   (vi) a. He stayed under the covers. (SEPARATION OR CONTACT)
   b. He stayed below the covers. (SEPARATION)

   (vii) a. The plane flew over the bridge. (SEPARATION ONLY? COMPARE THE VARIANT The car flew over the bridge. SEPARATION OR CONTACT)
   b. The plane flew above the bridge. (SEPARATION ONLY)
(viii) a. The plane flew under the bridge. (IF SEPARATION ONLY, BECAUSE OF plane and flew. COMPARE The termites scurried under the bridge.)
b. The plane flew below the bridge. (SEPARATION ONLY; COMPARE The termites scurried below the bridge. STILL SEPARATION ONLY)

In addition, with over and under and a verb of motion the most obvious interpretation is often one where the line of motion extends beyond the proximity of the object denoted by the NP object of the preposition, while this is not so much the case with above and below. However, this aspect of meaning appears to depend on the particular verb of motion as well. The verb run appears to be intermediate between crawl and fly in this respect and so makes the difference between the prepositions most obvious, e.g.,

(ix) a. He ran over the bridge. (MOST NATURAL INTERPRETATION HAS MOTION EXTEND BEYOND PROXIMITY OF BRIDGE.)
b. He ran above the bridge. (MOST NATURAL INTERPRETATION HAS MOTION CONFINED TO PROXIMITY OF BRIDGE THOUGH: NOT WITH CONTACT)

(x) a. He ran under the bridge. (AS WITH over IN (vii))
b. He ran below the bridge. (AS WITH above IN (viii))

When the verb of motion is crawl, the most natural reading seems to confine the motion to the proximity of the bridge, etc., whatever the preposition, cf., (iii) and (iv). When the verb of motion is fly, the most natural reading seems to have the line of motion extend beyond the bridge, etc., whatever the preposition, cf., (vii) and (viii).

Charles Bird has pointed out to me that when the preposition over is used with be there is an alternation in interpretation that depends on relative size. If CONTACT is understood, the object of over has to be completely covered:

(xi) a. My hand is over the penny. (CONTACT OR SEPARATION — IF CONTACT, PENNY IS COVERED BY HAND)
b. My hand is over the table. (SEPARATION ONLY UNLESS ONE CAN CONCEIVE OF TABLE AS BEING COVERED — AS A VERY SMALL TOY TABLE, A PICTURE OF A TABLE, ETC.)

(xii) a. The blanket is over the table.
b. The blanket is over the city.

These observations demonstrate several important points: (a) that semantic interpretation of utterances is a complex interaction of constituent and relational meaning; (b) that much of the meaning is constituent meaning, and how much is relational, and to what extent the range of possible linguistic meaning is narrowed down by extra-linguistic knowledge are empirical questions, even though not easy to answer.
21. (page 78) NP the subjunctive property of were and the use of the 'unreal' past in both were and needed. This is further evidence that there is a need for a grammatical account of the notion 'utterance type'. One could make it a lexical property of wish and suppose to require such verb forms in its complements, presumably in a lexically governed transformation. The structural description for such a transformation would also have to include 'contrary-to-fact' and 'future less vivid' conditional constructions. However, and it would appear that the grammar was recognizing utterance types by including these constructions in the structure description. The generalization that all constructions underlying this transformation are instances of the 'preterite of imagination' would seem to be an important one for the characterization of competence.

This discussion assumes that such a future changing rule is reasonable for the constructions mentioned. Technically there is no doubt that it can be managed, but the value of such an analysis is doubtful. Note that it is the presence of were itself that does much to signal the 'unreal' (rather than past time) interpretation of the (a) examples that follow:

(i) a. If there were more rain now, the harvest would be better.
b. If there is more rain now, the harvest will be better.

(ii) a. Unless there were more rain, the harvest would not be good.
b. Unless there is more rain, the harvest will not be good.

One could argue that the underlying presence of would in the (a) examples triggers the feature changing rule that produces were on the surface; however, notice that the result clauses can be ellipted, and there is no would on the surface.

(iii) a. If only there were more rain now!
b. Unless there were more rain.

The only way to hold to this analysis is to have an underlying result clause that gets deleted. The weight of the arguments in this work is entirely against such deletion rules. In view of all of these considerations, I would argue that subjunctive and 'unreal' past forms be inserted in deep structure and be part of what contributes to the semantic interpretation. Interpretive rules would then be needed to see that utterances such as the following are ruled out:

(iv) a. *If there is more rain, the harvest would be better.
b. *If there were more rain, the harvest will be better.

(v) a. *Unless there were more rain, the harvest will not be good.
b. *Unless there is more rain, the harvest would not be good.
This interpretive rule ought to make generalizations in terms of the notion 'preterite of imagination' and of course be extended to cover the construction with wish and suppose as well.

22. (page 86) The special presupposition structure of information questions has consequences for cooccurrence within the clause. Note that (100a) can be interrogated in a Yes/No question, (100b), but unless it is an "echo" question (getting someone to repeat what he has just said), information question (100c) is unacceptable.

(i) a. A boy was eating an apple.
   b. Was a boy eating an apple?
   c. *What was a boy eating?

If the grammatical subject of (100c) is made definite, the sentence is completely acceptable:

(ii) What was the boy eating?

Information questions of this sort cannot have indefinite subjects. This appears to be closely related to the fact that all information is presupposed except the constituent interrogated, but it does not follow automatically by any means. A + SPECIFIC indefinite NP ('exists and is known to speaker') ought logically to be compatible with the meaning 'presupposed'. The interrogation intended in (100c) could concern a picnic with a group of boys and girls. The picnic could be common knowledge to speaker and hearer. An indefinite NP a boy would be what one would expect in a context in which the class 'boy' is not exhausted with a singular expression. It is for some reason necessary to narrow the focus down to a single boy and then ask the information question with a definite expression, e.g.,

(iii) a. There was a boy with red hair at the picnic. What was the boy eating?
   b. A boy was sitting at your end of the table. What was he eating?

23. (page 87) Note that the dichotomy FOCUS-PRESUPPOSITION in Chomsky (1969) conflicts in its conception with the kind of 'presupposition' we are talking about here. Chomsky associates FOCUS with sentential stress, and PRESUPPOSITION with absence of same. But in information questions, what is presupposed, at least in the sense intended here, can also receive sentential stress and therefore be in the FOCUS of the utterance, simultaneously focused and presupposed!

(i) a. What did John give to BILL?
   b. What did JOHN give to Bill?
   c. What did John GIVE to Bill?
24. (page 90) In the Zerma dialect of Sonrai, spoken in Niger, if a full answer is to be given to an information question it must be in this cleft-like construction. In Hausa, spoken in most of West Africa, the cleft-like construction is the preferred way to give a full answer to an information question, though there is no stringent requirement as in Zerma. In both these languages the information question is in the cleft-like construction, so that as Schachter has pointed out, the generalization holds "Ask a clefted question and you get a clefted answer." Both the Zerma and Hausa cleft-like constructions share with English the property of having everything presupposed except that which is "clefted."

CHAPTER II

1. (page 99) I owe a considerable debt to Dick Stanley for helping me to get started on the theory of propositional structure outlined here. I had sketched the possibility of considering functional meaning a property of lexical entries for verbs, rather than of tree structures in Shopen (1968). I would perhaps have forgotten the idea, had it not been for conversations with Stanley in early 1969 where he put it forth with greater clarity than I had and got me to see its relevance to a number of problems in grammatical theory. From the thinking I started then has come the idea of word structure conditions in Shopen and Konáré (1970) and the theory of ellipsis presented here. Matthews (1968) also formulated the idea of making functional meaning a property of lexical entries rather than trees, though I unfortunately didn't learn of his work until later. Jackendoff (forthcoming) has also adopted this position.

2. (page 103) Cf. Mark Long (1970) for an illuminating discussion of the problem of artistic representation posed by Bird. Long points out that depending upon whether it is viewed as an artistic representation or not, a human noun will select a different relative pronoun, e.g., The nude who..., The nude which... In response to the possible claim that The nude which... really comes from an underlying The painting of the nude which..., Long points out such an analysis runs up against unsolvable problems of cooccurrence, e.g.,

(i) The woman by Da Vinci seems to be both smiling and frowning.
(ii) *The painting of a woman by Da Vinci seems to be both smiling and frowning.

Long concludes that there should be only one lexical entry for nude, cornfield, etc. and the difference in interpretation for the head noun in e.g., The nude who is in the other room, vs. The nude which is in the other room is the result of an externally imposed interpretive feature [+REPRESENTATION].
3. (page 103) It should be noted that there are concrete nouns that can take by phrase complements with AGENT interpretation, even when being thought of as representing "the real thing", e.g., the socks by my grandmother. Bird's observation is that all concrete nouns interpreted as artifacts allow such complements while only some would allow them otherwise. The socks by my grandmother is capable of taking two interpretations: ...keep my feet warm, ...are the worst India ink drawings I have ever seen. The term "artifact" may be unfortunate if it is construed as including manufactured products. It is intended as the opposite of "the real thing", "object in its natural state", etc. Perhaps "unnatural-natural" would be better.

4. (page 122) Some speakers find (25b) just as unacceptable as (25c); however, the point remains that the possible interpretation of truthfully depends on surface structure word order. It is noteworthy that Jackendoff (forthcoming) has adopted the same position we have taken as regards functional meaning. That meaning is determined by interpretive rules in deep structure that read lexicalities for propositional heads.

5. (page 127) Bird and I have noticed that there is a distinct asymmetry in the meaning imposed by the possessive construction, e.g., the range of interpretations possible for Agnew's tomato is quite broad, but it is distinct from the possible interpretations for The tomato's Agnew. For the latter, the interpretation seems limited to a formula with variables: x is to the tomato as Agnew is to y, e.g., Dr. Hugh Downtree is the tomato's Agnew. The "x" applies to "Dr. Downtree". The "y" is presupposed.

6. (page 128) In the case where the boat is PLAYER for the verb decide in (34), John decided on the boat, the syntactic cooccurrence feature that is relevant is:

\[ \text{(i) } [\text{NP }_____ \text{ on NP}] \]

This incorporates on as a syntactic marker, and makes decide on into an idiomatic phrase, two words functioning as a single unit of meaning, cf., the definition of idiom following. It is the other interpretation of (34) that is of interest here, however, where decide is being used intransitively. For midwestern American dialects, this is the only interpretation when the PP is preposed:

\[ \text{(ii) } \text{On the boat John decided.} \]

Here the syntactic cooccurrence feature for decide that is relevant is:

\[ \text{(iii) } [\text{NP }_____] \]

In other words, there are no PLAYERS for decide to its right in this interpretation. Using collapsing notation, (i) and (iii) can be represented jointly as:
(iv) [NP ___ (on NP)]

(iv) is the cooccurrence feature that the lexical entry for decide will carry. By comparison consider:

(v) John relied on the boat.

This does not carry the ambiguity that (34) does. This is because rely cannot be used intransitively the way decide can:

(vi) a. John decided.
b. *John relied.

Rely will carry (i) as its syntactic cooccurrence feature, [NP ___ on NP]. On the boat has to be a PLAYER for the REFEREE rely in (v).

Compare then the lexical entries for rely and decide: rely has just one syntactic cooccurrence feature, [NP ___ on NP]; decide has (iv) as its syntactic cooccurrence feature, collapsing notation (i) and [NP ___ ] (iii). Our position is that decide allows two different interpretations of its environment, and that the information in its lexical entry suffices to represent this. It is in fact doing the same thing twice to require two different kinds of trees to represent the two interpretations. We can have the same tree for the two interpretations of John decided on the boat and say that the lexical entry for decide allows two different interpretations, one where on the boat serves as its PLAYER, and another where it does not. The ambiguity of John decided on the boat resides in option for interpretation provided in the lexical entry for the verb and not in the syntax.

The sentence adverb interpretation in (34) corresponds to (iii) where on the boat is not a PLAYER for the REFEREE decide. There is no REFEREE governing it in this interpretation, and yet we understand just as clearly the functional meaning as we would if there were a REFEREE. It is a property of the sentence as a whole to allow sentence adverbs of this kind, including place and time expressions. The location on the boat is predicated onto all of the proposition governed by the main verb of the sentence, John decided. We have in effect a larger proposition in which the proposition John decided is a subpart. The meaning in this case can be paraphrased as follows:

(vii) John's decision was on the boat.

I propose that for either interpretation of (34) we have the following syntactic representation in deep structure:
(viii) The two interpretations are possible because of the parentheses in the syntactic cooccurrence feature [NP ____ on NP]. The syntactic representation for (v) would have the same configuration:

(ix) Since [NP ____ on NP] is the syntactic cooccurrence feature for rely, this time the syntactic structure can receive only one interpretation.

If (viii) is going to be the deep structure for either interpretation of (34), it is incumbent on me to provide a means of constraining the grammar appropriately to account for the Midwestern dialect where (ii) allows only the sentence adverb interpretation. Two means are conceivable. One is to put an interpretive condition on the transformational rule. (We will assume Chomsky's adjunction.) (Let A > B mean "A immediately dominates B")

(x) PREPOSITIONAL PHRASE FRONTING

\[
\begin{align*}
\text{S} & \quad \text{[ - X - PP - X } \\
1 & \quad 2 \quad 3 \quad 4 \\
\longrightarrow & \quad S > 3 + 1 - 2 - \emptyset - 4
\end{align*}
\]

Conditions:

(a) 2 does not contain [S

(b) 3 is not a PLAYER for a REFEREE in 2

Condition (b) is an interpretive condition in the sense that it requires reference to the lexical entry for the REFEREE governing the construction, e.g., the verbs decide or rely to see if the PP is being interpreted as its PLAYER. Since decide allows an option, the interpretative component has had to make a choice for purposes of determin-
ing the meaning of the sentence. If it has chosen to read [NP ___] as the syntactic cooccurrence feature for decide so as not to include on the boat as a PLAYER for the propositional meaning of that verb, then on the boat could be fronted by the transformation; on the other hand, if the syntactic cooccurrence feature for decide had been read as [NP ___ on NP] then condition (b) blocks the transformation from applying.

The output for (x) when applied to (viii) is as follows:

(xi)

```
  S
 /\  
|   |  
PP  S
   /\  
  |   |  
PP NP  NP  VP
    /\  /\  /
   |  |  |  V
  On the boat John decided
```

Condition (b) would prevent the application of transformation (x) to tree (ix) with rely because its lexical entry necessarily treats on the boat as a PLAYER. Thus the ill-formed (for Midwesterners) sentence is blocked:

(xii) *On the boat John relied.

Such a convention is unprecedented in transformational grammar, but it is consistent with the kind of theory of propositional structure being proposed in this chapter, which is being shown to be necessary for a generative account of ellipsis. A potential objection is that this is a half-way commitment to generative semantics; however, it should be noted that no reference has been made to the semantic templates that are paired with the syntactic cooccurrence features, only to the syntactic cooccurrence features themselves, the indexes for semantic interpretation.

Should it be shown that interpretive constraints on transformations are not justified, an alternative is possible, one of intricate nature. Remove condition (b) from (x). Let the rule operate freely on (ix) as well as on (viii). Then have a surface structure interpretation of the outputs, one which assigns special semantic status to preposed PPs. In case the PP has been preposed, the surface structure reading will mark the PP as being outside the scope of the main verb, i.e., it will say that it cannot be interpreted as a PLAYER for the main verb. Then the deep structure and surface structure readings could be matched, and in those cases where the preposed PP has been counted as a PLAYER for the main verb in deep structure, there is a clash and the utterance is judged semantically anomalous.

This alternative can only be outlined crudely here, since I understand little of what would be involved in the surface structure.
interpretation. Its only virtue would seem to be that it would allow transformation (x) to operate freely without an interpretive condition. I reject this approach and propose the formulation in which condition (b) of (x) is used.

The inclusion of sentential adverbs in the VP deviates from standard transformational theory. As is well known, the practice has been to provide a different grammatical relation for sentential adverbs, attaching the constituents not to the VP but to a higher node, either a Pred Phrase node, or S itself. The SD of a PP preposing rule then can specify only these higher PP constituents in the Midwestern dialect. But the use of a higher node for these PPs is questionable from the point semantic, since as we have shown, unique grammatical relations are not available for each semantic function anyway. Its only motivation would be to be able to constrain the PP preposing rule with a simple syntactic condition: our proposal is at least as adequate in this regard. It replaces a syntactic condition with an interpretive one.

If the standard theory principle of distinct grammatical relations for the PP on the boat in the two interpretations of (34), to be consistent (especially following Chomsky's x-bar convention in his 1968 paper), would have to be extended to NPs too, since the same ambiguity exists there, e.g.,

(xiii) a. John's decision on the boat was unfortunate.
     b. John's concentration on the boat was much better.
     c. John's anger at Christmas annoyed everyone.

While enriching the Phrase Structure rules. is always possible, it does not seem motivated to use. I resist complicating the constituent structure to account for ambiguities, since grammatical relations cannot be found for a unique representation of functional meaning anyway. In addition, I would like to be able to make relatively simple generalizations about phrase structure. If I include a node Pred Phrase, it is not a phrase like others because it has no head. If I include PPs immediately under S then I complicate my distributional statement of PPs. I would like to be able to say that PPs are found only at the end of phrases in deep structure. In Chapter IV we will see that I have motivation for generating infinitive phrases directly in deep structure with a complementizer TO and a VP, not with an S: but since infinitives can include sentential adverbs (I want to leave at midnight) it would be preferable for sentential adverbs to be included under VPs.

7. (page 129) This construction can be added to the list of those that we will discuss below to show that a rule of indefinite NP deletion is descriptively inadequate. One thing that (36) does not mean is:

(i) It was easy to please George before some went to college.
(ii) It was easy for someone to please George before he went to college.
8. (page 136) There are differences in the semantics of the appositive NP construction and that of be and various other verbs, as the following examples demonstrate:

(i) a. John Smith, a doctor, entered the room.
   b. A doctor, John Smith, entered the room.

(ii) a. John Smith is a doctor.
     b. *A doctor is John Smith.

(iii) a. We consider John Smith a competent doctor.
      b. *We consider a competent doctor John Smith.

A full account of the appositive NP construction ought to clarify the differences and similarities of structures such as those exemplified in the examples (ivb) - (ive):

(iv) a. The Pink Panther, a well-known jewel thief with his hat in his hand eager for new accomplishments having unlocked the door weakened by a hay fever attack

The similarities are obvious enough: an NP, a PP, an AP, an active participial phrase and a passive participial phrase can all be set off by commas and modify the subject NP above. The differences, on the other hand, I find to be fraught with complexity, and I have no neat analysis to offer here. I will outline two differences here.

First, all the constituents mentioned except the NP can appear freely in clause initial position set off by commas, where they are always understood to modify the grammatical subject, e.g., with sustained intonation before and after commas:

(v) a. *A well-known jewel thief; the Pink Panther spoke to the D.A.
   b. With his hat in his hand
   c. Eager for new accomplishments
   d. Having unlocked the door
   e. Weakened by a hay fever attack

Second, none except the NP can freely modify NPs other than the grammatical subject.
(vi) The D.A. indicted the Pink Panther,
a. a well-known jewel thief
b. *with his hat in his hand
c. *eager for new accomplishments
d. *having unlocked the door
e. ??*weakened by a hay fever attack

for the theft of the crown jewels.

The appositional NP differs from the adjunctive NP by intonation. NB the difference in interpretation:

(vii) a. The Pink Panther came back from visiting Henry, a well-known jewel thief.
b. The Pink Panther came back from visiting Henry a well-known jewel thief.

The PP, AP and participial constructions exemplified above can occur at clause end without the comma, like the adjunctive NP, and like the adjunctive NP they are modifiers of the grammatical subject (NB sustained intonation throughout):

(viii) The Pink Panther came back from visiting Henry
a. a well-known jewel thief
b. with his hat in his hand
c. eager for new accomplishments
d. having stolen the crown jewels
e. weakened by a hay fever attack

In (viii) and perhaps (viii) inserting a comma changes the semantic interpretation. In (viiib) - (viiid) a comma does not change the interpretation. There are many other details in need of analysis in these constructions. The APs employed must be in some sense 'heavy', by virtue of having complementation or conjunction, e.g., John, tired and hungry...

9. (Page 136) Condition (i) has self-evident justification. The need for condition (ii) is illustrated by examples (52b) and (52c). Condition (iii) is no doubt present for the interpretation of a number of structures that ought to be related, grammatical subject modifying adjuncts.

Condition (iv) says in effect that the second NP can be interpreted as a predication on the subject provided that it does not receive functional interpretation in the part of the clause governed by a lexical head, e.g., (52a) could not apply to the following sentences:
(i) a. The Pink Panther spoke to a well-known jewel thief.
b. The Pink Panther came back from visiting a well-known jewel thief.

The second NP of (52a) has to be 'left over', a PLAYER without a REFEREE. Of course such a PLAYER without a REFEREE will produce an ill-formed, incoherent reading if it cannot be assigned a semantic function of some kind, e.g.,

(ii) a. *It is hot today a well-known jewel thief.
b. *There was a man standing next to the Pink Panther a well-known jewel thief.

Condition (v) is necessitated by examples such as the following:

(iii) a. The Pink Panther came back from Europe a well-known jewel thief.
b. *The Pink Panther came a well-known jewel thief back from Europe.

It is for me an open question what other constraints should be placed on this rule. There are certainly many contexts where the adjunctive NP construction is unacceptable.

(iv) a. *The Pink Panther remembered the address a well-known jewel thief.
b. *The Pink Panther is fatter than Henry was last year a well-known jewel thief.

10. (page 140) See Chapter III, Secton 1 for a discussion of explain and the 'musical chair phenomenon'. (58a) is of particular interest, because all the constituents there are a part of the semantic structure for explain; however, the lexical entry for explain doesn't allow all of its arguments to be developed syntactically in the same clause.

11. (page 141) *Look at!, with the vowel quality [ə] preserved for the preposition is unacceptable; however in colloquial speech we have the quite acceptable Look it!, Look it here!, Look—y here! These may all be reduced forms of Look at.

12. (page 150) The above analysis appears to me to be correct in principle, but it is by no means complete. A difference between stay and arrive for which I have no explanation at present is that stay allows intransitive prepositions, while arrive does not:

(i) a. We stayed in the igloo.
b. We stayed in.

(ii) a. We arrived in the valley.
b. *We arrived in.
Also, the less than total acceptability of some of the following begs for an explanation: arrive under the bridge, ?arrive below the bridge, arrive over the city, ?arrive above the city, arrive in front of the house, ?arrive behind the house, ?arrive next to the house.

13. (page 164) A problem to be explained whether or not the feature $+ [\_ \_ \_ \text{NP} \ \text{PP}]$ is adopted is presented by the data arising from the formulation of relatives, cf. Ross (1967) on Pied-piping:

(i) a. ?*The valley down the hill into which I went was lovely.
b. ?*The valley into which I went down was lovely.
c. ?*The valley into which I went down the hill was lovely.d. The valley which I went down the hill into was lovely.
e. ?*The hill down which I went into the valley was lovely.
f. The hill which I went down into the valley was lovely.

14. (page 167) Consideration of the details of lexical entries such as these leads to the conclusion that semantic labels such as GOAL, though pedagogically useful notational devices, do not designate any discrete semantic categories. On the side of form, the PP category may be relative too: in place of the PP with verbs of motion there are also a few APs that can occur with locative meaning, e.g., with verbs like throw, put, insert, etc. ...as far from NP as..., as far as..., ...deeper..., ...nearer... With locative meaning, a full range of AP construction seems possible. The internal structure of APs is distinct from PPs but is their distribution distinct?

15. (page 168) Paul Schachter (personal communication) has supplied me with similar examples: put a curse on..., put a jinx on..., put a hex on...

16. (page 173) One cannot say *On through the month of April they kept the man, but that is because "Directional Adverb Preposing" is continued to operate when the verb has no other object than the fronted constituent itself. Thus On through the month of April they stayed is well-formed. This in turn is evidence that On through the month of April is itself a single constituent. Cf. Emonds (1970a) constraints on preposing rules already discussed in Section 4.1.

17. (page 175) NB that it is in two days and not on two days that displays something unique to temporal as opposed to spatial expressions. The paper is on two tables appears to require an interpretation of there being two copies of the paper, but then so does The paper is in two drawers. The most obvious and perhaps the only interpretation possible for in two days, however, is of a single continuum of time, so that we understand a single event in He wrote it in two days.

18. (page 176) I have concentrated here on regular uses of in and on in spatial and temporal expressions. I am grateful to Bob Ladner for bringing me to the realization that there is another productive axis of interpretation besides those of space and time with these preposi-
tions. Ladner (personal communication) has pointed out that the prepositions *in, into, onto* and *on* combine very productively with noun phrases to produce meanings of a very special sort, e.g.,

(1) a. I am in linguistics. (It's my field.)
   b. I am into linguistics. (getting interested)
   c. I am onto linguistics. (finding out about)
   d. I am on linguistics. (a kind of drug)

I would call this kind of interpretation psychological. It appears to be possible with any nouns denoting psychological entities, or substances the effect of which is psychological.

CHAPTER III

1. (page 188) I take the liberty of providing my own definition for at least these uses of the term ellipsis in view of the fact that there does not seem to be any generally agreed upon definition among traditional grammarians: compare, for example, the various ways in which the term is used by Jespersen (1926); Poutsma (1914–1929) and Fowler (1926). Cf. also Gunter (1963); in Waterhouse (1963) the term ellipsis is not used, but the notions developed there referred to as 'completeness' and 'independence' are quite complementary to ideas presented here.

2. (page 205) From here on we will follow the practice of including subjects in syntactic cooccurrence features for verbs. In Chapter II, Section 2 we presented a lexical entry for *steal* using the conventional strict-subcategorization feature where only constituents within the VP are mentioned. It will be noted that the lexical entry for *steal* in Chapter II (6) accounts for the semantic functions within the VP in (d), the semantic template for the VP, while the semantic function for the subjection is accounted for in (e) the constituent meaning of the verb *steal*. For reasons of expo-
sitional clarity, I have found it easier to include the subject NP in the syntactic cooccurrence feature and so introduce this practice here. For technical accuracy, there ought to be an account of possible auxiliary verbs between the subject NP and the main verb, so that instead of e.g., [NP ____ (PP)*] we have instead [NP (AUX) ____ (PP)*].

3. (page 206) Note that there are in my dialect a number of verbs of motion that allow the SOURCE to be ellipted when the GOAL is present, as in (26b), but not the other way around, e.g.,
(i) *The log slid from the bushes.
(ii) *John went from the kitchen.
(iii) *The ball rolled from the 10 yard line.
(iv) *The raft floated from the shore.
(v) *The bird flew from the branch.

I have found divergent judgements on the acceptability of these examples among various speakers.

4. (page 214) It is of some independent interest that how seems to be the only acceptable way to interrogate the explanation itself, whatever else is manifested syntactically. Both of the following questions are unambiguous in my dialect:

(i) What did John explain? (the problem is interrogated)
(ii) How did John explain? (the explanation is interrogated)

Further, it should be noted that explain does not allow any of the usual anaphoric devices to refer to the argument 'explanation'. Either pronominal anaphora or ellipsis anaphora are possible when 'the problem' is to be referred to:

(iii) Q. Did John explain the flat tire?
A. Yes, he explained it.
   Yes, he explained.

But when 'the explanation' is to be referred to, only circumlocutions seem possible:

(iv) Q. Did John explain that there had been nails on the driveway?
A. *Yes, he explained it.
   *Yes, he explained so.
   *Yes, he explained.
   Yes, that is the explanation he gave.
   Yes, that is what he said.

(v) a. Lonnie explained Lassie's absence and Nick explained it too. (the problem)
b. Lonnie explained that Lassie had been too tired to continue filming and Nick
   *explained it too.
   *explained so too.
   *explained too.
   gave that explanation too.
   said the same thing. (the explanation)

By way of a preliminary conclusion, I would say that there is some evidence here that 'explanation' has somewhat peripheral status as an argument capable of syntactic realization in the lexical entry for explain.
5. (page 216) Note that when an argument that is syntactically governed by the main REFEREE of the clause is topicalized with As for, there must be a pronoun, e.g., As for the book, John gave it to Bill. In (49) flat tire is not syntactically governed by explain, so there is no pronoun. Cf. Kuno (1970) for examples of Japanese topicalization structures where the topicalized NP (marked by wa) is not possibly an argument for the main verb, e.g., the translation of 'As for fish, I like Red Snapper'.

6. (page 223) It is worthy of note that questions, orders, invitations, criticisms, offers, and a large number of other communicative acts, even the one presupposed in John answered the door, which has been non-linguistic, form a natural class semantically because they all can serve as arguments for a verb like answer. Ordinary English seems to provide no better cover term than the phrase 'communicative act'.

7. (page 225) It would take us too far away from the subject of this study to go into the matter in detail here, but it should be pointed out here that examples of topicalization constructions of the likes of those presented in the last two subsections raise important questions for the theory of grammar.

(49) As for the flat tire, John explained to Bill that there had been nails on the driveway.

(50) As for the flat tire, John went to Indianapolis.

(66a) To the invitation, John answered that he would be glad to come.

These examples could not be derived by any preposing rules unless their sources were ill-formed to begin with. Cf., (52) and (66d). A number of algorithms are conceivable that are descriptively adequate, but it would appear that the most natural derivation of constructions such as (50) and (66a) would not include any preposing rules at all, rather a schema of phrase structure rules that allows the generation of trees of the form:

(i)

```
    S
   /\  \\
  PP   S
     /\   /\  \\
    NF   VP
```

8. (page 226) through appears to introduce a portmanteau PLAYER, one that represents both the SOURCE and the GOAL. The expressions in (74) can be said to be manifestations of the same predicate CHANGE. This would appear the appropriate analysis at least for the interpretation of through that means 'from one end to the other'.
9. (page 233) The formalism I have outlined here for lexical entries as part of the discussion of constituent ellipsis is to be taken as a first approximation. I am aware of various interesting grammatical phenomena that suggest that a still more abstract formalism is necessary. One problem that bears on the problem of ellipsis concerns an apparent hierarchy in propositional meaning between space and time. If I say:

(i) a. John walked from the courthouse to the library.
   b. John ran 100 yards.

I can say that the SOURCE and GOAL of physical motion have been overtly expressed. In (i) we have separate PLAYERS for each, and in (ii) we have a single portmanteau PLAYER for the SOURCE and the GOAL (the SOURCE is at the beginning of the distance of 100 yards and the GOAL at its end). Note that the SOURCE and GOAL can be discretely realized within the NP with 100 yards at its head — John walked the 100 yards from the courthouse to the library.

(ii) a. John walked from noon to 1 p.m.
   b. John walked for an hour.

Here the action endures for a length of time rather than length in space. (iv) is analogous to (ii) in that a single PLAYER expresses both SOURCE and GOAL: the SOURCE is at the beginning of the hour and the GOAL at its end. Now the striking fact to be noted here is that when physical motion is bounded in terms of time as in (iii) and (iv), it cannot be bounded in terms of space in the way that it is in (i) and (ii):

(iii) a. John walked from the courthouse to the library from noon to 1 p.m.
   b. John walked from the courthouse to the library for one hour.

In these examples, the action endures in an extent marked in time, and not in space. We know that John must have passed over the space indicated at least once, but beyond that we do not know how much space he covered. He is understood as covering that space over and over again, and when he stops walking, we do not know where he is in spatial terms, only in terms of time, e.g., at 1 p.m. he might be midway between the courthouse and library, or anywhere else in between. Thus, the full meaning of the arguments SOURCE and GOAL are not available to the expression of physical motion when temporal constructions of the sort illustrated here are included.

Examples such as the following lend themselves to iterative interpretations with the greatest difficulty in my dialect:

(iv) a. John drove from New York to Los Angeles.
   b. John ran a mile.
As a result, when a temporal SOURCE and GOAL are added, the utterance is unacceptable:

(v) a. *John drove from New York to Los Angeles from Friday to Monday.
   b. *John drove from New York to Los Angeles for three days.
   c. *John ran a mile from 12:00 to 12:15.
   d. *John ran a mile for 15 minutes.

Temporal expressions that carry the meaning of something happening within the time expressed are acceptable with such expressions (cf. Vendler, 1967, who started me thinking about this):

(vi) a. John drove from New York to Los Angeles between Friday and Monday.
    b. John drove from New York to Los Angeles in three days.
    c. John ran a mile between 12:00 and 12:15.
    d. John ran a mile in 15 minutes.

The time expressions with between are indeterminate: one doesn't know whether the exact amount of time it has taken to traverse a distance has been indicated or not. Furthermore, with both between and in, we do not know whether the action has been continuous during the time indicated, whereas with the SOURCE and GOAL expressions such as in (iia) and (iib) above, the physical motion or the process of physical motion must be understood as in some sense continuous. Somewhere bound up with all this is the fact that when no spatial limitations are expressed for a verb of physical motion, and the constituent meaning of the verb of motion does not itself allow the interpretation of completion, then the "locational" temporal expressions just exemplified cannot be used. Compare with the examples just cited:

(vii) a. *John drove between Friday and Monday.
    b. *John drove in three days.
    c. *John ran between 12:00 and 12:15.
    d. *John ran in 15 minutes.

A motional verb like fall allows the interpretation of completion in time and space, so that the following seems acceptable:

(viii) John fell between noon and 1 p.m.

The temporal expression with in presupposes an accomplishment; when a motional act like flying is understood as an accomplishment, as with a newly born bird, then we can get a well-formed utterance:

(ix) The young eagle flew in three days.

If John's falling is viewed by the speaker as an accomplishment (e.g., he poisoned him), then the following is acceptable:

(x) John fell in one hour.
All these complexities lie outside the scope of the analysis I have rendered here, but they are relevant to the theory of ellipsis: it is only when one correctly characterizes what the semantic structure is that is grammatically determined for an utterance that it is possible to then determine how much of that semantic structure is represented syntactically and how much not. I have defined the notion constituent ellipsis in terms of another notion 'argument'. Observations such as the foregoing show that there seems to be a number of aspects of meaning having to do with parameters in time and space that interrelate and restrict what can be understood as an argument.

It is not enough then to simply look at the lexical entry for say the main verb and check to see which of its surface arguments are manifested syntactically. Semantic structures of the sentence as a whole limit the meaning possible for the part of sentence governed by the main verb. Presumably a verb of physical motion like walk in (ia) includes in its semantic structure arguments concerning space, but not time. The phrase from noon to 1 p.m. in (iia) appears to be a temporal adjunct to the part of the sentence governed by the verb walk; yet, it changes the interpretation of the PLAYERS for walk, from the courthouse to the library.

(ia) John walked from the courthouse to the library.

(iia) John walked from the courthouse to the library from noon to 1 p.m.

The interpretation of spatial motion changes in the presence of the time adjunct.

10. (page 240) In applying the term definite ellipsis to Tommy refused, I am not unaware of sentences such as the following:

(i) I don't know what the sargeant ordered Rolland to do, but (whatever it was) he refused.

There are parallel cases involving definite (personal) pronouns:

(ii) I don't know what the hostess offered Michael, but (whatever it was) he refused it.

The grammatical devices of definite ellipsis and personal pronominalization are none the less definite in the light of these examples. In their most obvious interpretations, which are anaphoric, the speaker sets up an antecedent in the first clause and then uses ellipsis or personal pronoun as a definite anaphoric device in the second clause. In (i) the antecedent is what the sargeant ordered Rolland to do and in (ii) what the hostess offered Michael. The fact that these antecedents can be introduced with the expression I don't know... shows that the semantic feature 'definite' doesn't depend on whether the real world identity of a referent is known to speaker and
hearer, but rather whether their attention is focused on the concept of a unique referent ("whatever it is"). Bull (1965)'s notion 'common focus' extends itself to cover cases like this. What is crucial is the conceptual view of the situation being talked about rather than the real world, physical properties of that situation. This is why imagined entities like unicorns can be referred to anaphorically with definite expressions, e.g., "I dreamt of a unicorn and it was dancing on one foot". This is an important point, even if obvious, and so worth repeating here. The phenomenon I am calling definite ellipsis fits completely into this notion of 'definite'.

11. (page 245) Confusion arises when one attempts to account for native speaker judgements on speech acts involving sentences such as I believe that John left on solely grammatical grounds. The hypothesis would be that:

(i) believing implies not knowing (b ⊹ k)

But (i) can be shown to be a logical contradiction to the intuitively obvious statement that:

(ii) knowing implies believing (k ⊹ b)

It is a tautology that:

(iii) X ⊹ Y = ~Y ⊹ X

It follows that from (i), we get (i'):

(i) b ⊹ k
   (i') ~k ⊹ b

It is also a tautology that:

(iv) X = ~X

From (i') then, we get (i'') which is direct contradiction to (ii):

(i'') k ⊹ b
   (ii) k ⊹ b

Thus, if (ii) is going to be a part of the grammar, then (i) cannot. Exactly the same state of affairs pertains for the sentences discussed in the rest of this section.

(v) a. When Eldridge walked into the room, Susan spoke to him.
    b. When Eldridge walked into the room, Susan spoke to someone.

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(vi) a. When Mother told him to clean up his room, Tommy refused.
   b. When Mother told him to clean up his room, Tommy refused to do something.

(vii) a. What happened this time?  Tommy refused.
      What happened this time?  Tommy refused to do something.

The intuitively obvious relation is that the (a) sentences in each case imply the (b) sentences, and not vice versa. Hence, when a speaker's knowledge is sufficient in each case, it is a rule of language use rather than a rule of grammar that dictates that he should say one of the (a) sentences. The (b) sentences would not be false, but they would violate the rule of language use that says that in all cases where the information being communicated is relevant to the hearer's view of the situation, the speaker is expected to make the strongest statement possible. This is a principle that relies on both extra-linguistic cognition ("the strongest statement possible") and linguistic cognition (the notion of 'strength' or implication).

The clause "in all cases where the information being communicated is relevant to the hearer's view of the situation" appears a necessary part of this rule of language use, since one can think of many situations where statements are perfectly acceptable which are not the 'strongest' ones possible, e.g., (viiia) implies (viiib), and (viiib) implies (viiic):

(viii) a. I saw a Doberman pinscher cross the road.
       b. I saw a dog cross the road.
       c. I saw an animal cross the road.

There are many situations where (viiic) would constitute an acceptable speech act, even though the speaker's knowledge was sufficient for him to say (viiib) or even (viiia), but this would depend on the focus of the discussion. Judging whether the focus of the discussion makes it relevant to specify what kind of an animal was seen, or even more precisely what particular kind of dog was seen, is not a notion that can be captured in grammatical terms, certainly in a sentence-generating grammar, but even, I would argue, in a paragraph or discourse-generating grammar. This aspect of speech behavior is a fine example to support my contention in Chapter I that there are aspects of cognition which are not linguistic, that thought extends beyond language: I believe that the kind of thought involved in making judgements as to the 'relevance' of what someone says at each point in a conversation could not in general be put into words. It is not an analytical kind of thought, but rather one which involves a Gestalt-like set of relations within a whole mental set. This is ironic because it is a kind of thought employed continuously to monitor speech behavior.

The indispensable aspect of this principle of language use which is a part of grammatical competence is the notion of implication.
This notion appears to be exactly equivalent to the notion of 'determinacy' of central importance to the discussion of ellipsis. The more determinate unit of meaning always implies the less determinate one.

12. (page 246) I would argue that the inherent meaning of indefinite pronouns is always indeterminate as to the cognitive status of the referent even in the mind of the speaker. If 'definite' means 'referent uniquely identified in common focus between speaker and hearer', then the feature 'specific' means 'uniquely identified for speaker'. But the specificity of indefinite expressions is contextually determined meaning: the indefinite expressions themselves are indeterminate in this aspect of meaning. Compare:

(i) a. I found someone who can help me.
   b. I want to find someone who can help me.
   c. I ought to find someone who can help me.
   d. I insist that he find someone who can help me.

The verbs find, want, ought (to) and insist, as well as tense, all influence the specificity of the interpretation of someone. Cf. Chapter I, Section 4.2 above and Jackendoff (1971).

13. (page 246) It has been suggested to me by Charles Bird (personal communication) that the case of definite and indefinite expressions is different from that of know and believe, cf. footnote 11, and that in sentences such as:

(i) a. When Eldridge walked into the room, Susan spoke to someone.
   b. John shaved someone.

-That it be a rule of the grammar that marks someone as non-coreferential with other NPs in the same sentence. If this were the case then the rule of language use that I have discussed here would not be relevant to the discussion of definite ellipsis.

I find myself not in accord with this suggestion first of all because I don't think indefinite pronouns have any meaning at all in respect to coreferentiality. If a rule were to mark someone as non-coreferential with the NPs Eldridge, Susan and John in the examples in (i) no similar rule could operate in sentences such as:

(ii) a. Tommy refused to do something.
   b. Someone coughed.
   c. Someone left.

-Since there are no NPs with which to mark them non-coreferential, and yet these expressions have the same contrast semantically with definite expressions:
(iii) a. Tommy refused to do it.
b. Tommy refused.
c. He coughed.
d. He left.

The obviating this problem Bird's suggestion could be revised to the following: make the inherent meaning of someone and something 'non-coreferential with any referent already in common focus to hearer and speaker'.

The proposal leads to fundamentally incorrect results in either its original or revised form in the case of expressions such as the following:

(iv) a. If you drink and drive you may kill someone and the person you kill may be yourself.
b. When the president walked into the room, the security agents seized someone, and the one they seized was the president!
c. John is always criticizing someone and the person he is criticizing is usually himself.

The analysis would characterize sentences like this as contradictions, and clearly they are not contradictions. In each case an initial clause uses an indeterminate expression someone, and then an additional clause makes the meaning more determinate. Compare the corresponding sentences using the determinate expression someone else. I judge these to be ungrammatical:

(v) a. *If you drink and drive you may kill someone else, and the person you kill may be yourself.
b. *When the president walked into the room, the security agents seized someone else, and the one they seized was the president!
c. *John is always criticizing someone else, and the person he is criticizing is usually himself.

Of course, whether Bird or I are right on this matter doesn't change the fundamental point made here which is that there is a semantic difference between the expressions I have called definite ellipsis and indefinite pronouns, such that indefinite pronouns couldn't be used in underlying representations for the ellipted arguments.

14. (page 249) The definiteness of ellipted arguments will no doubt follow directly from a descriptively adequate characterization of the inherent meaning of the REFEREE constituent; however, for the moment we have only rudimentary representations for the semantic structure of lexical items so that at this point it will be necessary to make special mention of the value of ellipted arguments in respect to 'definiteness' in each lexical entry as if it were an idiosyncratic feature not predictable from more abstract semantic properties.
15. (page 249) The verb refuse presents an interesting example of the way propositional meanings can be related. In order for a refusal to take place there has to have been something like an order, an offer, a request, an invitation, or the realization of an obligation. The well-formedness of various complex sentences with refuse depends on this notion, e.g.,

(i) a. When Mother told him to clean up his room, Tommy refused. (ordered, invited, asked)
b. *When Mother expected (for) him to clean up his room, Tommy refused. (needed, hoped, waited)
c. *When he considered cleaning up his room, Tommy refused. (thought about, imagined)
d. *When it occurred to him to clean up his room, Tommy refused.

These examples might suggest that a second person must be involved in order for a refusal to take place, and furthermore that this second person must have issued an order, invitation, etc. to which the refusal is a response.

Considering this hypothesis for a moment it is interesting to think about how one could characterize the lexical property of refusal that makes it acceptable in (ia) but not the other examples in (i). Let us say that refuse presupposes an ORDER, where "ORDER" is a cover term for that abstract meaning held in common by the verbs order, tell, invite, ask, etc. The nucleus of meaning held in common by these verbs ought to be a part of the lexical entry for refuse:

(ii) refuse, +V, [NP ___ (INF)]
    x        z
    [CAUSE x [NOT [CHANGE x y z]]] abstract motion
    z = 'definite' if ellipted

Presupposition: A prior ORDER

[CAUSE w [CHANGE u w x]] abstract motion, communication
u = an order, invitation, request, etc.

The presupposition portion of the lexical entry refers to a second person (w) who is the SOURCE and CAUSE for a communicative act directed towards the subject of refuse (x). Building in this additional semantic structure provides a means of accounting for the possible cooccurrences of other verbs along with refuse in complex sentences. It also formalizes explicitly the notion of a second person being present when a refusal is made.

The treatment is still superficial. The argument of the presupposition "u" ('order, invitation, request, etc.') can be given more
explicit structure. Someone issuing an order, invitation or request is always communicating to another the desire for that person to be the AGENT of some action. Thus, we can have the structure:

(iii) [CAUSE x P]

where P is a variable standing for any proposition that can be an argument for the predicate CAUSE. The person to whom the communication is made is to be the CAUSE (or AGENT) of something. Now (iii) in turn can be an argument for a two-place predicate WILL.

(iv) [WILL w [CAUSE x P]]

This says that the person communicating the ORDER wills that the other person be the CAUSE of something. (iv) now can be built into presupposition structure of refuse in place of the symbol u: it is a complex THEME for the predicate CHANGE, the communication itself that moves between the person issuing the ORDER and the person receiving it:

(v) Presupposition: A prior ORDER

[CAUSE w [CHANGE [WILL w [CAUSE x P]] w x]] abstract motion, communication

Now we have some kind of reasonably adequate account for the data in (i). An important question can be raised at this juncture: are the arguments of the propositional structure in the presupposition portion of the lexical entry for a REFEREE PLAYERS? Do we have a kind of ellipsis if there is no explicit mention in the linguistic context of the arguments of the presupposition structure? e.g., do we have the possibility of an elliptical interpretation for:

(vi) Tommy refused to clean up his room.

In that we do not mention who ordered him to clean up his room? I see nothing wrong with extending the notion of ellipsis this way. There is certainly a difference to be captured between (vi) and something like:

(vii) Tommy started to clean up his room.

In (vi) the meaning of refuse, at least on one reading, suggests the presence of a second person, while (vii) does not in any way suggest the presence of a second person.

If the reader is not already overwhelmed by the complexity seen so far in the lexical entry for refuse, it would be well to proceed still a step further. The meaning of this word is even more complex. The additional complexity turns out to be relevant for the theory of ellipsis.
While it is the case that refuse necessarily presupposes a second person when it is used intransitively and elliptically, it can be used non-elliptically to describe situations in which there is only one person. These cases all have to do with the realization of some sort of obligation:

(viii) a. He spent three weeks alone on a desert island and refused to do anything that might improve his chances of being rescued.
   b. He refuses to expend the effort to finish his dissertation.

These situations do not appear to allow ellipsis with refuse, e.g.,

(ix) a. He spent three weeks alone on a desert island. There were many things that he could have done to improve his chances of being rescued, but
       *he refused.
       *he refused to.
       he refused to do them.
   b. He needed to finish his dissertation by the end of the summer, but
       *he refused.
       *he refused to.
       he refused to do it.

Barbara Partee (personal communication) has suggested that while a second person is not involved in these cases, it may be the superego instead that is involved: the superego issues an order and the refusal is a response to this order. Be that as it may (I will not formalize this added aspect of meaning of refuse here.), the fact remains that there is an additional complexity in the grammar of ellipsis where refuse is involved in that ellipsis is possible only in that subset of cases where a second person is present. I have found complexities of this kind any place where I have looked deeply enough, and have come to the conclusion that I am scratching away at the top of an iceberg.

16. (page 249) Just one of the many aspects of ellipsis not treated here has to do with ellipsis of arguments that can be represented by infinitives. It appears that often the complementizer to can be left behind when there is ellipsis, e.g.,

(i) a. Tommy refused to clean up his room.
    b. Tommy refused to.
    c. Tommy refused.

(ii) a. Tommy wanted to play baseball.
     b. Tommy wanted to.
     c. *Tommy wanted.
(iii) a. Tommy volunteered to raise the flag.
b. *Tommy volunteered to.
c. Tommy volunteered.

I do not know what general principle might explain the to phenomenon.

17. (page 256) The factive/non-factive dichotomy would appear to lend itself nicely to the generalization made in the form of a rule of language use in subsection 2.3 of this chapter. If one knew that the enemy had suffered a heavy defeat but said the non-factive (131b) instead of the factive (131a), then the speech act could be viewed as a violation of the rule of language use. Of course the same would hold in the case of (132b) vs. (132a) where the overt difference is one of indefinite and definite article. Factive expressions imply non-factive ones just as definites imply indefinites. As I have suggested, 'factive' and 'definite' may be equivalent notions.

18. (page 276) Nancy Woo and John Tienson (personal communication) have each separately communicated to me the observation that there is an important set of propositions that can be rendered into ordinary language and which have been proved to be simply recursively enumerable rather than recursive: the class of theorems in arithmetic. This means that the complement to the set of theorems in arithmetic, the set of statements about arithmetic that are anomalous, are not recursively enumerable. If this is true, then this amounts to a proof, as Woo and Tienson have both pointed out, that language is in general only recursively enumerable and that 'semi-grammatical' structures are not characterizable by the grammar. I would maintain that language is syntactically characterizable as a recursive set but not semantically. If 'semi-grammatical' is not a grammatically characterizable notion, then all the more reason to consider metaphors a part of language. To class them as 'semi-grammatical' would mean that they are in no sense a part of language - this would be an absurd conclusion.

CHAPTER IV

1. (page 291) See Shopen (1971) for expression of the hypothesis that the base forms of these verbs are at an intermediate stage of reanalysis towards becoming modal verbs, and that this explains the incomplete conjugations. The only productive part of the modal paradigm, I argue, is the base form itself, so that only the base forms go, come, etc. can take on a usage which are like that of a modal.

2. (page 301) There are limits beyond which even the most ardent defender of syntactic regularity does not pass. For example, the fact that be displays agreement for number and person in the past tense has not often been taken as evidence that all past tense forms carry
"zero allomorphs" for person and number, e.g., the fact that there is a contrast between the forms of be in (i) and (ii) has not been taken as evidence that (iii) and (iv) contain two homophones worked with different morphemic content:

(i) I was glad Dave was here. While he was here, we played some beautiful music together.
(ii) I wish Dave were here. If he were here, we would play some beautiful music together.
(iii) I was glad Dave worked here. While he worked here, we some beautiful music together.
(iv) I wish Dave worked here. If he worked here, we would play some beautiful music together.

Be has two base forms, be in the present and were in the past: this makes it unique among English verb lexemes. The occurrence of were with a third person singular subject after wish and if in contrary-to-fact constructions is a revealing fact. Ordinarily when the lexeme be is used with a 1st or 3rd person singular subject in the past tense, there is a form displaying number and person agreement, was: this also distinguishes the be lexeme from all others. In this case, however, number agreement does not hold. This shows that the complement structures after wish and if involve not only what Jespersen (1933) calls 'the preterite of imagination', but the "subjunctive" as well, the mark of which is the lack of number agreement, e.g., the even-numbered examples below:

(v) I insist that he is here on time.
(vi) I insist that he be here on time.
(vii) I insist that he works efficiently.
(viii) I insist that he work efficiently.

But while the lexemes of all tense non-modal verbs provide constrasting forms which signal the syntagmatic difference between indicative and subjunctive in the present, this is not the case in the past with any verb except be, and it would be pressing syntactic regularity too far to claim that all verbs other than be have this contrast with "zero" phonetic effect.

The conclusion to draw, it seems to me, is that contrary-to-fact constructions after wish and if are syntagmatically subjunctive, but that this has a paradigmatic reflex with only one English verb lexeme, be. A similar approach could be taken to other supposedly "100% regular" syntagmatic contrasts where zero allomorphs have been posited which do not have reasonably natural morphophonemic explanations.

3. (page 307) Idiosyncracies in inflectional morphology, as in the lexemes, be, do, go and begin are not registered in derivations in the current model until the morphophonemic rules, which is to say after the affixes have been attached to the base forms by syntactic rules. Base forms must carry with them information about the whole inflec-
tional paradigm in which they can be involved, and this seems to be a contradiction of the claim that only base forms are necessary in the lexicon.

4. (page 308) Roger Lass (personal communication) has pointed out that there are two ways that suppletive lexemes can come about, one reflecting a shift in the syntagmatic organization of the grammar that leaves a lexeme in a somewhat chaotic state, and the other a shift within the paradigmatic dimension itself, the partial decay of old lexemes and then their reconstruction. He suggests that the be lexeme as an example of the first sort, and the go lexeme as an example of the second.

5. (page 309) We owe a debt to Ray Jackendoff who in a lecture delivered at Indiana University in 1968 gave us some of our ideas for redundancy rules characterizing the content of the lexicon.

6. (page 311) It should not go unnoticed that there are some unresolved questions concerning alleged cases of homophony here. Most striking is the fact that without exception in English and in other languages, the verb form used for the passive is identical to the one used in the perfect construction. It is not the case that every syntagmatic difference is necessarily marked by a paradigmatic one, and it is not necessarily the case that there are two different and homophonous past participles for all English transitive main verbs. Bird (1970) has proposed the notion of lexical integrity as a criterion for the adequacy of grammatical descriptions, where highly improbable cases of homophony are ruled out as devices for analysis. He points out the statistical improbability of having the same homophones in numerous unrelated languages. The challenge, it seems to me, is to enrich our theory of syntagmatic processes in language so that we can see how a single paradigmatic form can be used in two such different constructions as the passive and the active perfect. It is possible that the difference in meaning between, e.g., It has eaten and It is eaten, comes not from two different words eaten but from the difference between have and be as they combine with eaten. Perhaps words have something like valences which combine to produce different derived meanings. N.B. that be + past participle takes a 'patient' subject, while have + past participle and be + present participle have 'actor' subjects. Instead of saying there are two different past participles and two different auxiliary verbs be a much simpler analysis based on a syntagmatic analysis may be found. Consider the differences in valences in:

(i) Joe has a problem.
(ii) Joe is a problem.

7. (page 323) Strictly speaking, the utterances in (50) are not full completions, since two other surface arguments, the SOURCE and the GOAL of the change of state meaning of ignite, are also covert. Compare:
(i) From a softly glowing mass, the constellation ignited into a flash of blinding light.

Recall the discussion of ellipsis of SOURCE and GOAL with change of state verbs in Chapter III. Since so much about the particular nature of the SOURCE and GOAL of change of state verbs is usually specified in the constituent meaning of those verbs, constituent ellipsis is the usual state of affairs for those arguments. By contrast, it has been pointed out, verbs of physical motion tend to have constituent meanings that differentiate the kind of motion but say little about the SOURCE and GOAL, except that they are locations.

8. (page 328) Unstressed personal pronouns are generally unacceptable as passive agents. See Discussion in section 4 of Chapter I for a partial explanation. For some reason, which I do not understand, unstressed personal pronouns can be acceptable as passive agents when they constitute instances of backward pronominalization, but not otherwise:

(i) Even though she had been interviewed by him twice that month already, the queen allowed the reporter to ask her some more questions.

(ii) The queen allowed the reporter to ask her some more questions, even though she had been interviewed by him twice that week already.

9. (page 328) It is not clear that the same constraints hold on backwards anaphora with agentless passives, as with anaphoric pronouns. Not only is (i) acceptable (the antecedent is preceded but not commanded), but (ii) is also. In the latter the antecedent for the anaphoric interpretation is both commanded and preceded.

(i) Even though she wasn't questioned about her political views, Elizabeth figured out that her date must be a spy.

(ii) Elizabeth wasn't questioned about her political views, even though her date was an East German spy.

Cf. section 2 of Chapter III for a discussion of ellipsis anaphora and deixis.

10. (page 334) A general situation of ignorance in regard to the get passive has been recently rectified by Robin Lakoff (1971). The aspect of meaning in get passives which I refer to here as 'achievement' is due, I believe, to more general properties of the verb get. The verb is used with both left-to-right and right-to-left motion (cf. Chapter III, section 1 on lexical entries and Gruber 1967). When it is left-to-right, it is primarily physical motion that is understood:
(i) John got from Los Angeles to New York.  
   T = Theme
   T(A)  S  G  
   A = Agent
   S = Source
   G = Goal

When it is right-to-left, the primary meaning is that of possessional or acquisitional motion.

(iii) John got the trunk from Los Angeles.
   G(A)  T  S

Note that (iii) is optionally agentive, and that if it is agentive one interpretation is that John stays put and takes initiative to cause the trunk to come to him, another that he 'fetches' it. One might not notice the difference between the foregrounding of physical vs. possessional motion in every case, but examples such as the following make it clear:

(iv) The trunk got to John.  (left-to-right)
   T  G

(v) John got the trunk.  (right-to-left)
   G(A)

When the GOAL is to the right in a PP, the only meaning that is determinate is that it is a locational point. Thus, for John we could substitute New York, the bottom of the ravine, etc. When the GOAL is in subject position, however, it must be understood as a recipient, as one that 'has' the THEME when the motion is completed. Thus,

(vi) The ball got to the bottom of the ravine.
(vii) *The bottom of the ravine got the ball.

(viii) The trunk got to Miami.
(ix) *Miami got the trunk.
(x) Miami got the nominating convention.

The next point to notice is that with left-to-right physical motion, there is an added nuance of an achievement understood along with the primary meaning. Compare get and go in this respect:

(xi) John went to Chicago.
(xii) John got to Chicago.

With get, we understand that there is something that accrues to John by his going to Chicago. What appears to be happening is that there is a polysemous blend going on here. John in (xii) is not only understood as the THEME of physical motion, and optionally the AGENT of that kind of motion, but also as the GOAL of possessional motion. At the same time that he is going someplace in a physical sense, something is coming to him in a possessional, or achievement sense.
If this analysis is correct, then we have a way of understanding why the following question could only be asked of a certain kind of person:

(xiii) Did you get to one of the concentration camps?

This might be asked of muckraking reporter, or a tourist back from a visit to World War II ruins, but hardly of a Japanese American or a European Jew. On the other hand, the same question with go would be acceptable with any of these people.

The get passive construction is an extension of the left-to-right physical motion usage, and in just the same way, there appears to be these two levels of meaning. The subject in this construction is the THEME of left-to-right motion when it is intransitive, and optionally AGENT (as in (i) this footnote): it is also the GOAL of right-to-left possessional or acquisitional motion. From Robin Lakoff's observations we are able to understand how (xiv) just below would be used by a partisan speaker, but not an 'objective' newscaster.

(xiv) Three students got put on probation for their part in the sit in.

The latter would replace got with were. (xiv) is an instance of a negative achievement. But it is viewed as something like an achievement nevertheless: that is, there is focus on what accrues to the students, or what affects them in this experience. Perhaps the same phenomenon is present in the transitive passive construction (like example (ii) this footnote):

(xv) Paul got three of his paintings accepted for an exhibition in Toledo.

(xvi) Fred is a fink. He got three students put on probation for their part in the sit in.

The unmarked interpretation appears to be a positive achievement: this would appear to be why asking (xiii) in certain circumstances would be indiscrete; however, an information question with how leaves everything else in the sentence presupposed: once it is accepted that something negative has happened to someone, one can then show sympathy by using the get passive construction in an information question. A Yes-No question asks whether the negative achievement came about, and can have the effect of disrespect or insolence. Any of the uses of the get passive focus attention on what there is in the experience for the NP in subject position, or for those associated with the entity referred to there.

(xvii) Did you get rejected by another graduate school?

(xviii) How did you get rejected by another graduate school?
(xix) Did you get arrested?
(xx) How did you get arrested?

There is the opposite polarity with achievements that are presumably positive. Here the Yes-No question can be flattering, while the information question with how can be disrespectful.

(xxi) Did you get invited to give a concert in New York?
(xxii) How did you get invited to give a concert in New York?

(xxiii) Did you get elected?
(xxiv) How did you get elected?

There is a good deal more to the get passive that I do not understand. I cannot explain how it is that passives such as the following are distinctly awkward.

(xxv) ?The problem got explained to us yesterday.
(xxvi) ?The electric light got invented in the nineteenth century.

Some psychological and emotional verbs are highly unacceptable in the construction discussed here, but are quite alright when the passive infinitive follows get.

(xxvii) *John got hated by everyone.
(xxviii) John got to be hated by everyone.

(xxix) *This problem got understood recently.
(xxx) This problem got to be understood recently.

The explanation probably has something to do with the fact that verbs like hate and understand have meanings incompatible with the motional meaning of get. But it cannot be because they are just abstract or psychological because remind shares those properties and can sound quite alright in the get passive; it cannot be because they are stative because see is stative and it can sound OK too.

(XXXI) I got reminded of Jeannie the other day.
(XXXII) Bill got seen with a member of the Cosa Nostra.

11. (page 340) Some objections are raised to Emonds' structure preserving framework in the final section of this chapter.

12. (page 342) In order to account for constituent ellipsis with empty nodes, it would be necessary to have a unique grammatical relation for each argument that can be ellipted, THEME, SOURCE, GOAL, CAUSE, and no doubt many more. We have seen that unique grammatical relations are not possible for each semantic function, that sometimes more than one semantic function converges on a single syntactic constituent and that the same semantic function can be manifested by more than one syntactic constituent in the same simplex (Bird's Toscanini's symphonies of Beethoven by RCA, with three different AGENT
constituents; the two THEME constituents associated with bring subject and object in John brought the book to Bill - both are moving, cf. the same utterance with sent; the two sets of GOAL, THEME and SOURCE with buy and sell, e.g., John bought the car from Bill for $50 where the car is one THEME, and $50 is the other - Bill is the SOURCE for the motion of the first, John for that of the second). Leaving that problem aside consider the problem that would be involved in cases of obligatory ellipsis, e.g., with the noun burglary where the THEME can never be expressed by a constituent, or explain where either the 'explanation itself', or 'the problem being explained' can be manifested syntactically, but never both together in the same clause. These lexical items would be required to be inserted in environments that always contain empty nodes. None of these problems occur in the theory of propositional meaning proposed in Chapter II.

13. (page 350) In a paper not yet published or circulated, presented at the University of Illinois in the spring of 1971. The notion of treating the passive in the way entailed by this approach, giving the same left-to-right structural description but allowing the scope to extend into subordinate clauses was also outlined to me earlier as a possibility by Charles Bird.

14. (page 351) Further qualification is needed on which prepositional phrases allow corresponding actives.

(i) The proposal was objected to.
(ii) *10 o'clock was started at by the party.

15. (page 354) I am indebted to Postal (1970b) for his summary of arguments to support raising rules.

16. (page 355) It is not true, however, that it is absolutely ruled out elsewhere, cf.,

(i) Heed to a friend's warning can sometimes save you from a lot of grief.

I cannot, however, find any acceptable instances of the use of heed as a noun outside the idioms with pay or take unless heed governs a complement to make it clearly a nominalization for the verb heed, e.g.,

(ii) a. *Heed can save you from a lot of grief.
    b. *The lack of heed was regrettable.
    c. *The boss insisted on heed.

17. (page 358) A rule of indefinite pronoun deletion meets with the same problems in descriptive adequacy with the subjectless infinitive as it does with the agentless passive. In line with standard theory, the underlying representation for (ia) would be (ib):

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(i) a. To try to escape now would be foolish.
   f. For someone_i to try for someone_i to escape now would be foolish.

But a structure such as (ia) allows for anaphoric and deictic interpretations:

(ii) a. Martin convinced Mitch that to try to escape now would be foolish, especially since he had such a good chance for a parole.
   b. Is it so difficult not to disturb me? Get the hell out of here with your questions!

Antecedents for the ellipted subjects of infinitives may or may not be in the linguistic context. In complement structures, the main verb typically determines which NP in the construction it governs is to be interpreted as the subject of the infinitive, e.g.,

(iii) a. John promised Bill to help.
   b. John told Bill to help.
   c. John begged Bill to help.

   The subject of help is John when the main verb is promise, Bill when it is tell and could be either John or Bill when it is beg. Except when subjects are grammatically determined in this manner, they ought to be viewed as indeterminate.

   Treating constituent ellipsis with empty nodes in the case of infinitives is not any more justifiable with infinitives than with agentless passives. Empty nodes do not represent functional meaning, and so simply complicate derivations unnecessarily. No deletion rules are needed for the generation of infinitives, and so they should be generated directly by PS rules just as they can appear on the surface. They could be generated as a special kind of prepositional phrase, where to is a preposition. To can still be seen to retain its full semantic force in the overall interpretation when a verb of motion is used, e.g.,

   (iv) a. He went to the grocery store. (cf. He came from the store).
   b. He went to buy vegetables. (cf. He came from buying vegetables)

   (v) a. He is hurrying to the administration building.
   b. He is hurrying to register.

Thus, we could consider a PS rule of the form PP → P VP, cf. Chapter II for a discussion of the PS rules for PPs. For purposes of exposition here we will use the more cautious rubric 'infinitive phrase', IP. It may well turn out that PP could be used instead for infinitives.

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18. (page 259) For a more abstract representation, one might simply employ the predicate LOCATION, where the THOUGHT is located abstractly with the THINKER. This kind of work on semantic structure is to a great extent guess work at this point.

19. (page 363) In more colloquial speech, the get passive would be used here to attribute agency to the SOURCE of the event:

(i) a. Lloyd expects his daughter to get herself escorted to the reception by an eligible young Republican.

c. Lloyd expects it of his daughter that she get herself escorted to the reception by an eligible young Republican.

In a dialect where (113a) is a possible paraphrase for (111a) but (120b) is unacceptable as it stands, and there is no comparable interpretation for (113b), we have even stronger support for the double object analysis.

A number of verbs assumed in Rosenbaum (1967) and standard theory in general to undergo raising in accusative plus infinitive constructions cannot in fact be described by that analysis because they have meanings which cannot be accounted for in that fashion. Rosenbaum's arguments in favor of double object representation for force can be applied here. As an additional verb consider believe.

(ii) a. We believe Rex Morgan to have examined Mary Blaine.

b. We believe Mary Blaine to have been examined by Rex Morgan.

(iii) a. We believe it of Rex Morgan that he has examined Mary Blaine.

b. We believe it of Mary Blaine that she has been examined by Rex Morgan.

(iii) can paraphrase (iia) but not (iib). (iib) can paraphrase (iib) but not (iia). The verb believe would also be characterized by a semantic predicate COGNITION, and the THOUGHT can have complex structure where a predication is made onto the surface (and deep) structure direct object. This can be represented as abstract LOCATION once again. There is important similarity to expect, as should be the case.

(iv) believe, +V

\[ [\text{NP } \text{NP} \text{ IP}][\text{COGNITION } z \text{ [LOCATION } w \text{ v}]] \]

\[ z \quad w \quad v \quad u \]

\[ u = \text{'true' in the mind of } z \]

The possible difference in interpretation for (iia) and (iib) is that Rex Morgan is the THEME of the belief (abstract location which

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is held to be true in the cognition of the subject) in one case while it is Mary Blaine in the other.

If double object representation is necessary in deep structure for believe in order to account for this semantic interpretation, then there cannot be raising. Then the kind of argumentation based on the assumption that cooccurrence must be satisfied within simplices where simplex constructions are concerned is shown to be erroneous, since we can get, e.g.,

(v) a. We believe heed to have been taken of the warning.
b. We believe the hour to be ripe.
c. John was believed to be expected to shave himself.
d. They were believed to be expected to hate each other.

Then the way is left open for a lexicalist–interpretive analysis of the passive, and utterances such as (vi) are not counter-examples.

(vi) a. Heed is believed to have been taken of the warning.
b. John is believed to have expected himself to win.

20. (page 363) This interpretation is possible when expect is followed by a noun phrase and a prepositional phrase as well:

(i) a. Lloyd expects Bill at the reception.
b. Bill resents it that Lloyd expects him at the reception.

(ii) I expect you all on the practice field at 4 o'clock sharp!

21. (page 370) There is another kind of argument based on the assumption that cooccurrence requirements must be satisfied within the simplex, whether or not the simplex is elliptical on the surface, which could be constructed in order to support the notion of a raising rule in accusative plus infinitive constructions, and that would be one in which a movement rule is posited the scope of which is presumed to be the simplex. Quantifier shift is such a case, and is mentioned in Postal (1970) as a supporting argument for raising. N.B. the subject NP:

(i) a. Each of the men have left.
b. The men each have left.
c. The men have each left.

(ii) a. Each of the men think that it has been too hot.
b. The men each think that it has been too hot.
c. *The men think that it has each been too hot.

Examples such as these are accounted for by saying that the scope of Quantifier Shift is limited to the simplex. In cases where raising
is presumed to take place, the quantifier can be found detached from its noun phrase which is in turn a part of the higher clause.

(iii) a. Each of the men are expected to have finished their work.
    b. The men are each expected to have finished their work.
    b. The men are expected to have each finished their work.

(iiic) is explained by saying that Q-Shift operates on the lower cycle, (iiib) by saying that it has operated on the higher cycle. But note that the meaning of (iiia) and (iiib) is different from that of (iiic). In the first two an expectation is placed on each of the men. In the last there is a general expectation that they have each done something. The difference is more apparent in examples such as the following:

(iv) a. Each of the men have at various times been believed to have been masked robbers.
    b. The men have each at various times been believed to have been masked robbers.
    c. The men have at various times been believed to have each been masked robbers.

Dougherty (1968a, b) has proposed that Quantifier Shift be considered a transformation that affects meaning of the sort that is interpreted on surface structure, e.g. (cited by Chomsky 1969):

(v) a. Each of the men hates his brothers.
    b. The men each hate his brothers.

It appears that Dougherty is correct, so that (iv) could still be consonant with the argument that there has to be a raising rule. On the other hand, this would be with the assumption that Quantifier Shift must be restricted in scope to the simplex. It is just as possible that the rule can include infinitive complements in their scope. If simplex sentence is defined as everything dominated by an S without another S intervening then the representation we have proposed for infinitives would mean that they are part of the simplex. The same principle should perhaps apply in the case of subjectless gerundive complements.

(vi) a. Each of the men regretted having bought air conditioners.
    b. The men regretted having each bought air conditioners.

(vii) a. Each of the men regretted Bill's having gone to the moon.
    b. *The men regretted Bill's having each gone to the moon.

It should be noted that in standard theory that the quantifiers in the following two examples are accounted for by different principles:
(viii) a. We expected the men to each leave on the next bus.  
b. We forced the men to each leave on the next bus.

The first by raising and the second by Equi-NP Deletion. In our analysis, however, these two utterances have identical constituent structure, and there is no rule of Equi-NP Deletion. Thus, as long as there is a rule of Quantifier Shift, it would appear that it should be allowed to operate down into a subjectless infinitive of any sort. Of course, the well-formedness of the output demands on whether or not a subject is grammatically determined for the infinitive phrase by a higher REFEREE, and if so, if the quantifier comes from the grammatically determined subject of the infinitive phrase or not.

(ix) a. The men each promised Bill to have left by morning.  
b. The men promised Bill to have each left by morning.  
c. Bill promised each of the men to have left by morning.  
d. *Bill promised the men to have each left by morning.

(x) a. The men each told Bill to leave by morning.  
b. *The men told Bill to each leave by morning.  
c. Bill told each of the men to leave by morning.  
d. Bill told the men to each leave by morning.

(xi) a. It seemed to each of us to be too cold to swim.  
b. *It seemed to us to each be too cold to swim.

Rather than governing the Quantifier Shift movement rule by semantic interpretation of the construction in which it is to occur, it would appear better in principle to let the rule operate in terms of constituent structure alone and then have semantic interpretation of surface structure act as a filter. On the one hand, this avoids a quasi-generative semantic grammar, where semantic interpretation determines surface structure - (ixd) above should be categorized as semantically ill-formed not syntactically ill-formed. On the other hand, there is a certain economy since Dougherty has shown we need semantic interpretation of the output anyway.

22. (page 370) Precisely the same issue is at stake with it subjects in constructions such as the following:

(i) a. It is raining in Los Angeles.  
b. It is a 10 mile trip to the border.  
c. It is too long a time until the vacation.

(ii) a. It is reported to be raining in Los Angeles.  
b. It is said to be a 10 mile trip to the border.  
c. It is claimed to be too long a time until the vacation.

23. (page 371) Only there subjects with be will be discussed here. Other verbs take there subjects in simplexes, e.g.,
(i) a. There appeared a slimy sea monster.
b. There took place the worst mine disaster in recent history.
c. There occurred in one month more cases of food poisoning than in the previous two years combined.
c. There exists no cure for that disease.

The number of such verbs is quite small, however, so that the same principle holds. Under current assumptions, accounting for the occurrence of there subjects exhaustively within simplexes is to be taken as of high value to the analysis. These simplex are restricted to just the ones in which the small number of items be, appear, take place, occur, exist and a few more occur as main verbs. Were there a deep structure constituent in these constructions, then it would be accounted for in the lexical entries for these verbs since standard theory places a premium on deriving there subjects transformationally, the restricted cooccurrence of there as subject is accounted for by virtue of having a condition on the transformational rule limiting its application to just simplex with these verbs.

24. (page 371) The same "gain" accrues to the analysis of other complex constructions when raising is used, e.g.,

(i) a. There is likely to be a big crowd.
b. There seems to be smoke coming out of the chimney.

Expressions such as likely and seem do not participate in the passive, so their analysis is not as immediately important here. Their relevance lies only one step away, however, because if I am right about the passive being generated directly in deep structure, then raising cannot be a part of the derivation of the examples in (124), and if raising is out in principle there, it is hard to imagine how it could be right for likely, seem and other verbs.

25. (page 373) The there insertion rule is one of those aspects of the standard theory grammar of English which has been assumed but never seriously justified in print. There are countless places in the literature where the existence of such a rule is assumed and used in arguments for some other rule, but no place I know of where arguments are given in print for there insertion itself. See Rosenbaum and Jacobs (1968) and Burt (1970) for textbooks where this rule is assumed and presented as part of the grammar. Emonds (1970) gives the most complete and most interesting account but carefully does not concern himself with its justification: his approach is rather one of saying that if there insertion is a transformation then it can be made a structure preserving rule. His structure preserving analysis, moreover, is a revealing one. It accounts nicely for some of the apparent asymmetry of permissible VP constructions after there is/there are. The justification for the transformational rule, while not written down, is the kind that is often talked about in introductory courses.
26. (page 373) It is a striking fact that passives that have there as surface structure subjects must be agentless to be acceptable. I have no explanation, but I take this as evidence of semantic difference between agentless and full passives, on the same order as the difference in acceptability of full and agentless passives with get in certain contexts discussed in section 2.2 just above. See examples (159)-(163) below.

27. (page 377) The pattern missing on the surface for be, (132), does exist for other verbs taking there subjects in simplex clauses, e.g.,

(i) a. There occurred a terrible earthquake.
   b. A terrible earthquake occurred.

(ii) a. There exists no explanation for that phenomenon.
     b. No explanation for that phenomenon exists.

Emonds accounts for the absence of e.g., *There is a woman the director of the clinic from A woman is the director of the clinic by making what he considers to be the independently motivated claim that the PS rule for the VP should generate no more than one NP. Thus, the underlying structure that would be necessary for such a construction can't be generated by the PS rules:

(iii) a. S
    VP →
    NP
    * VP NP PRED
    A woman is the director of the clinic

   b. S
    VP
    NP
    VP
    * VP NP PRED
    There is a woman the director of the clinic
    ∅

In Emonds' system an empty node can be used to fulfill a subcategorization feature but it can be ignored if the subcategorization feature is already satisfied. Such would be the case for e.g.,

(iv) a. S
    VP →
    NP
    V NP VP
    A boy was eating an apple

   b. S
    VP
    NP
    V NP VP
    There was a boy eating an apple
    ∅

Thus there can be too many nodes for the subcategorization features of a verb, but not too few: on the other hand, the derivation in
(iii) is prevented because the PS rules won’t generate the necessary deep structure.

Emonds analysis of this construction makes more sense than any other transformational analysis. It sets a standard that will have to be at least equaled by the alternative I will propose.

28. (page 377) Just those APs that can occur after head nouns inside noun phrases. This will become important in the analysis I will propose below.

(i) *There were several people tired. vs.
(ii) There were several people drunk.

29. (page 381) (1) The great challenge in the study of be is to show the relatedness and unity of its functions as a copular verb and an auxiliary verb. It is only the multitude of cooccurrences that has prompted people to think that there is more than one verb be; it seems to me, for essentially the same meaning is involved in all cases.
It always acts as an auxiliary verb in questions, negatives, preverb placement, tags, and instances of subject-tense inversion other than questions, in fact in all the syntactic tests to distinguish main verbs from auxiliary verbs.

(2) See section 1 of this chapter for an argument against affix-hopping. In effect all of the lexical entries here are for lexemes, and inflected forms are lexical entries too (of low cost since the inclusion of paradigms in the grammar makes them predictable).

It is simple enough to state that a VP following be can be either a present participle or past participle (and somehow we must rule our perfect constructions, e.g., *John is having left); however, the cooccurrences in the English verb auxiliary system have a semantic complexity that is not touched upon by formal cooccurrence features. It could not be an accident, for example, that the past participles used in the passive and those used in the perfect are always identical in form. This is true not only for English but all Indo-European languages I am acquainted with. It is as if these part participles have a polarity that switches depending upon whether they are preceded by have or be. There must be something very simple and abstract about the meaning of these two auxiliary verbs that triggers the polarity switch in the past participle. We can probably gain insight into the problem from pairs of examples such as the following:

(i) a. John has a problem.
b. John is a problem.

Here I assume the reader would agree that we would want to say that we have the same noun problem in both cases, but there is a kind of polarity switch, in terms of the relation of the predicate meaning to the subject, that has syntactic consequences:
(ii) a. John has a problem with Ed.
   b. John is a problem to Ed.
   c. *John has a problem to Ed.
   c. *John is a problem with Ed. ≠ (a) ≠ (b)

So also with participles.

(iii) a. John has criticized.
   b. John is criticized.

(iv) a. John has criticized Ed.
   b. John is criticized by Ed.
   c. *John has criticized by Ed.
   d. *John is criticized Ed.

I note that the polarity works in opposite directions in one sense here: **have** makes John 'patient' when **problem** is involved and 'actor' when it is a past participle. This in turn must have to do with the semantic properties of the noun and participle, some sort of 'valence' that determines its semantic interaction with other elements. I am convinced that the analogy to chemistry is apt and that our understanding of syntax will be vastly improved if we start testing out some bold and well-educated guesses about the atomic structure of words.

30. (page 381) The set theory notion 'set inclusion' $a \subset b$ is appropriate here, because of the semantic indeterminacy of this notion. As used in set theory it can mean either that $a$ is a part of $b$ or that $a$ and $b$ are coextensive and identical; what this formalism rules out is the interpretation where $b$ is properly contained in $a$ - it cannot mean that but it can have either of the other two meanings. This set theory notion seems compatible with the copular use of **be**, e.g.,

   (i) a. John is a student.
    b. John is the student.
   c. The student is John.
   d. *A student is John.

31. (page 383) N.B. that by making explicit reference to **there** in parts (b) and (c) of this entry, we are meeting the formal definition of 'idiom' established in Chapter II: whenever explicit mention is made of lexical item in the syntactic cooccurrence feature for a REFEREE, the lexical item is incorporated into an idiomatic unit. This seems quite right, since **there** loses part of its lexical meaning. 'Deixis' is retained, but 'distance' is lost, cf. **There is someone here**, just as good as **There is someone there**.

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32. (page 393) The meaning of many in (108b) is relative ('a large proportion of the congressmen conscious of the problem' without the overall number being large from an absolute point of view), while that in (171b') it is absolute. It is the latter that coincides with the meaning of the indefinite many in (170b).

33. (page 406) Alternatively, consider the following:

(i) a. Henry is a sadist, so he was glad that Bill lost to Fred in chess.
   b. ?Henry is a sadist, so he was glad that Fred defeated Bill in chess.

(ii) a. Henry took cruel delight in watching Bill lose to Fred.
     b. ?Henry took cruel delight in watching Fred defeat Bill.

34. (page 412) As pointed out in I.4 passive agents with personal pronouns are not bad per se.

35. (page 419) It is worthy of note that the logically conceivable alternates to (213) where actives and passives are reversed are of low acceptability:

   (i) ??John expected it of the chairman that Mary would be interviewed by him.
   (ii) ?John expected it of Mary that the chairman would interview her.

This indicates that a kind of focus is placed on the chairman and Mary respectively, and that they are given special status in the immediately following THAT S construction. Probably, there is a value of TOPIC placed on e.g., the chairman in (i) for what follows: in other words in (i) the chairman has to be analyzable as the TOPIC of the THAT S clause.

36. (page 420) Cf. with affirmative and negative polarity items (N.B. stress in (ic) and (ic')):

(i) a. Bill is pretty tall.
    b. *Bill isn't pretty tall.
    c. John didn't EXPECT Bill to be pretty tall.
    c'. John didn't expect BILL to be pretty tall.

Stress focus can be anyplace in (c) as long as it is not in the infinitive phrase.

(ii) a. Bill didn't meet Harry until 5 o'clock.
    b. *Bill met Harry until 5 o'clock.
    c. John didn't expect Bill to meet Harry until 5 o'clock.
37. (page 422) Of course the same goes for all the other cognitive verbs that take the accusative plus infinitive construction, e.g., believe. The grammar ought to allow us to talk about people holding logically incompatible beliefs. Cf. footnote to page 372 and the following:

(i) John believes Rex Morgan to have examined Mary Blaine, but he believed Mary Blaine not to have been examined by Rex Morgan! He must be crazy!

38. (page 426) Following Emonds (1970a) no THAT S or infinitive constructions will occur in deep structure subject position: they will only be placed in subject position by a 'root transformation' - one which operates in main clauses only and is not subject to the structure preserving constraint. It should be noted that by our analysis a problem in Emonds' analysis can be taken care of more naturally. He gets e.g.,

(i) It was expected that John would finish his term.
(ii) It was acknowledged that John worked for the CIA.

Not by the standard theory (Rosenbaum 1967) rule of Extraposition but by a derivation that starts with deep structures which as passives would be ill-formed:

(iii) *They expected it that John would finish his term.
(iv) *They acknowledged it that John worked for the CIA.

This is an asymmetry between actives and passives that a lexical analysis can account for as it is. (i) and (ii) contain passive configurations for which no direct correspondences exist among actives.

39. (page 433) Object Preposing and Agent Postposing for the passive, THERE insertion, IT Replacement, Object Raising; Possessive, THERE Replacement, Conjunct Movement, Obligatory Reflexive and Dative Shift.
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