

**Syntactic Features:**  
Parametric Variation in the History  
of English

by

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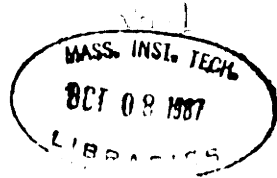
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Archives

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Abstract

This study compares the syntax of Old English and early Middle English, with particular attention to the annals of the Peterborough Chronicle. It provides an account of the immediate changes in syntactic representations during this period and relates these changes to the revisions which swept the English lexicon during the Middle Ages.

The thesis argues that the properties of substantive inflection (i.e., number, gender and Case) are best represented as binary features in underspecified matrices. These grammatical features are syntactic features. Grammatical feature matrices define phrases in the syntactic representation.

The thesis proposes that a single binary feature distinguishes structural Case from inherent Case. In Old English, only structural Case was underlyingly marked. Inherent Case was assigned by a general rule in each derivation. In later English, this markedness was reversed in verb and adjective phrases. Because the Case feature is listed in verbal lexical entries, this reversal altered the markedness of verb classes in the English lexicon. During the Middle Ages, hundreds of verbs which had assigned inherent Case in Old English were revised to become structural Case assigners. More immediate changes in the syntax of early Middle English are evident in adjective phrases and in other constructions where Case is not specified in lexical entries.

The analysis provides support for a "principles and parameters" view of variation in natural language. The grammars of Old English and early Middle English are argued to be massively similar. Relatively simple changes in the distribution of grammatical features can account for complex differences in the surface structures of these languages.

Thesis Supervisor: Morris Halle  
Title: Institute Professor

## Acknowledgements

1

In my experience, the most frequent question which is asked by graduate students in linguistics is:

Why am I putting myself through this?

The process is painful, there's no question about that. Obviously, we don't do it for money. Is it the satisfaction of discovering the truth? I doubt it. The activity is most like that of Sisyphus - one pushes the theoretic rock up the hill only to watch it thunder back down again. Truly accurate models of grammar are born, not invented.

Of course, there are many reasons to pursue linguistics. I am most grateful to those people who have been able to show me (by example) why it is that I want to study linguistics:

it makes me happy.

Morris Halle is a good example. I learned about the joy of learning from watching his face light up when somebody proved him wrong. Right or wrong, when Morris is doing linguistics, Morris is having fun. Rational thought is its own reward, and Morris managed to teach me well enough that I can occasionally claim the reward.

Ken Hale showed me that language is a wonderful object to contemplate from any angle. The study of language leads to self-knowledge, to knowledge of my fellows, to art, to politics, to love, to life, to kangaroos, even! It's the path to everywhere and a complete yoga in itself! Ken's boundless enthusiasm for language showed me many ways to be happy doing linguistics.

There are others who I would like to thank for their instruction. Wayne O'Neil gave me consistent support and showed me how to get through the jungle of red tape which the MIT bureaucracy creates with such single-minded industry. Jim Higginbotham put up with my abysmal ignorance and eventually initiated me into the outer circle of the Mystic Order of

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1. I would like to thank the people of Canada for their support of my studies as an undergraduate and through a one year grant from the Social Sciences and Humanities Research Council.

Semantics. Donca Steriade didn't let me get away with anything. I'm thankful for her thoroughness. Noam Chomsky was strictly honest in his assessment of my work. The characteristic is so rare that it took me quite a while to realize how valuable it is (even though it stings). Jim Harris listened when nobody else gave a damn - that mercy got me through some hard times. Luigi Rizzi has the ability to put aside his own sophisticated theories to help students develop their foolishness into something presentable - a selfless act that I appreciate very much. Jay Keyser always has a good word to say and says it well and I thank him for practicing cheerfulness, wit and wisdom. All of these people in their own way showed me that it is possible to do linguistics and be happy in it.

My classmates are a great bunch and I was lucky to be with them. They kept me sane when I would have bet against it. Here they are, in reverse alphabetical order (just because Steve must be tired of being first in line): Loren Trigo, Carol Tenny, Michele Sigler, Ur Shlonsky, Doug Saddy, Jennifer Cole, Hyon Sook Choe, Steve Abney. I would especially like to thank Kiyoko Masunaga, who has been my best friend through it all.

There are many others who helped me in my search for happiness in linguistics and in general. The community to which I was introduced in my four years at MIT is full of extraordinary people. I am honoured and delighted that I had the chance to meet them.

This thesis is for my father and mother. They gave me my first and best lessons in how to be happy.



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## Chapter 1

### Introduction

#### 1.1 The Problem

##### 1.1.1 The Problem in Particular

During the Middle Ages, the surface expressions of the English language underwent many remarkable changes. In particular, significant revisions of these expressions were accomplished in the period from c.1000-1200. In these years, there were important changes in the English lexicon. The importance of these changes is generally recognized in that the earlier period is named late Old English (OE), while the later period is the beginning of Middle English (ME). These changes were remarkable in that they involved classes of lexical entries which are normally the most stable. The changes affected inflectional affixes, prepositions, demonstratives/determiners, WH-words, etc.; all of which are usually "closed-class" items. That is, these classes do not usually lose or gain members from generation to generation of speakers.

In contrast to later English, in OE there were explicit paradigms of substantive inflection - sets of affixes which detailed the number, gender and Case of every phrase. Phonological processes eventually levelled these inflectional affixes and when this levelling had become acute, the status of various "minor" categories was revised. In ME, determiners (< demonstratives), prepositions, WH-words and complementizers, etc. were used differently than they had been in OE.

In the same period, the relatively flexible word order of OE phrases became more rigid. The distribution of substantive phrases was gradually reduced to the "subject" position and to positions adjacent to verbs and prepositions. Determiners and the inflected genitive marker were constrained to appear only in prenominal position in noun phrases.

The most remarkable change merely began in this period. Throughout the Middle ages, whole classes of predicates underwent a formal and semantic shift. From the beginning of the transitional period, constructions involving verbs with genitive or instrumental or dative complements were either abandoned or converted to constructions involving accusative or nominative. New (accusative) complements were introduced in construction with previously intransitive verbs and "transitivizing" verbal prefixes were abandoned. Along with these formal differences, the handbooks and literature

describe changes in the meaning of the various predicates which survived the OE period. Parallel to the change from "inherent Case" (e.g., dat., instr.) to "structural Case" (e.g., nom., acc.), the revised constructions had a different interpretation: as we will see below, peripheral arguments became more central in the definition of their predicate.

The formal changes (i.e., in Case "assignment") and the semantic drift which may be observed in the various classes of predicates in the English lexicon had a uniform direction (i.e., "inherent" to "structural"). Moreover, the process began slowly in late OE and gathered momentum, so that the waves of revision reached their peak about c.1600. At this point, the lexicon of English became more or less saturated with revised entries and the tide of changes began to subside<sup>1</sup>.

The depth and extent of the changes which were accomplished or initiated during this period suggest that the grammar of an English speaker of the early 12<sup>th</sup> century differs from that of a speaker of the late 13<sup>th</sup> century in a significant way. The difference is large enough that these periods of English are labelled as different languages (i.e., OE versus ME). An explicit and principled account of this difference cannot be

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1. See Visser (Volume 1) and below. Visser provides hundreds of examples of these revisions.

obvious, for the data is complex. But this pattern of facts has emerged through the diligence of a long scholarly tradition and some consensus has been reached among these scholars as to the nature of this distinction.

It is a common opinion that the revisions in English grammar during the Middle Ages were somehow initiated by the phonological levelling in the OE paradigms of substantive inflection. Among other properties, these affixes signalled the Case of each argument. The loss of the inflectional affixes as Case-markers encouraged the use of prepositions and verbs in particular configurations as the Case-markers of a new grammar. Similarly in ME, the inflected genitive was only seen as a Case-marker when it was in a particular configuration (i.e., prenominal). The loss of inflection also introduced an ambiguity in the formal marking of Case on arguments. Without their distinctive affixes, inherent Case complements could not be seen to be different from structural Case complements. They were free to take on a new interpretation.

Of course, there are many particulars which are not provided for so obviously, and the traditional opinion is less than unanimous about changes in the distribution of determiners, complementizers and other minor categories, and how these changes might be related to the loss of inflection. Moreover, there remains a rather large question: why is the formal and



semantic drift always from inherent to structural Case (and interpretation)? These formal changes involve properties (Case) which were expressed in the substantive inflection of OE. But how did the loss of inflection determine the direction of change?

In response to this and to a host of further questions, I will argue below that the traditional consensus is essentially correct. The significant changes in the grammars of English speakers during the late OE and early ME period may all be seen to originate in the phonological levelling of the affixes of inflection. The same phonological erosion is the cause of many of the long term changes which only became apparent after centuries of drift. I will argue that the essential differences between the grammars of Old and Middle English can be shown to spring from a single phenomenon.

#### 1.1.2 The Problem in General and a General Solution

An account of the facts of Old and Middle English must have a theoretical perspective. That is, an adequate account must provide for these facts as a special case of a general response to the fundamental questions of linguistic theory.

The theoretical framework of generative grammar, has evolved with particular attention to the following questions:

1) What is knowledge of language?

How is it attained?

How is it put to use?

The attempt to answer these questions has been based on the "Innateness Hypothesis". During a specific stage of maturation, children acquire competence in one or several languages with remarkable ease and in a very short time, despite the fact that they are usually exposed to limited and faulty data and are given little or no explicit evidence (instructions, corrections, etc.) concerning the matter at hand. Moreover, such acquisition seems to be a species specific talent - chimpanzees, for example, do not have the ability to acquire language, even under similar circumstances. These observations and others were motivation for Chomsky's hypothesis that knowledge of language is of two kinds. Some knowledge of language is innate to the human species and is ultimately to be derived from the human genetic code. Some knowledge of language is acquired on exposure to a particular speech community.

Recent research suggests a more specific outline of such knowledge. Studies in comparative linguistics provide support for the view that grammars are massively similar in their principles and processes by virtue of genetic specifications. Languages differ only in the specifications of particular lexical entries and along certain fixed parameters of variation (e.g., direction of theta assignment, etc.). That is, languages differ in only limited and specific ways. The

complexity of different constructions in different languages follows from the interaction of these limited variations with the systems of rules and universal principles which elaborate each derivation.

In the generative framework, a particular analysis "describes" a set of data if it provides an explicit account of the speaker's knowledge of language, including an algorithm for the derivation of grammatical utterances. An analysis "explains" the data when it provides an account of how the requisite knowledge of language was attained. The "principles and parameters" view of language variation provides a general outline of one answer to the demand for explanation in linguistic theory.

The demand for explanation is especially pertinent in a diachronic study. Within the span of data available to modern linguistics, language change must always involve knowledge which is learned. So, aside from the particulars of lexical entries, language change is predicted to be a rather simple alternation in a single parameter (or a set of related parameters) which has complex but principled effects in various surface constructions throughout the language. Since the simultaneous change of unrelated parameters can only be coincidence, it follows that if several surface changes are apparent at one period of time, then these may be expected to stem from a change in one parameter (or a single set of

related parameters).

Moreover, historical change involves a close proximity of two different grammars. Since diachronic variation requires that some language learner must acquire knowledge of language B from exposure to the data produced by a speaker of language A, a diachronic account of parametric variation must show that the data produced by A and B is ambiguous along the suggested parameter of variation. These two grammars must be able to interact fluently.

In comparative studies (and independently of the facts of the history of English), the Principles and Parameters theory of language variation has been designed and motivated with a very specific shape. When diachronic changes are considered, the same theory automatically makes two very specific predictions:

- 2) a) Simultaneous changes reflect a single parametric variation or a set of related parametric variations.
- b) The data which sponsors parametric change must be ambiguous along that parameter or that related set of parameters.

The facts of the history of English present a serious challenge to the explanatory power of the "Principles and Parameters" view of language variation. Is it true that the various convolutions in the expressions of the late OE and early ME period and the formal and semantic drift which

originated in this period, can be said to involve a single parametric change?

I will argue that such an account is possible. Moreover, the account provides some insight into the processes and principles which are constant in the various grammars of the period and suggests a more particular view of the knowledge of language which is universal to the human species.

### 1.1.3 A Solution in Particular

An examination of the paradigms of substantive inflection in OE suggests that the properties signalled by those affixes should be represented as binary features in underspecified matrices. The affixes are phonological markers which signal the number gender and Case of the elements in a particular syntactic environment. The phonological levelling of these affixes introduced an ambiguity into the interpretation of the expressions produced by the OE grammar. Particular realizations of the properties which had been signalled in inflection were no longer self-evident in the data.

I will cite a variety of evidence which suggests that the affixes of inflection and other (phonologically independent) categories are typically the same type of element (i.e., they are syntactic categories). These elements are heads of phrases in the underlying syntactic representation. They all express properties which are best described as binary

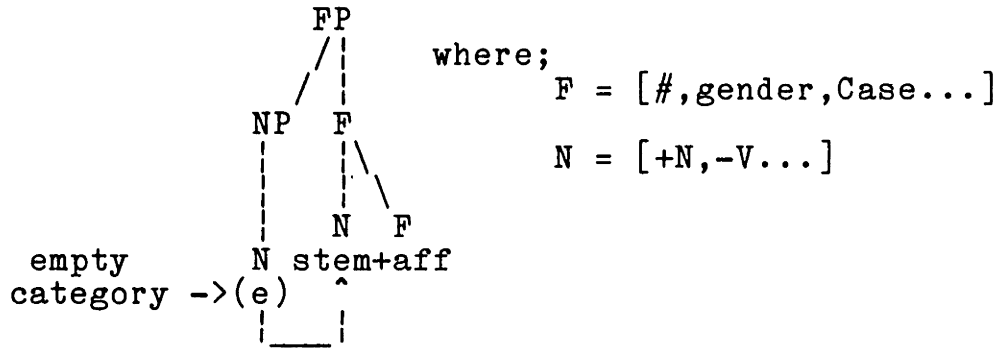
features.

Under the X-bar Convention, each phrasal projection has a "head" ( $X^0$ ) which is defined as a matrix of syntactic features. This class of features normally includes "categorial" features (i.e., [+/-N,+/-V...]). These features, however, only define the major categories (that is, the major parts of speech - nouns, verbs, adjectives and prepositions). In response to the insights in the research cited, I suggest that the class of syntactic features should also include the class of grammatical features (e.g., [+/-Plural, +/-Tense, +/-Feminine, etc.]). These features define the minor categories (the minor parts of speech) such as determiners, complementizers, Case-markers, etc.. I will show that the expanded class of syntactic features expresses the generalization developed from extensive research in comparative linguistics.

The generalization provides valuable insight into the diachronic grammar of English. The revision of the X-bar Convention which I will propose in the text below insists that since the affixes of inflection signal syntactic features, they must be the heads of independent phrases in the underlying syntactic representation. This independent status is merely obscured by head-to-head movement in the syntactic

derivation:

3)



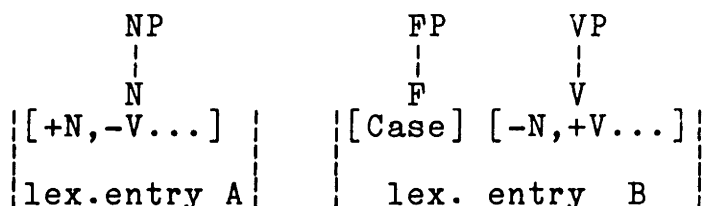
The affixes are minor categories which happen to be affixes. Affixes and stems are phonologically incomplete in underlying representations and they must be fused in surface representations to be pronounced. The required stem is adjoined to the affix by a process in the syntactic derivation (i.e., "move-alpha").

Given this perspective, the transition from a system of grammatical features signalled by inflection to a system of grammatical features signalled by minor categories is rather trivial. Underlying representations are similar in both grammars, but the ME markers for grammatical feature matrices (e.g., determiners, inserted prepositions, WH-words, etc.) are not affixes. No head-to-head movement obscures their syntactic status.

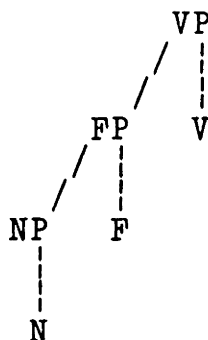
Moreover, since predicates in many languages select certain grammatical properties in their complements (e.g., Case, animacy, etc.) and since this selection must be made in lexical entries, the revised X-bar Convention insists that the

lexical entries of these predicates are the source of more than one matrix of syntactic features in the derivation. Each such lexical entry provides an independent matrix for its own categorial features and also matrices for the grammatical features of complements:

4)a)



b)



In short, the minor category (e.g., an affix in OE, an inserted preposition, etc. in ME and in later English) is required by the lexical entry of the predicate and the major category which is associated with the predicate must be a complement of that minor category (e.g., 4)b), above). Again the underlying structures remain very similar throughout the various constructions of the transitional period.

In OE, however, the explicit distinctions signalled by the affixes allowed phrases to be reordered in surface structures and reassembled at LF by the process of "Agreement". Each constituent of an OE substantive phrase appeared with its own



affix of inflection. Demonstrative pronouns, adjectives and nouns, all had affixes of inflection and when these categories were constituents of the same substantive phrase, all of their affixes had to be non-distinct in feature specifications. I will argue that "Agreement" involves "percolation" of syntactic features. The mechanism of percolation requires that elements in "Agreement" must be in the same constituency in underlying representations. So in OE, "Agreement" provided an algorithm between a fixed underlying structure and a flexible surface word order. The abundant distinctions signalled by the OE 'portmanteau' inflection (number, gender and Case) allowed speakers to reassemble even the widely scattered constituents of phrases which had been woven in the alliterative poetry.

The loss of inflection in the transitional period may be seen to be the "unpacking" of the portmanteau realization of grammatical features. The new markers for these properties (ME inflection, determiners, inserted prepositions, etc. and configurations with verbs and prepositions) tended to be less specific individually. Since the system of features involves underspecification, the loss of the more specific system of markers provides that redundancy rules are more visible in the grammar. Without the constant signal of strong inflection to instruct the language learner to encode exceptions, the distribution of feature values is generally determined by the domains described in the environments of default rules.

Without the algorithm of Agreement, the surface structures of English are required to reflect this underlying distribution directly.

Therefore, I will argue that the changes which were accomplished in the grammars of late OE and early ME involved variations in a single set of related parameters. The grammars from the beginning and end of this period differ in the specifications of syntactic features in the matrices of particular lexical entries and in the form of the redundancy rules which fill in those matrices in each derivation. The assumption that grammatical features are also syntactic features under the X-bar Convention provides for a crucial stability in the various grammars in the transitional period. I will show that each grammar uses grammatical features in the definition of substantive phrases. Each grammar produces constructions which are underlyingly quite similar - outside of these parametric variations. That is, both grammars must have matrices of grammatical features and these matrices must define similar structures in both languages.

The notion that syntactic features are underspecified in underlying representations provides an account of the most significant change of this transitional period. I will argue that these revisions of the rules and markers of syntactic features permitted the reversal of the default value for one Case feature in the domain of the verb phrase. This feature

([+/-Inherent]) provides the opposition between structural and inherent Case. In OE grammar, verbs which assigned structural Case (accusative) had to be underlyingly marked for [-Inherent] in the lexical entry for that verb. Inherent Case (i.e., dative, instrumental and some genitive Case) was not underlyingly specified. The default value for this Case feature ([+Inherent]) was assigned to these complements by a redundancy rule in the syntactic derivation.

But in ME grammar, inherent Case was underlyingly marked in verbal lexical entries and structural Case was not specified. The markedness of this Case feature was reversed in the history of English and this reversal was manifested in the formal and semantic shift of classes of lexical items in the English lexicon. But the effects of this reversal were complex and only after hundreds of years would the enormous impact of the change be fully apparent.

Again the account will meet the demands imposed by the "principles and parameters" view of language variation. there is a single area of parametric variation- syntactic features. The languages differ in their use of syntactic features in very limited ways:

- 5)a) In different languages, lexical entries have different specifications for syntactic (and phonological) features.
- b) Redundancy rules for syntactic features have different domains in different languages.
- c) Different languages have different default settings for syntactic features.

Knowledge of a particular language involves knowledge of the distribution of syntactic features in rules and in lexical entries. Given a principled account of Universal Grammar (which includes the expanded class of syntactic features), the acquisition of the required knowledge of language in the transition from OE to ME may be seen to be a possibility within the capability and the opportunity of language learners. Syntactic features (particularly grammatical features) are clearly visible as signals of "grammatical" properties (e.g., number, gender, human, partative, inalienable, etc.). Since Universal Grammar defines the distribution of syntactic features in a very narrow way (i.e., in rules and in lexical entries), comparisons of utterance and environments should establish the distribution of syntactic features with ease. I suggest that the markedness of particular features can be determined by the distribution of markers (forms) in surface structure.

I will argue below that this account explains the transition from Old to Middle English within the confines of a well-motivated theory of language variation. To the extent

that this explanation is successful, this account will provide support for the framework in which it is presented.

## 1.2 The Theoretical Framework

The basic theoretical concepts which I will use in this thesis are all derived from the work of other linguists. Although I have tried to make the exposition as self-contained and self-explanatory as possible, the intricacy of the subject matter has forced me to assume that the reader will have at least a passing acquaintance with these lines of thought.

The central notion here is the concept of binary features. This notion springs from the work of Roman Jakobson, who used it to describe both phonological and grammatical properties. The concept has since received considerable support, mainly through extensive research in phonology. Binary features are clearly the core of the theory of generative phonology which has grown from Chomsky and Halle's work, The Sound Pattern of English. The notion that feature matrices can be underspecified has also been developed in this theory. Specifically I have adopted the concepts and formalism developed in Pulleyblank and in Archangeli as the basis of this notion in my own work.

The perspective on syntactic theory which I adopt in this

thesis is based on the work of Chomsky and on the work of many other linguists (e.g., Hale, Rizzi, Higginbotham and others) who work within the framework which has been labelled "Government and Binding Theory". Although I use the terms and expressions which are familiar to researchers who work within the GB theory, the topics addressed in the theoretical discussion here are quite basic to any generative theory of syntax. I have tried to avoid theory internal debate and technical definitions, so as to keep the text accessible to all linguists.

One of the main concerns of this thesis is the nature and form of lexical entries. In this, I will try to build on the work of Jackendoff, Hale and Keyser and others.

I will adopt the "Principles and Parameters" view of variation in natural language. This perspective has evolved from a great deal of research in comparative linguistics by many linguists. The arguments made by Rizzi, Hale, Huang, Torrego, Travis, Saito, and Guersel (to name but a few) provide strong support for the notion that human languages are massively similar and differ only in limited parametric variations.

Here I must mention the work of Klima, whose analysis of diachronic changes in the distribution of English pronominal forms was an inspiration to the present work. The research presented in Klima's thesis pre-dates that of the authors

mentioned above, but his perspective on language variation is remarkably modern.

My views on diachronic linguistics have also been influenced by the work of Lightfoot, in particular his book, Principles of Diachronic Syntax.

### 1.3 Innovations

The analysis presented here is an attempt to describe and explain the relevant facts about the history of English within the confines of a particular theoretical framework. But of course, these facts have a shape of their own which does not fall out precisely from any current theory. Since the facts are what they are, I will argue for certain revisions in the theory.

The main thrust of this thesis concerns the role of a particular class of binary features in syntactic representations. I will argue that grammatical properties (such as number, gender and, significantly, Case) should be seen as syntactic features. Like the categorial features which define the major parts of speech (e.g., nouns and noun phrases, verbs and verb phrases, etc.), grammatical features also define syntactic categories - namely, the minor parts of speech (e.g., determiners and determiner phrases,

complementizers and complementizer phrases, etc.).

I will show that this hypothesis has considerable consequences in the analysis of particular syntactic structures. Since grammatical properties can be selected in the lexical entries of specific major categories (i.e., verbs and prepositions may select the Case of their complements), this notion requires that these lexical items must be the source of more than one phrasal projection in the syntactic representation. Since one of these projections must be a minor category, this perspective leads directly to the structures which have been proposed for substantive phrases in the "DP-hypothesis". This hypothesis, which has been a topic of discussion in the recent literature (e.g., Hellan (1984), Fukui and Speas (1986) and Abney (1987)), argues that substantive phrases are headed by minor categories.

I will also argue that in underlying representations, syntactic feature matrices are underspecified. They become fully specified through the application of feature-filling rules in the course of each derivation. This hypothesis permits a principled account of the distributional regularities of grammatical features in various syntactic environments. The same notion is crucial to the account of the significant changes which swept the lexicon of English during the Middle Ages.

I will show that this assumption also has significant



consequences in the theory of syntax. Since Case may be assigned by rule, structures cannot be excluded from the expressions of natural language on the basis that there is no lexical item which can "assign" Case. I will argue that the crucial question is whether or not a substantive phrase is provided with a minor category matrix which can realize Case features at a particular point in the derivation.

This thesis provides support for a particular view of the organization of the grammar of natural language. The account of inflection and other minor categories argues that lexical insertion - the transfer of information from the lexicon to particular representations - is not a single operation in each derivation. The account of lexical entries and their instantiations argues that phonological, syntactic and semantic information must have independent levels of representation. Both of these notions have been proposed and supported in the current literature (e.g., Pranka (1983), Sproat (1985); Jackendoff (1983, 1987), Hale and Keyser (1986)).

#### 1.4 Organization

Chapter 2 presents an account of the affixes of substantive inflection in OE. I argue that the grammatical properties which these affixes signal are best represented as binary features. The patterns of "syncretism" in the syntactic distribution of these affixes provide evidence that they are underspecified for these features. The affixes are phonological signals which are inserted into fully specified positions at a relatively late stage in each derivation. I show that this process of insertion must be constrained by "Agreement", by "Blocking" and by a specific hierarchy among the features involved.

Chapter 3 is an account of underlying representations. I argue that the fully specified representation into which the affixes of inflection are inserted is itself derived from an underspecified representation. The deeper representation becomes fully specified through the application of particular feature-filling rules. In the account of the Case feature [+/-Inherent], I will point out a remarkable parallel between the complements of present English noun phrases and the complements of OE verb phrases - in contrast with present English verb phrase complements. This chapter proposes that grammatical features are syntactic features, in that they

define syntactic structures. The final section also presents an account of the relation between binary grammatical features and the semantic properties which they may represent.

Chapter 4 outlines a theory of lexical entries which provides for a principled relation between syntactic features and thematic structures. I argue that these are independent representations which are related in a specific manner. Both categorial features and grammatical features are involved in specific processes in the fusion of thematic structures. The syntactic process of "Agreement" is defined and illustrated.

Chapter 5 is an account of the relevant aspects of OE syntactic structures. This chapter provides more concrete examples of the theoretical points discussed in the previous chapters.

Chapter 6 describes the syntax of early ME, with particular attention to the continuations of the Anglo-Saxon Chronicle which appear in the Peterborough manuscript. I will argue that the structures of the substantive phrases of OE and ME are essentially the same. The changes which are apparent in the surface structure of ME expressions are merely changes in the phonological signals of these structures. I will describe the most significant change of this period - the revision of the rules which assign the default value of the feature which distinguishes structural from inherent Case.



## Chapter 2

### Inflection in Old English

#### 2.1 On the Nature of Inflection

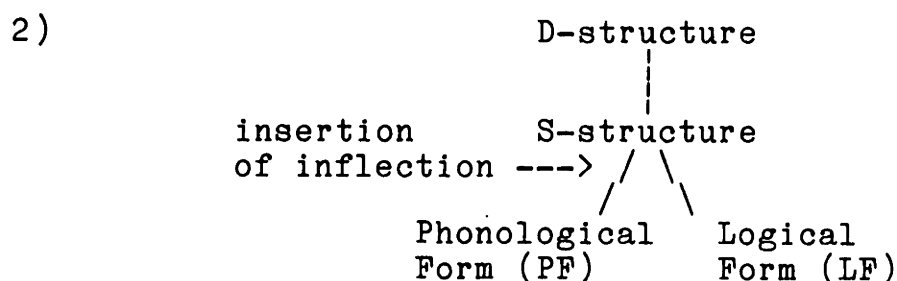
In OE, the affixes of inflection played a prominent role in the composition and the comprehension of every utterance. The nouns, verbs, adjectives and pronouns of OE, all appeared with affixes and these affixes signalled the various properties of their particular syntactic environment. The properties which are revealed in these signals - the "grammatical" properties of OE - include those in the list below. I assume that these properties are drawn from a finite set of such properties which is provided by Universal Grammar:

- 1)
  - singular/plural/dual (number),
  - masculine/neuter/feminine (grammatical gender),
  - 1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup> (person),
  - nominative/accusative/genitive/  
dative/instrumental (Case),
  - present/past (tense),
  - indicative/subjunctive/imperative (mood),
  - etc.

Apart from phonological information, the enumeration of these

properties exhausts the information provided by the affixes.

It is important to realize that the affixes are merely phonological signals which are inserted in specific positions in a more abstract representation. This underlying representation is based on the concatenation of the lexical categories in the utterance (i.e., nouns, verbs, etc.). These lexical categories are "content" words and define the syntactic and semantic form of sentences by themselves. The affixes of inflection are added to this representation at a late stage of the derivation of each sentence - as an additional overt signal of the properties of this underlying representation. In terms of the familiar model of the GB framework, the lexical categories of natural language are represented at all syntactic levels in the grammar and (generally) at PF, but the affixes of inflection only appear in PF representations:



There are three major arguments which lead me to this conclusion. The first argument is based on the observation that the affixes of inflection are signals of the grammatical properties of the syntactic environment where the affix is

placed. In OE for example, the inflectional affixes of nouns, adjectives and pronouns were signals of the grammatical properties "number", "grammatical gender" and "Case". But there is good evidence that certain properties of Case are determined by the lexical specifications of verbs and prepositions, while others are determined by rules in the grammar which are sensitive to the syntactic domains defined by lexical category projections (i.e., noun phrase, verb phrase, etc.). Such evidence will be presented in detail in the chapters which follow. On the other hand, the properties of grammatical gender in a particular syntactic environment are determined by the lexical specifications of nouns. Since both Case and gender are often signalled in a single nominal affix (e.g., "-ne" = non-neuter, accusative), it is apparent that the choice of a nominal affix must depend on the choice of the Case assigner and on the choice of noun.

In other words, nouns, verbs, adjectives and prepositions and adverbs (lexical categories) are consciously selected from the lexicon on the basis of their semantic content. Although these selections may bring specific grammatical properties to the representation, these properties are not the basis of the selection of lexical categories. But the affixes of inflection are selected from the lexicon on the basis of the assembled grammatical properties of the syntactic representation. This selection is merely a reflex of the (prior) selection of lexical categories. I will argue below

that the grammatical properties of a particular environment must be assembled before the selection of the proper affix of inflexion can be made. Therefore, inflection is inserted into a representation which has been independently generated.

Of course, it is possible to construct a theory where this argument is reversed. As a mechanism, the selection might be described in the opposite direction. The affixes of inflection might be selected randomly and the selection of lexical categories (i.e., nouns and verbs, etc.) might then depend on the grammatical properties which are signalled in the affixes. Presumably, these affixes would "filter out" lexical categories with the wrong grammatical properties. But since the utterances of natural language are not organized randomly, such a theory is obviously absurd. It fails to take note of the fact that the categorial and grammatical properties of natural language are generally ignored in the conscious mind of the speaker. Only our formal education encourages us to be aware of the categorial and grammatical distinctions in our language. Sound and meaning are the primary focus of our conscious attention. Any speaker can compose utterances on the basis of meaning (i.e., prose) or on the basis of sound and meaning (i.e., poetry), but we have no traditions of 'grammatical' composition - for example, a type of literature where every third word is a feminine singular genitive noun and every other sentence is either past subjunctive or future anterior. Even nonsense verse (e.g.,



Lewis Carroll) follows the regular grammatical patterns of natural language. This pattern is simply thrown into relief by the abandonment of "meaning" in such verse<sup>1</sup>.

The second argument which leads to the conclusion that the affixes of inflection are inserted into an independently generated representation actually makes a more general point. In her dissertation, Pranka (1983) discusses the cross-linguistic phenomenon of phonological suppletion - where the properties of inflection and the properties of a lexical category are (exceptionally) represented in a single phonological unit which cannot be decomposed (e.g., in present English, "he go+ third person singular present => he goes", but "he go+ third person singular preterite => he went"). Pranka demonstrates that the environments where suppletion occurs are not defined until the Surface-structure representation.

For example, Pranka shows that in Papago, WH-words exhibit a suppletive alternation which depends on their surface position in the sentence. The citation form of the word meaning "who" (hedai) is used in sentence medial positions, but another form

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1. Morris Halle (personal communication) points out a possible counter-example in the frequent use of grammatical "parallelism" in composition. I protest, however, that this style is based on parallels in sound and meaning, so that it is far from the kind of "grammatical composition" which I argue does not exist.

(doo) is used in sentence initial positions (Pranka, p.141):

- 3) a) K hedai hehem?  
(and) who is coming?  
b) Doo'o hehem?  
Who is laughing?

The other WH-words in Papago also have surface forms which depend on surface position (p.142):

4)	<u>Medial</u>		<u>Initial</u>
	hebai	"where"	baa
	has	"how"	saa
	hascu	"what"	saacu

Pranka provides further evidence based on synthetic verb forms in Modern Irish and on the "fused" forms of the prepositions and articles of Spanish, Portugese and French (e.g., in French, "de (of) + la (the, fem.) => de la", but "de + le (the, masc.) => du", etc.). I refer the reader to her discussion for the details of these analyses. She argues convincingly that there are at least two processes which insert information into the representations which provide the expressions of natural language. Semantic and syntactic information appears at D-structure. Phonological information (for both lexical category positions and for the positions held by inflection) is inserted in the representation at a later stage in the derivation. The affixes of inflection only participate in this latter process of insertion. They are phonological reflexes of the underlying representation. One

might say that the phonological forms of lexical categories are signals of the semantic and syntactic "bones" of the sentence while the affixes of inflection are the signals of the connection and relations between these "bones" (i.e., the "joints").

The third argument that inflection is inserted into an independently generated representation comes from the analysis of "Case conflicts". The presentation of this argument requires some further discussion of the proper representation of the properties of inflection.

In traditional presentations, the affixes of inflection are organized in paradigms according to the stems with which they could appear, (e.g., the strong adjective paradigm is the set of affixes which could appear with a strong adjective stem<sup>2</sup>). Not every grammatical property has a distinct signal in every paradigm. The properties which are signalled in the major

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2. The 'weak/strong' distinction in OE is sometimes arbitrary but it does seem to be associated with a notion something like "deictic/non-deictic". Weak adjectives are used in OE when the substantive phrase includes a demonstrative or when the expression is a vocative.

substantive paradigms of OE are distributed as follows:

)	nom/acc/ dat/gen	inst	sing/ plur	dual	masc/neut/ fem
a) 1&2 Pronoun	*		*	*	
b) 3 Pronoun	*		*		*
c) Strong Noun	*		*		*
d) Weak Adj./Noun	*		*		*
e) Dem. Pronoun	*	*	*		*
f) Strong Adj.	*	*	*		*
g) Inter. Pronoun	*	*			*

Verbal inflection provided a signal of the following properties:

- 5) sing./plur. (number),  
 1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup> (person),  
 pres./past (tense),  
 indicative/subjunctive/imperative (mood)

These paradigms (groups of affixes) are defined only by their stems. The affixes themselves are seldom restricted to appear in only one paradigm (e.g., the form "-ra" appears in the genitive plural environments of almost every paradigm). Moreover, the syntactic distribution of the affixes of particular paradigms is often not limited to an environment specifically defined by all the grammatical properties which are signalled in that paradigm. That is, different combinations of grammatical properties are often signalled by the same phonological shape. This "syncretism" among the

forms of each paradigm is illustrated in the following chart of the syntactic distribution of the OE third person pronoun affixes. The stem for these affixes ([hi+]) is subject to a phonological alternation:

V --> [-HIGH] / \_\_\_[-HIGH]

6) Third Person Personal Pronouns

	Masculine	Singular Neuter	Feminine
Nominative	-e	-t	-eo
Accusative	-ne	-t	-eo
Genitive	-s	-s	-re
Dative	-m	-m	-re
Instrumental	-m	-m	-re

Plural

Nominative	-ie	-ie	-ie
Accusative	-ie	-ie	-ie
Genitive	-ra	-ra	-ra
Dative	-m~om	-m~om	-m~om
Instrumental	-m~om	-m~om	-m~om

A glance at the chart shows that the distribution of forms depends on grammatical properties. Forms are either constant in gender and variable in Case (i.e., "-eo", "-re", "-t"), or constant in Case and variable in gender (i.e., "-s", "-ra"), or constant in both (i.e., "-e", "-ne"), or variable in both

(i.e., "-m", "-om", "-ie"). Only one is apparently variable in number, ("-m")<sup>3</sup>.

Moreover, in all of the third person substantive paradigms, there is a consistent pattern in the syncretism of forms. The abstract below illustrates this pattern. The lines connect the coordinates on the chart which are always signalled by identical phonological shapes in every paradigm:

7) Abstract of OE Syncretism

	Masc.	Sing. Neut.	Fem.
Nom.	.	·	·
Acc.	.	·	·
Gen.	.-----.		·
Dat.	.-----.		·
Inst.	.-----.		·
		Plur.	
Nom.	·	·	·
Acc.	·	·	·
Gen.	.-----.		·
Dat.	.-----.		·
Inst.	.-----.		·

Most paradigms (like the third person pronoun paradigm, above) have additional examples of syncretism. The fact that the paradigms have this common pattern, however, is a remarkable

3. I will argue below that these "-m" forms are distinct affixes in the singular versus the plural.

fact and hardly seems to be a coincidence. There is some factor in the source of the syncretism which is independent of the particulars of specific paradigms.

This common pattern of syncretism is not a phonological coincidence. Nor does it follow from instances of the same affix appearing in various paradigms. The same pattern of syncretism may be observed in affixes with quite different phonological shapes. For example, the plural forms of the weak noun paradigm have a distribution which is exactly parallel to that of the plural forms of the third person pronoun forms described above. But they have different phonological shapes:

8)	3 <sup>rd</sup> P.P.P.	Weak Nouns
	-ie <----->	-an
	-ra <----->	-ena
	-m <sup>o</sup> m <----->	-um

Moreover, as I shall illustrate below, very similar patterns of syncretism may be observed in the inflectional paradigms of Latin and Russian substantives. It would seem that the syncretism arises from the nature of the representation of grammatical properties in the affixes of inflection.

Moreover, in all the paradigms of OE and in the paradigms of Latin and Russian, some factor encourages a common pattern in this syncretism.

In "The Structure of the Russian Verb", Roman Jakobson

points out an asymmetry in the expression of grammatical properties in natural language:

(Note: Category = affix of inflection,  
A = grammatical property)

"If Category I signals the existence of A, then Category II does not signal the existence of A, i.e. it does not say whether A is present or not. The general meaning of the unmarked Category II, as compared to the marked Category I is restricted to the lack of "A-signalization"."

The point may be easily illustrated. In present English, the word "lion", by itself is not a signal for natural gender. But in context with "lioness", "lion" signals "male". In contrast, the word "lioness" always signals "female":

9) a) Did you see a lion here lately, Alice?

lion ---> male or female

b) Have you seen a lioness around here, Alice?.

lioness ---> female (not male)

c) I saw lions and lionesses around here today!

lion(s) ---> male (not female)

lioness(es) ---> female (not male)

One side of the property "male/female" has a specific signal in the representation. The other side of this property is only signalled by a form which appears in opposition to the specified form.

Such oppositions are defined in specific domains. The



following contrast shows that the domain for this opposition of male/female in present English is (roughly) the sentence<sup>4</sup>:

10) a) There were lions in the park.  
A lioness ate my sandwich!

lions ---> male or female

b) There were lions in the park  
and a lioness ate my sandwich!

lions ---> male (not female)

As I will show below, the same kind of asymmetrical marking is present in the representation of grammatical properties in the OE affixes of inflection. The domains for the opposition of these grammatical properties are the paradigms discussed above. In one paradigm, a single form might be used as a signal in two distinct syntactic environments (e.g., in the strong noun paradigm, the form "-e" appears as masculine/neuter dative and as masculine/neuter instrumental). In another paradigm, however, the same form might have a more restricted distribution because this second paradigm includes another form which is particularly marked for one of these environments (e.g., in the strong adjective paradigm "-e" appears as masculine/neuter instrumental, but another form "-um", appears as masculine/neuter dative). When these forms are part of the same paradigm they are in

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4. Note, however, that discourse factors are also involved here.

opposition for the property in question. Only in this paradigm does the unmarked form signal one side of the pertinent property.

Jakobson's observations are valuable hints as to the best way to represent grammatical properties in an account of natural language. It seems that these properties are binary and that only one side of each binary distinction is actually specified. It is notable that the same statement may be argued to be true for the phonological properties of natural language.

The representation of phonological properties as binary features is a well-established practice in phonological theory. Prompted by considerations concerning vowel harmony and tone processes, recent research in phonology (e.g., Archangeli (1984), Pulleyblank (1983) and others) has revived the notion that the representation of these features involves underspecification. In particular, Archangeli argues for a specific constraint on phonological representations as follows:

"No feature has both "+" and "-" (in different matrices) in underlying representation. A feature has the value "a" (either "+" or "-", not both) and the value "-a" is supplied by rule elsewhere, or the feature has no value at all in underlying representation and both "a" and "-a" are supplied by rule....The information absent in underlying representation is supplied by redundancy rule which may be either language specific or universal."  
(p.11-12)

According to Archangeli, a process "Alphabet Formation" automatically provides redundancy rules to complement the feature values which appear in underlying representations. Thus, if [+F] appears in underlying representations, then there is a redundancy rule in the grammar:

$$[ \ ] \text{ ---> } [-F]^5$$

Where [+F] does not appear in the underlying representation, some value of +/- is supplied for [F] by rule. If no other rule intervenes, the redundancy rule applies and the segment is specified [-F]. But other rules may apply first and mark the unspecified segment [+F]<sup>6</sup>.

The grammatical properties which are signalled in natural language have also been represented as binary features, in various linguistic theories. The observation that both phonological and grammatical properties are underspecified suggests that this is not an accidental parallel of notation. If the same mental mechanism (i.e., binary features) is used

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5. I assume that only feature matrices which include the pertinent unspecified feature are subject to these rules (i.e., [ ] = [OF]). Matrices which are already specified for this feature, or which have no such feature at all, are indifferent to the rule.

6. Moreover there may be special exceptions to the rule of markedness given above. That is, occasionally certain lexical items are specified in the underlying representation for the feature value which is normally supplied by rule. But these should be quite prominent as exceptions, since they are very expensive to the economy of the grammar.

to represent the oppositions of both phonological and grammatical properties, then the fact that both kinds of properties are underspecified in representations is no coincidence. Both kinds of information are encoded in a mechanism which of itself requires underspecification. Since this asymmetry appears with two quite different types of information (i.e., grammatical versus phonological properties), the asymmetry does not follow from the nature of the properties but rather from the nature of the vehicle which is used to encode these properties in representations. That is, underspecification reflects an arbitrary facet of the human mental organ which generates the expressions of natural language.

The theory of underspecification which Archangeli develops requires that the grammar should include at least one redundancy rule for every feature in the grammar. Thus every representation will surface with fully specified feature matrices. But the evidence from Case-conflicts argues that the signals of grammatical properties are always underspecified. The syntactic environments where these signals are inserted, however, are fully specified.

As I mentioned above, the environments where the affixes of inflection appear are defined for particular values of grammatical features by the lexical categories which appear in that representation. Thus, for example, certain verbs and



nominative<sup>9</sup>. German, like OE, has grammatical and natural gender signals. The form 'was' is neuter (or inanimate) and regularly appears in nominative or accusative neuter environments. The forms 'wer' and 'wen' are both masculine/feminine (animate) signals. 'Wer' only appears in nominative environments and 'wen' in accusative.

Since "was" typically appears in nominative or accusative environments, it presumably does not signal any value of the feature which opposes nominative and accusative Case. It is no surprise to a theory of underspecification that 'was' can appear in an environment which is required to realize both (conflicting) values of this feature. Since it signals neither value of the Case feature, the signal provided by 'was' is in conflict with neither.

The forms 'wer' and 'wen', however, provide an opposition between (animate) nominative and (animate) accusative. Presumably then, one of these signals is specified for one value of the relevant Case feature. Let us say that 'wen' is specified for one value of this feature. (i.e., [+Accusative]). It is no surprise, then, that when 'wen' appears in a Case-conflict position for this feature, the sentence is ungrammatical. An accusative Case signal

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9. It is not clear how the embedded verbs of free relatives are able to make this demand of the head of the construction. Nevertheless, it seems to be the fact.

conflicts with the assignment of nominative Case.

But if the signals are underspecified and if "wen" is specified for accusative Case, then the form 'wer' should not be specified for this Case feature. That is, 'wer' signals nominative Case only in opposition to the marked accusative form 'wen'. Why is the sentence with 'wer' unacceptable?

The answer to this might be argued to lie in the phenomenon known as "Blocking". Linguists from the time of Panini onwards have noticed that when two or more appropriate grammatical signals are available in the grammar, the most specific signal is always chosen. It seems that there is a general principle available in every grammar- a "Blocking" principle which requires the use of the most specific grammatical signal available<sup>10</sup>. The notion of "Blocking" and its pertinence to the affixes of OE inflection will be discussed at greater length in Section 2.4, below. For the present discussion, I simply note that this principle provides the basis for the contrast between the use of 'wer' and 'was' in the examples above. Although the Case specification (rather, lack of specification) of 'wer' is not in conflict with the underlying environment, the use of 'wer' is still unacceptable. The environment requires (among other things)

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10. See Aronoff (1976, p.43) for some discussion of Blocking in the processes of word formation.

the presence of accusative Case. There is a form of inflection (for animate referents) which is specifically marked for this Case (i.e. 'wen'). The use of 'wer' thus violates the Blocking principle and this is the reason that the sentence is unacceptable.

Notice that this complication of the account is required by the facts. Speakers find that there are three levels of judgement involved in these sentences. The same relative judgements are observed in present English examples of Case conflicts:

- 12) a) I destroy what annoys me.  
b) ?I destroy who annoys me.  
c) \*I destroy whom annoys me.
- 13) a) What Mary likes annoys me.  
b) ?Who Mary likes annoys me.  
c) \*Whom Mary likes annoys me.

The c) examples are ruled out because the form "whom" is specified for the opposite value to one of the feature values required in the underlying representation. These sentences get a full star (\*) judgement. The b) examples are ruled out by a violation of the Blocking principle. This violation invokes only a question mark (?) judgement. The contrast between these judgements supports the claim that different factors rule the different sentences ungrammatical.



The evidence from Case conflict examples argues that the inserted signals of grammatical properties - the affixes of inflection, etc. - are always underspecified. If default rules were to fill in the underspecified matrices of these signals so that every form was fully specified, then we should expect that no form inserted in an environment of Case conflict would produce a grammatical sentence. On the other hand, the underlying representation must be fully specified when the signals are inserted. Otherwise, there would be no possibility of a Case conflict in the first place. All examples would then be grammatical.

This point provides the third argument toward the conclusion that the affixes of inflection are inserted into a representation which has been independently generated. Only this perspective allows an account of Case conflict examples.

Furthermore, Case conflict examples are a valuable hint as to how a theory of underspecification which was developed to deal with phonological properties can be adapted to the representation of grammatical properties. Only the underlying matrices of grammatical features are (eventually) fully specified<sup>11</sup>. The default rules for grammatical features apply to representations before the insertion of the signals of

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11. In the following chapters, I will present evidence that underlying representations indeed do begin as underspecified matrices.

inflection (before or at S-structure).

In the next sections, I will develop an account of the specifications of grammatical features in the affixes of the (third person) substantive paradigms of OE inflection. I shall demonstrate that the patterns of syncretism can be used to determine the shape of the oppositions which are encoded in OE grammatical features. The patterns will also provide arguments concerning which side of each opposition is marked in the signals of inflection. This evidence shows that either side of a particular opposition may be marked - even in the same paradigm. Since I have argued that the syntactic parallel to Archangeli's theory of underspecification is the theory of the underlying specifications of grammatical features (not the representation of the features of the phonological signals), this does not violate the parallel between phonological and syntactic feature representations.

## 2.2 The Oppositions Extant in the Paradigms

### 2.2.1 Number

There are three numbers signalled in the expressions of OE; singular, dual and plural. But only a few remnants of the "dual" signals exist - in the forms of the first and second person pronouns. It is apparent there that the signals for

dual and plural have something in common, in opposition to the forms which signal singular:

14)	First Person Pronouns		
	Singular	Dual	Plural
Nom.	ic "I"	wit "we two"	we "we"
Acc.	mec~me	uncit~unc	usic~us
Gen.	min	uncer	user
Dat.	me	unc	us
Inst.	me	unc	us

Since little can be learned from so little evidence and since these forms might be argued to be more complex than the simple "stem+affix" arrangement of the third person paradigms, I will not attempt an account of the notion "dual" in this thesis, nor will I present an account of the feature specifications of the signals of this paradigm.

There remains the singular/plural opposition (with dual subsumed in plural), which I will represent formally in the binary feature [+/-Plural].

### 2.2.2 Gender

There are three grammatical genders in the expressions of OE. At least two binary features are required to represent masculine, neuter and feminine.

In most substantive paradigms, the masculine and neuter forms in the genitive, dative and instrumental Cases in the singular are phonologically identical and are opposed to a distinct feminine form. The demonstrative paradigm provides

an illustration:

15)		Demonstratives		
		Singular		
	Masculine	Neuter	Feminine	
Gen.	ɸae+s	ɸae+s	ɸae+re	
Dat.	ɸae+m	ɸae+m	ɸae+re	
Inst.	ɸae+m	ɸae+m	ɸae+re	

This opposition will be represented formally in the binary feature [+/-Feminine].

In the interrogative pronoun paradigm, in the nominative and accusative singular, a single form signals masculine or feminine, in opposition to the neuter form<sup>12</sup>:

16)		Interrogative Pronouns		
		Singular		
	Masculine	Neuter	Feminine	
Nom.	hwae+a (->hwaa)	hwae+t	hwae+a (->hwaa)	
Acc.	hwae+ne (->hwone)	hwae+t	hwae+ne (->hwone)	

I shall represent this alternation with the binary feature [+/-Neuter].

It might be argued that the nominative singular forms of the weak noun and adjective paradigm indicate a different distinction. It seems as though the masculine form is opposed to a single form which appears in neuter or feminine environments.

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12. I assume that the alternations in the vowel of the stem are due to phonological processes

17)

## Weak Nouns and Adjectives

	Singular		
	Masculine	Neuter	Feminine
Nom.	nom-a "name"	eag-e "eye"	tung-e "tongue"
Acc.	-an	-e	-an
Gen.	-an	-an	-an

But I suggest that there are two affixes here which both have the form "-e" through an historical accident. This is not surprising, since as Campbell points out (p.19 \$49) very early in OE the front vowels "i, ae, e" in unstressed positions (i.e., word-final, etc.) fell together in one sound, written "e".

Furthermore, even if one assumes that the two nominative singular "-e" forms are identical, one is still forced to postulate two affixes "-e" in this paradigm. Since "-an" appears in all genders (in the genitive), it cannot be underlyingly specified for gender features. Similarly the hypothetical nominative neuter/feminine "-e" affix cannot be specified for the feature distinguishing feminine from neuter. But in the accusative the form "-an" is opposed to a form "-e" for gender. Thus, even if the nominative "-e" forms were to be considered instances of the same affix, there must be another distinct "-e" affix in this paradigm (=accusative neuter).

Given this dilemma and observing that the features [+/-Feminine] and [+/-Neuter] are visible in other paradigms, it seems better to suppose that the nominative and accusative

neuter singular forms spring from the same lexical entry, while the nominative singular feminine form "-e" is a different affix.

There remains something of a mystery here, concerning gender. Given two arbitrary features (i.e., grammatical gender), why are there not four distinctions? Why is there no combination [+Neuter, +Feminine]? I believe that this fact follows from the relation between grammatical and natural gender.

There is a parallel to this gap in the signals of number. Like gender, number has only three distinctions (singular/dual/plural), but presumably requires two binary features in the representation. But the reason for the gap in the number signals is clear. The concept "dual" implies the concept "plural". The lack of a signal of "singular+dual" has a semantic basis.

It is apparent that the distinctions of gender in OE were usually "grammatical" rather than "natural" (i.e., an arbitrary distinction rather than one directly linked to a semantic concept). For example, the word "wif" ("woman") was neuter, not feminine, "stan" ("stone") was masculine, etc.. Grammatical gender was not the same thing as natural gender.

In spite of this statement, there was a more or less predictable relationship between the two. Men's names, for

example, were masculine and women's feminine. Grendel's mom in Beowulf is named by words of all the genders:

- 18) a) 1256 wrecend "avenger"  
nom. sing. masculine
- b) 1258 Grendles modor "Grendel's mom"  
nom. sing. feminine
- c) 1259 ides "lady"  
nom. sing. feminine
- d) 1259 aglacwif "monster woman"  
nom. sing. neuter

But in pronouns, as the following example illustrates, the woman is always named as feminine<sup>13</sup>:

- 19) Beowulf 1291 - 1292  
(masc.) (fem.)  
...þa hine se broga angeat. Heo waes on ofste...  
...when him that terror siezed. She was in haste...

Furthermore, in the diachronic development of English, "grammatical" gender in the demonstrative and personal pronouns, was supplanted by "natural" gender. "Grammatical" neuter became "natural" inanimate and "grammatical" masculine and feminine became their "natural" counterparts, male and female.

One might suppose then, that redundancy rules in the grammar of O.E. included the following redundancy rules:

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13. Note, however, that with inanimate antecedents, personal pronouns usually reflected their grammatical gender. See the discussion in Chapter 3.

- 20) a) [ ] ---> [-Neuter] / [\_\_\_\_,+Animate, +Pro]  
 b) [ ] ---> [+Feminine] / [\_\_\_\_,+Female, +Pro]

The rules above provide specific grammatical gender features for any pronominal stem which is underlyingly marked for natural gender.

The rules also provide the basis for an account of the historical change from grammatical to natural gender. Third person personal pronouns were underlyingly marked for natural gender and they received their specification for grammatical gender through rules as above. The loss of the grammatical gender distinctions in the affixes led to the abandonment of the pertinent rules - with no change in the underlying natural gender specifications of the pronoun stems.

There is a semantic redundancy in natural gender which can be expressed by rule. Anything which is female is animate:

- 21) [ ] ---> [+Animate] / [\_\_\_\_,+Female]

Given the intimate relation between grammatical and natural gender, it seems natural to think that the redundancy between the features of natural gender is (somehow) the source of a parallel redundancy between the features of grammatical gender. That is, there was a rule in the grammar of OE as follows:

- 22) [ ] --> [-Neuter]/ [\_\_\_\_,+Feminine]



Given such a rule, it follows that underlying representations will never provide a [+Neuter, +Feminine] environment. So there will be no signals for such an environment.

Exactly how such a rule was initiated in the grammar remains a question. It seems likely, however, that natural gender was somehow involved. I will suggest a solution to this conundrum in Chapter 3.

### 2.2.3 Case

There were five Case oppositions which were signalled by the OE affixes of inflection. At least three binary features are required to represent nominative, accusative, genitive, dative and instrumental Case. But in fact three binary features offer eight formal oppositions - where are the other three? Although only five of the oppositions are visible in the signals in the paradigms, I shall argue that the syncretism of forms obscures the fact that OE actually had eight Cases in underlying representations. To make this point, it will be useful to review a pioneering work in the analysis of Case.

In "The Structure of Russian Case Forms", Roman Jakobson suggests that three alternations in "meaning" underly eight realizations of Case features in Russian. According to Jakobson, Russian has six "primary" Cases: nominative, accusative, genitive, locative, dative and instrumental. In some paradigms, genitive and locative are further divided into

two more "accessory" Cases (i.e., genitive = genitive1, genitive2; locative = locative1, locative2). He proposes three features of Case (p.109):

[+Directional] "The feature of directionality in the A[ccusative] and D[ative] is opposed to the absence of this feature in the N[ominative] and I[nstrumental]; we shall call the A and the D directional cases."

[+Quantification] "The feature of quantification in the G[enitive] is opposed to its absence in the N and A, and the same feature in the L[ocative] is opposed to its absence in the I and D; we shall call the G and the L quantificational cases as distinct from the other non-quantificational cases - N,A,I,D"

[+Marginal] "It is the feature of marginality in the I, D and L which opposes these cases to the N, A, and G which lack this feature."

Jakobson defines the property "directionality" as that which is assigned to "an entity upon which the action is directed" (P.108). The property "quantification" is "an orientation toward limiting the signified entities participation in the contents of the utterance" (p.107). The notion "marginality" signifies that "a peripheral role is attributed to the entity in the contents of the utterance" (p.108).

The three features define eight Cases as follows:

23 )

	Nom.	Acc.	Gen. 1	Gen. 2	Loc. 1	Loc. 2	Inst.	Dat.
[+Qua]	-	-	+	+	+	+	-	-
[+Mar]	-	-	-	-	+	+	+	+
[+Dir]	-	+	-	+	-	+	-	+

In the remainder of this thesis, I will utilize three Case features which are quite parallel to those described by Jakobson - but (for reasons internal to this presentation) the labels of these features will be different. Jakobson's [+/-Marginal] will be here [+/-Inherent]. [+/-Directional] will be relabelled [+/-Accusative]. [+/-Quantificational] will be [+/-Genitive]. The change is simply a variation in notation.

The binary feature [+/-Inherent] opposes the structural Cases (i.e., nominative and accusative) to the inherent Cases (i.e., dative and instrumental). This is both a traditional opposition and one which has appeared in modern syntactic analyses (e.g., Chomsky, 1986).

I will parallel Jakobson's analysis of Russian Case in assuming that the feature which distinguishes nominative from accusative case ([+/-Accusative]) is the same feature which distinguishes instrumental from dative Case (i.e., instrumental = [-Accusative]). I will illustrate below that the facts of OE support this generalization.

The feature [+/-Genitive] opposes the genitive Case signal to all the others. But it seems clear that the genitive Case signal appears in OE in environments which are either value of [+/-Inherent] and either value of [+/-Accusative]. Again I will parallel the outline provided by Jakobson's analysis of Russian. I assume that in the syntax of OE there are actually

four distinct underlying Case feature specifications where a genitive Case signal can appear;

24)

1. [+Genitive, -Inherent, -Accusative]
2. [+Genitive, -Inherent, +Accusative]
3. [+Genitive, +Inherent, -Accusative]
4. [+Genitive, +Inherent, +Accusative]

That is, there are actually four genitive Cases in the underlying representation which parallel the four non-genitive Cases. These distinctions (like many others) are obscured by the syncretism of forms in the paradigms of affixes which signal Case, but they are there nevertheless.

There is evidence of these specifications in the interpretation of genitive arguments in OE. This evidence will be discussed immediately below. Further evidence in support of this view may be found in the patterns of diachronic change in English. This is presented in the chapters which follow (especially Chapter 7).

It is not my purpose to argue for a specific definition of the semantic properties which are associated with particular Case features. But I will follow Jakobson in the assumption that there are such properties in such an association. The definition of the semantic notions which are relevant to individual features is difficult, for every argument is presumably assigned some value for all three Case features. That is, the notions which are associated with particular

features are always met in combinations, and sorting these out is no trivial task. Moreover, it is clear that the Case features which are assigned to particular arguments are no more than general indicators of the nature of the theta-role which that argument has been assigned. Each theta-role is defined specifically and uniquely by the predicate which is the theta-role assigner, and sometimes the interpretation is further detailed by other content words in the representation or by context. Thus Case features do not define all of the semantic content of the theta-roles with which they are associated.

But the definitions suggested by Jakobson do find their parallel in OE. As in Russian, the OE accusative and dative Cases had a rather similar "directional" content. This is clearly illustrated in examples like the following:

25) Beowulf 1907-1909

		(dat. pl.)
no	<u>paer</u>	wegflotan wind <u>ofer ybum</u>
not	there	wave-floater wind over waves
sipes	getwaefde;	saegenga for
(of)	journey deprived;	sea-goer before
		(acc. pl.)
fleat	famigheals for	<u>ofer ybe</u>
swam	foamy-necked	forward over waves

"the wind on the waves did not there deprive the wave-floater of its voyage; the sea-goer swam foamy-necked before (it) forward over the waves"

Like many other OE prepositions, 'ofer' could take dative or accusative complements according to the intended

interpretation of the argument. The [-Inherent] specification of accusative Case (versus [+Inherent], dative), seems to be associated with some notion of movement. But both accusative and dative cases were associated with "direction" in a way that is not paralleled in nominative or instrumental usage. I assume that this association reflects their [+Accusative] specification.

Similarly, the nominative and instrumental arguments of OE seem to share some notion of "actor", even though the nominative ([-Inherent]) usually includes a sense of "volition" which is not present in instrumental ([+Inherent]) (i.e., "agent" versus "instrument"). This is easily illustrated:

26) Beowulf 1541-1542

(nom.)

Heo him eft hraþe handlean forgeald  
She him after quickly handgift (blow) repayed

(instr.)

grimman grapum  
(with) fierce claws

These interpretations have parallels in the various usages of genitive in OE. The following example demonstrates a clearly "directional" sense in genitive arguments:



are genitive2 ([+Genitive, -Inherent, +Accusative]). Note that the suggestion that these latter examples are [-Inherent] is supported by the fact that many of the verbs in this class have "transitivizing" prefixes "be+" or "ge+". I shall argue below (in Chapter 7) that these prefixes are generally associated with the feature [-Inherent].

Perhaps the most common use of the genitive in OE has an interpretation of "cause" or "source". These would seem to fit the interpretation expected of genitive3 ([+Genitive, +Inherent, -Accusative]):

29) a) Beowulf 1366-1367

(gen.sg.)  
 No þaes frod leofaþ  
 Not (because of) that old and wise lives

gumena bearna þaet þone grund wite  
 (of) men's children who that area would know

"Because of that, no old and wise one of the children of men lives who would know that area."

b) Elene 110

(gen.sg.)  
 hrefn weorces gefeah  
 raven (because of) work rejoiced

These genitive arguments do not indicate a sense of direction, so they are presumably specified [-Accusative]. It seems to me that there is a unifying notion which runs through the concepts "agent", "instrument" and "source" which would confirm this common specification of nominative, instrumental and this type of genitive. The suggestion that these genitive





genitive arguments do have a range of interpretations which (roughly) parallel the range encompassed by the other four Cases. Given the frequent syncretism of forms in the paradigms of affixes, I would argue that this is sufficient evidence to justify the notion that there is more than one underlying genitive Case specification, even though the signals do not distinguish them on the surface.

### 2.3 The Specifications in the Signals

14

The following analysis makes use of two assumptions<sup>15</sup>. The first one is that, except where other factors militate against, affixes which have the same form (and which share some distribution) are actually the same affix and therefore have the same feature specifications. Given the widespread syncretism in the forms of these paradigms, this seems to be the minimal hypothesis and as such, needs no argument. A

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14. The paradigms illustrated below are taken from Bright's Old English Grammar and Reader, with minor simplifications. The reader may note that in the first paradigms which I present, gender is not distinguished in the plural. As I will show, the strong adjective and the strong noun paradigms do have such distinctions.

15. In fact, these assumptions are implicit in the preceding discussion.

theory which does not make this assumption is missing a large and obvious generalization about the grammar of OE.

The affixes which have the form "-e", however, are a major exception to the efficacy of this assumption as an analytical tool. As I have mentioned above, the unaccented front vowels of very early OE were soon collapsed by phonological reduction in a single sound (written "e"). There are clearly several distinct affixes which surface with the form "-e" in the paradigms under discussion - in fact, I will argue that there are seven such affixes among the various paradigms.

The second assumption is that, whenever the markedness of an opposition is not clearly visible in the patterns of syncretism, the feature value which is assumed to be marked is the one which is required to be specified on the least number of different affixes. That is, given an opposition where two forms signal [+F] and three signal [-F], it is the two signals of [+F] which are specified. This is an argument based on the desirability of elegance in the theory (i.e., a "simplicity metric"). Although the assumption that an elegant theory is to be preferred to an inelegant one is widespread in scientific research, it is very hard to justify a priori. Thus it must be an empirical hypothesis. It is justified to the extent that the opposite assumption leads to confusion and even absurdity. The illustration of this justification, I leave to others.

The distribution of the forms represented in the traditional charts of the paradigms of OE inflection is actually an abstract of the distribution of the forms in the syntactic environments defined by the various properties represented in the paradigms. In the present theory then, syntactic environments are defined for these forms by the six features described above. Thus there are forty-eight possible syntactic environments where these signals may be inserted. The twenty-four singular environments are defined in the chart below:

31)

## Singular (= [-Plural])

	Masculine	Neuter	Feminine
Nom.	-Feminine -Genitive -Inherent -Neuter -Accusat.	-Feminine -Genitive -Inherent +Neuter -Accusat.	+Feminine -Genitive -Inherent -Neuter -Accusat.
Acc.	-Feminine -Genitive -Inherent -Neuter +Accusat.	-Feminine -Genitive -Inherent +Neuter +Accusat.	+Feminine -Genitive -Inherent -Neuter +Accusat.
Gen1	-Feminine +Genitive -Inherent -Neuter -Accusat.	-Feminine +Genitive -Inherent +Neuter -Accusat.	+Feminine +Genitive -Inherent -Neuter -Accusat.
Gen2	-Feminine +Genitive -Inherent -Neuter +Accusat.	-Feminine +Genitive -Inherent +Neuter +Accusat.	+Feminine +Genitive -Inherent -Neuter +Accusat.
Gen3	-Feminine +Genitive +Inherent -Neuter -Accusat.	-Feminine +Genitive +Inherent +Neuter -Accusat.	+Feminine +Genitive +Inherent -Neuter -Accusat.
Gen4	-Feminine +Genitive +Inherent -Neuter +Accusat.	-Feminine +Genitive +Inherent +Neuter +Accusat.	+Feminine +Genitive +Inherent -Neuter +Accusat.
Dat.	-Feminine -Genitive +Inherent -Neuter +Accusat.	-Feminine -Genitive +Inherent +Neuter +Accusat.	+Feminine -Genitive +Inherent -Neuter +Accusat.
Inst.	-Feminine -Genitive +Inherent -Neuter -Accusat.	-Feminine -Genitive +Inherent +Neuter -Accusat.	+Feminine -Genitive +Inherent -Neuter -Accusat.

Of course, there is a plural parallel to this chart.

### 2.3.1 Weak Nouns and Adjectives

The most remarkable instance of syncretism in the OE paradigms occurs in the weak noun and adjective paradigm:

32)

Weak Nouns and Adjectives				
Singular				
	Masc.	Neut.	Fem.	
Nom	-a	-e	-e	
Acc	-an	-e	-an	
Gen1	-an	-an	-an	
Gen2	-an	-an	-an	
Gen3	-an	-an	-an	
Gen4	-an	-an	-an	
Dat	-an	-an	-an	
Inst	-an	-an	-an	
Plural				
Nom	-an	-an	-an	
Acc	-an	-an	-an	
Gen1	-ra~ena	-ra~ena	-ra~ena	
Gen2	-ra~ena	-ra~ena	-ra~ena	
Gen3	-ra~ena	-ra~ena	-ra~ena	
Gen4	-ra~ena	-ra~ena	-ra~ena	
Dat	-um	-um	-um	
Inst	-um	-um	-um	

The minimal assumption is that all of these instances of "-an" spring from a single affix. Since this form appears in all genders, in all numbers and in all values of the Case features, it must be completely unspecified. Therefore, the other affixes in the paradigm are specified with the feature values which define their limited distribution in opposition to "-an".

In the plural, "-ra" (not "-an") appears in all the genitive

environments (and in no non-genitive environments), so it must be specified [+Genitive]. Since "-an" appears in the genitive environments in the singular, "-ra" must also be specified [+Plural]. Similarly, "-um" must be specified [+Plural, +Inherent].

Since the form "-e" is opposed to "-an" in the accusative singular (i.e., neuter versus masculine/feminine), "-e" must be specified [+Neuter]. Since "-an" appears in the neuter in the [+Inherent] and [+Genitive] singular environments, "-e" must also be specified [-Inherent] and [-Genitive]. Since "-an" appears in nominative and accusative neuter plural environments, "-e" must be specified [-Plural]. Similarly, the affix "-a" must be specified [-Plural, -Genitive, -Inherent, -Accusative]. Since "-e" is [+Neuter], the affix "-a" does not need any specification for the neuter opposition.

The second affix "--e" in this paradigm must also be specified [-Plural, -Genitive, -Inherent, -Accusative]. Rather than specify the two non-feminine structural Case affixes as [-Feminine], I assume that this second affix "-e" is also specified [+Feminine].

The specifications of the forms of the weak noun and adjective paradigm are therefore as follows:

33) Affixes of the Weak Noun/Adjective Paradigm

-an	[	+Plural, +Inherent]	]	
-um				
-ra~ena				+Plural, +Genitive]
-e				-Plural, -Genitive, -Inherent, +Neuter]
-a				-Plural, -Genitive, -Inherent, -Accusative]
-e				-Plural, +Feminine, -Genitive, -Inherent, -Accusative]

2.3.2 Interrogative Pronouns

In this paradigm there are no distinctions made as to number. Yet these forms are similar or identical phonologically to the singular forms in many of the other paradigms:

34) Interrogative Pronouns

	Stem = "hwaet" <sup>16</sup>		
	Masc.	Neut.	Fem.
Nom	-a	-t	-a
Acc	-ne	-t	-ne
Gen1	-s	-s	-s
Gen2	-s	-s	-s
Gen3	-s	-s	-s
Gen4	-s	-s	-s
Dat	-m	-m	-m
Inst	-y	-y	-y

The lack of [+/-Plural] oppositions is not too surprising, since the reference of question words is often indeterminate - the number of referents involved may be unknown to the questioner. But sometimes the speaker does know the number of

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 16. I assume that the alternations in the stem vowel are to be explained as phonological processes (i.e., hwaetne --> hwone, hwaeta --> hwaa, etc.).



the questioned referent. Examples of singular subject/verb agreement with interrogative subjects abound. But Mitchell also assures us that "The verb after "hwa" or "hwaet" is regularly plural when it refers to a plural subject" (p.140 \$352).

- 35) a) Beowulf 237  
Hwaet syndon ge searobaebbendra...?  
What are you (of) armour-bearers...?
- b) AElfric HomM 8 179  
Hwa synd mine gebroþru...?  
Who are my brothers...?

The interrogative pronouns appear in singular and in plural environments. This fact suggests that these forms are not specified for number.

Since the affix "-s" appears in all genitive environments in all genders, it cannot be specified for [+/-Inherent] or [+/-Accusative] or for gender features. I assume that it is specified [+Genitive], since the alternative would be to list the five other affixes as [-Genitive].

I will provide arguments in the discussion of the strong paradigms which suggest that the affix "-ne" is specified [-Neuter, +Accusative]. The specification [-Neuter] provides for the opposition with the accusative neuter singular form "-t", while [+Accusative] opposes "-ne" to the nominative "-a".

There is no evidence which shows the markedness of "-a"

versus the form "-t". I resolve (by fiat) that "-a" is specified [-Neuter], while "-t" is unmarked.

The opposition between the non-genitive structural Cases (nominative and accusative) and the non-genitive inherent Cases (instrumental and dative) also has no obvious markedness in the patterns of syncretism. Since there are three structural Case forms and only two inherent Case forms, I will assume that "-m" and "-y" are specified [+Inherent]. Both of these forms appear in all genders, so they are not specified for the gender features.

The comparison of these forms with the dative and instrumental singular form of the third person personal pronoun paradigm argues that the opposition between dative "-m" and instrumental "-y" depends on the specification of "-y" as [-Accusative]:

36)

	Third Person Personal Pronouns		
		Singular	
	Masc.	Neut.	Fem.
Dat.	-m	-m	-m
Inst.	-m	-m	-m

The minimal assumption is that the form "-m" is the same in both paradigms. Therefore it is not specified for [+/-Accusative]. Therefore "-y" is specified [-Acc].

The specifications of the interrogative pronoun paradigm are as follows.

37)

Affixes of the Interrogative Pronouns

-t	[ ]
-m	[+Inherent]
-a	[-Neuter]
-s	[+Genitive]
-y	[+Inherent, -Accusative]
-ne	[-Neuter, +Accusative]

2.3.3 Demonstrative Pronouns

The demonstrative pronoun paradigm reiterates many of the forms which have already been discussed.

38)

Demonstrative Pronouns<sup>17</sup>

	Singular		
	Masc.	Neut.	Fem.
Nom	-e	-t	-eo
Acc	-ne	-t	-a
Gen1	-s	-s	-re
Gen2	-s	-s	-re
Gen3	-s	-s	-re
Gen4	-s	-s	-re
Dat	-m	-m	-re
Inst	-y	-y	-re
	Plural		
Nom	-a	-a	-a
Acc	-a	-a	-a
Gen1	-ra	-ra	-ra
Gen2	-ra	-ra	-ra
Gen3	-ra	-ra	-ra
Gen4	-ra	-ra	-ra
Dat	-m	-m	-m
Inst	-m	-m	-m

An interesting question arises concerning the "-m" form in

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 17. The stem here is usually "pae+", although the non-neuter nominative singular forms have a separate stem "se+". As in the interrogative stem, the stem vowel here undergoes phonological alternations.

the singular and the "-m" form in the plural. The minimal assumption is that these are the same affix. But this does not seem to be so. If these are the same form, then the affix is not specified for [+/-Plural] (since it appears in both singular and plural environments). But the form "-y" (presumably the same as the form in the interrogative paradigm) is also unspecified for number. But then (since there is no [+Plural, +Inherent, -Accusative] form), why doesn't "-y" appear in the instrumental plural? Either "-y" is specified [-Plural] or there are two "-m" affixes, one of which is [+Plural].

Indeed, there is evidence that there are two "-m" affixes. As we shall see, in third person plural pronouns there is an alternate pronunciation of the plural (him~heom) which does not occur in the singular (him). Moreover, the weak paradigm (discussed above) requires a form "um" specified [+Plural, +Inherent] but there is no parallel singular form. While the affixes "-m~om" and "-um" which appear in the dative and instrumental plural of their respective paradigms are not necessarily the same affix, they are obviously related, at least in the history of OE. So this parallel is at least suggestive that the "-m~om" form is also [+Plural, +Inherent].

Furthermore, the strong Adjective paradigm has two "um" affixes - one a singular dative form and the other, the

[+Plural +Inherent] form which also appears in the dative and instrumental plural environments of the weak noun and adjective paradigm. In the discussion of strong adjectives, I will argue that the singular dative form must be distinct from the (phonologically identical) plural form in its Case specification. While not conclusive, these points suggest that the demonstrative paradigm includes two affixes "-m", one specified [+Inherent] and the other [+Plural, +Inherent].

I assume that the structural Case form "-a" in the plural is specified [+Plural]. The alternative involves marking the five singular structural Case forms [-Plural].

Since the forms "-t" and "-ne" are presumably the same affixes which appear in the interrogative paradigm, the nominative singular masculine form "-e" must be specified [-Neuter] to provide the opposition with "-t".

Since the feminine form "-re" appears in [+/-Inherent], [+/-Genitive] and [+/-Accusative] environments, it is not specified for Case. Since "-s", "-m" (singular) and "-y" are not specified for gender (c.f. the interrogative pronoun paradigm), the affix "-re" must be specified [+Feminine]. The [+/-Plural] opposition is marked on the plural forms, so "-re" does not have to be specified for number.

Since the feminine singular structural Case forms are opposed to the unspecified form "-re", they must be specified

[-Inherent, -Genitive]. Since they are opposed to the other singular structural Case forms ("-ne", "-t" and "-e"), they must also be [+Feminine]. These forms ("-eo" and "-a") are opposed to each other for [+/-Accusative]. The markedness of this opposition is shown by a comparison with the third person personal pronoun feminine singular structural Case forms:

39)

	Third Person Personal Pronouns		
	Singular		
	Masc.	Neut.	Fem.
Nom	-e	-t	-eo
Acc	-ne	-t	-eo

Presumably, the instances of the form "-eo" in both paradigms are instances of the same affix. Since the affix appears in both nominative and accusative environments, it is not specified for [+/-Accusative]. Therefore, "-a" in the demonstrative paradigm is specified [+Accusative].

The specifications of the demonstrative paradigm forms are as follows:

40) The Affixes of the Demonstrative Paradigm

-t	[ ]
-e	[-Neuter]
-s	[+Genitive]
-m	[+Inherent]
-re	[+Feminine]
-a	[+Plural]
-ne	[-Neuter, +Accusative]
-y	[+Inherent, -Accusative]
-ra	[+Plural, +Genitive]
-m	[+Plural, +Inherent]
-eo	[+Feminine, -Genitive, -Inherent]
-a	[+Feminine, -Genitive, -Inherent, +Accusative]

### 2.3.4 Third Person Personal Pronouns

Given the discussion above, the specifications of third person personal pronouns follow immediately.

41) Third Person Pronouns

	Singular		
	Masc.	Neut.	Fem.
Nom	-é	-t	-eo
Acc	-ne	-t	-eo
Gen1	-s	-s	-re
Gen2	-s	-s	-re
Gen3	-s	-s	-re
Gen4	-s	-s	-re
Dat	-m	-m	-re
Inst	-m	-m	-re
		Plural	
Nom	-ie	-ie	-ie
Acc	-ie	-ie	-ie
Gen1	-ra	-ra	-ra
Gen2	-ra	-ra	-ra
Gen3	-ra	-ra	-ra
Gen4	-ra	-ra	-ra
Dat	-m~om	-m~om	-m~om
Inst	-m~om	-m~om	-m~om

### 42) The Affixes of the Third Person Personal Pronoun Paradigm

-t	[ ]
-e	[-Neuter]
-s	[+Genitive]
-m	[+Inherent]
-re	[+Feminine]
-ie	[+Plural]
-ne	[-Neuter, +Accusative]
-ra	[+Plural, +Genitive]
-m~om	[+Plural, +Inherent]
-eo	[+Feminine, -Genitive, -Inherent]

### 2.3.5 Strong Adjectives

The analysis of the forms of the strong adjective paradigm requires further discussion:

43 )

Strong Adjectives			
Singular			
	Masc.	Neut.	Fem.
Nom	-0	-0	-u
Acc	-ne	-0	-e
Gen1	-es	-es	-re
Gen2	-es	-es	-re
Gen3	-es	-es	-re
Gen4	-es	-es	-re
Dat	-um	-um	-re
Inst	-e	-e	-re

Plural			
Nom	-e	-u	-a
Acc	-e	-u	-a
Gen1	-ra	-ra	-ra
Gen2	-ra	-ra	-ra
Gen3	-ra	-ra	-ra
Gen4	-ra	-ra	-ra
Dat	-um	-um	-um
Inst	-um	-um	-um

The minimal assumption is that the instances of the null affix "-0" spring from the same lexical entry. The affix appears in nominative and accusative environments in the neuter so it is not specified for [+/-Accusative]. It appears in masculine and neuter environments in the nominative, so it is not specified for [+/-Neuter]. Therefore the opposition with the affix "-ne" follows from the specifications [-Neuter, +Accusative].

The suggestion is confirmed by a comparison with the strong



noun paradigm:

44)		Strong Nouns Singular		
		Masc.	Neut.	Fem.
Nom.		-0	-0	-u
Acc.		-0	-0	-e

Presumably, these are instances of the same null affix that appears with strong adjectives. But this paradigm lacks the accusative masculine singular form "-ne", so the distribution of the unspecified affix "-0" is extended.

The distribution of the "-um" and "-e" forms in the dative and instrumental singular is parallel to that of the "-m" and "-y" forms in the paradigms discussed above. But a comparison with strong nouns suggests that the markedness of the [+/-Accusative] opposition is different:

45)		Strong Nouns Singular	
		Masc.	Neut.
	Dat.	-e	-e
	instr.	-e	-e

Presumably, this is the same "-e" affix which appears in the masculine/neuter instrumental singular with strong adjectives. Since it also appears here in the dative, this affix is not specified for [+/-Accusative]. Therefore the dative singular "-um" in the strong adjective paradigm is specified [+Accusative].

There are three plural non-genitive structural Case forms as

opposed to four singular. I assume that the plural forms are specified [+Plural].

I resolve by fiat that the masculine plural form "-e" is specified [-Neuter].

The feminine plural form "-a" is [+Feminine], since otherwise two forms would have to be specified [-Feminine]. Further, this feminine plural form must be specified [-Genitive, -Inherent] to account for its restriction to non-genitive structural Case environments. The masculine plural form escapes this requirement because of the hierarchy of features, a point which will be discussed in section 2.4.2, below.

Finally, I will argue in the discussion of the strong noun paradigm that the opposition between the feminine singular nominative versus accusative forms ("-u" and "-e") follows from the specification of "-u" as [-Accusative].

The specifications of the strong adjective paradigm are therefore as follows:

46) The Affixes of the Strong Noun Paradigm

-O	[	]
-es	[+Genitive]	
-e	[+Inherent]	
-re	[+Feminine]	
-u	[+Plural]	
-e	[+Plural, -Neuter]	
-ne	[-Neuter, +Accusative]	
-um	[+Inherent, +Accusative]	
-ra	[+Plural, +Genitive]	
-um	[+Plural, +Inherent]	
-e	[+Feminine, -Genitive, -Inherent]	
-a	[+Plural, +Feminine, -Genitive, -Inherent]	
-u	[+Feminine, -Genitive, -Inherent,	-Accusative]

2.3.6 Strong Nouns

The specification of the forms of the strong noun paradigm require little further discussion:

47)

Strong Nouns			
Singular			
	Masc.	Neut.	Fem.
Nom	-O	-O	-u
Acc	-O	-O	-e
Gen1	-es	-es	-e
Gen2	-es	-es	-e
Gen3	-es	-es	-e
Gen4	-es	-es	-e
Dat	-e	-e	-e
Inst	-e	-e	-e
Plural			
Nom	-as	-u	-a
Acc	-as	-u	-a
Gen1	-a	-a	-a
Gen2	-a	-a	-a
Gen3	-a	-a	-a
Gen4	-a	-a	-a
Dat	-um	-um	-um
Inst	-um	-um	-um

The remaining point concerns the opposition between "-u"

(nominative feminine singular) and the feminine affix "-e". The question, of course, is whether this "-e" is a single affix or two (i.e., the accusative feminine singular "-e" which appears with strong adjectives and an "-e" parallel to the feminine "-re" of other paradigms). Presumably this is the same affix "-u" which appears with strong adjectives. The minimal assumption is that there is only one affix "-e" (= [+Feminine]) in the feminine environments of the strong noun paradigm. Therefore, the minimal assumption requires that the "-u" form is specified [-Accusative].

The specifications of the strong noun paradigm are therefore as follows:

48) The Affixes of the Strong Adjective Paradigm

-0	[	]
-es	[+Genitive]	
-e	[+Inherent]	
-re	[+Feminine]	
-u	[+Plural]	
-as	[+Plural, -Neuter]	
-a	[+Plural, +Genitive]	
-um	[+Plural, +Inherent]	
-u	[+Feminine, -Genitive, -Inherent, -Accusative]	
-a	[+Plural, +Feminine, -Genitive, -Inherent]	

Thus I would argue that forty-eight environments in six paradigms of OE inflection (i.e., 288 possible affixes) are actually signalled by only 32 affixes. The affixes and their distribution according to paradigms are presented together below:

	Weak	IntP	DemP	3rdP	StA	StN
-t		*	*	*		
-m [ +Inh ]		*	*	*		
-e [ -Neut ]			*	*		
-a [ -Neut ]		*				
-eo [ +Fem, -Gen, -Inh ]			*	*		
-a [ +Fem, -Gen, -Inh, +Acc ]			*			
-y [ +Inh, -Acc ]		*	*			
-ie [ +Pl ]				*		
-a [ +Pl ]			*			
-ne [ -Neut, +Acc ]		*	*	*	*	
-re [ +Fem ]			*	*	*	
-e [ +Fem ]						*
-ra [ +Pl, +Gen ]	*		*	*	*	
-a [ +Pl, +Gen ]						*
-s [ +Gen ]		*	*	*		
-es [ +Gen ]					*	*
-m [ +Pl, +Inh ]			*	*		
-um [ +Pl, +Inh ]	*				*	*
-o [ +Inh ]					*	*
-e [ +Inh ]					*	*
-u [ +Pl ]					*	*
-a [ +Pl, +Fem, -Gen, -Inh ]					*	*
-u [ +Fem, -Gen, -Inh, -Acc ]					*	*
-as [ +Pl, -Neut ]						*
-e [ +Pl, -Neut ]					*	
-um [ +Inh, +Acc ]					*	
-e [ +Fem, -Gen, -Inh ]					*	
-an [ +Pl, +Gen ]	*					
-ena [ +Pl, +Gen ]	*					
-a [ -Pl, -Gen, -Inh, -Acc ]	*					
-e [ -Pl, -Gen, -Inh, +Neut ]	*					
-e [ -Pl, +Fem, -Gen, -Inh, -Acc ]	*					

## 2.4 Lexical Insertion

### 2.4.1 Agreement and Blocking

Having argued for specific features and particular specifications in the signal, the next step is to show how the features in the signals can interact with processes in the grammar to provide the distribution of forms observed in the charts of the paradigms.

The process of lexical insertion must be constrained by the requirements of Agreement. That is, the underlying specifications of the syntactic environment and the specifications of the affixes must be "non-distinct" (i.e., they must not conflict).

In a theory which allows the full specification of all matrices in both underlying representations and in the affixes (i.e., a different theory than that presented here), the process of Agreement ensures by itself that all matrices in Agreement are identical. In such a theory, Agreement acts as a filter and screens out all the mis-matched matrices. If matrices are always fully specified and Agreement is a filter, then lexical insertion can be described very simply. Any concatenation of stems and affixes may be assembled, but only those which pass the filter "Agreement" are grammatical. But

if the feature matrices of the affixes are underspecified, then Agreement is no longer capable of regulating the lexical insertion of the affixes of inflection by itself. A specific example will make this point clear.

Recall the affixes of the paradigm which attach to the third person pronoun stem. The underlying representation of these affixes according to the features and markedness proposed above, is as follows:

50) Third Person Personal Pronouns

	Masculine	Singular Neuter	Feminine
Nom	-e [-Neut]	-t	-eo
Acc	-ne [-Neut,+Acc]		[+Fem,-Inh, -Gen]
Gen1	-s [+Gen]		-re
Gen2			[+Fem]
Gen3			
Gen4			
Dat.	-m [+Inh]		
Inst.			

Plural

Nom	-ie [+Pl]
Acc	
Gen1	-ra [+Pl,+Gen]
Gen2	
Gen3	
Gen4	
Dat	-m <sup>o</sup> m [+Pl,+Inh]
Inst	

Suppose that the environment where an affix from this paradigm is to be inserted is defined as nominative singular masculine (i.e., [-Pl, -Fem, -Gen, -Inh, -Neut, -Acc]). There are two affixes in this paradigm which are non-distinct from this environment: "-t" and "-e"[-Neuter]. As both are non-distinct from the environment, Agreement cannot choose between them. But in fact "-e"[-Neut] is always selected.

Similarly, if the environment is accusative singular masculine (i.e., [-Pl, -Fem, -Gen, -Inh, -Neut, +Acc]), then three affixes are non-distinct: "-t", "-e"[-Neuter], and "-ne"[-Neuter, +Accusative]. Again the process of Agreement cannot select a unique candidate for insertion. But in fact "-ne" is always chosen.

The selection of the appropriate affix for a particular environment conforms to the following generalization:



If two or more affixes are non-distinct from an environment, the most fully specified affix is selected for insertion.

Thus "-ne" is selected over "-t" and "-e", etc.. The phenomenon just described has a familiar character: the existence of a more specified form "blocks" the insertion of a less specified form.

The phenomenon of "blocking" has been a topic of discussion in generative theory for some time (e.g., Aronoff, 1976). The general effect can be simply illustrated with an example from present English. The plural affix "-s" is the most common method of indicating plurality in present English. The affix is very general in association and in fact, most new nouns introduced into English automatically form their plural with "-s" (e.g., #BLUG (singular) --> #BLUGS (plural)). But there are small classes of nouns in English which have exceptional plurals (e.g., ox --> oxen, sheep --> sheep, etc.). Presumably, English includes morphemes "-en"[+Pl] and "-0"[+Pl], etc. which are specifically marked to concatenate with a particular class of nouns. But note that not only does "ox" form its plural with "-en", it cannot form a plural with the more general affix "-s" (i.e., ?oxes). It seems unlikely that "-s" is underlyingly specified against concatenation with the "ox" class of stems, since it would also have to be specified against concatenation with every exceptional plural in the language (e.g., ?sheeps, ?datums, ?foots, ?mouses,

etc.). These facts (and many others) suggest that there is some general principle at work.

The principle involved might be formulated roughly:

51)                    Blocking (first definition)

In specific environments, more specific forms block the insertion of less specific forms.

Agreement and blocking both seem to be necessary to determine of the distribution of the affixes of inflection. Note, however, that this principle is somewhat troubling in the theory of natural grammar. As Morris Halle points out (personal communication), natural language does not seem to use any counting device. But the Blocking principle as formulated above implies that there is such a device. That is, the principle implies that the grammar can choose between forms specified for ten features and those specified for two or eight, etc.. I will return to this point below.

#### 2.4.2 The Hierarchy of Features

Even with the additional notion of blocking, the process of Agreement is still not sufficient to select a unique affix for insertion in each environment. Again the point is best demonstrated in an example.

Suppose that an affix from the paradigm above must be inserted in a genitive<sup>1</sup> singular feminine environment

(i.e., [-Pl, +Fem, +Gen, -Inh, -Neut, -Acc]). There are four affixes in the paradigm which are non-distinct from this environment: "-t", "-e"[-Neuter], "-s"[+Genitive], and "-re"[+Feminine]. The Blocking principle will eliminate "-t" from consideration. But what chooses between those remaining? All are non-distinct from the environment and each is equally specific - but their specifications are disjoint. The form "-s" signals [+Genitive] but not [+Feminine], while "-re" signals [+Feminine] but not [+Genitive], etc.. Whatever it is that enforces a unique selection, the facts are clear. In a genitive singular feminine environment, "-re" is always chosen. For some reason then, the feature [+/-Feminine] has precedence over the features [+/-Genitive] and the feature [+/-Neuter] in the process of lexical insertion.

Similarly, when the environment is defined as nominative plural masculine (i.e., [+Pl, -Fem, -Gen, -Inh, -Neut, -Acc]), there are three affixes in the paradigm which are non-distinct: "-t", "-e"[-Neuter], and "-ie"[+Plural]. The first of these ("-t") can be eliminated by appealing to the principle of Blocking. But "-e" and "-ie" are equally specific; one specifies only [-Neuter] and the other only [+Plural]. In fact, the specification [+Plural] always has priority. In a nominative plural masculine environment, the form which always appears is "-ie". For some reason, [+/-Neuter] must give way to [+/-Plural].

It is apparent that, given the underlying representations as above, some features must be given priority over others in the process of lexical insertion. Before discussing further the details of this hierarchy of precedence, it is worthwhile to note that the features must be ranked in this manner regardless of the choice of underlying values and redundancy rules. Such a hierarchy is necessary in any theory which represents the properties of inflection as binary features in underspecified matrices.

Consider the affixes which signal the singular of the strong adjective paradigm:

52)

	Strong Adjectives		
	Singular		
	Masculine	Neuter	Feminine
Nom.	-0	-0	-u
Acc.	-ne	-0	-e
Gen.	-es	-es	-re
Dat.	-um	-um	-re
Inst.	-e	-e	-re

Only one of the three genders can be "default" (i.e. unmarked for gender in underlying representations).

Suppose that feminine is the default. Then "-u" and "-e" are unmarked for gender, while "-0" and "-ne" have some specified feature value(s) (let us say, [+GEND]). In addition, some feature(s) (say, [+CASE]) must differentiate nominative from accusative Case. So in the feminine, either "-u" or "-e" is specified [+CASE]. But nominative and accusative are not differentiated in the neuter, so "-0" is unmarked for this

Case feature.

Suppose that an environment is defined for one of these affixes as neuter and the marked Case (either nominative or accusative). The environment is [+GEND][+CASE]. One of the feminine forms is [+CASE] (but not [+GEND]). The neuter form is [+GEND] (but not [+CASE]). Both of these forms are non-distinct from the environment. But the neuter form is always selected for such an environment. Therefore, if feminine is the default gender, then [+GEND] has precedence over [+CASE].

Suppose that feminine is not the default gender. Then the feminine form "-re" is [+GEND] and the masculine/neuter forms "-es", "-um" and "-e" are unmarked for gender in underlying representation. Some feature(s) (say, [+CASE]) must differentiate between dative and instrumental Case. So either "-um" or "-e" is underlyingly [+CASE]. Dative and instrumental are not differentiated in the feminine, so "-re" is unmarked for that Case feature.

Suppose that an environment requires a feminine affix in the marked Case (either dative or instrumental). Thus the environment is [+GEND][+CASE]. One of the non-feminine forms ("-um" or "-e") is [+CASE] and unmarked for gender, while the feminine form is [+GEND] and unmarked for Case. Both are non-distinct from the environment and each is equally specific. The feminine form is always selected. If feminine

is not the default gender, then [+GEND] has precedence over [+CASE]. Thus in any theory which allows underspecified matrices, there must be a hierarchy of features.

Furthermore, it can easily be shown that this hierarchy of features has priority over the Blocking principle which was formulated above. Suppose that an affix from the third person personal pronoun paradigm must be inserted into a feminine singular genitive<sup>4</sup> environment

(i.e., [-Pl, +Fem, +Gen, +Inh, -Neut, +Acc]). There are six affixes which are non-distinct from this environment ("-t", "-e"[-Neuter], "-s"[+Genitive], "-re"[+Feminine], "-m"[-Inherent] and "-ne"[-Neuter, +Accusative]). The Blocking principle would select the affix with the most specifications, that is, "-ne"[-Neuter, +Accusative]. But in fact, "-re"[+Feminine] is always chosen in these environments, even though it has only one of the pertinent feature specifications. This follows if [+/-Feminine] has precedence in the feature hierarchy over [+/-Genitive], [+/-Inherent], [+/-Neuter] and [+/-Accusative] and if this hierarchy is the pertinent factor here.

I will argue for a reduced formulation of Blocking in section 2.4.4. below.

The paradigms of OE substantive inflection (with the feature specifications given above) provide clear and consistent arguments for a particular hierarchy among all the features.

The arguments are of the following kind.

In a feminine plural accusative environment (i.e., [+Pl, +Fem, -Gen, -Inh, -Neut, +Acc]), the third person pronoun paradigm provides six affixes which are non-distinct from the environment ("-t", "-e"[-Neuter], "-re"[+Feminine], "-ie"[+Plural], "-ne"[-Neuter, +Accusative], and "-eo"[+Feminine, -Genitive, -Inherent]). The form which is always selected in this environment is "-ie"[+Plural]. Therefore, [+/-Plural] has precedence over all the other features under discussion.

I have demonstrated above that [+/-Feminine] has precedence over [+/-Genitive], [+/-Inherent], [+/-Neuter] and [+/-Accusative].

In a neuter singular genitive environment (i.e., [-Pl, -Fem, +Gen, +Inh, +Neut, +Acc]), the third person pronoun paradigm provides five affixes which are non-distinct from this specification ("-t", "-e"[-Neuter], "-m"[+Inherent], "-s"[+Genitive] and "-ne"[-Neuter, +Accusative]). The genitive signal "-s" is always chosen in this environment. Therefore, [+/-Genitive] has precedence over [+/-Inherent], [+/-Neuter] and [+/-Accusative].

If the environment is masculine singular dative (i.e., [-Pl, -Fem, -Gen, +Inh, -Neut, +Acc]), then four affixes are non-distinct ("-t", "-e"[-Neuter], "-ne"[-Neuter, +Accusative]

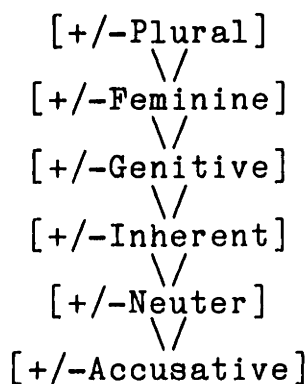
and "-m"[+Inherent])). The affix "-m"[+Inherent] is always selected. Therefore, [+/-Inherent] has precedence over [+/-Neuter] and [+/-Accusative].

The relative priority of [+/-Neuter] versus [+/-Accusative] is visible in the weak noun and adjective paradigm. Suppose that an affix from this paradigm must be inserted into a nominative singular neuter environment (i.e., [-Pl, -Fem, -Gen, -Inh, +Neut, -Acc]). There are three affixes which are non-distinct from this environment ("-an", "-e"[-Plural, -Genitive, -Inherent, +Neuter] and "-a"[-Plural, -Genitive, -Inherent, -Accusative]). The affix "-e" is always selected in these environments. Therefore, [+/-Neuter] precedes [+/-Accusative] in the hierarchy.

I will not bother the reader with the proof that these precedence relations are consistent in all of the paradigms. The feature hierarchy which is visible is the following:

53 )

The Hierarchy of Features



I suggest that this hierarchy provides some basis for the



remarkable regularity in the patterns of syncretism in the various OE paradigms (and, as I will show below, in the paradigms of inflection in other languages). That is, certain distinctions have priority over others and are thus less likely to be lost in the signals. The [+/-Accusative] distinction is least of the hierarchy and so is often ignored in the signals. [+/-Plural] is highest in the hierarchy and so is preserved everywhere.

This is not a complete explanation, of course, but it does seem to go a long way toward a resolution of the problem. I assume that other factors also play some role in these patterns (hopefully explaining why, for example, feminine signals had been lost in the plural while genitive and dative distinctions were preserved). A more complete answer awaits further research.

#### 2.4.3 A Universal of Grammar?

At first glance, the necessity of postulating a hierarchy of features in order to account for the distribution of the affixes of inflection in OE is a rather unexpected facet of the analysis. If such a hierarchy is particular to OE, then it poses a question for a theory of the acquisition of natural language. Do language learners acquire knowledge of this hierarchy from the distribution of forms? This seems possible in OE, since the forms are very visible in the data. But not

all languages have such well elaborated paradigms of inflection - but they must have a feature hierarchy. How do learners find out about the hierarchy in those languages? It may be that the hierarchy is not learned but is, instead, an aspect of Universal Grammar. If this is so, then the same hierarchy should be visible in other languages.

As the ranking in the hierarchy is dependent on a given set of forms, features and markedness, a comparison of the OE system with others in different languages depends on a detailed investigation of each different language. Such a study is beyond the scope of this thesis. But a brief glance at two other "inflected" languages does provide some encouragement for the notion that the hierarchy is universal<sup>18</sup>.

The following is a chart of the syntactic distribution of surface-phonological forms in the "normal" paradigm of affixes which appeared with Russian adjectives:

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18. I present only the surface forms of the Russian and Latin paradigms.

54)

## Russian "Normal" Adjectives

	Masculine	Singular Neuter	Feminine
Nom.	-iy	-oye	-aya
Acc.	-iy~ovo	-oye	-uyu
Gen.	-ovo	-ovo	-oy
Loc.	-om	-om	-oy
Dat.	-omu	-omu	-oy
Inst.	-im	-im	-oy

## Plural

Nom.	-iye	-iye	-iye
Acc.	-iye~ix	-iye~ix	-iye~ix
Gen.	-ix	-ix	-ix
Loc.	-ix	-ix	-ix
Dat.	-im	-im	-im
Inst.	-imi	-imi	-imi

As may be seen at a glance, the patterns of syncretism are very similar to those found in OE. It is evident, for example, that "-oy" is marked for [+Feminine] but not for the Case features which distinguish the Inherent cases in Russian. In feminine environments "-oy" is always preferred to "-ovo", "-om", etc.. So in Russian [+/-Feminine] has precedence over Case features, just as it does in OE.

Similarly, in the nominative plural "-iye" is unmarked for

gender, but still has precedence over the nominative singular forms which are specified for gender features. As in OE, [+/-Plural] has precedence over gender features. In short, the Russian hierarchy of features seems to be quite consistent with the OE hierarchy.

Note that the alternation of forms in the accusative is regular, in that the form of the nominative is used if the referent is inanimate, while genitive represents animate. There seems to be some redundancy relation between [+Genitive] and [+Animate] in the signal of Russian inflection, but I will not pursue the matter here.

Further, consider the paradigm of affixes which appeared on First and Second declension adjectives in Latin:

55) Latin 1&2 Declension Adjectives

	Masculine	Singular Neuter	Feminine
Nom.	-us	-um	-a
Acc.	-um	-um	-am
Gen.	-i:	-i:	-ae
Dat.	-o:	-o:	-ae
Ablat.	-o:	-o:	-a:

		Plural	
Nom.	-i:	-a	-ae
Acc.	-o:s	-a	-a:s
Gen.	-o:rum	-o:rum	-a:rum
Dat.	-i:s	-i:s	-i:s
Ablat.	-i:s	-i:s	-i:s

Again the pattern of syncretism seems to be consistent with that of OE. In feminine environments, the feminine form "-ae" is chosen over "-i:" or "-o:", even though one of the latter must bear a feature distinguishing genitive and dative (and "-ae" does not bear this feature). Again [+/-Feminine] has precedence over Case features.

Further, in the ablative plural ("-i:s"), there are no gender distinctions. In the singular, the feminine "-a:" is in opposition to a non-feminine form, "-o:". In an ablative plural feminine environment, "-i:s" is always chosen. Again, [+Plural] has precedence over gender features. Latin also seems to conform to the proposed hierarchy.

OE, Russian and Latin are all Indo-European languages. Thus the hierarchy of features seems to be uniform in that family. Unfortunately I have not found languages outside of Indo-European which combine the pertinent properties in single

affixes, so I have not been able to extend the comparison<sup>19</sup>. Still it seems probable that the hierarchy is a universal. Were it language particular, it would be very surprising if the drift of time had not made this obvious in the inflectional paradigms of the three languages under discussion. But instead, the patterns of syncretism in OE, Russian and Latin are remarkably similar to even a casual inspection.

#### 2.4.4 Rule Ordering and Insertion

The question remains as to why such a hierarchy exists. I have a suggestion to make in this regard which depends on the hypothesis that the underlying representations of syntactic environments begin as underspecified representations and only become fully specified through the application of redundancy rules.

I would argue that the operation which inserts the affixes of inflection into the positions in underlying representations interacts in a particular way with the feature-filling redundancy rules which are applied to those matrices. As each feature becomes fully specified in the underlying representation (by the application of the relevant redundancy

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19. Classical Arabic seems to be a good candidate for comparison, but I have not yet found time to sort out the complex morphology involved.

rule), certain forms in the pertinent paradigm are eliminated from consideration as candidates for lexical insertion. When only one form of that paradigm has not been eliminated, it is inserted - before the application of further rules.

It is notable that the view of lexical insertion which will be proposed here will allow a reduced form of the Blocking principle discussed above. Since the feature filling rules interact with lexical insertion one at a time, the Blocking principle may be given the following formulation:

56)                    Blocking

If an environment is specified for a feature [+F], a form which is specified for this feature is preferred to one which is not so specified.

This version of the Blocking principle has no implication that the grammar includes a counting device.

The process of lexical insertion is best illustrated with a simple example.

Suppose that a paradigm of forms includes three members:

57)                    X = [+Plural]  
                         Y = [+Feminine]  
                         Z = [                    ]

Further, suppose that the grammar has two ordered redundancy rules:

- 58)                   1. [    ] --> [-Plural]  
                       2. [    ] --> [-Feminine]

There are four possible underlying environments:

- 59)                   a. [            ] (=unspecified)  
                       b. [+Plural]  
                       c. [+Feminine]  
                       d. [+Plural, +Feminine]

The application of the first redundancy rule provides that all of the environments are specified for some value of [+/-Plural]:

- 60)                   a. [-Plural]  
                       b. [+Plural]  
                       c. [-Plural, +Feminine]  
                       d. [+Plural, +Feminine]

Before the application of the next rule, the available forms must be inspected.

For the environments marked [-Plural] (i.e., a. and c.), the form X can be eliminated from consideration as a possible candidate for lexical insertion. Since X is specified [+Plural], it is incompatible with these environments. But the remainder of the paradigm still includes two forms (i.e., Y and Z), so no choice for lexical insertion in these environments can yet be made.

For the environments which are marked [+Plural] (i.e., b. and d.), the forms Y and Z can be eliminated from consideration as possible candidates for lexical insertion. Since these forms are not specified for [+Plural] and since



the paradigm does include a form which is specified for that feature value and which has not been eliminated from consideration as a candidate for insertion, the unmarked forms Y and Z are ruled out by the Blocking principle. Moreover, since only the form X remains under consideration for these environments, it must be inserted before the application of further rules. So X will appear in the environments b. and d..

The next step in the derivation is the application of the second redundancy rule. This provides that all environments are specified for some value of [+/-Feminine]:

- 61)
- a. [-Plural, -Feminine]
  - b. [+Plural, -Feminine]
  - c. [-Plural, +Feminine]
  - d. [+Plural, +Feminine]

Since the environments b. and d. have already had a form inserted, they are no longer of concern.

The form Y can be eliminated from consideration as a candidate for insertion for environment a.. Since Y is specified [+Feminine], it is incompatible with that environment. This leaves only one form under consideration for that environment (i.e., Z), so it must be inserted.

For environment c., the form Z can be eliminated from consideration. Since it is not marked [+Feminine], and since there is a form which is marked for that feature (i.e., Y), Z



## Chapter 3

### Features in Underlying Representations

#### 3.1 D-structure Underspecification

In the previous chapter, I argued that the affixes of inflection which signal the grammatical features of OE are inserted into a representation which is fully specified for those features. I would further argue that this fully specified representation (S-structure) is itself derived from an underlying representation (D-structure) which is underspecified.

I will provide evidence that the default values of these features are assigned by rule. On the other hand, the marked values of different features are assigned in different ways. Some may be listed in lexical entries. These lexically specified features enter the representation through lexical insertion at D-structure. Others do not originate in lexical entries - they are imposed on representations during each derivation according to the intended interpretation of the utterance. In present English (in contrast to OE), the marked

value of at least one feature seems to be assigned by rule (like the default values of all features).

### 3.1.1 Number

It is clear that the feature [+/-Plural] generally does not appear in lexical entries. Rather, the specification of this feature depends on the inherent properties of the intended referent. I assume that in each derivation, the marked value of [+/-Plural] is simply imposed on a relevant feature matrix when the semantic content of the utterance so requires. The default value is assigned by redundancy rule, later in the derivation.

It might be argued that in present English, the feature [+/-Plural] does appear in a few (very exceptional) lexical entries. Nouns like "trousers" always appear with a plural marker (\*trouser) and they require plural agreement:

- 1) a) \*Your trousers is in the closet.  
Your trousers are in the closet.
- b) \*A trousers fell on the floor.  
The trousers fell on the floor.

But it is notable that all of the words in this exceptional class include in their meaning some notion of "duality":

2) a pair of...

trousers  
scissors  
glasses  
spectacles  
forceps  
garden shears  
binoculars  
tweezers  
pliers  
bellows  
etc.

This fact suggests that the relevant lexical specification has something to do with duality. These words are not lexically specified [+Plural] but rather with a feature something like [+Dual], perhaps a remnant of the OE distinction. Since the notion "dual" implies the notion "plural", it is clear that an account of these words can be made without the assumption that [+Plural] is specified in the lexicon.

Mitchell provides some examples of OE words which occur only in the plural (p.46 §93). These include the names of peoples (e.g., Engle "Englishmen", etc.), firas "men", ilde "men", higan "family", and compounds in -dagas "-days" and -stafas "letters", as well as nouns formed from participles (e.g., burhsittende "town-sitters" (= city dwellers), lyftfleogendra "air-flyers", laguswimmendra "water-swimmers", etc.).

I suggest that the fact that these words are found in the plural follows from their semantic content, rather than from any feature specification in the lexicon. That is, their content encourages plural usage (e.g., 'firas' refers to

members of the species "human", rather than to a collection of men). The lack of examples in the singular is an accidental gap in the data. Note for example, that the compounds and the nouns formed from participles are especially unlikely to be specified in the lexicon (certainly dagas "days" and stafas "letters" have singular forms - daeg and staef - when they appear alone).

A similar kind of account can be given for present English "mass" nouns (e.g., "sugar", "air", "snow", etc.). These nouns almost always appear in the singular - but some adjustment of context shows that these mass nouns are not incompatible with plural markers:

3) This is demerara from Cuba and this is "pure granulated" from California.

Which of these sugars has more flavour?

Unfortunately, there are no native OE informants available to judge singular expressions for the OE plural words discussed above. I will assume, based on the observations above, that these words were not lexically specified [+Plural]<sup>1</sup>.

Subject-verb Agreement provides evidence that the feature [+/-Plural] was underspecified at D-structure in OE. The same

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1. Note that nothing in the analysis will depend on this assumption.

evidence shows which value was marked and which was default. In OE, if a plural subject precedes the verb, then the verb shows plural Agreement. But quite often when a plural subject follows the verb, the verb is singular:

4) a) Maldon 34  
(sg.)

Ne þurfe we us spillan  
Not need we us (to) destroy

b) AElfric Hom. i 10, 34  
(sg.)

pa wearp he and ealle his gefaran forcupran  
then became he and all his companions cut down

But there are no examples of plural verbs with clearly singular subjects, no matter whether they precede or follow the verb<sup>2</sup>.

These facts may be explained with the assumption that subjects preceding the verb (and sometimes subjects following the verb) can determine the number signalled by verbal inflection (through subject/verb Agreement). But when the subject does not determine the number of the verb (when post-verbal subjects do not enter into subject/verb Agreement, for whatever reason), the verb is assigned the default value for number by the redundancy rules of the grammar.

Therefore, [+Plural] was the marked value for this feature

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2. Mitchell (p.635-639) disposes of some possible counterexamples to the patterns described above.

in OE (the value which was imposed on representations) and the grammar of OE included the following rule:

5)                    [   ] --> [-Plural]

### 3.1.2 Gender

OE nouns were specified in the lexicon for the features of grammatical gender. Particular nouns appeared with affixes signalling a specific grammatical gender and sometimes these distinctions provided the only signal of the difference between homophonous forms (e.g., *leod* (masculine) "man" versus *leod* (feminine) "people"; *secg* (masculine) "man" versus *secg* (feminine) "sword", etc.). When an adjective or demonstrative pronoun modified a noun, they too would wear affixes signalling the grammatical gender of the noun which they modified.

But when adjectives or demonstrative pronouns appeared in an expression by themselves (without modifying a noun), they reflected the natural gender of their intended referent. Similarly, personal pronouns signalled the natural gender of their intended referent (in most cases - but see below), even though their affixes were often identical to those found in other paradigms (as illustrated in Chapter 2).

Since the lexical entries of pronoun and adjective stems did not include any specification for natural gender (i.e., [+/-Animate], [+/-Female]), I assume that the marked values





b) Idem 1387-1388  
nom. sg. masc.  
wyrce se þe mote  
acquire who that is allowed  
  
domes aer deape  
(of) glory before death

c) Idem 1598  
nom. pl. masc.  
þa þaes monige gewearp...  
then (of) that many (people) agreed...

d) Idem 2314-2315  
no þær aht cwices  
not there anything (of) living (things)  
  
lap lyftfloga laefan wolde  
hated (one)(of) air-flyers (to) leave intended

Since the reference of these forms arguably includes both male and female creatures, presumably the inference from [+/-Female] to [+/-Feminine] cannot be invoked. Therefore, these examples reflect the assignment of the default value for the pertinent feature of grammatical gender. That is, [+Feminine] was a marked feature value in OE.

Unfortunately, it is difficult to find a parallel test for [+/-Neuter] (i.e., an independent adjective which referred to both animate and inanimate things simultaneously).

However, personal pronouns provide a further clue to the markedness of both features of grammatical gender. Although these pronouns generally signal the features of natural gender, there are systematic exceptions. On occasion, personal pronouns signalled the grammatical gender of the

antecedent noun.

Mitchell (p.37, §71) sums up the relations between personal pronouns and their antecedents as follows:

- 7) a) Masculine/ feminine nouns referring to males/females take he/heo (= masculine/feminine forms).
- b) Neuter nouns referring to males/females tend to take he/heo rather than hit (= neuter form) and masculine nouns referring to females tend to take heo rather than he.
- c) Masculine/ feminine nouns referring to inanimates ("asexuals") tend to take he/heo... but occasional examples of hit anticipate the present English situation.

I refer the reader to Mitchell for the relevant examples.

Abstracting away from the imperfections in the data (i.e., the exceptions which lead Mitchell to speak of "tendencies"<sup>3</sup>), this pattern suggests a rather different view of the relation between these "kinds" of gender. I would account for this pattern in the following way.

Suppose that there is only one set of gender features ([+/-Feminine, +/-Neuter]) and that [+Feminine] and [-Neuter] are the marked values for these features. Thus, the lexical

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3. Of course, no speech community is homogenous, and the knowledge we have of OE is drawn from documents written across centuries and in various dialect areas of England, so OE is no exception to this rule.

entries of nouns may be marked [+Feminine] or [-Neuter]. The lexical entries of pronouns, of course, are not marked for these features. but when a pronoun appears in a syntactic representation, the marked value for these features is imposed on the pronominal matrix according to the natural gender of the referent of the pronoun. Thus a female referent invokes the imposition of [+Feminine] and an animate referent invokes the imposition of [-Neuter].

Crucially in the following analysis, the Agreement of features which relates the pronoun and its antecedent must precede the redundancy rules which assign the default values for these features. There are three rules which are pertinent<sup>4</sup>:

$$8) \quad \left[ \begin{array}{l} \phantom{ } \\ \phantom{ } \\ \phantom{ } \end{array} \right] \begin{array}{l} \text{-->} \\ \text{-->} \\ \text{-->} \end{array} \left[ \begin{array}{l} \text{-Neuter} \\ \text{-Feminine} \\ \text{+Neuter} \end{array} \right] / \left[ \text{+Feminine, \_\_\_} \right]$$

The assignment of the values of gender features to pronominal matrices is represented in the following chart:

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4. The reader will be familiar with the first of these rules - the dependency between [+Feminine] and [-Neuter] - from the discussion in the previous chapter.

9) Gender Specifications of Pronouns

$$[+/-Feminine] = [+/-F] \quad [+/-Neuter] = [+/-N]$$

1. Grammatical Gender (antecedent)	2. Natural Gender (referent)	3.(=1+2) Agreement	4. Redundancy Rules	5. Result
[+F]	<u>female</u> [+F, -N]	[+F, -N]	----	feminine
[-N]	[+F, -N]	[+F, -N]	----	feminine
[ ]	[+F, -N]	[+F, -N]	----	feminine
[+F]	<u>male</u> [-N]	[+F, -N]	----	feminine
[-N]	[-N]	[-N]	[-F, -N]	masculine
[ ]	[-N]	[-N]	[-F, -N]	masculine
[+F]	<u>inanimate</u> [ ]	[+F]	[+F, -N]	feminine
[-N]	[ ]	[-N]	[-F, -N]	masculine
[ ]	[ ]	----	[-F, +N]	neuter

The chart shows that this markedness of gender features together with the ordering of Agreement before the redundancy rules yields the specifications of gender features for the pronouns which Mitchell describes. Moreover, the system makes a prediction about the one case which Mitchell does not describe. That is, a feminine antecedent which refers to males is predicted to take a feminine pronoun.

Unfortunately, it is no accident that Mitchell fails to describe this situation. Feminine words which can refer to males are extremely rare in OE. Moreover, the few examples

which are to be found (e.g., *dugupe* "company of experienced men" and *geogupe* "company of young men") never seem to be the clear antecedent of a pronoun. In short, I have found no data which can confirm or deny the particular prediction of the proposal (that feminine nouns referring to males would be antecedents of feminine pronouns).

Nonetheless, the hypothesis does explain the pattern which is described by Mitchell. Moreover, the same perspective will eliminate the puzzle concerning the dependency relation between [+Feminine] and [-Neuter] which was mentioned in Chapter 2. That is, why is there a rule like the following in OE?

10)           [    ] --> [-Neuter]/ [+Feminine]

As I noted above, this is an apparently arbitrary rule if grammatical gender features are arbitrary features. But such a rule is not surprising if these features are associated with natural gender. Females must be animate.

In the account provided here, grammatical gender features and natural gender features are the same features. They are arbitrary in nouns only because they are arbitrarily specified in nominal lexical entries. They are not arbitrary when the marked values are assigned in a derivation (as they are in pronominal matrices). The dependency rule reiterated above reflects the association of these features with semantic content.

Note that such dependency rules are of a different order than the complement rules which supply the default value of syntactic features (i.e., the opposite value to the value which is underlyingly marked). Complement rules may vary according to the markedness of a particular feature in a particular grammar. But dependency rules like the one above may spring from the semantic notions which are associated with features, so we should expect these to be universal wherever such an association is made.

The suggestion that grammatical gender features are the same features as those which are associated with natural gender thus leads to the conclusion that [+Feminine] and [-Neuter] are the marked values for these features in OE. There is further evidence which points to the same conclusion.

Since inanimate antecedents take pronouns which reflect their grammatical gender, it follows that when there is an inanimate antecedent which cannot be specified for grammatical gender features, we should expect the default values of these features to be assigned. Since clauses can hardly be thought to be lexically specified for the features of grammatical gender, they provide the crucial test. Pronouns with sentential antecedents are always neuter:

11) a) Beowulf 1345-1347

Ic þaet...seleraedende secgan hyrde  
I that... hall-rulers (to) say heard

þaet hie gesawon...  
that they saw

"That, I heard the hall-rulers say, that they saw.."

b) AElfred C.P. 429, 16

Ac forþaemþe hi her syngiaþ & hit him no hreowþ  
But because they here sing and it (to) him not  
distresses

c) Beowulf 1392

Ic hit þe gehate: no he on helm losaþ  
I it to you vow: not he in cover escapes

Similarly, an unnamed place (again, not a lexically specified item) is the antecedent of a neuter pronoun:

12) a) Beowulf 1361-1362

Nis þaet feor heonen  
Not is that far hence

milgearnearces, þaet se mere stande  
by measure of miles, where that lake stands

b) Idem 1239-1240

(neut. plural - not the antecedent)  
Bencþelu beredon  
Benchplanks (they) bared

(neut. sing.)  
hit geondbraeeded wearþ beddum ond bolstrum  
it overspread became (with) beds and cushions

Thus I conclude that [+Feminine] and [-Neuter] were marked values in OE. The OE grammar contained the following redundancy rules:



13)            {    } --> [-Feminine]  
                 {    } --> [+Neuter]

To these must be added the dependency rule:

14)            [    ] --> [-Neuter]/ [+Feminine\_\_\_\_]

I assume that, like phonological rules, these rules are ordered by the Elsewhere Condition. The following is a statement of this condition given by Kiparsky (1984):

15)            The Elsewhere Condition

Rules A, B in the same component apply disjunctively if and only if:

- a. the input of A is a proper subset of the input of B
- b. the output of A and B are distinct

In that case, A (the particular rule) is applied first and if it takes effect then B (the general rule) is not applied.

The rule which specifies all [+Feminine] matrices as [-Neuter] must precede the more general complement rules for gender described above.

There is an obvious parallel between the Elsewhere Condition and the Blocking principle. It is interesting to note that again a more simple version is possible, at least for the rules which are proposed in this thesis. Here the following statement would suffice:

16) When two rules may be applied in the same environment, rules which have specified environments precede rules which do not.

Since Kiparsky's formulation of the Elsewhere Condition has a good deal of motivation outside of the scope of this thesis, I shall not pursue the possible reduction of this principle here.

### 3.1.3 Case

The arguments for the underlying underspecification of Case features are rather different than those which have been made for the features of number and gender. The evidence shows that the assignment of the default values of Case features is not uniform throughout the sentence. Particular categorial domains (i.e., noun phrases, verb phrases, etc.) have different default values for the same feature, as I will show below.

This evidence not only supports the notion that Case features are underspecified at D-structure, it also argues that default values are assigned by rule. That is, the generalizations which can be made concerning the distribution of Case features are easily captured in the familiar notation of rewrite rules of the general shape:

$$X \rightarrow Y / A \underline{\quad} B$$

It is hard to imagine a significantly different formalism which could express these generalizations with an equal grace. Since this formalism has already been well-motivated in linguistic theory, it seems obvious that it is the

appropriate vehicle for the expression of these facts about Case features.

### 3.1.3.1 [+/-Accusative]

Klima's analysis of two dialects of present English argues that both values of the feature [+/-Accusative] are established by rule.

Klima (1964) discusses two present English dialects, each with an opposite markedness of nominative versus accusative Case<sup>5</sup>. The difference between these dialects can be seen in the use of these Cases in examples where there is an argument which (for one reason or another) is outside the domain of "Case assignment".

For example, in environments within a conjunction phrase, in the subject position of absolute participle constructions or in isolation, these dialects use different forms of personal pronouns:

- 17) a) Dialect 1:  
Veronica and I dined at the Ritz today.  
Dialect 2:  
Edna and me ate at McMeat's place today!

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5. Klima also provides an interesting account of the history of this feature. There has been more than one reversal of the markedness of [+/-Accusative] in the history of English.

b) Dialect 1:  
I having finished my meal, Abdul was eager  
to speak of business.  
Dialect 2:  
Me being a linguist, I never get up before noon.

c) !!!You took the deed to the ranch!!!  
Dialect 1:  
Who, I?  
Dialect 2:  
Who, me?

Klima suggests that these dialects differ in that one has a particular rule assigning nominative to arguments in subject position (and accusative appears "elsewhere"), while the other dialect has a particular rule assigning accusative to arguments in the verb phrase and in preposition phrases (and nominative appears "elsewhere"). In the present theory, these two dialects would differ in the following rule sets:

- 18) a) Dialect 1:  
[ ] --> [+Accusative]/ [[-N]\_\_\_\_]  
[ ] --> [-Accusative]
- b) Dialect 2:  
[ ] --> [-Accusative]/ [+Tense,\_\_\_\_]<sup>6</sup>  
[ ] --> [+Accusative]

Note that again the Elsewhere Condition is pertinent.

Klima's analysis is very interesting, for here the markedness of a particular feature is not defined in terms of

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6. I assume that "subject position" may be defined as "the argument which Agrees with the verb".

marked values determined from the specifications of lexical entries (as with grammatical gender), nor are marked values assigned in the derivation, in accord with the semantic content of the expression (as with the feature [+/-Plural] and the features of natural gender). Both values of [+/-Accusative] are assigned by rule - the marked value is simply the one assigned by the most particular rule. This expresses the fact that the differences between these dialects seem to be arbitrary, with no semantic consequence (beyond an indication of social status). The feature [+/-Accusative] in present English is assigned entirely by rule and so it is completely defined by the structure of the expression<sup>7</sup>.

The distribution of these feature values in OE is not so easy to define. The relatively free word order in OE and the difference in the markedness of another Case feature ([+/-Inherent], see below) prevents an account based on the same kind of evidence.

For speakers of OE the (admittedly sparse) signal of the dative/instrumental opposition was also pertinent to

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7. Note that these examples demonstrate the contrast between the markedness of signals and the markedness of underlying representations. My own dialect of English has the [+Accusative] default (i.e., I use "me" in default environments, rather than "I"). But in the Case conflict examples discussed in Chapter 2, I have the judgements given there - that is "whom" is the marked form - presumably marked [+Accusative].

[+/-Accusative]. It seems unlikely that the environments of all four Cases (i.e., both nominative versus accusative and instrumental versus dative) could be defined by a single rule (by a single structural description).

Furthermore, the dative/instrumental alternation clearly has a semantic correspondance (i.e., recipient/instrument). In OE, the nominative/accusative alternation also seems to have some consequence to the interpretation of arguments (i.e., agent/theme). In OE, there were some tensed sentences which did not appear with a nominative argument (i.e., "impersonal" constructions<sup>8</sup>). Nominative Case was not incompatible with the verbs involved in many impersonal constructions. But there is a difference in interpretation between such utterances as "drince hine" versus "drince he" (with some exaggeration - "he drinks habitually" versus "he drinks deliberately"). The nominative theta-role seems to imply a sense of "agency" which is not found in the accusative. It seems that in OE, the marked value of [+/-Accusative] was imposed on matrices according to the semantic content of the utterance.

The notion that the earlier stages of English assigned the marked value of [+/-Accusative] according to the particular

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8. These constructions will be exemplified and discussed in Chapter 7.

interpretation of each argument will explain an interesting fact in the history of English. Klima notes that at one point there was a peculiar change in the relation between the form of interrogative elements (WH-words) and the underlying Case of their D-structure position. Where previously the form of the moved element had to reflect the Case of the underlying position quite strictly, at the end of the seventeenth century it became possible to use a different Case signal if the element had been moved.

Klima points out that the following examples (and others) from Wycherley's plays are evidence that nominative Case is the default assignment of the nominative/accusative alternation in Wycherley's dialect (p.137-139):

- 19) a) "she and I'll be rid of the town."  
b) "he visit you!"  
c) "this is she"  
d) "Who, I at the park?"

In the same works, according to Klima,

"in questions... who is the subject form... However, the interrogative pronouns in Wycherley differ from those of the preceding stages [of English (J.S.L.)] in showing who in object function, except when following a governing preposition" (p.139-140)<sup>9</sup>:

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9. Note that Klima also shows that the relative pronoun continued to signal the actual Case of the relative variable for some time after the change in interrogative constructions (i.e., "whom" was always used for objects). This, perhaps,

- 20) a) "Who do you call the shadows of men?"  
 b) "Who wou'd you marry?"  
 but;  
 c) "To whom, Mrs Joyner?"  
 d) Mr. Pin: "Only a love letter, Sir."  
 Hor.: "From whom...?"

This distribution can still be seen in the present English usage which requires "whom" as the form under a preposition only if the preposition is "pied-piped". When the preposition is stranded, either form is allowed:

- 21) a) To whom did you speak?  
 \*To who did you speak?  
 b) Whom did you speak to?  
 Who did you speak to?

The present English distribution of "who/whom" (and the distribution of these forms in Wycherley's plays) follows naturally from the assumption (as above) that both values of [+/-Accusative] are assigned by rule. The distribution of the forms depends on structure alone. But this alternation in forms only begins at the end of the seventeenth century. Klima suggests that the forms and the Case assignment were always identical in the earlier stages of English because Case assignment preceded the movement rule for interrogatives (move-WH). In the late seventeenth century (in Wycherley's

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 reinforces the notion that relative clauses do not involve "move-alpha" (as suggested by Chomsky, class notes, 1986).



dialect), this ordering was reversed. The movement rule preceded Case assignment.

In the present theory, the earlier stage could be described as one where the marked value of [+/-Accusative] was assigned according to the semantic content of the theta-role assigned to that argument. Since this content would not change, WH-movement would not allow any difference of specification. But when the marked value was assigned by rule (with a structurally defined environment), then WH-movement preceding this rule would make a difference. This is to say that the redundancy rules for Case features always follow WH-movement (in all stages of English). But in the earlier stage, the marked value of [+/-Accusative] was not assigned by rule. It was imposed on matrices during the derivation, according to the interpretation of the argument.

Which of the values of [+/-Accusative] was marked and which was default in OE is not clear<sup>10</sup>. For the sake of a concrete exposition, I shall assume that [-Accusative] was the marked value. Thus, the grammar of OE included the following redundancy rule:

22)                    [   ] --> [+Accusative]

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10. But see Chapter 7.

### 3.1.3.2 [+/-Genitive]

It is a commonplace to observe that in contrast to verb phrases, the genitive has always been the Case assigned to the direct complements of noun phrases in all stages of English. Mitchell (p.535) quotes Gildersleeve and Lodge:

"the great function of the Accusative is to form temporary compounds with the verb, as the great function of the Genitive is to form temporary compounds with the noun"

The following examples show that in OE (as in present English), arguments which are typically [-Genitive] in a verb phrase are typically [+Genitive] in the parallel phrase headed by a derived noun:

23) a) AElfric Hom. 2.84

(nom.)

se Haeland... laerde... þæt folc  
that Healer... taught... that people

AElfric Hom. i. 62, 33

(gen.)

mines Drihtnes lare  
my Lord's teaching

b) AElfric Hom. 3, 129

(acc.)

and Crist swa alysde þa þe gelyfaþ on hyne  
and Christ so saved those who believed in him

AElfric Hom. ii. 8, 21

(gen.)

ure sawla Alysend  
our soul's savior

In OE, as in present English, the domain of the assignment of the default of [+/-Genitive] is split: in noun phrases (and in adjective phrases) the default is [+Genitive]. In other environments, [-Genitive] is default. This fact can be expressed in the following redundancy rules:

- 24)                   [ ] --> [+Genitive]/[[+N]\_\_\_]  
                       [ ] --> [-Genitive]

Note that the Elsewhere Condition orders these rules.

There is a good deal of evidence which suggests that the marked value of [+/-Genitive] is imposed on matrices during the derivation. In all stages of English, many arguments which are "normally" accusative may be realized as genitive if the argument has a partitive interpretation (e.g., Ic notode þaes hlafes = "I ate of the loaf" versus Ic notode pone hlaf = "I ate the loaf"). Moreover, Visser points out that "nearly all" of the verbs which he lists as taking genitive complements "also occur with a dative or accusative" (§371).

Those assignments of [+Genitive] which might be thought to be underlyingly specified are relatively few. For example, most genitive complements of prepositions in OE are only optionally genitive in that there are dative or accusative alternates. In Mitchell's list of 87 OE prepositions (§1177-8), only two - andlanges "along", and utan "outside of" - are suggested to be consistently found with genitive arguments. One of these has a near parallel - andlang "along"

- which appears with genitive or accusative arguments.

It seems clear that the [+/-Genitive] specification is not determined in lexical entries. The marked feature value is imposed on matrices during the derivation according to the intended interpretation of the utterance.

### 3.1.3.3 [+/-Inherent]

In her dissertation, Anderson argues that some noun phrase complements in present English are bare NPs (not PPs) in the underlying representation. Only these complements are available for NP-Preposing and "of"-insertion. So in the following examples, the relation between the verb and its complements seems quite parallel to the relation between the derived noun and its complements:

- 25) a) They destroyed the city.  
b) the destruction of the city  
c) The city was destroyed.  
d) the city's destruction

But Anderson points out that in other examples, "nouns are more limited in the kinds of direct objects they allow than their verb counterparts" (p.103-104). Thus some derived nouns cannot have a "direct" object at all<sup>11</sup>:

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11. The judgements are for parallel readings in the sentence and noun phrase pairs.

- 26) a) He kicked the ball.  
 b) \*the kick of the ball  
 c) He climbed the mountain.  
 d) \*the climb of the mountain  
 e) He bellowed an answer.  
 f) \*the bellow of the answer

Still other derived nouns may have a preposition phrase complement (e.g. "of NP") which is in contrast to "of"-insertion constructions, for it does not alternate with NP-Preposing:

- 27) a) He knows algebra.  
 b) his knowledge of algebra  
 c) \*algebra's knowledge  
 d) He trusted the police.  
 e) his trust of (in) the police  
 f) \*the police's trust  
 g) He evaded the police.  
 h) his evasion of the police  
 i) \*the police's evasion

Anderson suggests that in these noun phrases, the arguments are not "bare NP" complements, but rather indirect objects (PPs).

Thus it seems that in present English, only a particular class of complements are parallel in verb phrases and derived noun phrases. The crucial test for this parallel is the possibility of NP-preposing.

According to Anderson,

"the clearest example of NP-Preposing seems to be destruction. Here the relation is agent-action-object ... the bare-NP complement must be changed or moved by the action of the head nominal." (p.43-44)

She generalizes the notions "changed or moved" to the notion

"affected".

Other classes of nouns with complements which may be preposed include picture and performance nouns:

- 28) a) the play's performance (by the company of actors)
- b) the book's publication (by MIT Press)
- c) the senator's portrait (by da Vinci)

These, according to Anderson, "imply the creation of an object" (p.45), which she also labels an "affected" theta-role assignment.

Nouns of concealment and exposure also allow their complements to prepose:

- 29) a) the plant's exposure (to sunlight)
- b) the knife's concealment (by Morris)

To Anderson, these complements "are in some way affected by being concealed or exposed" (p.45).

In short, all those arguments which are generated as bare-NP complements in noun phrases are in some way "affected" by the action of the head of the containing phrase<sup>12</sup>. Why should this "affected" interpretation of the complement require just this structure?

Recent research (Tenny, MIT thesis, 1987) suggests that the

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12. Anderson is not the first to notice the distinction of "affectedness" (e.g., Fillmore (1967), and the references there).

notion "affected" can be seen as one aspect of a larger notion. The elements which delimit the reference of direct objects also delimit the dimensions of the action described by the verb which governs that object. Thus in the sentences below, the determined objects are in clauses understood as accomplishments while the non-determined objects are in clauses understood as activities:

- 30) a) Elmer ate the apples. Carol pushed the carts.  
(Accomplishments)
- b) Elmer ate apples. Carol pushed carts.  
(Activities)

A delimited object implies a bounded action; a non-delimited object allows an unbounded action.

Anderson's affected/non-affected opposition may be seen as a particular instance of the delimited/non-delimited distinction. The delimiting elements in affected arguments (which are changed or moved or created or concealed by the action of their predicate) are naturally required to delimit the boundaries of that action. The sentence "Ed destroyed the city." describes an action of destroying which has an extent circumscribed by the boundaries of "the city" and a duration limited to the time it took to destroy that much. The delimiting properties of the "affected" arguments described by Anderson necessarily participate in delimiting the boundaries of the action described by their predicates. As we will see below (Chapter 7), the theta-roles assigned by other classes

of verbs do not force the delimiting elements in their complements to delimit the action described by the verb.

The reader will note that these descriptions of affected/non-affected, delimiting/non-delimiting alternations are quite similar to Jakobson's description of the alternations afforded by the Case feature [+/-Marginal] (in the present theory, [+/-Inherent]). Recall that he defines the property associated with the feature [+Inherent] as one which indicates that "a peripheral role is attributed to the entity in the contents of the utterance" (p.108). It seems clear that arguments which cannot delimit the action of the predicate will be interpreted as more "peripheral" than arguments which can.

I suggest that only [-Inherent] complements may delimit the action of their predicate. The feature [+/-Inherent] indicates how closely the interpretation of an argument is to be related to the interpretation of the action of the verb. [+Inherent] arguments are circumstantial to the action. [-Inherent] arguments participate in the definition of the action. Put another way, the theta-roles assigned to [+Inherent] arguments are not interpreted with particular attention to the specific interpretation of the predicate. But the interpretation of the theta-roles assigned to [-Inherent] arguments depends directly on the action described by each predicate.



Since only the complements which must be able to delimit their predicate are direct objects in present English noun phrases, then it may be said that only these (semantically marked) objects are assigned [-Inherent]. Therefore, in present English noun phrases, [-Inherent] is the marked value for that feature. Since the feature [-Inherent] is marked, noun phrases complements are generally assigned [+Inherent] - they do not delimit the action of the nominal predicate. In contrast, the feature value [+Inherent] is marked in the present English verb phrase. Therefore, unless they are specifically marked [+Inherent], verb phrase complements are assigned [-Inherent] and they can delimit the action described by the verbal predicate.

I will argue below (in Chapter 6) that preposition phrases pattern with noun phrases in having a [+Inherent] default value, but adjective phrases pattern with verb phrases. In short, the grammar of present English includes the following redundancy rules:

$$31) \quad \left[ \quad \right] \begin{array}{l} \text{--> } [+Inherent] / [[-V] \underline{\quad}] \\ \text{--> } [-Inherent] \end{array}$$

The complements of OE noun phrases (and adjective phrases) behaved very much like present English noun phrase complements. What is striking, however, is the behavior of arguments in the verb phrase in OE.

The verbs of motion and verbs of vocal expression (which



33) a) Maldon 34

(acc.)  
ne þurfe we us spillan  
not need we us (to) destroy

b) Paris Psalter 103, 28

(acc.)  
þu scyppest eorþan ansyne  
you created (of) earth (the) face

c) OE Riddles 26/11

(acc.)  
Mec sippan wraþ haeleþ hleobordum  
me afterward covered man (with) protecting-  
board

The parallel seems compelling. Present English noun phrases differ from present English verb phrases in that certain classes of complements which seem to be direct objects of the verb must be indirect objects of the derived noun. The same classes of complement are realized as indirect (inherent Case) objects in OE verb phrases. Similarly, certain classes of complements which appear as accusative complements in present English verb phrases cannot appear in the present English derived noun phrase. Neither could they appear in the OE verb phrase. Only "affected" arguments are parallel in present English verb and noun phrases. Only "affected" arguments are parallel in OE verb phrases and present English verb phrases.

I suggest that OE had a different set of redundancy rules for the Case feature [+/-Inherent]. In OE, only subjects which Agreed with a tensed verb were automatically [-Inherent]. Everywhere else (in VP, NP, PP and AP),

[+Inherent] was the default. Thus the grammar of OE included the following redundancy rules:

34)            {    } --> [-Inherent]/[+Tense, \_\_\_]<sup>14</sup>  
                  {    } --> [+Inherent]

The difference between these rules and the redundancy rules for present English suggested above is arguably the basis of the greater part of the distinctions between these two languages. The situation which gave rise to the change in these rules occupies much of the discussion in Chapter 6. The consequence of this change is the topic of Chapter 7.

The analysis which I will argue for in this thesis is based on the notion that verbs and prepositions may be listed in the lexicon with the marked value of the feature [+/-Inherent]. It is this possibility of lexical specification which will explain why the reversal of the default value for this feature did not provoke more drastic revisions in all of the surface structures of English at the precise time when the revision in the rules was accomplished. Rather, as I will show in Chapter 7, there was a gradual but steady drift in the use of various classes of verbs. This drift did not saturate the lexicon until five hundred years after these changes in the markedness

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14. In fact, this rule seems to be a universal and so must be pertinent in present English, as well. Its particular effects are hidden in the general default rule in the present English grammar.

of [+/-Inherent] in the grammar of English. The precise mechanisms involved in this delay will be discussed in Chapters 6 and 7.

It must be noted here, however, that the marked value of [+/-Inherent] can also be imposed on matrices in a derivation according to the intended interpretation of the argument. Visser notes that many OE verbs could appear with dative or accusative objects and "there was a good deal of vacillation as to the proper form of the object" (§319). I suggest that this vacillation corresponded to the semantic alternation associated with the feature [+/-Inherent]. That is, in examples like the following, the dative object and the accusative object have different interpretations:

- 35) AElfric, Saints' Lives p.494, 110
- |             |         |                          |        |
|-------------|---------|--------------------------|--------|
| se faeder   | wip-soc | his bearne and           | (dat.) |
| that father | gave up | (concerning) his son and |        |
|             |         |                          | (acc.) |
| þæt bearn   | wip-soc | þone faeder              |        |
| that son    | gave up | his father               |        |

The precise nature of these interpretations is, of course, open to debate. But it can hardly be denied that the author intended some difference in the interpretation of these two objects. I wish merely to argue that in general, where dative and accusative forms are so opposed, this difference is consistent.

Although the default value of every feature is always

assigned in the derivation by the redundancy rules, there are different methods for establishing marked values. In present English, the marked value of [+/-Accusative] is assigned only by rule in the derivation. This feature is purely structural, in that it is assigned according to the particulars of the redundancy rules without regard to individual lexical entries or semantic content. In OE, however, the marked value of [+/-Accusative] was imposed on matrices in each derivation according to the semantic content of the utterance. In both of these languages, the marked value of [+/-Genitive] is assigned during the derivation on the basis of the semantic content. Similarly, the marked value of [+/-Plural] is imposed on matrices according to the required interpretation. These features are "semantic" in that their assignment reflects their association with particular interpretations. The marked value of [+/-Inherent] is assigned in the lexical entries of verbs (and, as I will show in Chapter 4, in the lexical entries of prepositions). However, the marked value may also be imposed on feature matrices in each derivation on the basis of semantic content. So [+/-Inherent] is both lexical and semantic. Similarly, the features of gender are lexical for nouns, but semantic where nouns are not involved.

I propose that the redundancy rules which have been motivated here have the following order in the grammar of OE:

- |    |   |   |     |                              |
|----|---|---|-----|------------------------------|
| 1. | [ | ] | --> | [-Plural]                    |
| 2. | [ | ] | --> | [-Feminine]                  |
| 3. | [ | ] | --> | [+Genitive] / [[+N]___]      |
| 4. | [ | ] | --> | [-Genitive]                  |
| 5. | [ | ] | --> | [-Inherent] / [+Tense, ___]  |
| 6. | [ | ] | --> | [+Inherent]                  |
| 7. | [ | ] | --> | [-Neuter] / [+Feminine, ___] |
| 8. | [ | ] | --> | [+Neuter]                    |
| 9. | [ | ] | --> | [+Accusative]                |

The Elsewhere Condition orders 3 before 4, 5 before 6 and 7 before 8. The remaining ordering is given to provide an account of the hierarchy of features which was discussed in the previous chapter. Presumably, the forms of inflection are inserted into matrices following the application of each redundancy rule. This process was discussed in Chapter 2.

### 3.2 Features and Syntactic Structures

Grammatical features are not the only features which are pertinent to syntactic theory. Binary features are commonly used to describe the categories which appear in the expressions of natural language as words and phrases. These categorial features are fundamental to the design of syntactic representations. I shall argue that grammatical features have a similar role in grammar. Categorial and grammatical features together are the class of "syntactic" features which define syntactic structure.

### 3.2.1 The X-bar Convention

Features have been widely used in various syntactic theories, including the framework which I am assuming here. Perhaps the most interesting development in this framework has been the evolution of the X-bar Convention.

Prior to the introduction of this convention, generative linguists described the constituent structure of particular syntactic configurations in terms of language-specific phrase building rules - "rewrite" rules of the following shape<sup>15</sup>:

37)  $X \rightarrow Y / A \underline{\quad} B$

The early research in generative syntax led to the formulation of a constraint on the general shape of these phrase structure rules<sup>16</sup>. In the description of natural language, all such rules may be said to conform to the following pattern:

38) The X-bar Convention

$$\begin{array}{l} X^n \rightarrow \dots X^{n-1} \dots \\ X^{n-1} \rightarrow \dots X^{n-2} \dots \\ \vdots \quad \quad \quad \vdots \\ \vdots \quad \quad \quad \vdots \\ \vdots \quad \quad \quad \vdots \\ X^1 \rightarrow \dots X^0 \dots \end{array}$$

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15. This schema is not meant to imply that all systems previous to the X-bar Convention were context sensitive.

16. The proposal originates in Chomsky, 1970.



(where "X" is a matrix of syntactic features)

The X-bar Convention ensures that all phrases have heads ( $X^0$ ) and that all heads project phrasal structure ( $X^n$ ). Since each is defined by the same matrix of syntactic features (X), each head and its phrasal projections are the same category. So verbs must head verb phrases and noun phrases must be headed by nouns, etc. The grammar is thus constrained so that category-changing processes (e.g., the processes signalled by derivational affixes) cannot be described as syntactic processes (the "Lexicalist Hypothesis"). So, for example, the verb "destroy" and the noun "destruction" are not related by a syntactic derivation. Presumably these words are composed in the lexicon - a distinct component of the grammar.

The heads of phrases which are generated under the X-bar Convention are defined as bundles of syntactic features. Lexical entries are also specified for syntactic features. The features are the mediators between particular lexical entries and particular phrases. When lexical items are inserted in the structures generated under the X-bar Convention, the matching of lexical entry and phrase is constrained in that their feature matrices must be non-distinct.

Under the X-bar Convention, the notion "syntactic feature" is crucial to the representation of syntactic structure. The class of syntactic features defines the possible categories

(parts of speech) available to syntactic representations. Moreover, these features are also required to express generalizations in the distribution of the properties of the various syntactic categories in natural language.

It has been widely accepted that the class of syntactic features should include (at least) the categorial features which define the major parts of speech<sup>17</sup>:

- 39)  $\begin{bmatrix} +N, -V \\ +N, +V \\ -N, +V \\ -N, -V \end{bmatrix}$  = noun  
          = adjective  
          = verb  
          = preposition

Chomsky (1981) suggests that these features express the traditional notions; "substantive" ([+N]) and "predicate" ([+V]) (p.48). I will argue in Chapter 4 that [+N] and [+V] may be given a more explicit definition. These categorial features provide indications of basic properties in the associated thematic structures.

### 3.2.2 The Projection Principle

The X-bar Convention was introduced as a universal constraint on the expressive power of phrase structure rules. But even under the X-bar Convention, the language and construction specific rules could still generate many more configurations than are actually to be found in natural

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17. These features were proposed in Chomsky 1970.

language. Stowell (1981) observed that the great majority of phrase structure rules which were attested in the literature were massively redundant with information which in any case must be listed in particular lexical entries (i.e., in "theta-grids" and in "selection frames" or "subcategorization frames")<sup>18</sup>.

Since the elimination of language specific phrase structure rules would not complicate the grammar in another place (whereas the elimination of the same information in lexical entries would be impossible), and since the language-specific rewrite rules are too powerful for a unique description of the facts, Chomsky (1981) proposes that phrase structure rules should be eliminated. The X-bar schema (as illustrated above) constrains the general shape of syntactic configurations and in each derivation, the particulars of constituent structures are to be defined under the Projection Principle (roughly):

40)                    The Projection Principle

Representations at each syntactic level (i.e., LF, and D-structure and S-structure) are projected from the lexicon, in that they observe the subcategorization properties of lexical items.  
(1981, p.29)

Given the X-bar Convention and the Projection Principle, the generation of syntactic structures may be seen as a completely

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18. This topic is resumed in Chapter 4.

general process, similarly expressed in every language. Knowledge of this process is an aspect of Universal Grammar, a part of genetic knowledge of language. The details of language-specific configurations in syntactic representations are defined only in the lexical entries which are inserted in each derivation.

### 3.2.3 "Project X"

The Projection Principle suggests an interesting "bottom-up" view of syntactic processes. That is, the distribution of syntactic categories is determined by information in the lexical entries which provide the heads of phrases - not by rewrite rules which arbitrarily expand a phrasal node. In contrast with this "bottom-up" perspective, however, the general schema provided in the X-bar Convention still requires that phrasal projections and their heads must have the same categorial identity - by virtue of a "top-down" derivation. That is, the features of the maximal phrasal projection (i.e.,  $X^n$ ) are given and the schema requires that the head of the phrase (i.e.,  $X^0$ ) must conform to this specification of features.

Moreover, the same feature specifications must be listed again in the lexical entry which inserts an item in the head of the phrase in the syntactic representation. But this is a redundancy of a familiar kind. The X-bar Convention requires



Each matrix of syntactic features found in lexical items is interpreted as  $X^0$  under the new X-bar Convention and projects at least one phrasal category of the same features:

$$43) \quad \begin{array}{cccc} [AX]P & [BX]P & [CX]P & [DX]P \\ | & | & | & | \\ [AX]^0 & [BX]^0 & [CX]^0 & [DX]^0 \end{array}$$

That the feature matrices of the projection must be identical with the specification of the lexical entry and with each other is ensured only by the Projection Principle. The projection rule (Project X) is completely general. In the present theory (and as before), the Projection Principle provides that the particulars of lexical entries also determine the relations between these structures in any derivation. I shall demonstrate these derivations more specifically and completely in the following chapters.

The proposed formulation of the X-bar Convention has been motivated here largely on theory-internal considerations. The new Convention allows the elimination of a redundancy in the expressive apparatus of the grammar and provides an interesting perspective on lexical insertion. As I will show below, this perspective has some consequence beyond this simplification of the theory.

### 3.2.4 What Features are Syntactic Features?

As illustrated above, the major categories of traditional grammars may be defined with two syntactic features (i.e., [+/-N, +/-V] = noun, adjective, verb, preposition). But it seems obvious that more than these two features are required to account for the multitude of minor categories (e.g., determiners, WH-words, "inserted" prepositions, conjunctions, complementizers, etc.). The class of syntactic features (i.e., those features which invoke the X-bar Convention) must be expanded. But how is this to be done?<sup>19</sup> What are the possible minor categories? What features define them?

#### 3.2.4.1 Verbal Inflection

Before I address these questions, I would point out some interesting research concerning the representation of major categories.

A long debate among generative linguists<sup>20</sup> has provided convincing evidence that among the categories available in Universal Grammar, there is one category which expresses the

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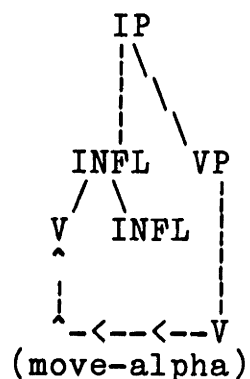
19. In fact, there have been numerous attempts to enlarge the class of categorial features to account for these minor categories, e.g., Jackendoff (1977), and others.

20. See especially Steele et al. (1981)

tense and/or modality of the clause and which appears in the syntactic representation as the head of the clausal phrase. In many current analyses of present English, for example, the forms of verbal inflection, the modal "verbs" and the infinitival marker "to" are all described as instances of INFL<sup>0</sup> - the head of the sentence phrase (e.g., Chomsky (1981), p.52).

The independent position of these elements in the underlying syntactic representation is often obscured by head-to-head movement during a derivation. In many languages, there is evidence that verbs may adjoin to the head of their clause (e.g., see Koopman (1984), Torrego (1984)):

44)



The nature of this process has been a topic of discussion since the beginning of generative linguistics. In the early debate (e.g., in Syntactic Structures), the process was often conceived of as "affix-hopping" rather than as "head-adjunction". Whatever the analysis, this kind of process seems to be common in many languages.



The properties signalled by the elements of INFL (the head of the clausal phrase) are often described in terms of binary features (e.g., [+/-Tense, +/-Past,...etc.]). Chomsky (1981, p.52) suggests that this matrix includes the categorial features ([+N, -V]). If this is so, INFL is not a minor category - it is a noun. But I would emphasize that in this analysis, INFL is always the head of an independent phrase in the syntactic representation (i.e., the clause). Thus, the affixes of verbal inflection may be the heads of phrases in syntactic representations.

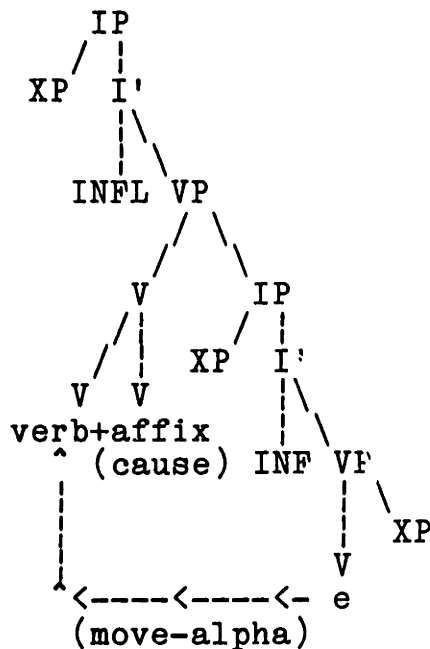
Baker (1985) shows that other affixes of verbal inflection are also heads of syntactic phrases. In many languages (e.g., Chamorro, Quechua, Bemba, etc.), the causative morphemes which appear as a part of verbal inflection are independent verbs in underlying representations<sup>21</sup>. The effects of structurally defined processes (e.g., Binding Theory facts, subject agreement, passive movement, etc.) provide evidence that the constructions where these causative affixes appear are actually bi-clausal.

Again, these facts are obscured by head to head movement. Presumably, the lower verb adjoins to the head of the

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21. In fact, this perspective is also found in the tradition of linguistic discussion concerning these languages.

causative verb phrase:

45)



Again an affix of inflection is the head of a phrase in the syntactic representation - this time, the affix is a verb.

Baker's discussion shows that other elements in the array of verbal inflection are also indications of independent structure in the underlying representation. So the reciprocal markers in Quechua and in Bemba and the applicative morphemes in Huichol and in Kinyarwanda, etc. are the heads of phrases in the underlying syntactic representation. Again this structure is not obvious because of head-to-head movement in the syntactic derivation.

Baker demonstrates that the surface manifestation of the morphology of these constructions has a consistent pattern. The order of the affixal morphemes and their stem always reflects the order of processes in the syntactic derivation.

The evidence which Baker presents shows that the syntactic and the "morphological" derivations must be parallel. This observation is framed in the Mirror Principle:

- 46) Morphological derivations must directly reflect syntactic derivations (and vice versa).  
(Baker, 1985 LI 16, 3 p.375)

As Baker points out, this principle is not likely to be a basic axiom which must be stipulated in Universal Grammar. Nonetheless, in any account of natural language it is necessary to provide for the surface distinctions and for the underlying parallel between morphological and syntactic configurations. Baker suggests that the most obvious provision is to assume that the affixes of inflection are the heads of syntactic phrases. The morphological derivation and the syntactic derivation are then the same event and the Mirror Principle follows from the basic structure of the grammar. The analysis argues for a broad generalization. Each affix of verbal inflection is the head of a phrase in the syntax.

Thus the class of major categories includes both affixes and phonologically independent forms. This is an important clue for any inquiry into the extent of the class of minor categories.

### 3.2.4.2 Substantive Inflection

A number of researchers<sup>22</sup> have argued for the "DP-hypothesis" ("DP" = Determiner Phrase). This notion is based on observations concerning systematic differences between major and minor categories.

Major categories are "lexical", in that they have an inherent thematic structure (i.e., Stowell's notion "theta-grid"). These lexical categories are "open-class" categories - individual lexical items are relatively transient in the diachronic lexicon because their semantic content depends on usage. That is, each generation of language learners must learn the thematic structure of each lexical entry from a different linguistic community. New words might be added or old ones lost or revised because the data which initiate the acquisition of each thematic structure have varied sources and content. Following Fukui and Speas (1986), I assume further that the phrase structure of lexical categories is recursive. That is, lexical categories may have an indefinite number of projections, depending only on how many phrasal levels are required to accommodate the thematic structure of the category (under binary branching). The more

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22. Brame ( ), Hellan ( ), Abney (1987), Hale and Selkirk (1986), Fukui and Speas (1986), Saddy (1987), etc..

complements present, the more phrasal levels are generated (by repeated applications of "Project X").

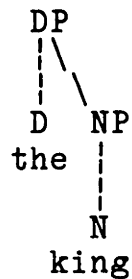
In contrast, the minor categories lack this sort of semantic content (thematic structure). They are "closed-class" items with relatively few losses or innovations (but see below). These are high-frequency words which generalize across semantic contexts. They are "functional" categories in that they connect the elements of some other category's thematic structure by expressing the grammatical properties of the environment (as I will illustrate below). Again following Fukui and Speas, I assume that functional categories allow only two phrasal projections. They have one "complement" position. The functional category may select certain properties of the phrase which is the sister of the head of that functional category (e.g., determiners take noun complements, complementizers take clauses, etc.). These categories may also have one "specifier position" - a non-thematic position, where operators and other "moved" elements can be realized as the sister of a higher projection of the functional category.

Note that, henceforth, I will refer to major categories as "lexical categories" and to minor categories as "functional categories".

The DP-hypothesis argues that substantive phrases are actually headed by functional categories. That is,

substantive phrases typically have the following structure:

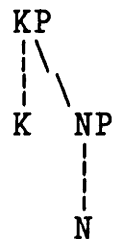
47)



This structure allows an account of the selectional properties of DP categories (e.g., the fact that determiners select nouns, rather than verbs, that they can require singular nouns, not plural, etc.). The same analysis provides for the parallels in the structures of the variety of substantive phrases which appear in natural language<sup>23</sup>.

Given a grammar which incorporates the Mirror Principle as Baker suggests (so that inflection may also project phrasal structure), the DP-hypothesis has further implications. As early as Fillmore (1967) and in some current analyses (Hale 1985, class notes), the following structure has been suggested as the one which underlies all substantive phrases:

48)



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23. I refer the reader to the authors mentioned in the previous footnote for more complete arguments in favour of the DP-hypothesis.

(where "K" is a Case-marker)

Hale points out that the general advantage of this perspective is a provision for an underlying similarity in seemingly disparate languages (a provision which directly addresses the problem of acquisition). In modern German, for example, Case is primarily signalled in the substantive phrase by a minor category (i.e., a determiner)<sup>24</sup>:

49) nom.	der Mann	"the man"
acc.	den Mann	
dat.	dem Mann	

On the other hand, in languages such as Japanese etc., Case is realized as an affix of inflection attached to the head of the noun phrase:

50) nom.	hon-ga	"the/a book"
acc.	hon-o	
dat.	hon-ni	

If Case is always signalled in  $K^0$  (the head of KP), then (ignoring the directional parameter) these phrases must be parallel in underlying representation. In Japanese, however, the Case element is an affix. The underlying structure is

-----  
24. Of course, Case is sometimes also realized as an affix on the noun in German, as well as in Japanese (e.g., des Mannes = genitive). More than one functional category matrix must be involved - but these categories must Agree in their feature specifications. In fact, the same kind of reiteration of functional categories in Agreement with each other can be seen in ME. See Chapter 5.





substantive inflection and the non-affix functional categories seem to be a natural class. They differ simply in that one group is composed of affixes - but a similar distinction can be seen in lexical categories (e.g., verbal inflection versus other nouns and verbs).

I would argue that these functional elements are united in that they all express grammatical properties. This suggests a parallel between grammatical and categorial features. Lexical categories are united in that they all express categorial features. So every category in the syntactic representation expresses grammatical and/or categorial features. Since categorial features are defining features for lexical categories, it seems natural to assume that functional categories are defined by grammatical features.

I suggest that the X-bar Convention should be viewed in the following way:

52) Lexical entries are provided with matrices of syntactic features. Syntactic features include;

i) categorial features -  
(e.g., [+/-N,+/-V...])

ii) grammatical features -  
(e.g., [+/-Pl,+/-Genitive,+/-Neuter...])

Each language selects a set of these features chosen from a universal inventory.

When lexical items are assembled in a particular derivation, each matrix which contains one or more syntactic features is subject to one or more applications of the general rule:

"Project X"

where "X" is a matrix of syntactic features.

The expansion of the class of syntactic features and the "bottom-up" version of the X-bar Convention are compatible with the incorporation of the Mirror Principle into the structure of the grammar. Since inflection signals syntactic features (categorial features and/or grammatical features), it must take part in defining phrasal structure and it must take part in the syntactic derivation. I will demonstrate in the next chapter that the revised X-bar Convention and the expansion of the class of syntactic features also provide that substantive structures must conform to the configurations suggested by the DP- and KP-hypotheses.

### 3.3 The Linking Conventions

Obviously, the relations between grammatical features and semantic content are not simply random and any account of grammatical features is obliged to describe the nature of these relations. I suggest that these relations must conform to specific Linking Conventions which map binary features on to semantic continua.

Each binary feature represents an absolute opposition (i.e., on/off), with no middle ground. It seems clear, however, that each of the associated semantic oppositions expresses a

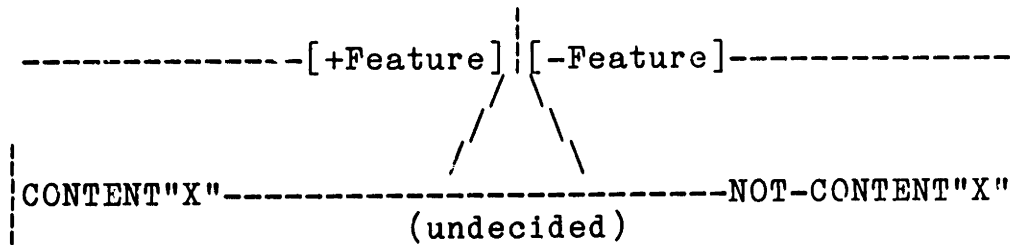
continuum of meaning. Naturally these continua are best described by speaking of their extremes, but they differ from the formal oppositions expressed by the feature alternation in that they do have a middle ground.

I assume that each predicate assigns an idiosyncratic theta-role to each of its arguments. But each theta-role assignment can be assessed according to its position in the semantic continua of the Linking Conventions. Every theta-role which has an interpretation which is unequivocally at the (marked) extreme of a semantic continuum is assigned to an argument which is specified in the underlying representation for the (marked) value of the feature which is linked to that continuum. Each argument is interpreted according to those semantic continua which are pertinent to the feature in question. Presumably, the pertinence of any one of these continua becomes obvious in the data which are the source of the acquisition of the language.

The properties of the argument itself may also be pertinent to the Linking Conventions. Thus the features of gender are linked to the notions animacy and female. But animacy also seems to be pertinent to the Case features. Similarly, [+Genitive] is linked to the notion "partitive" which seems to be an aspect of the interpretation of the substantive phrase, rather than of the interpretation of the theta-role assigned to that phrase.

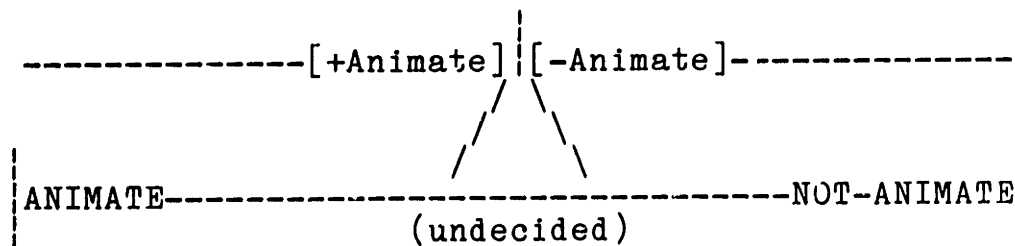
The Linking Conventions mapping the binary alternation indicated by a feature onto the continuum indicated by a semantic opposition can be illustrated graphically:

53) Linking Convention (abstract)



For the sake of the exposition, let us assume that the content of the semantic continuum concerns animateness. I present the feature with the label [+/-Animate] only for convenience. Actually it is associated with this content only through the Linking Conventions. A particular manifestation of a Linking Convention is thus:

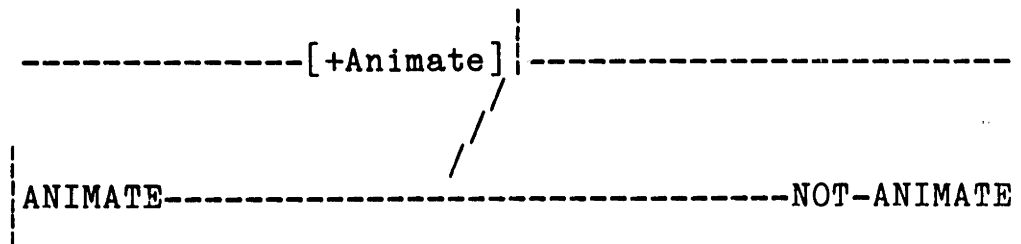
54)



Suppose then, that [+Animate] is underlyingly marked and [-Animate] is supplied by rule. The link between the feature and the content is only explicit in underlying representations

for one side of the opposition, thus:

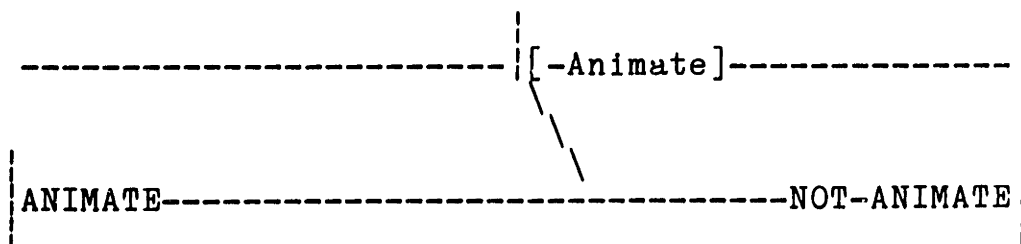
55)



Given the natural assumption that underlying representations are minimally specified for features, it follows that only unequivocally animate arguments will be underlyingly specified [+Animate]. All other arguments, which might be unequivocally non-animate or ambiguous or indifferent to the distinction of animacy, will be unspecified in the underlying representation.

But if the markedness of the feature [+/-Animate] should reverse, only those arguments which are unequivocally non-animate will be underlyingly specified [-Animate]. All others, whether they are obviously animate or merely ambiguous or indifferent to the distinction, will be underlyingly unspecified.

56)

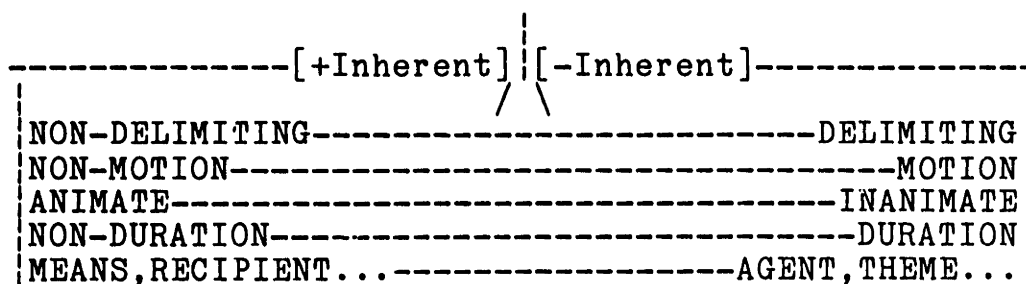


In each case, those arguments which are not clearly defined as being on one extreme or the other of the semantic opposition

will be unspecified in the lexicon and will end up with the default specification for the feature which is linked to that continuum of meaning.

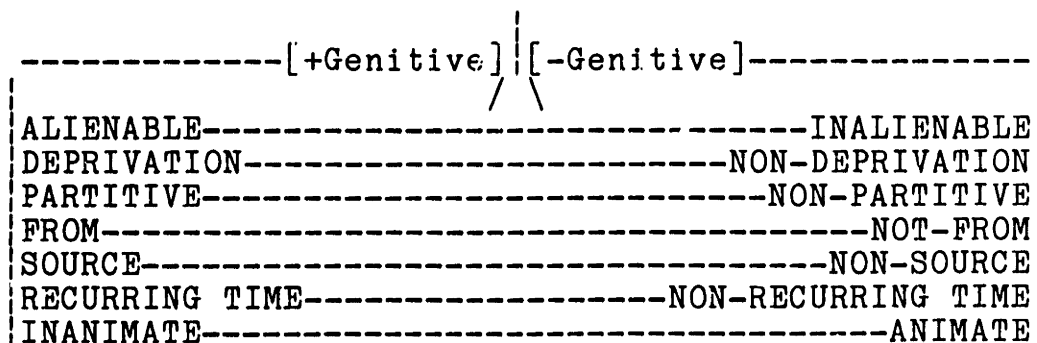
The linking between feature and semantic opposition is not necessarily one to one. The same feature might be linked to more than one semantic opposition and the same semantic opposition might be pertinent to more than one feature. Thus the Case feature [+/-Inherent] is linked to the delimiting/non-delimiting opposition, but with arguments expressing direction, the same feature is linked to the motion/non-motion opposition (seen in the OE dative/accusative alternation described in Chapter 2). The same feature has a further (weak) tendency to align to a animate/inanimate opposition in double object verbs (i.e., dative objects tend to be animate in contrast to accusative objects). If the theta-role concerns time, the accusative indicates duration. One might also claim that the division of theta-roles into groupings such as AGENT, THEME, etc. versus MEANS, RECIPIENT, etc. is also encoded here. All of these factors might contribute to a decision as to whether any particular feature matrix should be underlyingly specified for the feature [+/-Inherent]:

57)



Similarly, the feature [+/-Genitive] is linked to more than one continuum of semantic opposition. Arguments which involve the notion of deprivation are clearly [+Genitive] even in present English (e.g., "deprive him of the prize"), but the same feature also signals a partitive reading and the opposition of direction away-from/not away-from. In time adjuncts, the genitive indicates the habitual location of the event (see Chapter 4, Section 5.3). Another pertinent opposition (in OE noun phrase complements) is alienable/inalienable possession. The feature [+Genitive] was also linked to the notion source/non-source in OE. Moreover, in contrast with dative arguments, the genitive argument is usually inanimate:

58)



Again, all of these factors may be considered before a







## Chapter 4

### Syntactic Features and Thematic Structure

In the previous chapter, I have argued for a specific formulation of the X-bar Convention. Together with the Projection Principle, the new Convention provides that the categorial and grammatical properties of lexical entries are manifested as phrases in the syntactic representation. Of course, the distribution of phrases is further constrained. In addition to matrices of syntactic features, lexical entries provide information concerning phonological and semantic properties. The semantic information and the feature matrices in lexical entries both fall under the Projection Principle and must be represented at D- and S-structure and at LF.

In the framework which I assume here, the central constraint on the relation between syntactic structures and thematic structures is the Theta Criterion. Higginbotham (1985) and Jackendoff (1983, 1987) have proposed substantial revisions to the "standard" version of this principle. These proposals are quite distinct but not (I think) incompatible. I will present a brief outline of each below. The outlines are selective. The material which I present is that which I consider

pertinent to the present work. The reader is advised to turn to the originals for a more complete discussion of the concepts involved.

#### 4.1 Higginbotham on Semantics

In Higginbotham's approach, the theta-grid of every lexical entry is projected into the phrase structure representation along with the pertinent categorial features. The present English verb "to slay", for example, springs from a lexical entry which contains phonological information, categorial features and a theta-grid:

1) "slay" [+V, -N] <1, 2, e>

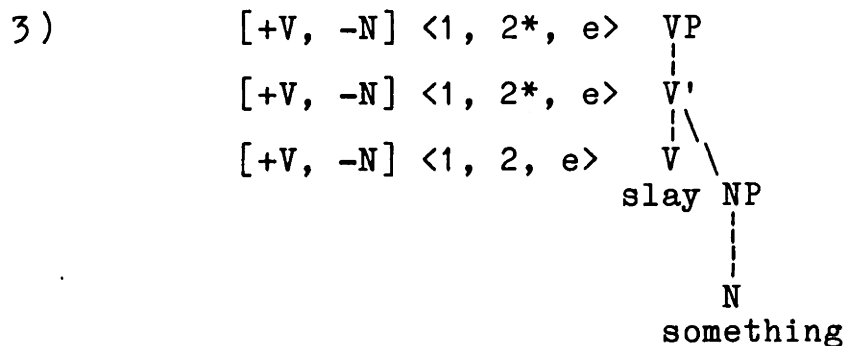
Each position on the theta-grid represents a particular theta-role (e.g., <1, 2, e> = <AGENT, PATIENT, EVENT>). Each theta-role must be assigned to a referring expression in the syntactic representation. The phrasal projections reiterate the categorial and the thematic information of the head:

2)

[+V, -N] <1, 2, e>	VP
[+V, -N] <1, 2, e>	V'
[+V, -N] <1, 2, e>	V
	slay

Theta-roles are assigned through "theta-marking". When the verb governs a substantive phrase, one position on the verb's

theta-grid is discharged by that phrase. For the purposes of this exposition, "government by the verb" means that a projection of the verb immediately dominates the phrase in question<sup>1</sup>. The star (\*) in the illustration indicates that the position on the theta-grid has been discharged:



Thus in Higginbotham's account, theta-marking involves a predicate phrase and an argument phrase, and the predicate must govern the argument phrase.

Higginbotham points out that

"In many languages, nominals can serve as predicates in main clauses. On these grounds alone, we should expect the word "dog" to have a thematic grid as part of its lexical entry, as in 29)

4) (=29)) "dog" [-V, +N] <1>

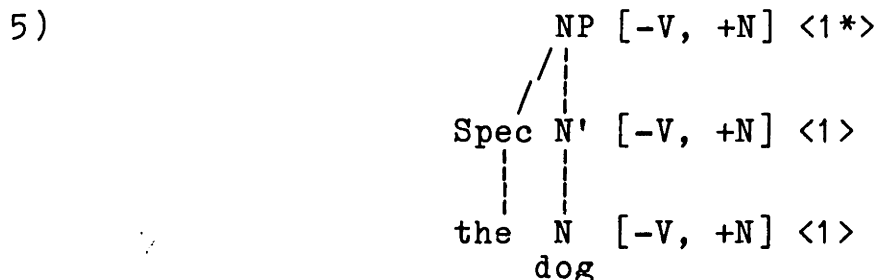
But...head nouns do not take arguments when they form NPs. What happens instead is that the position 1 is accessible to Spec, which acts as a binder of it" (p.560).

By "Spec", Higginbotham refers to a non-thematic position

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1. See Chomsky, 1981, for a discussion of various definitions of government.

within the maximal projection of the argument phrase which c-commands the head of that phrase<sup>2</sup>. A quantifier-like element in this position discharges the open position in the theta-grid of the noun phrase:



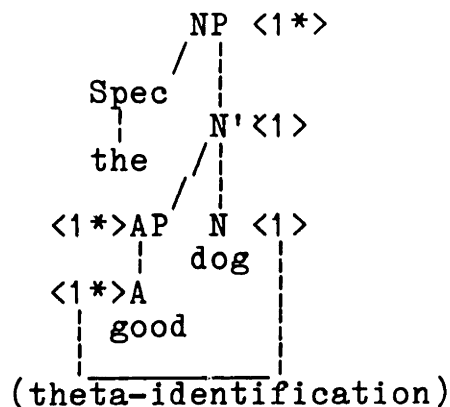
Of course, determiners are not the only elements which can appear in Spec. The same function of theta-binding is seen in the use of quantifiers (e.g., "some dog", "every dog", "no dog", etc.) and demonstratives (e.g., "that dog", etc.) and the pre-nominal genitive marker of present English (e.g., "Mike's dog", etc.). Only when the theta-position in the theta-grid of the noun phrase is discharged, can the substantive phrase refer and be assigned a theta-role.

Besides theta-marking and theta-binding, Higginbotham introduces a third process for discharging positions in the theta-grid - "theta-identification". This process allows adjectives to modify substantive phrases. Like nouns, adjectives have a theta-grid with at least one thematic

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 2. A phrasal projection X c-commands Y if and only if the first branching node which dominates X also dominates Y.

position. When an adjective modifies a noun phrase, the open position in the theta-grid of the adjective is "theta-identified" with the open position in the theta-grid of the noun (p.564).

6)



Here, the adjective variable is discharged through theta-identification<sup>3</sup>.

But Higginbotham further observes that there are two types of modification. These are exemplified in the following:

- 7) a) That is a big butterfly.  
       He is a bad musician..
- b) That butterfly is big.  
           The last musician in the front row is bad.

The first reading of the a) examples is that "the butterfly is

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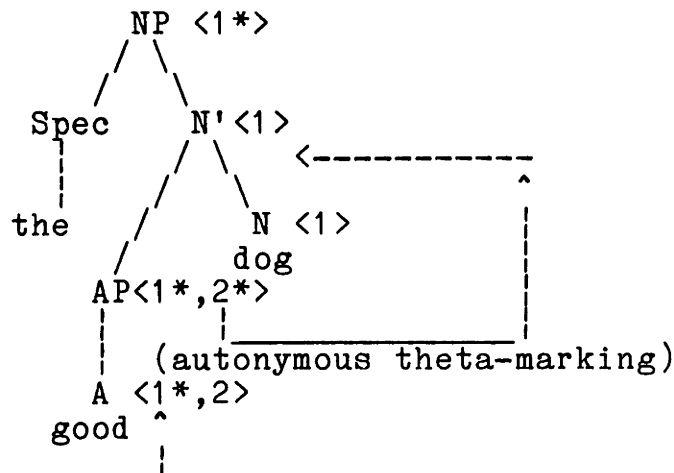
3. An alternative perspective might claim that theta-identification does not itself discharge the adjective variable. One might say that the variables are identified and then the same process discharges both variables. That is, the same theta-binding which discharges the nominal variable also discharges the adjectival variable.

big - for a butterfly", and "the musician is bad - as a musician". But the b) examples have a first reading which leaves the standard of comparison open - the butterfly is big and the musician is bad - by an arbitrary measure<sup>4</sup>.

Higginbotham suggests that this contrast is evidence that (some) adjectives have a second position in their thematic grid:

"The attribute is an argument of the adjective, so that the head noun in an ordinary adjective-noun construction serves to discharge two thematic positions, one by identification and the other by theta-marking, by the adjective, of the very noun itself. In the usual case of theta-marking, the reference of the theta-marked expression becomes the value of an open position in the theta-marker; but in the case of modification, I suggest, what is theta-marked, the phrase marker with root N, is itself the value. For this reason, this type of theta-marking will be called "autonomous" (p.564):

8)



(Note: <1> has been saturated through theta-identification.)

4. Note that the arbitrary standard of comparison might still be understood as the standard of butterflies or musicians (in the examples given) - but it need not be.

When the AP is within the noun phrase, the standard by which the attribute is measured is that of the noun. But when the AP is not in this configuration, the standard of comparison is arbitrary.

In summary, according to Higginbotham, thematic positions may be discharged in four different ways:

9)

- i) theta-marking, where the reference of a theta-marked expression becomes the value of an open position in the theta-grid of a predicate
  
- ii) theta-binding, where an open position in the theta-grid of a substantive phrase is discharged by a quantifier-like element in the Spec position of that phrase
  
- iii) theta-identification, where an open position in the theta-grid of one phrase is identified with an open position in the theta-grid of another phrase
  
- iv) autonomous theta-marking, where the theta-marked expression itself is the argument of the theta-marker

In the Government and Binding framework (which Higginbotham adopts as the basis of his discussion), the theory of thematic structure is constrained by the Theta Criterion<sup>5</sup>:

-----  
5. See Chomsky, 1981, for discussion.



- 10) i) Every argument is assigned a theta-role.  
ii) Every theta-role is assigned to one  
and only one argument.

Higginbotham's insights lead him to a more general formulation of this constraint. Since theta-assignment (= theta-marking) is not the only process involved in discharging thematic positions, Higginbotham revises the principle as follows:

- 11) i) Every thematic position is discharged.  
ii) If X discharges a thematic role in Y,  
then it discharges only one.

The system which Higginbotham proposes offers an explicit account of the role of syntactic structure in the interpretation of utterances in natural language. Phrases are objects with semantic values. Thematic structures find their arguments through the concatenation of phrases.

But Higginbotham's theory raises further questions which are of interest here. Many grammatical features are clearly signals of semantic properties (i.e., [+/-Plural]). How are these involved in the interpretation of thematic structures? Moreover, the system proposed allows four different ways to saturate positions on theta-grids. Are these quite interchangeable? Can the theta-grid positions of verbs and adjectives be theta-bound? Can nouns and verbs discharge variables through theta-identification?

In this chapter, I will present a theory of syntactic

features and thematic structures which will attempt to address these questions. I will argue that a process which is independently necessary in any theory of syntax - namely, Agreement - must also play a role in the explication of thematic structures. Moreover, I will argue that there is no need to posit a process of autonomous theta-marking in natural language.

I will turn to this theory shortly. First, I present a short review of another theory of semantic representations.

#### 4.2 Jackendoff on Conceptual Structure

Higginbotham's theory of thematic structures can be contrasted with the theory of semantic/conceptual structures proposed in Jackendoff (1983, 1987). Jackendoff argues that the "theta-grid" is not merely a list of annotated thematic roles. It must be seen as a more detailed representation. Moreover, he argues that thematic structures are autonomous structures with their own primitives, principles of combination and organization into subcomponents. According to Jackendoff,

"the organization of language includes three autonomous levels of structure: phonological, syntactic and semantic/conceptual" (1987, p.372).

These levels are "placed in correspondence with each other by

independent rule components" (p.374)

In Jackendoff's theory, the

"vocabulary of primitive conceptual categories or  
"semantic parts of speech"... includes...  
"such entities as Thing (or Object), Event, State,  
Action, Place, Path, Property and Amount" (p.375).

These basic conceptual categories may be expanded by innate  
formation rules like the following<sup>6</sup>:

12) a) PLACE --> [<sub>Place</sub> PLACE-FUNCTION (THING)]

b) PATH --> 
$$\left[ \begin{array}{c} \left( \begin{array}{l} \left( \begin{array}{l} \text{TO} \\ \text{FROM} \\ \text{TOWARD} \\ \text{AWAY-FROM} \\ \text{VIA} \end{array} \right) \right) \\ \text{Path} \end{array} \right) \left( \begin{array}{l} \text{/THING\} \\ \text{-} \\ \text{\PLACE/} \end{array} \right) \end{array} \right]$$

c) EVENT --> 
$$\left( \begin{array}{l} \text{/[_Event GO (THING, PATH)] \} \\ \text{-} \\ \text{\[_Event STAY (THING, PLACE)]/} \end{array} \right)$$

d) STATE --> 
$$\left( \begin{array}{l} \text{/[_State BE (THING, PLACE)] \} \\ \text{-} \\ \text{\[_State ORIENT (THING, PATH)/} \end{array} \right)$$

These primitives and rules provide the sentence "Ray ran  
into the room." with the following conceptual structure:

13)  
[\_Event GO([Thing RAY],[Path TO([Place IN([Thing ROOM]))]])]

The primitives of this structure are drawn from lexical

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6. Lacking Jackendoff's typographer, I have tried to represent  
the large "curly brackets" with "slashes and dashes". I hope  
that these are intelligible to the reader.

entries like the following:

- 14) a)  $\left[ \begin{array}{l} \text{into} \\ [-N, -V] \\ \left[ \text{NP}_j \right] \\ \left[ \text{Path}^{\text{TO}} \left( \left[ \text{Place}^{\text{IN}} \left( \left[ \text{Thing} \right]_j \right) \right] \right) \right] \end{array} \right]$
- b)  $\left[ \begin{array}{l} \text{run} \\ [-N, +V] \\ \left[ \text{PP}_j \right] \\ \left[ \text{Event}^{\text{GO}} \left( \left[ \text{Thing} \right]_i, \left[ \text{Path} \right]_j \right) \right] \end{array} \right]$

Lexical entries include phonological information, categorial information, a "subcategorization frame" and a conceptual structure (as illustrated above).

In the derivation, these entries (and the lexical entries for the relevant nouns) are concatenated in a particular expression and the conceptual structures of these items are subjected to a process of "Argument Fusion":

- 15) (= (29), p.386) Argument Fusion  
Into each indexed constituent in the reading of the verb or preposition, fuse the reading of the syntactic constituent in the sentence that satisfies the co-indexed position in the verb's subcategorization feature. Into the position indexed *i* in the reading of the verb, fuse the reading of the subject.

Thus the conceptual structures in the lexical entries of "run" and "into" are combined with each other and with noun phrases to yield the "fused" conceptual structure shown in 13), above.

Jackendoff argues that these detailed representations of

thematic structures are needed to allow an adequate account of "control" theory<sup>7</sup>. The conceptual structures allow an explicit and natural representation of the selectional restrictions which particular lexical items impose on their complements (e.g., "drink" requires that its complement be a liquid, etc.). The same structures provide a basis for the rules of inference in natural language. Moreover, the structures allow an explicit account of the similarities and differences in the meanings of various words and they relate these meanings to the representations generated by other (non-linguistic) cognitive mechanisms.

Jackendoff points out certain difficulties which arise from the Theta Criterion as it is commonly understood (i.e.,<sup>10</sup>), repeated here):

- 16) i) Every argument is assigned a theta-role.
- ii) Every theta-role is assigned to one and only one argument.

Jackendoff argues that thematic structures must be allowed to represent "implicit" arguments - arguments which are always understood in the meaning of a word, whether or not they are expressed in syntactic structures<sup>8</sup>. Thus, the verb "run" is

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7. The theory which describes the reference of certain empty categories (PRO).

8. See also Rizzi (1986) for arguments to this effect.

always understood as including a "path" complex. For example, the sentence "Alison runs every day." includes the idea that the running is "along some indeterminate path". This "path" argument is not optional - it is merely optionally expressed (e.g., "Alison runs to school every day.").

In Jackendoff's theory, the optionality of "implicit" arguments depends on whether or not they are co-indexed with a category in the syntactic representation. But in Jackendoff's theory, arguments which can be realized through different syntactic categories are also represented with optional conceptual structures.

For example, the verb "climb" can be intransitive or transitive with an NP complement or a PP complement:

- 17) a) Joe climbed (for hours).
- b) Joe climbed the mountain.
- c) Joe climbed along the ridge.

In Jackendoff's account, the verb "climb" has the following "path" complex in its conceptual structure:

18)  $[_{Path} \{ \text{TO}([_{Place} \text{TOPOF}([_{Thing} j])]) \} ] \{ j \}$

The curly brackets are an abbreviatory convention which collapses two possibilities:

- 19) a) [<sub>Path</sub><sup>TO</sup>([<sub>Place</sub><sup>TOP</sup> OF([<sub>Thing</sub>]j)))]  
 b) [<sub>Path</sub>]j

Since NPs correspond to things, 19)a) allows the NP option (=17)b)). 19)b) allows the PP option (=17)c)), since PPs are the unmarked expression of paths in English. The optional index ({j}) in 18) represents a third possibility - the intransitive usage (=17)a)).

Jackendoff also points out that members of a certain exceptional class of NP can represent paths without a preposition:

20) We can descend by climbing this way.

Jackendoff's arguments in favour of an autonomous representation of conceptual structure are convincing and I will adopt this perspective in the account below. In particular, I will make use of the notion of "implicit" arguments. Similarly, I accept the notion that this structure may be defined in terms of innate conceptual primitives (like Thing, Event, Action, etc.). But I am not convinced that the labels of these semantic categories are similarly innate (e.g., GO, STAY, ROOM, etc.). I suspect that the "language of thought" is rather less tidy than this viewpoint suggests. That is, the conceptual primitives are simply "templates" into which the particular and idiosyncratic continua of human concepts must be squeezed, in order to be expressed in natural

language.

But details of conceptual structure representations will not be explored in the discussion below. The topic here is the relation between syntactic features and conceptual structures. To this end, conceptual structures need only be articulated as predicates and variables.

I will depart from Jackendoff's theory in its detail (though not necessarily in spirit) in that I will argue that the "fusion" of thematic structures is accomplished through processes in the related representation of syntactic structure (in particular, through the process of Agreement).

I will also argue against the notion that the representation of conceptual structures must include optional structures. The evidence from the history of English shows that these options must be intimately linked to the assignment of Case features in the syntactic representation. Given that Case must be involved, it would be redundant to complicate conceptual structures with this device of optional structures. I suggest that they are not necessary to the description of natural language.

In the following sections, I will outline a theory of syntactic features and conceptual structures which uses insights from both Higginbotham and Jackendoff.



### 4.3 Feature Matrices and Theta-grids

Under the X-bar Convention proposed above, the matrices of syntactic features in each lexical entry are projected as syntactic structures in every derivation where that lexical item appears. The Projection Principle requires that the thematic structure (the theta-grid) of each lexical entry has to be represented, as well. Because the interpretation of the expressions of natural language depends on particular phrase structures, theta-grids and syntactic configurations must be related. Since both syntactic features and theta-grids are specified in lexical entries, it seems natural to look for this relationship in the lexicon.

#### 4.3.1 Verbs

Recent research in generative syntax<sup>9</sup> has developed an articulated model of verbal lexical entries. In particular, Hale and Keyser (1986) provide an elegant account of certain verbs which display transitivity alternations (the "middle" verbs, unaccusatives. etc.). In the Hale and Keyser account, lexical entries include semantic information on one level of

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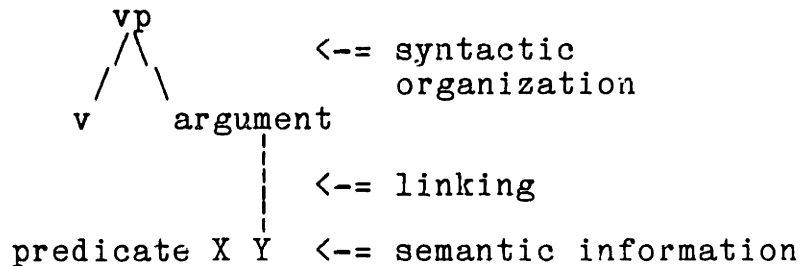
9. See Jackendoff, Hale and Keyser, Levin and Rappoport and the references cited there.

representation - a "dictionary definition", couched in terms of predicate and variables. They argue that lexical entries also include a second level of representation - "an abstract syntactic projection of the verbal lexical item, embodying the basic syntactic organization of its arguments" (p.22).

Elements in each of these two levels of representation may be linked (from one level to the other). This linking is the equivalent of the "co-indexing" in Jackendoff's account of lexical entries.

The formalism introduced in Hale and Keyser illustrates the types of information which are specified on these two levels of representation:

21) Lexical Entry:



According to Hale and Keyser, the syntactic configuration of predicate and argument is determined within lexical entries. Variables in the "dictionary definition" of the lexical item are linked to elements in the "abstract syntactic projection" of that item in the lexicon, rather than merely in the syntactic concatenation.

Following Jackendoff and Hale and Keyser, I will assume that

lexical entries provide syntactic and semantic information in separate and distinct "levels" of representation. As in Hale and Keyser, the level of semantic representation - the Lexical Conceptual Structure (LCS)<sup>10</sup> - provides a "dictionary" definition of the predicate. The definition includes variables to indicate any participants which are involved in this definition. So the LCS for the OE verb "slean" (to strike, slay) may be represented as "X Y e SLAY" (where "X" is the slayer and "Y" is slain and "e" is the event of slaying<sup>11</sup>).

I depart from the authors above in that I would argue that all syntactic information is represented in lexical entries exclusively as feature matrices<sup>12</sup>. This is a natural consequence of the formulation of the X-bar Convention presented above - only syntactic features define syntactic structure. As I will demonstrate below, this departure has some consequence.

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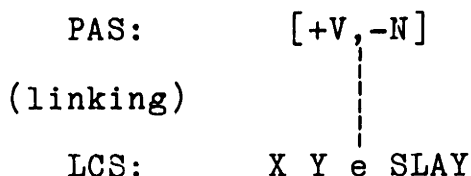
10. These terms are taken from Hale and Keyser.

11. I assume that all verbal thematic structures include an event variable. It has been argued that action verbs and a few others have an independent event argument, see Davidson, Higginbotham and below. Following Higginbotham, 1985, I assume that other (i.e., non-action) verbs also have event places in their thematic structure.

12. In earlier work, Hale (and Farmer) did use a Case array in the representation of lexical entries, but without the decomposition of Case into features as in the present theory.

The level of syntactic representation in lexical entries - the Predicate Argument Structure (PAS) - provides a feature matrix giving the categorial status of the predicate. I suggest that this PAS feature matrix of the categorial features of the verb is linked to the event variable which appears in the LCS of the verb's lexical entry:

22) "slean"



The definition of the LCS predicate may include further variables (as the entry for "slean" does) and these may also be linked to feature matrices in the PAS representation. The features in these matrices express the grammatical properties which the predicate may select in its variables (i.e., its complements).

I shall assume that only "object" variables are linked to PAS feature matrices in lexical entries. Presumably, the "subject" variable (i.e., the nominative argument, the external argument, the agent, etc.) is usually linked to a feature matrix by some process of "external theta-assignment" during the syntactic derivation (see Williams (1980) and Rothstein (1983) for some discussion of this process)<sup>13</sup>.

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13. This topic will be resumed briefly in Section 5.2, below.

The lexical entry for the OE verb "slean" may be further illustrated as follows:

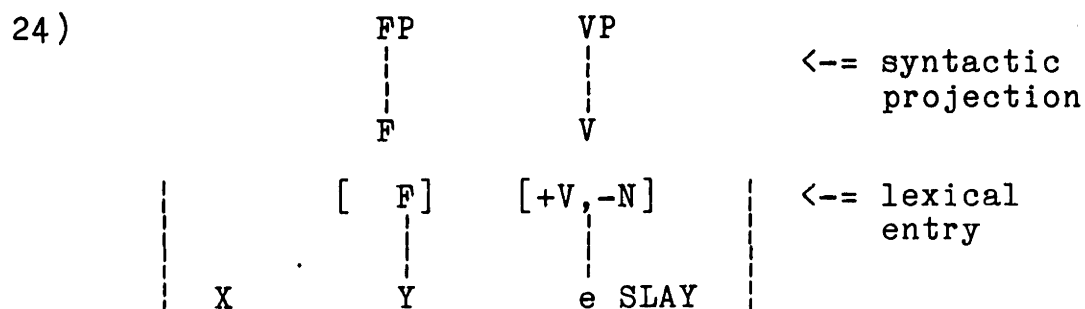
23) slean	PAS:	[ F ]	[ +V, -N ]
	(linking)		
	LCS:	X	Y                      e SLAY

(where "F" = grammatical features)

In verbal lexical entries, only the feature matrix which is linked to the LCS event variable includes categorial features. Research by Grimshaw (1979) and by Pesetsky (1982) and others argues that predicates do not select the categorial status of their complements directly. Rather the grammatical properties which are selected by the predicate have a "canonical" realization in category. So, the selection of [+Tense] is usually expressed with a clausal complement; [+Animate] requires a nominal realization, etc..

The relation between the LCS predicate and the LCS variables will provide the basis for the configuration of "theta-marking" in the derived syntactic representation. In the present theory (as in Hale and Keyser), lexical entries are central in determining the syntactic configuration of a predicate and its complements. Under the revised X-bar Convention, each matrix of syntactic features must be an  $X^0$  and must project at least one level of phrasal structure. It follows that the OE lexical entry for "slean" must provide the

heads of two phrases in a particular derivation<sup>14</sup>:



The LCS representation defines the thematic structure of the lexical entry in terms of predicate and variables. These are linked to PAS feature matrices and these matrices project the FP (the Functional Phrase) and the VP. I intend the position "F" (the head of "FP") to indicate the positions where inflectional affixes and other functional category forms (e.g., determiners, complementizers, etc.) are inserted during the derivation from S-structure to PF. Thus, the analysis here (in contrast with the Hale and Keyser account) will lead directly to the structures of the DP-hypothesis. This should be clear in the exposition below.

Grimshaw's observation that complements are not selected according to categorial features points out an asymmetry in the projection of the phrases of the verbal lexical entry. I

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14. I use the notation "F" (e.g., FP) to indicate a matrix of grammatical features. Since functional categories (the minor categories) never specify categorial features in underlying representations (before feature percolation), the symbol will be used to designate these phrases in opposition to the lexical categories, i.e., nouns, verbs, etc.

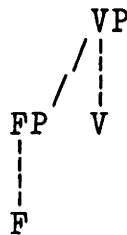
assume that one matrix must govern all of the other projections which spring from the same lexical entry. Since categorial features define such lexical entries, I propose the following constraint:

25) Categorial Dominance

If a lexical entry includes more than one LCS variable which is linked to a PAS matrix in the syntactic representation, then the matrix with categorial features governs the other linked matrices in the syntactic projection of that lexical item.

Therefore, the lexical entry for "slean" requires that its projections form the following configuration at D-structure:

26)



The rule "Project X" has applied to the feature matrices and V governs the FP. The FP is a "complement" of V and an underlying constituent of the verb phrase (VP).

Since FP is linked (through F) to the LCS variable Y, it is a theta-position. The verb theta-marks FP when it governs FP - but the Hale and Keyser theory suggests that this configuration is simply a projection of the structure of lexical entries. That is, theta-marking does not depend directly on the concatenation of two phrases. It is the

Projection Principle which ensures that these relations are reflected in syntactic representations. This is to say that I follow Jackendoff in the assumption that theta-assignment is not a process of the syntax - theta-roles are assigned to variables in conceptual structures. This relation (already established) may then be projected into the syntactic representation.

Theta-marking (as in Higginbotham's account of the Theta Criterion) is merely a syntactic operation which is parallel to theta-assignment in conceptual structures. In contrast to theta-assignment, theta-marking is only pertinent if the variables are linked to matrices in the syntactic level of representation. I suggest that only such linked variables are subject to the Theta Criterion.

A provision of Universal Grammar - the Visibility Condition<sup>15</sup> - requires that phrases which are assigned theta-roles are visible for interpretation at LF only if they are Case-marked<sup>16</sup>. The Visibility Condition thus requires that substantive phrases in general must be identified with Case features. Since the verb may select the Case of its complement, it seems obvious that the Case features which make

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15. In earlier theories, this condition was known as the Case Filter. See Chomsky, 1981, for discussion.

16. (or if they are "PRO" - see Chomsky, 1981, etc..)



the argument "visible" are provided in the feature matrix of the FP (the functional category) which is projected from the verb's lexical entry.

Since verbs never select the categorial features of their complements, FP must be a functional category (defined by grammatical features only). FP is a theta position, so it is the maximal projection of the substantive phrase which identifies a participant in the thematic structure of the predicate. But the FP is a functional phrase - the form which is inserted in the head of FP (the affix of inflection, the determiner, etc.) has no independent thematic structure and does not by itself identify any referent in the discourse. Only lexical categories have thematic content (that is, only lexical categories have LCS "dictionary" definitions which can identify things in the world of the speech community). So theta-marking must also involve a lexical category phrase. Every functional category in the theta-position of a substantive phrase must dominate a lexical category which can establish the identity of the referent which is interpreted as the bearer of that theta-role. I understand this requirement to be the same as the one proposed in Rizzi (1986). Substantive phrases must be identified by certain features to have referential or argumental status (see below) and these features are not supplied from the verbal lexical entry. They must be supplied from some other category.



Again following Higginbotham, I assume that this substantive phrase variable must be discharged through theta-binding.

Under the new X-bar Convention, however, the structures involved are those of the DP-hypothesis. Moreover, I would argue that the elements which are necessary to theta-bind the variable in the thematic structure of the noun phrase are best described as binary syntactic features.

In Higginbotham's account, the vocabulary of present English must include a phonologically null determiner which appears with various classes of nouns. In that theory, these noun classes are simply arbitrary. But if theta-binders are features, then the particulars of these classes can be expressed directly in the same way as other theta-binders. For example, well-formed nominal phrases in present English must include either a determiner ([+Determinate]), or a quantifier ([+Quantifier X]), or an affix of number which allows a generic interpretation ([+Generic])<sup>17</sup>, or they must include a lexical category from one of the abstract or mass or proper noun classes ([+Abstract], [+Mass], [+Proper]):

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17. Although the relevant affix is obviously marked for number ([+Plural]), this feature does not seem to be a theta-binder. Plural noun phrases must have a generic interpretation to be acceptable (if there is no other theta-binder), as shown in 29)d).

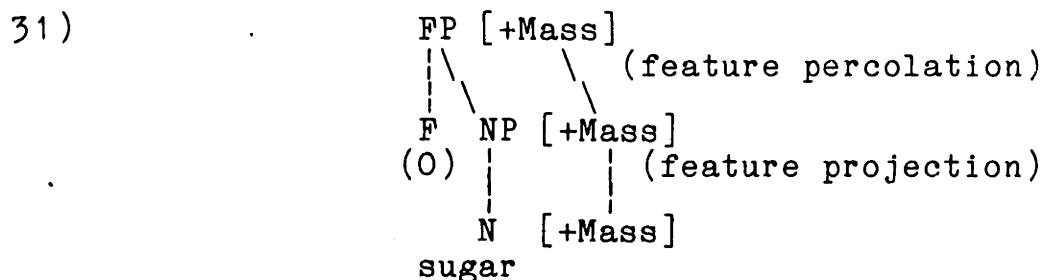
- 29) a) \* Book fell off the table.  
 b) The book fell off the table.  
 c) Every book fell off the table.  
 d) Books are fun.  
 (c.f. non-generic - ?Books fell off the table.)  
 e) Happiness is rare in linguistic circles.  
 f) Sugar is sweet.  
 g) Ken eats too many beans.

- 30) a) \* I like book.  
 b) I like the book.  
 c) I like every book.  
 d) I like books.  
 e) I like happiness.  
 f) I like sugar.  
 g) I like Ken, even though he is full of beans.

In the present theory, each substantive phrase will be theta-bound if it realizes a theta-binding element (a syntactic feature or features) in a matrix which governs the head of the phrase which is linked to the theta-bound variable. Since government of X by Y means here that "a projected matrix of Y must immediately dominate the projection of X", this is a more constrained notion than "c-command" (as in Higginbotham's formulation).

Some of the theta-binding properties ([+/-Abstract], [+/-Mass], [+/-Proper], etc.) are only specified in the

lexicon in the lexical entries of nouns. It follows that these features must "percolate" from the noun phrase to the functional category which governs it:



The notion that features "percolate" was originally suggested in Ross (1967). Since WH-phrases need only contain a WH-word in order to be eligible for WH-movement, Ross suggested that there must be some mechanism by which the maximal projection of the whole phrase can inherit the WH-feature (e.g., "[To whom] did you give the book?", "[A picture of which government official] adorns every post-office?"). I shall argue that feature percolation has a large role to play in syntactic derivations.

The terms "feature Agreement" and "feature percolation" have been used to describe the same phenomena. But feature percolation is a more constrained notion in that (by definition) it must depend on structure. The percolation of features discussed in this thesis obeys the following stricture:

32) Percolation Constraint

The feature values [+/-F] may percolate between matrices X and Y if and only if:

- a) both X and Y include the feature label [F], and
- b) X governs Y (where X governs Y if a projection of X immediately dominates a projection of Y).

In what follows, I will use the terms "Agreement" and "feature percolation" interchangeably. I take "Agreement" to be defined as feature percolation.

Note that I would differentiate feature matrix projection (i.e., the rule of the X-bar Convention) from feature percolation. I assume that matrices of the same projection (e.g., N, N', NP) are always identical, throughout the derivation. But feature percolation only applies to a particular set of features and the matrices involved in feature percolation might differ in their specifications for non-percolating features.

If long-distance relationships are to be described in terms of feature percolation (as in Kayne (1984), etc.), then, not surprisingly, a more flexible definition of government is involved in those processes of percolation. But I shall not pursue this question here.

There seem to be other percolating features. In OE, the affix which realizes the grammatical properties of the substantive phrase is always chosen from a paradigm of affixes

:

which signal number, gender and Case. Gender features are specified in the lexicon in the lexical entries of nouns and presumably, it is the noun matrix where number features are imposed in underlying representations. Apparently, gender and number features also percolate to the governing functional category (since they are often realized there).

I will illustrate in Chapter 6 that the loss of gender distinctions and the reanalysis of demonstrative pronouns as determiners are simultaneous changes in the history of English. Since such simultaneous changes are expected to be related, this suggests that gender and determinacy features are somehow similar. I propose that gender features were theta-binding features in OE. When the signals of speech no longer explicated gender (because of the phonological reduction of the pertinent affixes), language learners looked for other signals of theta-binding. For independent reasons (see Chapter 6), determiners were the obvious candidate as a signal of such features. Only in Middle English, did [+/-Determinate] become a theta-binding feature for English.

On the other hand, in languages like Japanese, the governing functional categories in substantive phrases (i.e., the affixes) provide no signals of any other properties except Case. Moreover, Japanese - like OE - has no determiner system (only demonstrative pronouns (see Masunaga, 1987)). But presumably in Japanese, as in English and other languages,

referring expressions must be saturated. Presumably, Japanese substantive phrases are projected from a feature matrix which is linked to an LCS variable and that variable must be discharged. Why are there no obvious theta-binding elements?

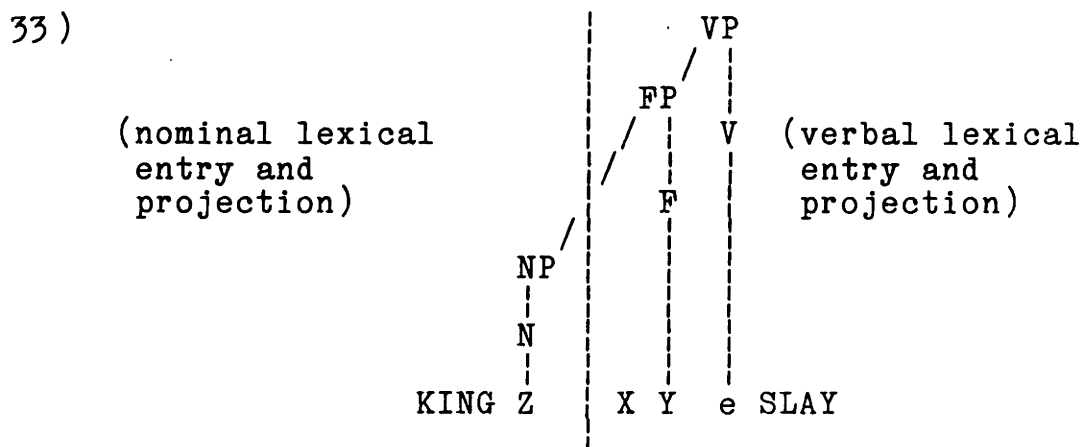
I suspect that this gap in the Japanese signal is related to other language specific properties of Japanese; for example, the extensive discourse-conditioned "pro-drop" (the non-expression of arguments which are identified in the context of the speech act), and perhaps the Topic/Comment structure of Japanese root clauses. It might be that arguments in Japanese are theta-bound through discourse factors - perhaps there is a theta-binding feature in Japanese which is related to discourse binding. But I shall not pursue this question here.

I suggest that each language chooses a set of grammatical features as theta-binders from a universal inventory of such features. OE relies on gender features. Present English uses the set of generic, determinate, abstract, etc.. I assume that Japanese has made another selection. Whatever features are chosen, I assume that there is some theta-binder in every language. Crucially, theta-binding features must be recoverable from the syntactic representation. If the features can be uniquely determined by reference to the lexical entry of the pertinent noun (e.g., [+Mass] in present English or (perhaps) [+Discourse] in Japanese, etc.), then



nothing more is required. But if this is not the case, then some other signal must be used. For example, at S-structure, an appropriate functional category form may be inserted to signal theta-binding.

But recall that a functional category is also required to represent the thematic structure of the verb. An "FP" is projected from a matrix which is linked to an LCS variable in the lexical entry of the verb. In the OE verb phrase, the configuration would be something like the following:



It seems natural to assume that the association of theta-role and referent depends on the relation between the functional category which is projected from the lexical entry of the verb and the NP. According to Higginbotham

"in the usual case of theta-marking, the reference of the theta-marked expression becomes the value of the open position in the theta marker" (p. 564).

That is, the theta-role which is assigned to the variable which is linked to FP (i.e., Y, above) must be understood as assigned to the referent which is identified by the

theta-bound variable which is linked to the NP (i.e., Z, above). These two variables must be interpreted as instances of the same variable ( $Z = Y$ ). I suggest that this is the process that is described as "Argument Fusion" in Jackendoff's account of conceptual structures.

I argue that this identification depends on Agreement. The feature matrix which is projected from the lexical entry of the noun includes the feature [+N]. I presume that this feature percolates to the governing functional category (along with theta-binding features). The percolation of this feature from the NP to the functional category is the process which identifies the two variables of the substantive phrase as being the same. That is, if two matrices Agree in the feature [+N], then the variables which are linked to these matrices are instances of the same variable. Therefore, only one matrix of Case features is required to make both instances of this variable visible for interpretation at LF (i.e., as a single argument).

Simultaneously, the lexical category variable must be discharged by theta-binding. The required governing matrix is conveniently provided in the FP generated from the verbal lexical entry. It seems that OE uses this position to signal both Case and theta-binding features. Japanese uses it to signal only Case features. In Japanese, theta-binding features are signalled elsewhere (perhaps in nominal lexical

entries). Present English uses the functional category to signal theta-binding features. Case features in this language are signalled in the predicates, etc.<sup>18</sup>. As we will see in the chapters which follow, these differences in the signals of grammatical features are a prominent parameter of variation, distinguishing the grammars of different stages in the history of English.

I would follow Higginbotham's formulation of the Theta Criterion - for thematic variables which are linked to syntactic structures. But Jackendoff's and Hale and Keyser's approach to lexical entries suggests that theta-assignment is accomplished on the level of conceptual structure. Not all thematic variables are linked to syntactic structures.

When this approach is combined with the X-bar Convention, as above, it allows a direct relation between elements in the theta-grid and particular phrases in the syntactic representation. Variables in thematic structures are linked to phrasal projections. Phrasal projections are defined in terms of syntactic features. Relations between phrases are established on the basis of lexical entries and through the

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18. The exception in present English is the inserted genitive marker "of". This form can appear with determiners. The theory does require that Case features and theta-binding features must be signalled in the same functional category matrix. Presumably, additional matrices are inserted as required.

process of feature percolation in the syntactic representation. Feature percolation (Agreement) is the mechanism which permits theta-positions to be identified with a referent.

### 4.3.3 Clauses

Chomsky (1982) argues that there is a universal generalization to be made about the subjects of clauses - that is, every clause in every language must have a subject (the Extended Projection Principle). This must be true even when the subject position is not a theta position (e.g., in passives, raising constructions, etc.). Why do clauses need subjects?

Following Chomsky (1981), I assume each clause is a lexical category ([+N,-V] - a noun). Like other nouns, INFL has an LCS representation. Like other nouns, the clausal matrix of categorial features is linked to an LCS variable. This variable is interpreted at LF as indicating an event (an arbitrary division of space/time):

34) INFL	
PAS:	[+N, -V]
(linking)	
LCS:	EVENT e

But it seems that clauses are not specifically defined in the lexicon. That is, there is nothing about specific clauses

which does not spring from the syntactic or the semantic/conceptual environment. I suggest that clauses begin at D-structure as "empty" noun phrases. They are merely canonical instances of nouns, with no particular content. This is why clauses (in contrast to other nouns) are realized through the insertion of forms which signal only grammatical properties (i.e., verbal inflection). The interpretation of this nominal variable as an "event" will follow from the relation between the verb and INFL (theta-identification) - see Section 4.4.2, below.

In his discussion of the phonologically null arguments which are found in various languages, Rizzi (1986) argues that in each language, every substantive phrase must be identified according to a canonical set of properties ([+/-Human, +/-Number, +/-Gender, +/-Generic, etc.]). That is, there is a formal requirement in the grammar of natural language which defines possible referential phrases (i.e., those which are identified for person and number) or possible argumental phrases (i.e., those which are identified for number). This would explain the prominence of the signal of number in the inflection of all stages of English.

I would argue that the empty noun which is linked to the event variable is not associated with these properties directly. It must inherit them through feature percolation from some other category. That is, the subject appears in the

specifier position of the clause so that it will be in a position to allow the appropriate features to percolate to the clausal matrix<sup>19</sup>.

When the person and number features of the subject percolate to the clause, the feature [+N] is not involved. When [+N] percolates, LCS variables which are linked to the relevant matrices must be identified as instances of the same variable. This is obviously not the relation between clauses and their subjects.

As in other substantive phrases, the LCS variable which is linked to the clausal matrix must be discharged through theta-binding before the phrase can be understood as a referring expression. The features which theta-bind the clausal variable signal the co-ordinates of the event in time or space. Every tensed clause, of course, includes a specification [+Tense]. This feature percolates to the complementizer of the clause. That is, complementizers must Agree with their complement (the clause) in exactly this feature<sup>20</sup>:

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19. This suggestion arose from a discussion with Richard Larson.

20. See also the discussion of complementizers in Chapters 5 and 6

- 35) a) For Ed to leave would spoil the party.  
\*That Ed to leave is unnecessary.
- b) That Ed left annoyed Isabel.  
\*For Ed left is unfortunate.

I assume that the complementizer serves the same purpose for clauses as does the functional category which governs other nouns. That is, the complementizer itself is a functional category form which is inserted in the head position of the FP (=CP) when the argument to be expressed is a clause. The variable which is linked to this complementizer matrix may be assigned a theta-role by the governing predicate. So the CP (the FP) is a theta position. The variable which is linked to the clausal matrix (i.e., to INFL) will be theta-bound by the features in the complementizer. These two variables are identified as instances of the same variable by virtue of their Agreement. So clauses behave similarly to other nouns and the feature [+Tense] behaves as do other theta-binding features (e.g., the OE gender features, [+Determinate], etc.), in that it percolates to the functional category which governs the matrix which is linked to the theta-bound variable. This perspective accounts for the fact that complementizers and determiners are historically related in English and other languages. They are the same class of element.

Although every tensed clause requires a specification [+Tense] (by definition), the feature composition of infinitivals is rather different. In OE, these phrases are

ordinary nouns. Lightfoot points out that

"it is generally assumed that the infinitive in prehistoric times was a fully inflected verbal substantive. In OE the ending was -an... and the only inflected form was -enne... which occurred after the preposition to" (p.189)

I assume that the theta-binders for OE infinitives were similar to those of other OE nouns. The infinitive affix signalled the (default) grammatical gender of the deverbal noun.

But the present English infinitive is a clause (still a noun but with particular properties, as will be seen below). The "to" form is the head of the clause, rather than a preposition as in the OE construction<sup>21</sup>. The change from "preposition" to "INFL" is not unusual in natural language. Lightfoot points out that

"in a great number of languages the infinitive marker has developed from or is homophonous with a locative preposition or case-marking: Greek -ein, reflecting an old locative, English to, German zu, Swahili ku/kw, Hungarian ni, Thai thi, Tok Pisin long, Hebrew le" (p.195).

Lightfoot also refers to research which indicates that infinitival complementizers are also commonly derived from locative prepositions<sup>22</sup> (e.g., present English "for").

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21. See Lightfoot 1979, p.186, for an account of the development of this construction

22. See Lightfoot, p.195, where he quotes Washabaugh, 1975.



I assume that these locative expressions signal a theta-binding feature for infinitival clauses. The feature [+Locative] can be signalled in the clausal matrix (i.e., in INFL), or in the complementizer, or in both. So every clause must be theta-bound by either [+Tense] or [+Locative]. But the features [+Tense] and [+Locative] are not in complementary distribution. The deictic use of "there" (and the use of certain prepositional phrases as subjects of tensed clauses) arguably shows both features together:

- 36) a) (pointing) There is the unicorn in the garden  
(the one that I told you about)!
- b) In the garden is the unicorn from New Jersey!

#### 4.4 Modification

##### 4.4.1 Adjectives and Nouns

In OE, most adjectives (like nouns) always appear with an affix of inflection which signals the pertinent number gender and Case features for that phrase. In Chapter 3, I illustrated the fact that in OE, these adjectives behave like independent substantive phrases (see also Chapter 5). Similarly in present English, if a theta-binder is supplied, adjectives may be arguments on their own, without need of a supporting noun phrase (e.g., "The poor are always with us.", "the unspeakable, in pursuit of the inedible", etc.). I

suggest that the OE adjectival inflection is a theta-binding element for adjectives, just as nominal inflection was for nouns.

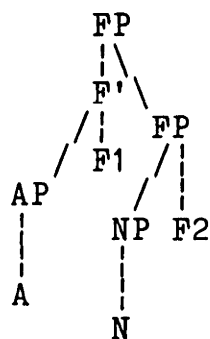
But there is an interesting difference in the constructions of these two languages. In present English, the theta-binder and the lexical category are phonologically independent. That is, speakers recognize an independent citation form for articles, quantifiers, etc. The OE stem and affix arrangement required the phonological concatenation of these items. I presume that affixes and stems are phonologically incomplete. Perhaps the affixes may have melody but no timing units, while the stems have extra timing units. These elements cannot be realized independently in the phonological representation. This distinction will be shown to have rather startling consequences in the change from OE to later stages of English (see Chapter 6). The distinction also has consequence in determining the primary relation between adjectives and nouns in OE versus later English.

I shall argue that OE adjective phrases usually modify their supporting nouns in the same way that appositive noun phrases modify their supporting nouns. Both of these constructions invoke an interpretation of modification as "conjunction". The crucial process involved in this modification is Agreement.

In OE the inflectional affixes of noun phrases, adjective

phrases and other appositive substantive phrases (e.g., demonstrative phrases), all have to Agree with their stems in theta-binding features and in the feature [+N]. Moreover, in a single complex substantive phrase (i.e., demonstrative, adjective and noun phrases combined) all of these affixes Agree with each other, as well. The mechanism of Agreement is feature percolation and I assume (as above) that feature percolation involves the configuration of government. In OE, for example, the D-structure configuration of a noun phrase and its modifying adjective phrase would normally be something like the following:

37)



After S-structure (in PF), adjectival inflection would be inserted in F1 and nominal inflection in F2. I assume that all the matrices in this configuration must Agree for the percolating features of the substantive phrase. In OE these are number, gender, Case and [+N]. These structures will be explored in more detail in the chapter on OE syntax (Chapter 5).

Since these functional and lexical category matrices Agree

in the feature [+N] (and in other features) and since they are visible at LF through only one set of Case features, the variables which are linked to these matrices must be understood as identical.

In OE, the adjective has to appear with an affix of inflection which signals the theta-binding features for arguments in that language. That is, the theta-binding features of the adjectival affix discharge the adjectival variable quite independently of the noun. The noun, of course, has its own theta-binding affix, so these phrases are each saturated independently (theta-identification is not involved). The two FP phrases are understood as a "modification of conjunction" (i.e., where "good king" means "someone who is good and who is king") because the two theta-bound phrases are in Agreement for the feature [+N].

I suggest that this form of adjectival modification persists in present English. Some present English adjectives are regularly interpreted as modifying a noun phrase with an interpretation of conjunction. Higginbotham points out, for example, "a white wall is a thing that is white (on the outside) and a wall" (p.562). In contrast, he argues that "as everyone knows, a bad violinist is not a thing that is, on the one hand, bad, and, on the other, a violinist. Adjectives like bad, the classic syncategorematic ones, are the norm." (p.562)

It is worth noting again that the phrase "a bad violinist"

is ambiguous. Besides the obvious sense (i.e., someone who is bad at being a violinist), there is a second reading. In context, the phrase may be understood as a conjunction of predicates (i.e., someone who is bad and who is also a violinist):

38) a) The bad violinist destroyed Chicago.

b) Not all violinists obey their mother; there are plenty of bad violinists.

Other adjectives are similarly flexible in their interpretation: /

39) a) The important official who was to testify today has had a stroke.

The important official is the one who will actually testify.

b) That's a big butterfly on your nose, there!

Only a big butterfly could destroy Chicago!

c) A suspected murderer is coming to dinner tonight.

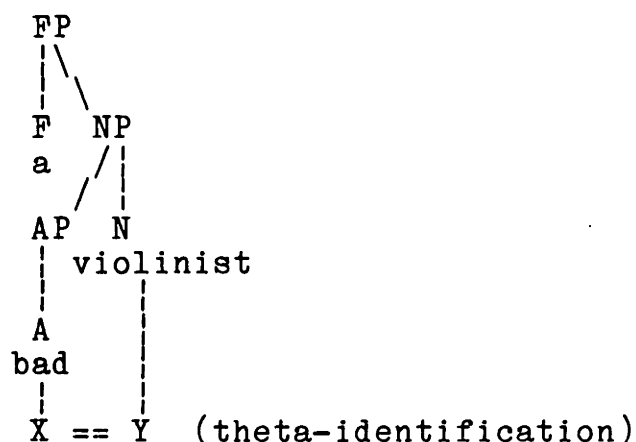
Someone in death row has sabotaged the fuse-box!  
The suspected murderer is Johnson, in cell 13!.

The discerning reader has noted that the reading of conjunction must be marked in context and in stress in every example. For present English, this is patently a second reading.

Following Higginbotham, I assume that LCS variables may be

discharged through theta-identification. I will depart from Higginbotham in that I will assume that an instance of theta-identification can only provide the syncategorematic type of interpretation. In present English, the configuration of theta-identification would be as follows (quite parallel to Higginbotham's structure):

40)

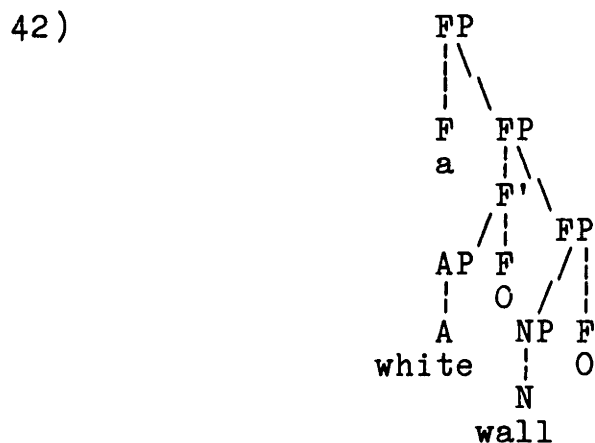


Crucially, theta-identification must involve a lexical category governing a lexical category (e.g., N governs AP). In OE, because (most) adjectives are phonologically incomplete (i.e., they are stems and so require affixes), this configuration is usually impossible. In present English (where only comparative adjectival inflection remains overt) this is the normal configuration.

I assume, however, that present English adjectives like "white" are derived from lexical entries where there are two feature matrices. One of these provides the categorial features of the adjective and the other is a functional category matrix:

41)           PAS:       [+N,+V]   [ F ]  
           (linking)  
           LCS:       white X

The functional category matrix is not linked to any LCS variable - when this matrix is projected in the syntax it must become the functional category which governs the adjective phrase (or it would have no interpretation). This additional feature matrix in the lexical entries of these adjectives ensures the structure which leads to the reading of conjunctive modification. Since "white" inherently projects the configuration of theta-binding, it can only modify as conjunction - there is no syncategorematic interpretation:

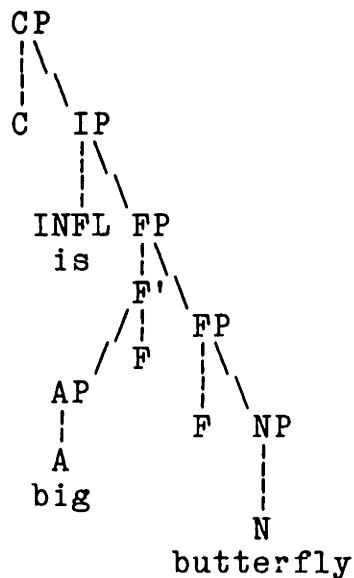


I suggest that the context and stress which signal the second reading for present English adjectives such as "bad, big, important, etc.", are semantic and formal clues indicating a similar hidden underlying structure.

I suppose that adjective phrases in predicative

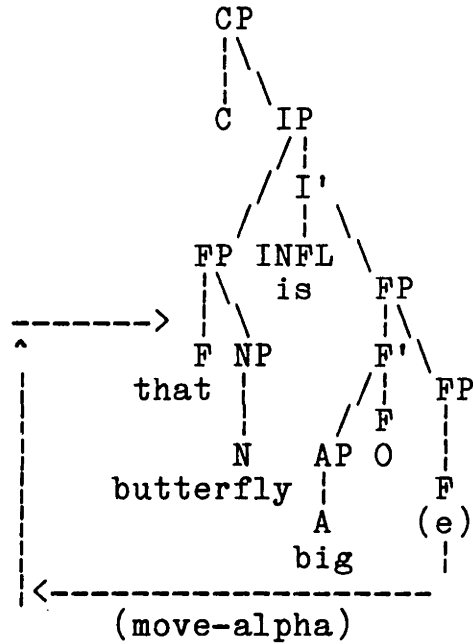
constructions also involve theta-bound adjectival variables. The adjective LCS variable and the noun LCS variable are associated through Agreement, rather than through theta-identification. Thus the first reading of these structures is the one of "conjunctive" modification. In OE, this agreement is overt, but in present English the minor category is not realized phonologically - though it is there in the underlying representation. Since Agreement requires phrases in the government configuration at D-structure, copula constructions have the following structures (I assume that the copula is a realization of INFL):

43) a) D-structure:



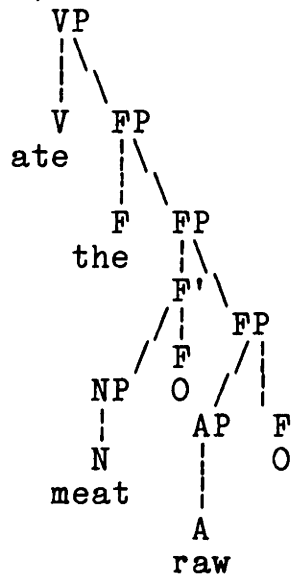


b) S-structure:



Similarly, predicate adjectives must be governed by the noun phrase they modify:

44) (Elmer) ate the meat raw.



It is apparent that the analysis here requires that functional category matrices can be inserted freely during the

derivation to conform to the general requirements of the grammar. In OE, of course, there is a particular requirement. Minor categories are required for (almost) every adjective and noun because these are phonological stems. In present English, adjectives and nouns are phonologically independent. But if circumstances require, then (phonologically null) minor categories are available for insertion. The construction may be signalled by context and stress patterns or by the syntactic configuration of predication. In Section 4.2, I shall discuss the insertion of these functional category matrices in more detail.

In the analysis of appositive phrases, there is further evidence for the structures suggested above<sup>23</sup>. As is well known, identificational clauses have an asymmetrical interpretation. For example, "All whales are mammals" means something quite different than "All mammals are whales". The same kind of asymmetry can be seen in the interpretation of appositives. For example:

- 45) a) The man, a farmer, made a ringing speech against subsidies.  
b) The farmer, a man, made a ringing speech against subsidies.

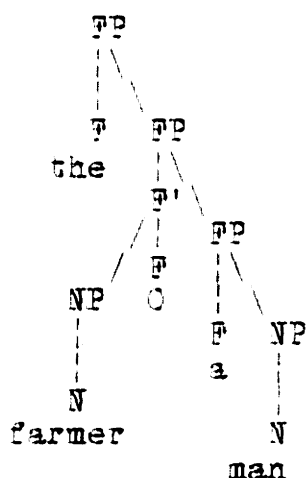
In the a) example, the referent of the subject phrase is

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23. This argument was pointed out to me by Harry Leder and Lori Holmes

identified as a man. Out of the set of men, this one is a farmer. In the b' example, the referent is identified as a farmer. Out of the set of farmers, this one is a man. This seems quite parallel to the copular predication - but the surface linear order is reversed. In "All whales are mammals.", the set is mammals and the individual is a whale (and vice versa in "All mammals are whales.") If appositive phrases have the following configuration as D-structure, then this parallel is explained:

46)



The appositive configuration and the configuration of predication are quite parallel in underlying representations.

Moreover, the underlying configuration of appositives is very similar to the underlying configuration of the constructions with adjectives which modify a noun with a reading of conjunction. Of course, appositives also have this reading (i.e., he is a farmer and a man).

Higginbotham's theory allows a radical possibility for the

interpretation of identificational sentences. Since there is more than one way to discharge an LCS variable (besides theta-marking), this theory admits the possibility that there might be expressions in natural language which are grammatical and which do not involve theta-marking. In "Whales are mammals.", both of the substantive phrases have LCS variables which are discharged through theta-binding. The variables are identified as instances of the same variable because they Agree in syntactic features. The clause itself is also a noun phrase and has an LCS variable which is theta-bound (by the complementizer features). There are no more LCS variables. So there is no variable which is saturated through theta-marking<sup>24</sup>.

Notice that the present theory makes no mention of a process like "autonomous theta-marking". The contrast between the following pair must follow from the contrast between theta-identification (in a)) and theta binding with Agreement (in b)):

47) a) That is a big butterfly.

b) That butterfly is big.

I argue that there is no need to postulate a distinct process

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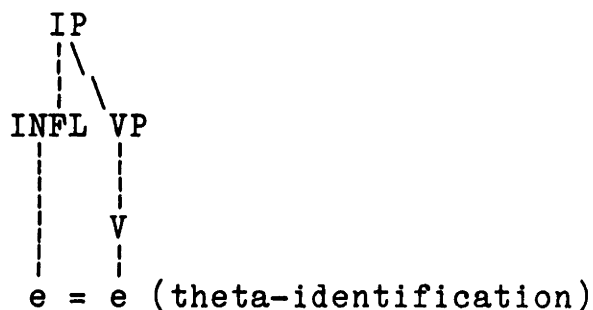
24. This is, of course, only a sketch of an analysis for a particular construction in present English. The uses and shape of copula constructions is various in various languages and the pursuit of this question would be a thesis in itself.

of "autonomous theta-marking" in natural language.

#### 4.4.2 Verbs and Clauses

In the discussion of verbal lexical entries above, I suggested that the PAS matrix of categorial features in the lexical entry of a verb ([+V,-N]) is also linked to an LCS variable. Following Higginbotham, I assume that all verbs include an event position in their theta-grid<sup>25</sup>. In contrast with adjectives, I have found no convincing example of theta-binding of the verbal event variable. I suggest that this event variable is only discharged through theta-identification. The verb's event variable is theta-identified with the event variable which is linked to the INFL matrix (i.e., the clausal head):

48)



So verb phrases modify the clause, just as adjective phrases modify noun phrases - through theta-identification. In fact, given that the clause is underlyingly merely a canonical

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25. Presumably, action verbs, etc., assign a particular theta-role to this event variable.

instantiation of a noun (as suggested above), the interpretation of the clause as an "event" depends entirely on this identification. The clause has no particular thematic content of its own (aside from its status as a noun and the grammatical properties which it may signal). The interpretation of the clause as an "event" depends entirely on its association with a verb.

Since the only variables which may be theta-identified are both linked to matrices with the specification [+V]<sup>26</sup>, I suggest that there is a generalization to be made here. Just as [+N] categories (nouns and adjectives) are linked to variables which may be theta-bound, [+V] categories (adjectives and verbs) are linked to variables which may be theta-identified. I shall argue below that [-V, -N] categories (prepositions) are not linked to LCS variables at all. Moreover, matrices which are neither [+/-V] nor [+/-N] (i.e., functional categories) are linked to variables which must be theta-marked. In short, the present theory argues for a more explicit definition of the traditional notions "substantive" ([+N]), and "predicate" ([+V]) and provides an explicit account of the relation between semantic variables and syntactic feature matrices as follows:

-----  
26. Noun-noun compounds are a possible counter-example to this claim, but I will assume here that this is a lexical rather than a syntactic process.

49)            Categorial Identity

LCS variables which may be theta-bound  
are linked to [+N] matrices.

LCS variables which may be theta-identified  
are linked to [+V] matrices.

LCS variables are not linked to [-N, -V]  
matrices.

Similarly,

50)            Functional Identity

Variables which are theta-marked are linked to  
matrices which are not specified for categorial  
features.

These definitions constrain the linking between PAS matrices  
and LCS variables.

#### 4.5 Adjuncts

By the term "adjunct", I mean something like the traditional  
notions "optional complement" or "adverbial complement",  
rather than the technical notion of G.B. theory having to do  
with the structural configuration of "adjunction".

The LCS representations of verbs, nouns and adjectives may  
include variables which are not linked to PAS feature matrices  
in the lexicon. Presumably these variables are assigned a  
theta-role by the LCS predicate and are thus discharged  
through theta-marking in the lexicon (as are other

theta-marked variables). If no feature matrix is associated with these variables in the derivation, then they will not be represented in the syntactic structures of that expression (i.e., they remain implicit complements). But these variables are often linked to feature matrices which are provided to syntactic representations from the lexical entries of prepositions. However, this is not the only possibility for the syntactic representation of these variables.

#### 4.5.1 Prepositions and Adverbs

Although prepositions are lexical categories and so have lexical entries equipped with LCS representations, they are expressly that lexical category which is neither a predicate ([+V]) nor a substantive ([+N]). That is, prepositions do not take part in theta-binding or theta-identification. I suggest that prepositional LCS representations do not include a variable. The arguments with which they are associated are always participants in the LCS representation of some other lexical category. How then are prepositions lexical categories? How does their LCS representation contribute to the interpretation of utterances?

Mustanoja points out that in the history of English, "the majority of prepositions are originally adverbs... The connection between adverbs and prepositions has always been intimate, and it is quite common even today to find the same word used as an adverb and a preposition; c.f. "they went up" and "they went up the hill"" (p.346).



It seems that adverbs and prepositions have much in common.  
But what is the categorial status of adverbs?

Throughout the history of English, the stock of (non-prepositional) adverbs has been mainly derived from the adjective class by the use of a particular set of affixes (e.g., "happy" -> "happily", etc.). In contrast with adjectives, however, adverbs are understood as modifying predicates. But here I depart from the analysis of Higgenbotham (1985). He follows Davidson in assuming that adverbs are simply modifiers of an "event" position in the clause. It seems to me, however, that the interpretation of "Elmer walked rapidly" is not (as suggested (p.562, 36)37)):

51) There was an event of walking by Elmer and it was a rapid event for such events.

$(\exists e)$  walked(Elmer, e) & rapid(e, A)

I'm not sure what a "rapid event" is - does time pass more quickly? Or is a "rapid event" the same as a "short event"? I would argue that the action of an event can be rapid, but each event is simply an arbitrary unit of space/time<sup>27</sup> and the rate of time's passing is fixed outside of Elmer's (or anybody's) control.

How do adverbs contribute to the interpretation of

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27. Or possibly a collection of such units - see Tenny, 1987

utterances? I suggest that adverbs enter the syntactic representation with no LCS variable. That is, their "dictionary" definition in the lexicon does not include any "participants" which might be assigned a thematic role. These categories are understood through their association with some other LCS predicate - so "Elmer walked rapidly" means that the walking by Elmer was a particular kind of walking - "rapid walking". I suggest, then, that parallel to the process of theta-identification which allows substantive phrases to be modified, there is also a process of "predicate-incorporation" which allows predicates to be modified. The LCS representation of each adverb is incorporated in the LCS predicate of some other lexical category. Like theta-identification, "predicate-incorporation" requires that the the category undergoing the process (the adverb) must be governed directly by the (lexical) category with which it will combine.

Since they do not specify LCS variables, adverbs are not predicates ([+V]) nor substantives ([+N]), so they must be in the same class as "prepositions" ([-V,-N]).

This is not to say that adverbs and prepositions do not describe relations between various substantives. The point is that these elements can only express relations in a thematic structure which is independently generated in the syntactic representation. Since they do not participate directly in

theta-assignment or theta-binding, the class of adverbs and prepositions is the least "lexical" of the major categories. The relationships which they help to express are always general properties which are based in the thematic structure of other categories. That is, co-ordinates in time and space are pertinent to most things, and these are often explicated through adverbs and prepositions. Most actions have manners, most states have degrees, etc.. Adverbs and prepositions name the particulars of these dimensions of theta assignment. But so doing, these categories merely provide particular details of properties which are implicit in the representation already.

What is the difference between adverbs and prepositions? Since their LCS representations must be similar (since they are defined with the same categorial features), the distinction must be found in their PAS representations. Since prepositions may require a particular Case in their complement, I suppose that, in contrast with adverbs, prepositions are derived from lexical entries with two matrices of syntactic features:

52)	PAS:	[-V, -N]		[-V, -N]	[ Case]
	(linking)				
	LCS:	(quickly)		(under)	
		<u>Adverb</u>		<u>Preposition</u>	

The lexical entries of prepositions do not introduce any LCS

variables to link to this second matrix of syntactic (Case) features. Nevertheless, this matrix must be linked to a variable in the D-structure representation (or it would project a phrasal category with no possible interpretation). The variable must be a participant which is provided in the thematic structure of some other lexical category. Since space and time co-ordinates are implicit in most (if not all) thematic structure, the LCS variables which represent places and times are natural candidates to be linked to this second matrix provided by the lexical entries of prepositions. Similarly, other predictable properties of thematic structures (means, manner, etc.) are often found in constructions with prepositions.

Mustanoja points out that many ME prepositional phrases are compositional:

- "many of them are originally combinations of a preposition and an adverb (before, etc.) - even combinations of the type preposition+adverb+preposition occur (afore-zen, aforon-on)... - or combinations of an adverb and a preposition (out of, etc.). The type preposition+preposition is not uncommon (at-after, at-fore, at-over, into, inwith, of beside, on-under, within, etc.)" (p.346-7).

This is not surprising in a theory which says that adverbs and prepositions are the same type of category and moreover, that this category is only interpreted through the combination of its LCS representation with some other LCS representation.

Since the LCS variable which is associated with prepositions

must be derived from variables which are implicit in some other thematic structure and since these are predictable "dimensions" of theta-assignment in a wide variety of constructions, some prepositional phrases become stereo-typed. Mustanoja tells us that

"whole phrases may acquire prepositional force (e.g. because of, by means of, by reason of, in spite of, instead of, in order to, in addition to)" (p.347).

In these phrases, the noun "names" the theta-role (e.g., cause, means, reason, etc.) which it is assigned (i.e., rather like a cognate object - "die a death" etc.).

Prepositions and adverbs are the same type of lexical category - [-N,-V]. Since they are neither predicates nor substantives, they are not linked to any LCS variable. They are interpreted only because their LCS representation is incorporated into the predicate of some other LCS representation. Prepositions and adverbs "modify" predicates. Prepositions differ from adverbs in that only prepositions can select the grammatical features of a complement phrase directly. Like verbs, the PAS in the lexical entries of prepositions includes more than one matrix of syntactic features.

#### 4.5.2 Default Adjuncts

There is evidence from the history of English which suggests that functional category matrices (FPs) can be inserted into syntactic representations during a derivation without the use of any prepositional lexical entry.

In Chapter 3, I discussed the parallels between the complements of OE verbs and present English nouns and contrasted these with the complements of present English verbs. In particular, verbs of motion (e.g., climb, run, etc.) and verbs of verbal expression (e.g., whisper, bellow, etc.) were strictly intransitive in OE and the parallel nouns in present English are similarly intransitive. But the parallel present English verbs take direct (accusative) complements (e.g., "He climbed the mountain.", "She bellowed an answer.", etc.).

In Chapter 7, I will illustrate the fact that these classes of verbs began to appear with complements (one by one) in early ME. During the course of the Middle Ages, these verb classes were entirely converted, so that they came to their present status - they are now all optionally transitive. I suggest that this fact is connected to another development in the history of English. As I will illustrate in Chapter 7, many OE verbs which have been described as basically "intransitive" (Visser, §370), had optional indirect

complements (dative, instrumental or genitive). These complements expressed notions such as "source" (gen.), "means" (instr.) and "concernment" (dat.) and were quite common in OE expressions. It is remarkable that these complements died out in early ME - just as the accusative complements described above began to appear.

I would account for these changes in the following way. I suppose (as above) that certain predicates may have "implicit" participants in the "dictionary" definition of their LCS representation. That is "run" means something like "X move along a path (Y) with gait #3". Similarly, verbs of vocal expression, like "bellow" may be understood as "X makes sound (Y) with character #6". Similarly various verbs may imply a possible "source" or "means" or a variable of "concernment". But these LCS variables are not linked to any feature matrix in the lexicon. Of course, such a matrix may be supplied to the D-structure representation by a preposition. So we have, for example, "He climbed up the mountain.", "She whispered about the secret.", "They rejoiced in their good fortune.", "He buttered the toast with a knife.", etc.

I suggest that alternately the required functional category matrix may be inserted into the representation (independently of any lexical category) during the derivation. That is, such a matrix does not have to spring from any lexical entry. But I suggest that this insertion must follow the imposition of

the marked value of [+/-Inherent] in the matrices of the representation. As a consequence, such an inserted matrix will automatically be assigned the default value for that feature by the redundancy rules of the grammar. Thus in OE, the inserted feature matrix must be realized with the feature value [+Inherent] while in present English, an inserted feature matrix must be realized with the feature value [-Inherent].

Given that the alternation of the feature [+/-Inherent] is associated with an opposition along a semantic continuum (by the Linking Conventions - see Chapter 3), the requirement that inserted feature matrices must realize the default value of [+/-Inherent] provides an account of the diachronic changes in the status of the various intransitive verbs of English. That is, the theta-roles assigned to the "implicit" LCS variables of verbs of motion and verbs of vocalic expression require an interpretation which is associated with [-Inherent]. Therefore, these complements began to appear in English only when [-Inherent] became the default value for that feature in the English verb phrase. Similarly, the theta-roles assigned to the implicit LCS variables expressing "source", "means" and "concernment" require an interpretation which is associated with [+Inherent]. Thus, although they were common in OE, these complements died out when [+Inherent] was no longer the default value in the English verb phrase.



The postulated reversal of the default value of [+/-Inherent] in the English verb phrase can be independently motivated through the analysis of those verbs which required indirect objects in OE but which switched to direct objects during the Middle Ages. Thus there is a strong argument for this kind of account for the complements discussed here. The various changes were simultaneous and therefore it seems very likely that they spring from the same development in the grammar of English.

### Notes

1) Although the insertion of these minor category matrices must follow the imposition of the marked value of [+/-Inherent], it must precede the imposition of the marked value of [+/-Genitive]. This follows from the observation that the "source" complements of OE (which died out in early ME) were [+Genitive], while the "means" and "concernment" complements (which were also abandoned) were [-Genitive]. One of these values must be marked (imposed) in the domain of the verb phrase. Why it might be that the marked value of [+/-Inherent] is imposed prior to the insertion of adjunct matrices and prior to the imposition of other marked feature values is not at all clear. Luigi Rizzi (1986) comments that "the affected-unaffected distinction appears to be of higher syntactic relevance than most distinctions offered by theta-theory" (p.540). Since affectedness is pertinent to

[+/-Inherent], the observation is parallel to the observations here.

2) I suggest that the minor category matrix which dominates the subject noun phrase (i.e., the phrase which is the specifier of the clause) is also inserted during the derivation. But since subjects Agree with INFL (i.e., with verbal inflection), there is a particular redundancy rule for this matrix (see Chapter 3):

[ ] --> [-Inherent]/ [+Tense,\_\_\_]

So subjects are always realized with [-Inherent] Case, even in OE.

3) Since the complements of nouns and adjectives are always optional, I assume that these lexical entries do not provide a feature matrix for their arguments. Since these matrices are inserted during the derivation, they do not appear at D-structure and they are not subject to the imposition of the marked value of [+/-Inherent]. Since only derived nouns have [-Inherent] complements (i.e., the marked value for [+/-Inherent] in the noun phrase), these matrices must be inherited from the verbs from which the noun is derived. All other complements of nouns and adjective are inserted - and receive the default value of [+/-Inherent].

### 4.5.3 "Adverbial" Adjuncts

In contrast to the "default" adjuncts discussed above, there was another class of adjuncts in OE which could appear with either value of [+/-Inherent], depending on the intended interpretation. These adjuncts typically expressed the dimensions of time or space (and purportedly, the "manner" - but see below) of the predicate with which they were associated.

Mitchell describes the "adverbial" use of Case in some detail (§1380-1427). A few examples will suffice to illustrate these adjuncts here. The accusative forms may indicate the "extent" of time (e.g., ealne daeg "all day"), while the genitive "defines the time within which something happens" (e.g., anes daeges "within one day") and the dative/instrumental may express a "point of time" (e.g., þaere ilcan niht "in the same night"). Similarly, the accusative may indicate an "extent" of space (e.g., ealne weig "all the way"), while the genitive of "place" has a different twist of interpretation (e.g., þiderweardes "that way") and the dative/instrumental of "place" expresses "the place where" (e.g., wraeccan lastum "in the paths of exile")<sup>28</sup>. Notably,

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28. Mitchell points out, however, that the datives of place were usually found with prepositions in OE (§1416).

those adverbial adjuncts which expressed "manner" in OE were always genitive or dative - never accusative (e.g., þonces (gen.) "unwillingly", nede (dat.) "of necessity").

It is apparent that the existence of these "adverbial" uses of both accusative and dative (and genitive and instrumental) Case provides a serious challenge to the account of "default" adjuncts proposed above. In that account, the loss of the OE "source", "means" and "concernment" adjuncts and the innovation of the "path" and "vocal expression" adjuncts rests on the notion that these adjuncts appear with functional category matrices which have been inserted into the representation after the marked value of [+/-Inherent] has been imposed on feature matrices. So these adjuncts must be assigned the default value for that feature. But "adverbial" adjuncts of time or space can be realized with either value of [+/-Inherent]. Why are they different?

An answer is provided in the analysis of present English "bare-NP adverbs" which is developed in Larson (1985). Larson points out that

"[present] English exhibits bare-NP adverbs in a variety of semantic functions, including temporal modifier, locative modifier, adverbial of direction and adverbial of manner" (p.595):







adjuncts to appear with the default value of [+/-Inherent].

One might legitimately question whether "adverbial" adjuncts are restricted to a lexically specified class of nouns in a language with overt inflection. From a casual survey of OE adverbial adjuncts, such would seem to be the case - there are only so many words which are provided (again and again) as examples of these adjuncts in the handbooks. Of course, negative evidence is not available from OE. But the mere availability of overt inflection does not mean that such languages can use any noun as a bare-NP adverbial adjunct. For example, Halle (1972) points out that

"in Russian the instrumental case of certain nouns designating times of the year and of the day has special adverbial force that is not possessed by other nouns in the instrumental case. In particular, letom may mean "in summer", nocju "at night", zimoj "in winter". However, avgustum may not mean "in the month of August", or obedom may not mean "at dinner (or noon) time" (p.698).

Similarly, most nouns cannot appear as locative adverbial adjuncts:

57) y zil        \*Germanii/\*43<sup>0y</sup> ulice  
I lived        Germany / 43rd Street

It seems likely that OE adverbial adjuncts were similarly limited to a specific class of lexically marked nouns.



## Notes

1) Recall that OE adverbials of "manner" only appeared in dative, instrumental or genitive Case - there were no accusative adjuncts of manner. This fact will follow if the nouns which appeared in these expressions were not bare-NP adverbial adjuncts. That is, like other common nouns, these categories came from lexical entries with only one matrix of features (one providing categorial features). When they were used as adjuncts, their functional feature matrices were inserted and realized with the default value of [+/-Inherent] (i.e., [+Inherent]). Given the extremely restricted number of "manner" adverbial adjuncts in present English (i.e., none or perhaps one - "way"), this suggestion is further supported. The manner adjuncts required [+Inherent] - the opposite value to the default of present English.

2) There are a very few exceptions to the generalization that OE verbs of motion did not take direct (accusative) complements. Mitchell points out that "the uninflected form ham [=home, J.S.L.] after verbs of motion... can be taken as accusative" (§1418)

Similarly, verbs of motion could appear with the adverbial adjuncts norp "north" and east (§1386). Since this set is very limited, it is natural to assume that these are not counters to the analysis of "default" adjuncts, but simply adverbial adjuncts with their own (lexically specified)



## Chapter 5

### OE Syntax

In this chapter, I will discuss some OE syntactic structures as a preparation for the discussion of the changes in early ME syntax, the topic of the next chapter. This chapter will also provide a concrete illustration of some points of the theoretical discussion which has occupied the last two chapters. Of course, the entire range of OE structures cannot be described here. The following is merely an outline of the pertinent material.

Following Lightfoot (1979), Travis (1984) and others, I assume that the underlying word order in OE is SOV. Presumably, the order of complement and predicate in lexical phrases is determined by a language particular choice of direction for theta-role assignment (and perhaps for Case assignment)<sup>1</sup>. The underlying word order suggests that in OE, theta-roles are assigned to the left.

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1. See especially Travis for discussion of these parameters.

## 5.1 Substantive Phrases

### 5.1.1 Adjectives

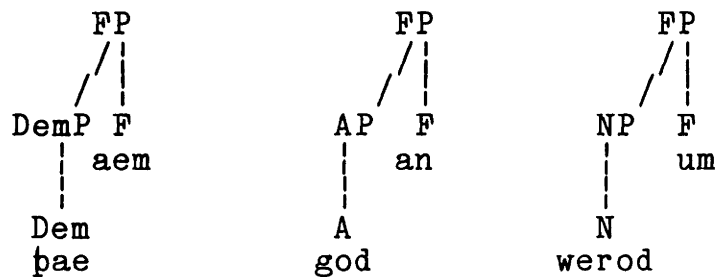
In the complex substantive phrases of OE, noun, adjective and demonstrative pronoun stems all have affixes of inflection which Agree - with their stems and with each other - in number, gender and Case features:

- 1) a) þa godan wylfe (feminine, singular,  
that good she-wolf accusative)
  
- b) se goda mearh (masculine, singular,  
that good horse nominative)
  
- c) þaem godan werodum (neuter, dative, plural)  
those good troops

The X-bar Convention requires that each affix which specifies syntactic features must be the head of a phrase in the syntactic representation. So each of the examples above must be represented in the syntax as six phrases. I will argue below that the phrase headed by the stem (the lexical category) must precede the phrase headed by the affix (the

functional category):

2)



Since these functional categories all Agree with each other in their feature specifications, they must be in the government configuration at D-structure. Since demonstratives and many adjectives signal quantifier-like properties<sup>2</sup>, and since quantifiers must c-command the variable which they quantify over, I assume that these categories must c-command the noun phrase. Mitchell (143-150) declares that in the poetry and the prose of OE, the normal word order in the substantive phrase is:

3)

demonstrative - adjective - gen. complement - noun

Only a few "quantifier-like" adjectives (e.g., maenig "many", eal "all", sum "some") normally precede the demonstrative.

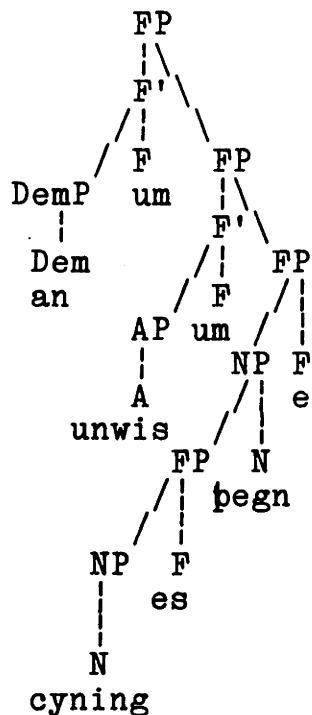
These considerations suggest the following configuration in OE

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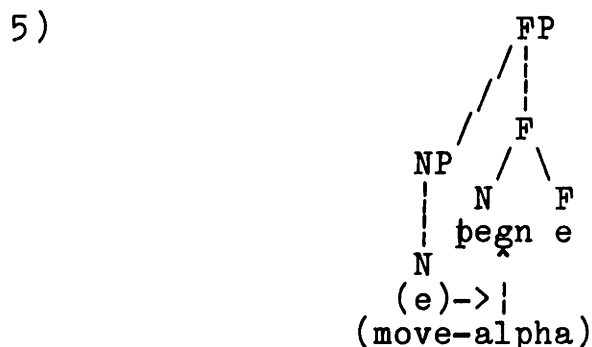
2. Lightfoot discusses these quantifying adjectives (p.168)

substantive phrases at D-structure:

- 4) Chronicle c.874  
 (Dat.Sing. Masc.) (Gen.S.M.) (Dat.Sing. Masc.)  
 anum unwisum cyninges þegne  
 one unwise king's thegn



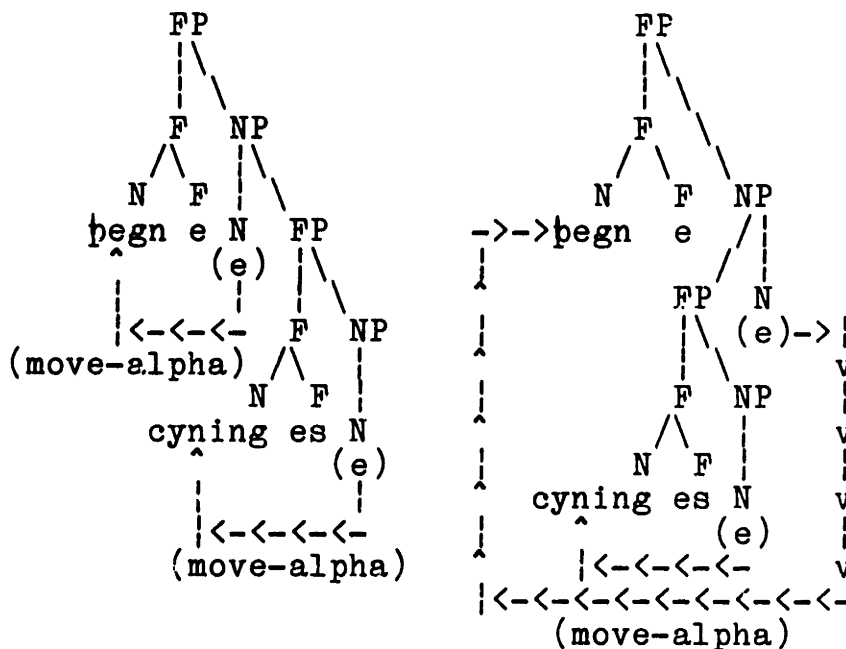
I assume that there is head-to-head movement between the stem and affix pairs - for example, the head of the noun phrase adjoins to the head of the functional phrase:



Given the possibility of such movement, the underlying order of the stem phrase and the affix phrase is open to debate.

But it is apparent that the stem must precede the affix even in underlying representations. If it did not, then we should expect that the complements of noun phrases would generally follow the surface realization of the noun and affix, no matter which side of the noun the complement was generated on. The reason for this expectation is easily seen from a glance at the pertinent (wrong) structures:

6) NOT OE Structures



But contrary to the prediction in such underlying structures, noun phrase complements normally precede the head of the phrase in OE.

The percolating syntactic features must permeate the functional categories of the substantive phrase, so all the FP phrases demonstrate Agreement. Note that the Case features must percolate "down" from the demonstrative functional

phrase, while gender features percolate "up" from the noun.

Since functional categories must appear with lexical categories in OE (for reasons of phonology), the adjectives and demonstratives must modify the nominal head of the phrase with an interpretation of conjunction (i.e., X, is an unwise X (for a Y) and is a thegn X). The reason that the open variable in the adjective and the open variable in the noun are "identified" as the same variable is because both of these categories are dominated by the same functional category (i.e., the same by virtue of Agreement). There is only one set of Case features to make the argument visible at LF and only one categorial feature [+N]. Thus, in contrast to present English, OE adjectives are predicted to have no syncategorematic modification (where the noun governs AP).

But of course, modification with the reading of conjunction allows a near parallel of the syncategorematic interpretation. In the structure of conjunction, the standard by which the attribute is measured is arbitrary, but it may still be interpreted as the standard of the modified noun (i.e., X, is an unwise X (for a Y = X), and is a thegn X). The prediction here is that in OE (in contrast with present English), the syncategorematic interpretation is not a "first reading", even for prenominal adjectives. But the test of this prediction would seem to require native judgements. Other languages may provide such evidence, but I will leave



the question for future research.

Given that in OE, each of the lexical categories in substantive phrases appears with a functional category which signals number, gender and Case, a number of other facts about OE substantive phrases have a direct explanation.

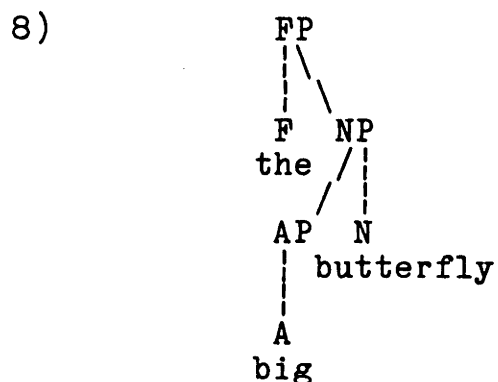
The most prominent difference between OE adjectives and those of later English is the relative freedom of position which they are allowed in the surface representations of OE. According to Lightfoot,

"most adjectives were free to occur before a determiner [=demonstrative J.S.L.] and some normally did so...: of inne weardre his heortan "from within his heart" (p.170).

7) Maldon 240  
on wlanca pam wigge  
on proud that steed

The relative freedom in the order of demonstrative and adjective when they both precede the noun is in contrast with later English. The present theory will provide a direct account of this fact. The OE demonstratives seem to have the same categorial status as adjectives (that is, [+N,+V]). In contrast, the determiners of later English have lost this categorial status and are simply phonological signals which are inserted into functional category matrices at a late stage

in the derivation (i.e., like the OE affixes)<sup>3</sup>. In present English, the pertinent functional category matrix is generated at the left edge of the substantive phrase - in the theta-position. The adjective and noun must follow the determiner:



However demonstratives and adjectives are opposed in OE, it is not the opposition of categorial features versus functional features. The demonstrative was not a functional category and was not required to appear in the theta-position of the substantive phrase. It is not surprising then, that demonstrative and adjective may precede or follow each other with comparative freedom.

Adjectives could also appear post-nominally (e.g., "freopoburh faegere "fair stronghold" (Lightfoot p.170)).

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3. See the discussion of determiners in the next chapter.

- 9) AElfric Saints' Lives 26, 225  
gebeoras blipe  
drinkers merry

But the noun+adjective configuration is marked and rare. Similarly, the rare post-nominal demonstrative is emphatic or stylistic. Thus it seems that prenominal positions are more natural for OE adjectives and demonstratives than post-nominal positions. This is not to say that the word order noun/demonstrative/adjective (for example) could not be achieved in a derived environment:

- 10) Beowulf 1016  
on sele þam hean  
in hall that high

The prediction is simply that such a word order should be "marked" (unusual and so "stylistic") by virtue of the complex derivation required. Naturally, these constructions are poetic.

But these examples do not show the limits of the flexible positioning of OE adjectives and demonstratives. These categories could often "float" away from the substantive phrase. This dispersal of the elements of substantive phrases was not very common in OE prose, but there are numerous flagrant examples in the poetry, where word order was partially determined by phonological properties (by alliteration and by the requirements of rhythm):

11) a) Beowulf 972-3  
no þær aenige swa þeah feasceaft guma  
Not there any nevertheless destitute warrior  
  
frofre gebohte  
relief obtained

b) Beowulf 1296-98  
Se waes Hroþgare haeleþa leofost  
That was (to) Hrothgar (of) warriors most loved  
  
on gesipes had be saem tweonum  
in retainer's position between (the) seas  
  
rice randwiga...  
powerful shield-warrior

c) Beowulf 264-5  
aer he on weg hwurfe gamol of gearдум  
before he on way turned ancient from dwelling

Especially in example 11)c) (where the adjective modifies a pronoun), the "floating" of adjectives and demonstratives seems to be parallel to the pervasive appositive style of OE literature. The reiteration of arguments is common in the language of poetry and prose:

12) a) Beowulf 1557-60  
Geseah þa on searwum sigeeadig bil  
(He) saw then in war-gear victory-blessed sword  
  
ealdsword eotenisc ecgum byhtig  
ancient sword giantish, in edge strong (one),  
  
wigena weorþmynd þaet waepna cyst  
(of) warriors glory, that (of) weapons best

b) AElfric Hom. i, 146, 33  
He cwaep se apostol Paulus...  
He said the apostle Paul...

c) Beowulf 1345-47  
Ic þat londbuend... secgan hyrde þæt hie gesawon...  
I that landholders (to) say heard that they saw...

d) Chronicle 1074  
On þyssum geare Willelm cyng geaf Raulfe eorle  
In this year king, William gave earl Ralph  
  
Willelmes dohtor Osbearnes sunu  
William's daughter Osborne's son

The "floating" adjectives seem even more like the  
appositives, given the fact that

"as long as the inflectional system functioned, any  
adjective could occur substantively" (Lightfoot, p.172).

13) a) Beowulf 2373  
No by aer feasceafte findan  
Not (by) that earlier wretched (ones) (to) find  
  
meahton...  
were able...

(the wretched ones were not able to find through that  
(behavior) that...)

b) Cynewulf, Elene 493  
ne geald he yfel yfele  
not gave he evil (for) evil

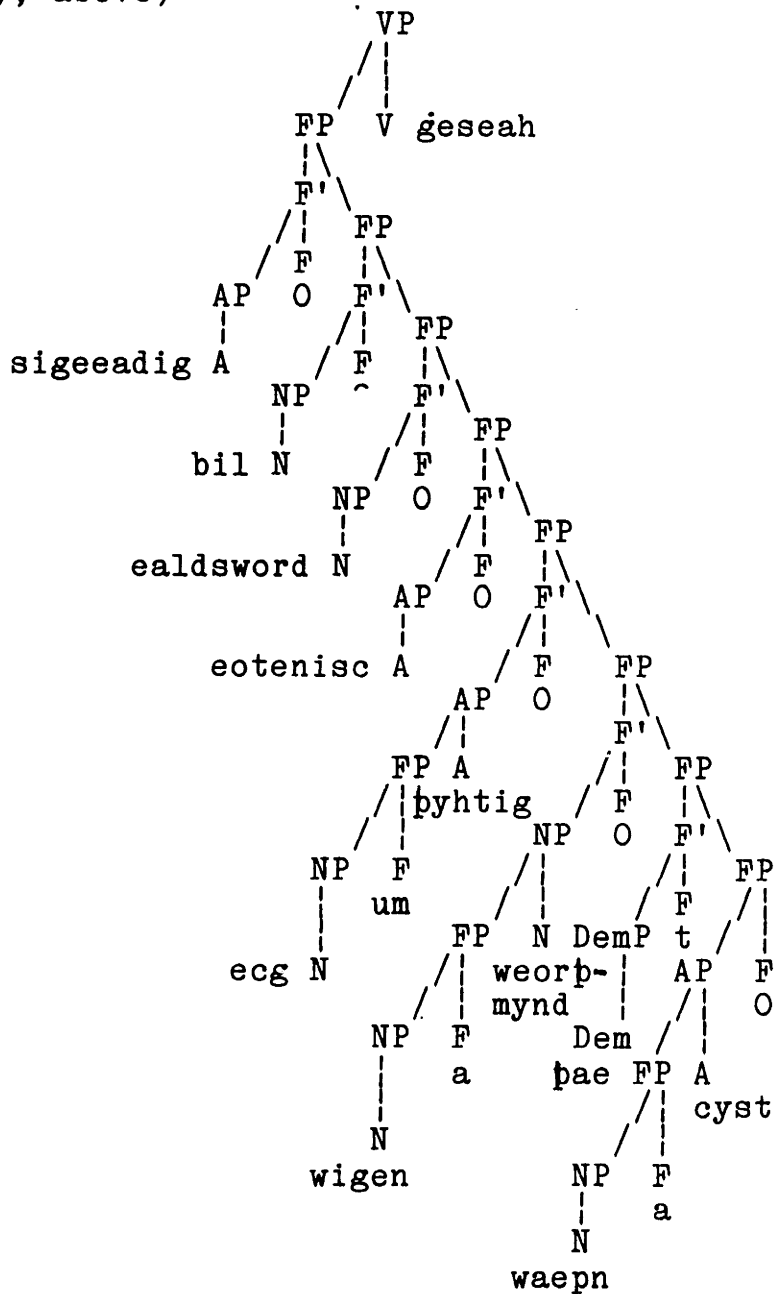
c) Matt. X 41 Gospels in West Saxon,  
MS CXL Corpus Christi College  
seþe underfehþ rihtwisne  
who that receives (a) righteous (one)  
  
on rihtwises naman...  
in righteousness' name...

d) Beowulf 2314-5  
no þær aht cwices laþ  
not there any (of) living (things) hated (one)  
  
lyftfloga laefan wolde  
(of) air-flyers (to) leave intended

These phenomena all have a similar explanation. As Lightfoot points out, the floating adjectives are allowed because "the elaborate inflectional system facilitated the association of the adjective with the head noun" (p.71). The phrases can be recognized as Agreeing in the Case features of the relevant theta-position, so their underlying positions can be deduced. They must each be governed by a matrix of syntactic features which is linked to the LCS variable in the theta position of that substantive phrase (or by a matrix which Agrees with that matrix).

Similarly, the Agreement between the affixes of appositive phrases ensures that they too are governed by the same syntactic projection at D-structure. Only phrases which are in the government configuration are in a position to percolate features and hence to Agree in these features. So the reiteration of an argument simply expands the identity of the substantive phrase in the theta position:

- 14) Beowulf 1557-60  
 Geseah þa on searwum sigeeadig bil  
 (He) saw then in war-gear victory-blessed sword  
 ealdsword eotenisc ecgum byhtig  
 ancient sword giantish, (in) edge strong (one),  
 wigena weorbmynd þæt waepna cyst  
 (of) warriors glory, that (of) weapons best  
 (= )a), above)



Since the Agreement of the affixes forces this D-structure





every instance of an adjective offers some resolution of these properties. The adjective itself provides the substantive feature [+N]. Given that the gender features theta-bind the LCS variable of the substantive phrase, while the Case features signal the nature of the theta-role and the number feature signals the status "canonical argument" (i.e., as in Rizzi, 1986), it would seem that adjectives with their affixes provide all of the necessary features to identify the referent and the theta-position. As long as the affixes were explicit in these features, adjectives were substantive phrases in their own right.

The OE "floating" adjectives, the appositive style and the adjectives used as independent substantive phrases are all accounted for in the consideration of the explicit OE substantive inflection.

### 5.1.2 Adjective Phrase Complements

In OE, adjectives often appeared with dative or genitive complements. Mitchell (200-217) provides a list of adjectives which took these complements. These fall into the following "sense groups":

17) Genitive Complements

- 1) happiness, despair, gratitude
- 2) generosity, meanness
- 3) guilt, admission, agreement
- 4) fullness, emptiness, lack
- 5) boldness, braveness, usefulness
- 6) measure
- 7) knowledge, ignorance, belief
- 8) desire

18) Dative Complements

- 1) fitness, propriety
- 2) equality
- 3) familiarity
- 4) easiness
- 5) nearness
- 6) pleasure, friendship, obedience

Mitchell points out that

"the various types of genitive and dative which occur with nouns are distinguished in [the lists of adjective complements J.S.L.]" (195).

That is, OE adjective phrase complements are quite parallel to the complements of noun phrases.

Most of the genitive complements in adjective phrases are those which Visser would file under the appellation "causative" - compare the list above with Visser's description

of verbs taking genitive complements (in Chapter 7)<sup>4</sup>. I assume that these are in general assigned the feature value [+Inherent]. Of course, the same specification is found in the dative complements.

The redundancy rules of OE assigned a [+Inherent] default in adjective phrases, so these specifications are not surprising. In the next chapter, I will illustrate the changes which were wrought in adjective phrase complements by the reversal of this default.

### 5.1.3 Functional Category Specifiers

There is evidence that the phrases projected from OE substantive inflection had a "specifier" position. Mustanoja observes that

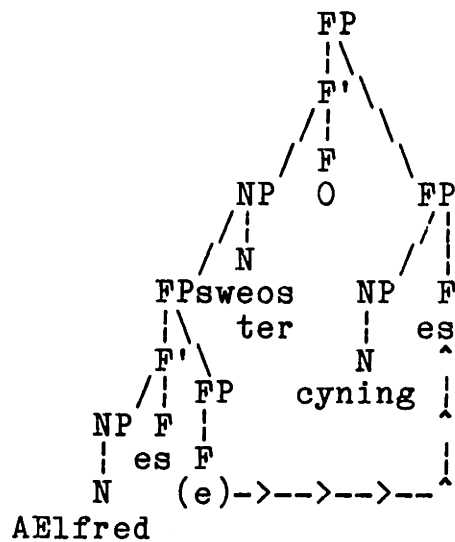
"in OE, if the genitive is followed by another noun in apposition, the noun governing the genitive is usually placed between the genitive and the noun in apposition (AElfredes sweostor cyninges; Malcolmes cyninges dohter of Scotland)" (p.78).

Since the nouns in apposition must be a single constituent in the underlying representation, these surface structures

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4. I will argue in the discussion of these complements in Chapter 7, that these are better described as "source" theta-roles.

must be derived by movement:

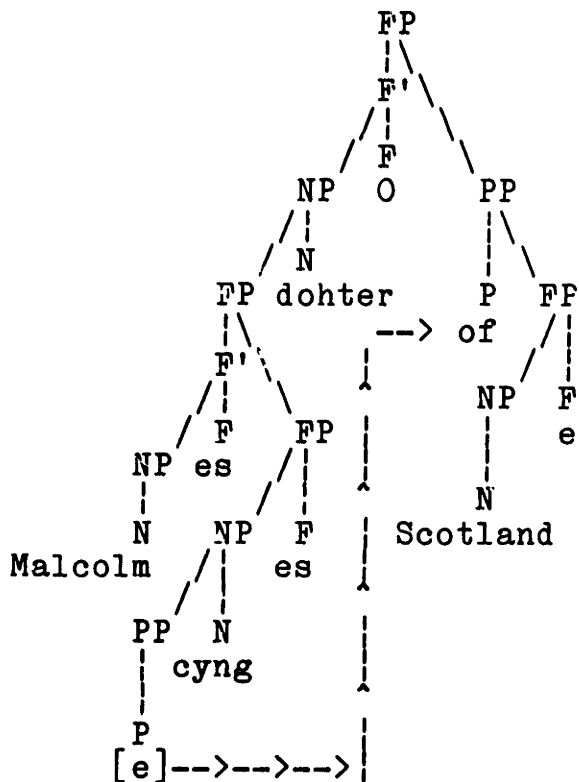
19)



As Mustanoja's examples show, not only nouns in apposition are moved to this position. The phrase "of Scotlande" is underlyingly an argument in the thematic structure of "cyniges" and of "Malcolmes" (i.e., the king is Malcolm, but neither of these is Scotland). The underlying structure of

these phrases is slightly different:

20)

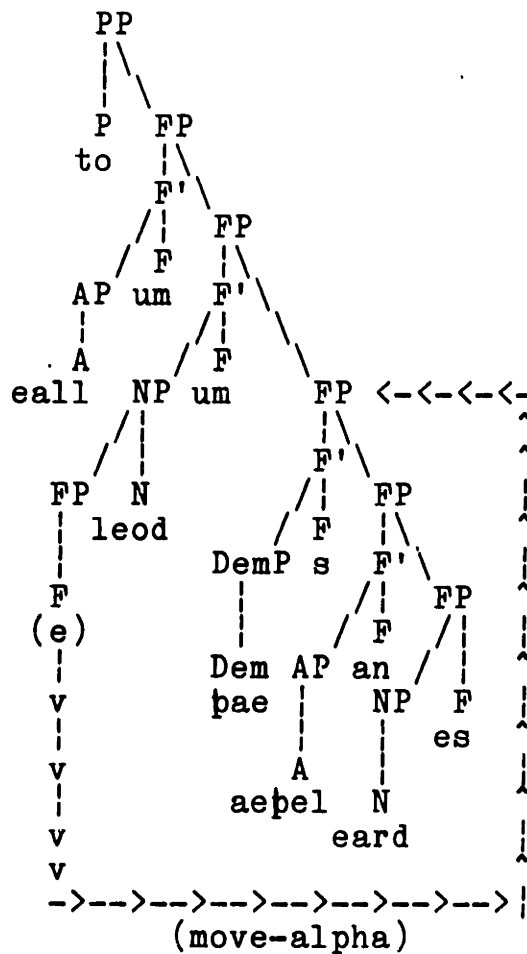


Since OE theta/Case assignment is leftward, the post-nominal position must be derived for even the simple cases of genitive post-posing:

21)

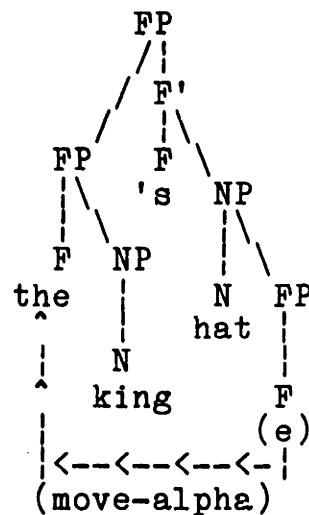
Ælfric Hom. ii 214, 1

to eallum leodum þaes aepelan eardes  
 to all people (of) that noble country



The present English parallel to this kind of structure is limited to the constructions with the prenominal genitive " 's":

22)



Mustanoja tells us that "the present-day English type of expression, "the king of England's hat" is first recorded in Chaucer's works" (p.78). I suspect that this is a clue as to the date of the reversal of the direction of theta-role assignment in English. At any rate, many changes occurred in English substantive phrases between OE and Chaucer. I shall illustrate some of these in Chapter 6.

## 5.2 Prepositions and Adverbs

In OE, adverbs were formed from adjectives by the addition of the affix -e or -unga (-inga, -enga):

23)	georn	"eager"	georne	"eagerly"
	hlud	"loud"	hlude	"loudly"
	deoplic	"deep"	deoplice	"deeply"
	eall	"all"	eallunga	"altogether"
	aenig	"any"	aeninga	"entirely"

Since these affixes change the category of the phrase (i.e.,

[+N,+V] --> [-N,-V]), they are derivational affixes and do not have an independent status in the syntactic representation. Since these [-N,-V] categories are derived from adjectives, they do not bring any functional category matrix to the D-structure representation - they are not prepositions.

Mitchell provides a list of some eighty prepositional forms of OE (1178). Some of these are restricted in that their complements must have certain Case features. More than forty prepositions appear with dative or accusative complements; only five appear with just an accusative complement. Since these Cases are differentiated by [+/-Inherent], and since in OE only [-Inherent] (structural Case) was specified in the lexicon, these proportions are not surprising. Accusative Case had to be specially marked in prepositional lexical entries in OE (as in present English). In Chapter 7, I will argue that language learners minimize such specifications in the lexicon.

The fact that only a small number of OE prepositions were restricted to accusative complements follows from the markedness of [+/-Inherent] in preposition phrases. Similarly, since [-Inherent] had to be marked in verbal lexical entries, there were relatively few accusative assigning verbs.

It should be noted, however, that the accusative class of verbs was restricted in OE only in comparison with later



stages of the language. In fact, this was still the largest class of verbs in OE. The relative difference between the size of the class of OE accusative verbs (compared to other verb classes) and the size of the class of accusative assigning prepositions (compared to other preposition classes) is rather striking. Only about one sixteenth of the prepositions fall in the class which was marked [-Inherent], but the largest class of verbs were thus marked. Why was there such a contrast?

The proportions are not surprising when the semantic content which is associated with the feature [-Inherent] is taken into consideration. Structural Case arguments ([-Inherent]) must delimit the action of the predicate which assigns them a theta-role. But in the present theory, prepositions are not independent predicates. Their interpretation depends on the LCS predicate and variables of some other category. In order to be useful in these combinations, the dictionary definition of a preposition must be quite general. In contrast, verbs may be quite specific in the definition of thematic structure. While a [-Inherent] specification may follow naturally from the particular interpretation of the verbal predicate, a [-Inherent] specification of a preposition is an arbitrary idiosyncrasy of that lexical entry. The required interpretation actually depends on the associated predicate, which is derived from some other lexical entry. In short, many verbs must assign [-Inherent] by virtue of their

"dictionary definition", but this is never true of prepositions.

The alternation in the dative/accusative complements of prepositions is possible because the marked feature value of [-Inherent] may be imposed on the unspecified matrices which these prepositions supply to the syntactic representation at D-structure. Mitchell points out that

"prepositions are sometimes found with more than one case in the same sentence... [where J.S.L.] ...the preposition is not repeated, LS 34.241 wip þam awyrgedan strangan and þone ealdan wiperwinnan" (Æ1177)  
(Ælfric Saints' Lives)  
"against those cursed, violent ones (Dat.)  
and that ancient one (Acc.), to fight back"<sup>5</sup>

Since these substantive phrases are specified differently for [+/-Inherent], this feature cannot have been established through specification by the adverb "wip". Rather the marked value of [+/-Inherent] is imposed on the adjuncts according to the demands of the interpretation.

The lexical entries for these OE prepositions are something like the following:

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5. I would say that the writer means that "those cursed, violent ones" are the particular manifestations of evil which happen to be the immediate object of "fighting back", but that "that ancient one" is the totality of evil - the dimensions of the devil delimit the extent of the object against which the fight is directed. This delimitation of the action of the verb calls for structural Case.

24) a) Dative or Accusative (ofer "above,over",  
aet "at, as far as", etc.)

ofer PAS: [-N,-V] [ Inh]

LCS: OVER

b) Accusative (ufan "above", wiper "against")

ufan PAS: [-N,-V] [-Inh]

LCS: ABOVE

A few prepositions are found with dative/genitive or accusative/genitive or dative/accusative/genitive alternations in their complements. I assume that the marked value of [+/-Genitive] is never specified in English lexical entries. This marked value is imposed on matrices, according to the interpretation of the linked LCS variable. It is not surprising then, that there are no clear cases of prepositions which require a genitive complement<sup>6</sup>

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6. Mitchell suggests that the forms wana, andlanges and utan take only genitive complements. But wana means "wanting in" - an unlikely notion to be expressed in a preposition. I suspect that this form had some other categorial status (perhaps a noun). Similarly utan "outside" seems to be a substantive phrase which does not decline (or which has a special declension - "-an"):

OE Chronicle c. 991

forhergedon paet on ytan

(they) ravaged that on (the) outside (= the coastline)

Of course, substantive phrases have genitive complements - by virtue of the default rule for [+/-Gen] in that domain. The form andlanges "along" should be compared with andlang "along", which appears with accusative or genitive complements. It is not clear that these are separate lexical entries.

About thirty of the prepositions in Mitchell's lists were strictly dative, without an accusative alternation in their complements (e.g., foran "before", of, fram "from", etc.). I suggest that these "prepositions" are simply adverbs. They do not provide a Case feature matrix for the associated complement phrase. As simple adverbs, these elements have only an indirect association with substantive phrases. That is, the LCS representation of every adverb (and since prepositions are adverbs, every preposition) must be incorporated in the LCS predicate of some other category and thus may influence the interpretation of the theta-roles assigned by that predicate.

Since these adverbs did not bring a functional category matrix to the D-structure representation, the matrix which did appear with the associated adjunct was inserted into the representation after the imposition of the marked value of [+/-Inherent]. Thus it could only be realised with the default value of that feature ([+Inherent]).

According to Mitchell (§1063), some OE prepositions clearly function as adverbs. These elements can appear with intransitive verbs:

25) a) Maldon 136  
se sceaft tobearst  
that spear burst asunder

b) cume to and drince  
come and drink

The same kind of element can supplement the predicate of an already transitive verb:

26) a) Bl. Hom. 187.35  
þa ahof Paulus up his heafod  
then raised Paul up his head

b) AEC. Hom. ii 382 23  
op þaet hi hine inn leton  
until that they him in let

Mitchell points out that many preposition+verb combinations had become inseparable in OE (§1072). This is demonstrated in the forms which lack a parallel verb+preposition usage (e.g., utlagian "to outlaw") or where the parallel has a distinct meaning, as in the following pair:

27) a) Chrcn A 70.7 (870)  
þa Deniscan... þone cyning ofslogon  
those Danes that king slew

b) AELS 32.124  
and mid anum swenge slogon him of þaet heafod  
and with one stroke struck him off that head  
(struck off his head)

The preverbal position was typical for these adverbs and "stranded" prepositions in OE. This cliticization is not surprising, given the necessary "incorporation" of the LCS representations of these categories<sup>7</sup>. Similarly, the inseparable preposition and verb pairs are simply

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7. But the particular pre-verbal position of the clitic is still unexplained.

"lexicalizations" which began in the type of semantic incorporation that takes place in the syntactic representation.

Since only verbs and prepositions can be specified for the Case feature [+/-Inherent] in their lexical entry, these categories play a central role in the distribution of inherent and structural Case. As I shall demonstrate in the next chapter, in ME some prepositions were re-analysed as Case-markers. That is, these elements lost their status as a lexical category ([-N,-V]) and they came to be seen as the "inserted" phonological signal of a functional category. Since prepositions are the least lexical of the major categories - being neither a substantive nor a predicate - and since prepositions may include Case features in their lexical entries, they are naturally the prime candidates for such a re-analysis.

### 5.3 Complementizers

#### 5.3.1 The OE Relative Clause

In relative clauses, the OE complementizer was primarily the indeclinable particle "þe":

28) Chronicle anno 880  
for se here ofer sae  
journeyed that army over sea

þe aer on Fullanhomme saet  
that earlier in Fullanham stayed

According to Allen (1977) this particle was not a relative pronoun. It did not decline for person or number and the particle could not be directly preceded by a preposition governing the variable in the relative clause (Allen, p.226).

The demonstrative pronouns served as relative pronouns in OE. These could appear with or without a (phonologically visible) complementizer:

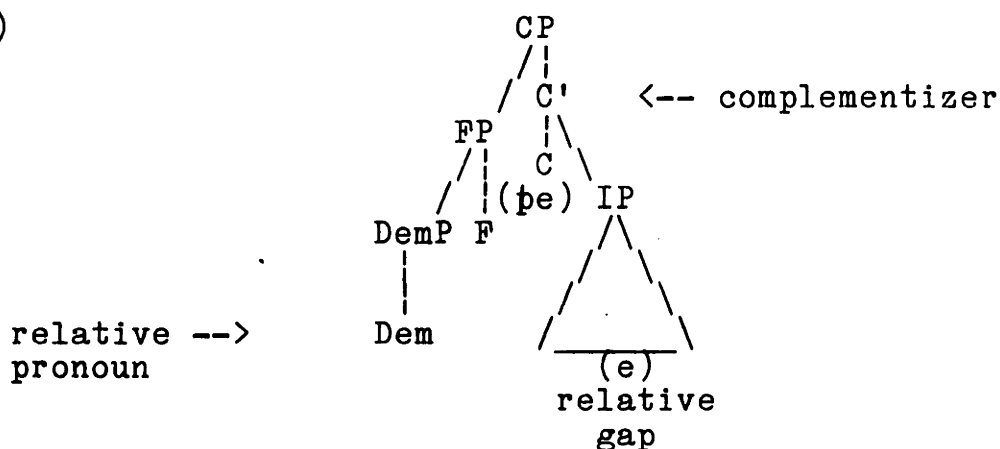
29)a) Beowulf 287-9  
AĒghwaeþres sceal scearp scyldwiga gescad witan  
Each of two must smart warrior choose (to) know  
  
worda ond worca, se þe wel þinceþ  
(of) words and (of) deeds, who that well thinks

b) Beowulf 369-70  
huru se aldor deah  
indeed that leader is noble  
  
se þaem heaþorincum hider wisade  
who those warriors hither guided

Since INFL must be governed by a theta-binding category, I assume that the complementizer is always represented in the underlying structure (even if it is not realized with a phonological form). Similarly, the embedded empty category in the relative clause must have an antecedent, so there must be a relative pronoun even if it is not phonologically realized.

Therefore, the underlying structure of OE relatives is the following:

30)



Allen points out that, along with the "pe" complementizer, "even in OE, *paet* was occasionally used in relatives... [as a complementizer (J.S.L.)]" (p.274)

But the distribution of the "paet" relative complementizer was limited. According to Allen,

"it was most frequently found in the following types of relatives: (i) those with a neuter head (ii) those with temporal heads and (iii) those with "eall" "all" as their head." (p.274, footnote)

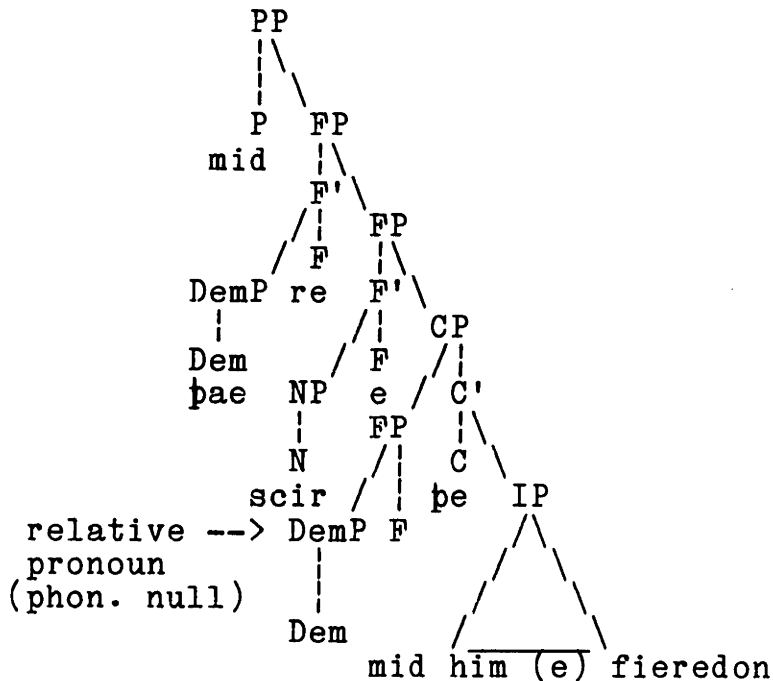
Presuming temporal heads and "eall" to be [+Neuter], it is apparent that relative complementizers had to Agree with the relative head. The complementizer "paet" was used with [+Neuter] heads and "pe" was used for others (and occasionally for [+Neuter] also).

Since Agreement is defined as the percolation of features, this fact requires a particular account of the structures of relative clauses. The complementizer may be governed by the



minor category matrix in the theta-position of the substantive phrase (or by some matrix already in Agreement with this matrix)<sup>8</sup>. In OE, relatives usually followed their head, so the structure would be as follows:

31) OE Chronicles 892  
 mid þære scire þe mid him fieredon  
 with that shire that with him campaigned



That is to say that the relative clause complementizer is another instance of the "chain" of functional categories which are in Agreement with the functional category which is in the theta-position of the substantive phrase. The complementizers appear with a [+Tense] complement, so the lexical entries for

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 8. Perhaps restrictive relatives are governed by the head of the noun phrase and appositives have the structure discussed above.

these signals in OE should be:

32) a) þe PAS: [ Neuter, +Tense]

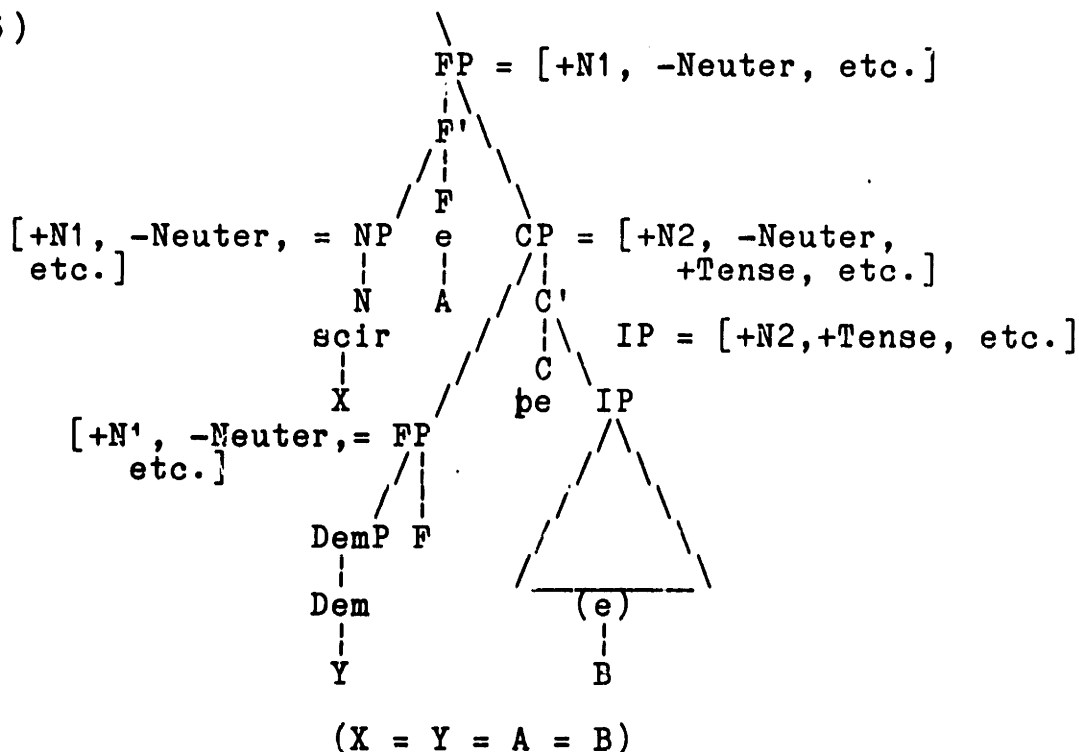
b) þæt PAS: [+Neuter, +Tense]

The empty category in the relative clause must be interpreted as having the same reference as the head of the relative phrase. This is accomplished through Agreement of the feature [+/-Neuter].

The [+/-Neuter] feature of the relative pronoun percolates to the complementizer matrix and on to the functional category dominating the head noun. The complementizer and this functional category Agree in [+/-Neuter]. Apparently this Agreement in a theta-binding feature is sufficient to allow the identification of the reference of the variables which are linked to these matrices. So the LCS variable which is linked to the relative pronoun feature matrix (Y) must be the same as the LCS variable which is linked to the head noun (X) and these must be the same as the variables which are in the relevant theta-positions in the relative clause (B) and in the

matrix clause (A):

33)



Crucially, however, the matrices where complementizers are inserted differ from the other OE substantive functional category matrices in that they do not signal Case. Rather the matrix includes the feature [+Tense]. Although gender features (and in ME, number) percolate to this matrix from the demonstrative (relative) pronoun, Case features do not.

The relative complementizer is not linked to any LCS variable (i.e., the relative clause is not assigned a theta-role). It is only a pathway for the percolation of [+/-Neuter]. The complementizer matrix receives a specification for [+Tense] through percolation from the relative clause. This feature is a theta-binder for the event variable of that clause. Presumably the [+N] feature of the



the clause. The elements which land in this position may provide features which will percolate to the complementizer (e.g., [+WH]).

#### 5.4 The Loss of Inflection in OE

The phonological processes which levelled the paradigms of substantive inflection of OE did not spring up overnight.

Campbell points out that

"in very early texts the common unaccented vowels are expressed with the symbols ae, i, a, u. e normally occurs only before r (e.g. faeder). But very soon ae, e, i fall together in one sound, which was written e. Also o is written for unaccented u with increasing frequency, especially before a consonant (e.g. past pl. in -on, older -un), but also in final position (e.g. neut. pl. of nouns in -o, -u." (p.19, §49)

Since the inflectional affixes in the final syllables of OE words were rarely accented (Campbell p.30, §71), some vowels in the affixes were reduced by these phonological changes. The early collapse of ae, e, i into e (schwa) provides the first attested example of the leveling of a Case opposition in the paradigms of substantive inflection. In early texts, the dative singular in the strong declension of nouns was signalled in the form -ae. The instrumental singular was signalled by -i. When the front vowels were levelled, this

opposition was no longer signalled in nominal inflection<sup>9</sup> - both dative and instrumental forms were realized on the surface as "-e".

In other paradigms, however, the levelling of these vowels did not eliminate the dative/instrumental contrast. In the strong adjective and the demonstrative paradigms, for example, the dative singular form was -um (versus -i, instrumental singular). The phonological revision of the instrumental form (-i > -e) did not collapse the dative/instrumental distinction. When these paradigms were used, dative and instrumental could still be explicitly opposed in the affixes of inflection.

Nonetheless, OE speakers had a specific response to the ambiguity which the vowel levelling had introduced into nominal inflection. According to Mustanoja (p.75), the loss of the dative/instrumental opposition in nouns encouraged the use of "instrumental" type prepositions and adverbs (e.g., mid "with", purh "through", fram "from", etc.). Why was this usage an appropriate response to the levelling of inflection?

I suggested in Chapter 3 that the grammatical feature [+/-Accusative] (the feature which distinguishes nominative from accusative Case and instrumental from dative Case) was

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9. Note, moreover, that even in early OE, dative and instrumental were not opposed in the plural of any paradigm.

not marked in lexical entries. In OE (and in later stages of English until the seventeenth century) the marked value of this feature was assigned to representations at D-structure on a semantic basis (according to the Linking Conventions). Moreover, these prepositions could also appear with dative complements. Therefore the lexical entries of the "instrumental" type prepositions did not specify the feature [-Accusative] in the lexicon. In fact, they provided no functional category matrix at all to the D-structure representation - they were adverbs. How then were these forms instrumental?

As discussed in the previous chapter, prepositions are neither substantives ([+N]) nor predicates ([+V]). The lexical entries of prepositions do not bring any LCS variable to the syntactic representation. To have an interpretation, these lexical categories must be associated with some other category - they must modify a predicate in some other LCS representation. Prepositions "name" some dimension of theta-assignment which is implicit in other thematic structures. That is, "mid" (with) and "purh" (through) when abstracted from the spatial dimension are semantic parallels to the notion "by means of" (i.e., "instrument").

Theta-assignment is a relation between an LCS predicate and an LCS variable and there are two places where the particulars of this relation can be signalled. The signal may be an overt

Case-mark, realized on the substantive phrase which is linked to the LCS variable or the signal may be an overt explication of the particular properties of the LCS predicate or both of these. The "instrumental" prepositions were used to signal that the interpretation of the theta-role assigned by the associated LCS predicate was such that it required that the feature value [-Accusative] should be imposed on that inserted functional matrix.

In early OE, when -ae was opposed to -i in nominal inflection, English speakers could rely on this signal to identify the Case and theta-role of an instrumental argument. The loss of the signal of inflection encouraged speakers to clarify the theta-assignment involved by naming that theta-role with a preposition. This early strategy is the first example of a general pattern of change which emerged in the surface structures of later English.

Just as the front vowels were levelled in early OE, Campbell notes that in the later stages of OE, "-u, -o, -a are freely interchangeable" (p.156, §377). Moreover,

"in the eleventh century unaccented e (< ae, e, i) and the unaccented back vowel in which a, o, u had largely coalesced, became confused" (p.182, §379).

Also, word final nasal consonants fell together (i.e., m,n --> n) "and when no longer followed by m, unaccented u changed to o" (i.e., um>un>on) (p.152, §378). As Mossé points out, these changes were followed by "the progressive loss of all final



-n's in inflection" (p.44, §53).

Without the explicit oppositions previously signalled by nominal inflection, nouns began to lose their specifications for grammatical gender. When the signals of particular affixes were obscured by phonological reduction, the affixes which remained distinctive for Case and number were generalized across all genders. Not all dialects underwent exactly the same sound changes. Clark points out that in the Peterborough Chronicle the survivors were usually masculine endings. But in the (northern) Lindisfarne Gospel, this drift favoured the neuter forms (p.Lvii-Lviii). The levelling of the forms of substantive inflection also obscured the lines between paradigms. In the north and in the Midlands area, the "strong" nominal paradigms became dominant. In the south, however, only the "weak" forms survived.

Again there was a syntactic response to the levelling of substantive inflection. In late OE, prepositions were used to modify predicates and to explicate the details of theta-assignment which had been signalled in OE by substantive inflection alone. Besides the "instrumental" prepositions, there were prepositions which encouraged a "dative" reading of theta-roles (e.g., for, to, on), and a preposition which came to be associated with a "genitive" interpretation (e.g., of). These forms would be crucial in the changes which enabled the development of a significantly different English grammar.

## Chapter 6

### Early Middle English Syntax

#### 6.1 The Peterborough Chronicle

Unfortunately there is relatively little documentation of early Middle English. The literary language of earlier periods (West Saxon) was no longer prestigious after the Norman invasion. Although English continued as the spoken language for most people in England, official and literary documents were not always written in the common language.

But there are some exceptions. Notable among these are the "continuations" of the Anglo-Saxon Chronicles which were composed by the monks at Peterborough Abbey in the twelfth century. In her introduction to the text of this document, Cecily Clark points out that

"these Peterborough annals are not merely one of the earliest Middle-English documents; they are also the earliest example of that East-Midland language which was to be the chief ancestor of our Modern standard English" (p.xvi).

These annals are especially interesting because

...most of the basic developments leading to Modern English are illustrated in this brief text" (p.xvi).

Up until the annal for 1121, the Peterborough Chronicle is mainly a copy of the Anglo-Saxon Chronicle - a more or less annual summary of the affairs of the kingdom which was circulated and copied in various religious houses in England. Occasionally the copies of the circulating chronicle were supplemented with interpolations concerning local events<sup>1</sup>.

The circulating annals were expressed in the literate West-Saxon dialect which had served as a "schriftsprache" among the monasteries and the English court. By late OE, the dialects of the local monasteries had slowly diverged from this standard, so that the schriftsprache was eventually quite conservative in comparison with the actual spoken language in many areas. There is evidence of this drift in the language of the "interpolations" in the Peterborough Chronicle. Since the scribe who composed these comments was probably a native of the East Midlands<sup>2</sup>, it is not surprising that his compositions display some deviations from the style of the main body of the annals.

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1. Note, however, that the date of composition of each of these interpolations is far from clear. Of course they were composed after the events described, but not necessarily at the same period as the main body of the annal.

2. According to Clark, "in the late twelfth century and in the thirteenth abbeys recruited their monks locally, and this was probably the practice in the early twelfth century also" (p.xxx).

From 1121 onwards, the annals were no longer circulated to Peterborough and the remainder of the document was entirely composed and written at the abbey. According to Clark, there were probably two authors of this Peterborough composition. The annals of the first continuation (c.1121-1131) were probably written by a single monk periodically through the decade. The final continuation (c.1132-1154) is in a very different hand, with radical changes in style, spelling, etc. (Clark p.xi-xiii). The final continuation also seems to be the composition of a single individual.

The language of these twelfth century monks exemplifies the grammar of early Middle English. As we shall see below, the first continuation is particularly interesting, because significant remnants of substantive inflection still survived. Nonetheless, it is apparent that in both continuations, inflection is no longer the most important signal of grammatical features. In the next section, I will describe the details of the inflection which remains in the language of the first continuation. In the following two sections, I will show that the distribution of this inflection provides evidence that an important change has occurred in the rules of English grammar.

### 6.1.1 Inflection in Peterborough

The first continuation does provide some signals of Case in the affixes of inflection, but the paradigms are obviously much reduced from those of OE. There are also some remnants of grammatical gender in specific nouns, but in general, natural gender is predominant. Number is signalled by inflection in all of the annals (though not in every paradigm). There are exceptions to the patterns which I will describe below, but I believe that this is a fair representation of the language of the text.

The noun affixes in the first continuation have the following distribution:

#### 1) Nouns

	Singular
nom./acc.	0
dat./inst.	e
gen.	es
	Plural
nom./acc./	
dat./inst.	es
gen.	e

Compared to those of OE (cf., Chapter 2), the lexical entries for this paradigm are quite simple:

## 2) Nouns

1. O	[	]
2. e	[+Inherent]	
3. es	[+Genitive]	
4. e	[+Genitive, +Plural]	
5. es	[+Plural]	

Two markers are vaguely associated with plural and gender features: O [+Plural, +Neuter] and e [+Plural, +Feminine], so that O sometimes represents neuter plural and e can indicate a feminine plural.

It is notable that there are no individually unambiguous forms in this paradigm. This confusion is increased by the fact that, with a few exceptions (e.g., the "long stemmed feminine nouns" (Clark, p.Lii)), only monosyllabic nouns appeared with the dative singular marker. Moreover, the form "-es", the signal of nominative/accusative plural<sup>3</sup>, sometimes encroaches on the environment of the genitive plural (e.g., c.1129 aercedaecones, preostes), a change which is virtually completed in the final continuation. By itself, the nominal paradigm reveals very little about the grammatical features of underlying representations.

In comparison to OE, the strong adjective paradigm has also been levelled:

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3. This syncretic form might be thought to be the genitive singular, but since [+/-Plural] precedes [+/-Genitive] in the hierarchy of features, I suppose that the syncretic form is the plural.

### 3) Strong Adjectives

	Singular
nom./acc./	
dat./inst.	0
gen.	es

	Plural
nom./acc./	
dat./inst.	e
gen.	(r)e

The paradigm has only four affixes:

### 4) Strong Adjectives

1. 0	[ ]
2. es	[+Genitive]
3. e	[+Plural]
4.(r)e	[+Genitive, +Plural]

Weak adjectives are reduced to a paradigm of two forms and even then, the genitive plural marker is used only rarely:

### 5) Weak Adjectives

1. e	[ ]
2. ene	[+Genitive, +Plural]

There is some complication in the account of the personal and demonstrative pronoun paradigms. Clark points out that "this is one of the earliest surviving literary texts written under strong dialectical influence since the establishment of the West Saxon Schriftsprache, and no doubt the author was aware that by that standard much of his own language was provincial or newfangled" (p. Lvii).

According to Clark, this awareness encouraged the use of archaic forms.

The attempt to render a literary style is clearly the source of the rare use of the archaic "m" forms in dative demonstratives (in contrast to the far more common "pone"

forms). In the interpolations, the dative marker is sometimes written "þan":

- 6) First Continuation  
c.1122 to þam wolcne  
c.1123 on þyssum geare  
c.1123 to þam kyng

Interpolations  
c.656 to þan abbode  
c.675 of þan aercebiscop  
c.675 to þam pape

This form appears only after prepositions. Another form in the text - "þe" - has the same distribution (i.e., post-preposition)<sup>4</sup>. Presumably, this second form is the one which is native to Peterborough.

The form "þet" seems to be used mainly for emphasis. It appears only with inanimate nominals and the (OE neuter) noun folc "people", so it must be specified for gender. But all of these nouns can appear with other (non-emphatic, non-neuter) demonstrative forms, as well.

According to Clark, the form "se(o)" is also an archaic form. She argues that the monk uses this form where he would normally pronounce "þe". But in his dialect, "þe" was also the unstressed form of the plural "þa" and the dative "þam", so he slipped into an "ultracorrect substitution" (p.Lvii).

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4. There is one exception - c.1122 se fir... forbearnde ealle pe mynstre. I have no account for this.



Although it is true that "se(o)" is used (rarely) with plural referents, there is nonetheless a systematic pattern in its use which differentiates it from "þe".

In the singular and plural only "se(o)" (or plural "þa") is used in nominative environments<sup>5</sup>. The form "þe" only appears in post-prepositional environments. Moreover, although "se(o)" does appear in non-nominative environments, these seem to be quite generally instrumental. The form "se(o)" appears with the OE "instrumental" prepositions þurh "through", fram "from", for "because", wip "against, with" and of "from" - usually with a clear instrumental reading:

7) c.1123

se aercebiscop... waes þaere son gebletsode  
that archbishop was there soon blessed

to biscop fram se biscop of Lundene and  
to (be) bishop by the bishop of London and

se biscop Ernulf....  
the bishop Ernulf...

c.1124

for se miccle unfrip þet he haefde wip se king  
because of that great hostility that he had  
against that king

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5. Clark (p.Lvii) presents one example of a "nominative" use of the form "þone", in the first continuation:

c.1127

þus earmlice waes þone abbotrice gifen...  
thus badly was that abbacy given...

This seems to me to be an impersonal usage - "þone" is actually a signal of accusative, not nominative.

c.1126

þæt waes eall done... þurh se Scotte kyng  
that was all done... through that Scottish  
king

c.1127

for to hauene sibbe of se eorl of Angeow  
for to have peace from that earl of Anjou

This restriction to nominative and instrumental environments suggests that "se(o)" was specified [-Accusative] in opposition to "þe"<sup>6</sup>. Note, however, that the (unmarked) form "þone" could also appear in instrumental environments.

The feminine form "þaere" only appears once. The instance involves an OE feminine noun - maesse "mass" (c.1122 sungen þaere messe). This is clearly an archaic usage.

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6. This account fails to explain the use of "se(o)" in two instances - after toforen "before" in c.1123 and after flemdon "put to flight" in 1131.

The distribution of the forms is as follows:

8) Demonstratives

	Masc./Neut. /Fem. se(o)	Singular Neuter	Feminine
nom.		ɸet	
acc.	ɸone	ɸet	ɸaere
dat.	ɸam~ɸe~ɸone	ɸet	
inst.	se(o)~ɸone		
gen.	ɸes		
		Plural	
nom.		se~ɸa	
acc./dat./inst./gen.		ɸa	

I suggest that this distribution follows from the following lexical representations;

9) Demonstratives (stem = pe+<sup>7</sup>)

	1. ɸa	[+Plural]
	2. ɸes	[+Genitive]
	3. se(o)	[-Accusative]
	4. ɸe	[+Inherent, +Accusative]
	5. ɸone	]
	6. ɸet	[+Neuter, +Emphatic]
archaic ---->	7. ɸaere	[+Feminine]
" ---->	8. ɸam	[+Inherent, +Accusative]

Given that this system of distinctions in the demonstrative paradigm is lost in the final continuation, it is not

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7. I shall not confuse the exposition by providing a separation of affix and stem in the illustration of these lexical entries, though I think it is real. I assume that the alternations in the vowel of the stem are due to phonological processes.

surprising that the unmarked form sometimes supplants the specified forms in the speech of the author of the first continuation. Note that only twenty years separate the two continuations. If the second author was growing up in the period when the first author was writing, then the forms in the demonstrative paradigm were probably phonologically reduced in the daily speech of Peterborough, even during the life of the first author. Only the older speakers (like the author of the first continuation) would remember the underlying forms when they wrote.

It is notable that, aside from personal pronouns this is the most explicit paradigm in the language of Peterborough. Nouns and adjectives opposed genitive Case to other Cases and distinguished number and [+/-Inherent], but these signals by themselves were always ambiguous. Demonstratives provide the only signal of the opposition between nominative and non-nominative Case, and the other signals in this paradigm are often the only inflectional signal of the other properties of the substantive phrase.

This suggests an explanation for the rise in the use of demonstratives during late OE and early ME. Grammatical features are signalled in order to ensure the correct interpretation of theta-assignment and reference. Moreover, the nominative/non-nominative distinction is parallel to a grammatical function (i.e., subject/non-subject). Given the

significance of the properties displayed in these signals, the increase in the use of demonstrative forms is entirely natural. The demonstratives continued to provide an overt signal of crucial properties of the substantive phrase, while the signals for these properties in other paradigms were obscured by phonological levelling.

Why was it the demonstrative paradigm which survived with these distinctions? One reason might be the fact that these are usually monosyllabic words, so that word stress would keep some vowel distinctions alive. However, I suspect that the important reason for this survival was that in OE the demonstrative inflection was usually the head of the substantive phrase (i.e., the functional category in the theta-position). Since this is a crucial position in the substantive phrase (for Case-visibility and theta-binding), it is not surprising that this matrix should preserve signals which are not overt in the realization of peripheral matrices.

The third person personal pronouns of the first continuation have the following forms:

	Masculine	(Third) Singular Neuter	Feminine
nom.	he	(h)it	
acc.	hine~him	(h)it	hire
dat. /inst.	him	(h)it	hire
gen.	his	his	hire
		Plural	
nom./acc./dat.		hi	
gen.		he(o)re	

The specifications of the third person paradigm are straightforward<sup>8</sup>:

10) Third Person Pronouns (stem = hi+)<sup>9</sup>

1. [-High]	[-Accusative]
2. t	[+Neuter]
3. re	[+Feminine]
4. s	[+Genitive]
5. m	]
6. (o)re	[+Genitive, +Plural]
7. 0	[+Plural]
8. ne	[-Inherent, +Accusative]

I suggest that "hine" was like "þam" and "þaere" in that it was an archaic form which the author used in imitation of the earlier *schriftsprache*. There are several independent reasons

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8. I shall not provide an account of the first and second person forms, since they have little relevance to the topics which engage our attention here.

9. I assume that, as in OE, there is a phonological process (V --> [-High]/\_\_\_[-High]) which lowers the stem vowel in the nominative singular and in the plural forms.

to make this assumption.

As Mustanoja points out (p.129), the replacement of "hine" by "him" began as early as the tenth century in the north and gradually spread to the south. Since the Peterborough document was composed two hundred years later, it is not surprising that this change had already been established in the speech of the abbey at the time of the composition of this document.

Moreover, it is apparent that in this text, "hine" is always optional. There is no environment where "hine" appears where "him" is not also used (in fact "him" is by far the more common form everywhere).

Finally, it is pertinent that the use of "hine" is found only in the first continuation and even there it is concentrated in the earliest annals (when the memory of the *schriftsprache* was prominent in the mind of the author). "hine" appears four times in the annal of 1123, once in 1124, three times in 1125, four times in 1126, twice in 1127. The last four years of the first continuation have no examples of this form.

The monk who composed the first continuation had apparently been exposed to the speech of the *schriftsprache* and he tried to conform to that standard by importing the forms "hine",

"þaere" and "þam" to his own speech<sup>10</sup>. Since the author of the second continuation was hardly exposed to actual speakers of the *schriftsprache* (Standard West Saxon), he did not use these forms.

#### 6.1.2 OE to ME; the Default Parameter

As I have illustrated above, the author of the first continuation of the Peterborough Chronicles used some substantive inflection to signal Case features. But I suggest that in both of the continuations of the Peterborough Chronicle, the signals provided by the affixes of substantive inflection are no longer central to the interpretation of [+/-Inherent]. Even in the first continuation, the main signal of this feature is configuration.

In OE, the redundancy rules for [+/-Inherent] ensured only that the subject argument (the argument in agreement with INFL) was specified [-Inherent] by rule. All other arguments were [+Inherent] - unless they were specified differently in lexical entries or by the imposition of the marked value according to the Linking Conventions. The rules which were

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10. Similarly, one might suppose that speakers whose native dialect was West Saxon would make concessions to the provincial speech of the East Midlands monks (should they have conversation with such) by using more prepositions etc..



pertinent in OE are the following:

11) OE [+/-Inherent] Redundancy Rules

- a) [ ] --> [-Inherent] / [\_\_\_\_,+Tense]
- b) [ ] --> [+Inherent]

The OE rules require that prepositions, nouns, adjectives and verbs have inherent Case defaults.

In OE, however, the explicit paradigms of substantive inflection permitted many exceptions to be encoded in individual lexical entries. That is, when a child was learning the language, he would hear the inflectional endings of each argument and recognize that some of these were indications of the marked value of this feature. Where the feature could be encoded in lexical entries, there would be three possible specifications:

12) OE Lexicon

Verb [-Inherent]	Preposition [-Inherent]	(marked)
Verb [ ]	Preposition [ ]	(unmarked)
Verb [ ]	Adverb [ ]	(intransitive)

The markedness of the [-Inherent] entries is illustrated in the restricted numbers of accusative assigning verbs and prepositions in OE<sup>11</sup>. Of some eighty prepositions listed in Mitchell's OE Syntax, only a handful require an accusative complement (or allow only an accusative/genitive

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11. The verb classes will be discussed more completely in the next chapter.

alternation). Similarly in OE, there were many fewer accusative assigning verbs than, for example, in present English.

In OE, the overwhelming majority of prepositions appeared with inherent Case complements - many only appeared with inherent Case complements. The loss of Case signals in inflection encouraged speakers to use more prepositions (e.g., the early loss of instrumental signals). These elements could disambiguate an utterance by "naming" the theta-role which was assigned to an associated argument. As inflection was further reduced and as [+/-Inherent] and [+/-Genitive] distinctions were lost or confused, prepositions became more and more prominent in English.

The loss of the signals of substantive inflection and the frequent use of prepositions to support an inherent Case interpretation in the verb phrase allowed language learners to make a generalization about default domains for Case features which was different than that of OE. To the first ME speaker, it seemed that all arguments which appeared in the verb phrase without a preposition were always [-Inherent]. I suggest that this generalization was encoded in the following redundancy

rules:

13) ME [+/-Inherent] Redundancy Rules

- a) [ ] -->[-Inherent] / [\_\_\_\_, +Tense]<sup>12</sup>
- b) [ ] --> [+Inherent] / [\_\_\_\_[-V]]
- c) [ ] --> [-Inherent]

The new ME rules required that:

- 14) i) - prepositions had inherent Case complements unless lexically specified (=OE)
- ii) - nouns had inherent Case complements unless [-Inherent] was imposed at D-structure by the Linking Conventions (=OE)
- iii) - adjectives had structural Case complements unless [+Inherent] was imposed at D-structure by the Linking Conventions (not OE)
- iv) - verbs had structural Case complements unless [+Inherent] was lexically specified (not OE)

These revisions in the redundancy rules reversed the default value for [+/-Inherent] in verb and adjective phrases. It is my thesis that this reversal is the most significant difference between the grammar of OE and that of ME and later stages of English. This was the parametric change which would have consequences developing through hundreds of years of English speech.

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12. I suppose that the rule for subject arguments (i.e., those arguments in agreement with INFL) is a universal redundancy rule and still existed in ME.

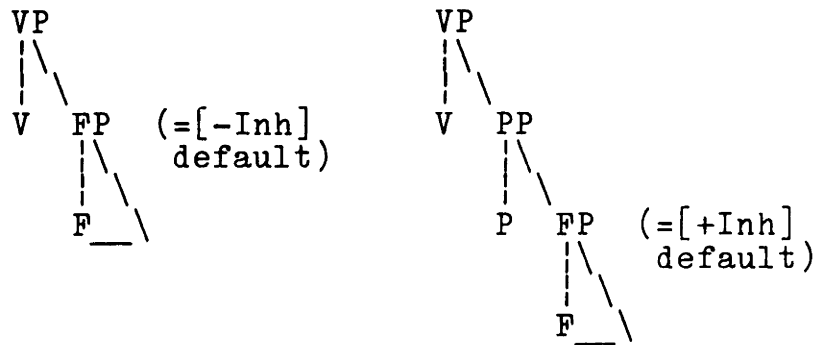
In the new ME lexicon, verbs had to list exceptions with the feature [+Inherent], while prepositions retained the OE pattern of specifications:

15) ME Lexicon

Verb	[+Inherent]	Preposition	[-Inherent]	(marked)
Verb	[	Preposition	[	(unmarked)
Verb		Adverb		(intransitive)

The ME speaker would often signal the opposition of [+/-Inherent] in substantive phrases by opposing the domains VP and PP - a configurational opposition rather than a simple morphological opposition:

16) Default Domains in ME



Since the first ME speakers were acquiring their lexicon from data supplied by speakers of OE, there were many exceptional verbs to be learned (that is, many verbs appeared with [+Inherent] arguments). In late OE the interpretation of these complements was supported by accompanying prepositions which "named" the specific theta-role involved. In early ME, many of these supporting prepositions came to be seen as mere "markers" signalling the appropriate grammatical features. That is, these elements lost their categorial features and



to be understood as a structural Case argument.

### 6.1.3 Default Domains in Peterborough

Since the first continuation still provided an explicit opposition between [+/-Inherent] Case arguments in the forms of inflection, this document provides direct evidence of the ME generalization of Case and domain.

Clark points out that in the nominal paradigm of the continuations,

"after prepositions... there still remain in our text some vestiges of dative inflections. In the plural the only examples are "fram his agene manne" 1127, and perhaps "on ealle westme" 1124, 1125 and "undernaepan his fote" 1070 (the earlier Interpolations also contain a number of good examples), with which may be compared "on fote" 1140 (both these examples being possibly, however, dat. sing.)...

In the singular inflected forms are more common... it is with monosyllabic stems that the dative inflection is most often preserved, thus, "to his inne" 1123, "on corne" 1124, "in his mycele codde" 1131, but also "on þes abbotes settle" 1131 and "in quartenne" Final Continuation...

The usage here is... more advanced than that of the West Midlands, where the -e of the dative singular was regularly preserved after prepositions during the early Middle-English period" (p.Li - Lii).

One might suggest that outside of monosyllabic stems, the final vowel was deleted by a phonological rule. Underlyingly the vowel affix was always present with post-prepositional nouns (and sometimes with nouns in marked verbal environments). Clark points out that

"whereas in Old English the preposition determined the case [marker J.S.L.], here the form seems to depend on the noun, for post-prepositional inflections seem almost confined to certain words and phrases" (p.Lii).

Perhaps only these nouns could supply phonological "timing units" which could realize the affix "melody". It appears that nominal dative inflection is quite generally post-prepositional in the continuations of the Peterborough Chronicle.

The notion that [+Inherent] Case was general in PP is supported from the observation of the distribution of forms in the other paradigms. In Personal pronouns, the form "hine" (specified [-Inherent]) never appears after a preposition. Only the unspecified form "him" is used in that environment. Clark observes that

"after prepositions dative forms are now regular, and since amid the variations of Old-English usage the dative was the commonest case after prepositions, this generalization is logical enough" (p. Liv).

Of course, the unmarked form "him" could also appear as the direct object of a verb. Nonetheless, every direct argument of a verb could also be expressed with "hine" - even the second arguments of double object verbs like "gifan" (give) which were obviously dative Case in OE:

- 18) a) c.1125 eall hine iaefen micle gife & maere  
 everyone gave him great gifts and more
- b) c.1127 iaef hine þone eorlðom
- versus
- c) c.1123 Se kyng him geaf þone aercebiscoprice.

The accusative Case of verbal (and adjectival) complements is also visible in the distribution of nominal inflection.

Clark observes that,

"whereas, ...the copied text regularly shows the Old-English use of an inflected genitive after certain verbs and adjectives, the Continuations regularly replace this, like the dative in similar functions, either by uninflected forms or by prepositional periphrases, thus weald eall Engleleand, of his gyfe naht ne rohton 1123, iaernde... þone abbotrice 1127; and in the Final Continuation thre niht ald mone, ful of castles" (p.Lvii).

The distribution of the [+Inherent] element of the demonstrative paradigm also conforms to this generalization. The forms "þam" and "þe" ([+Inherent]) appear only after prepositions, except in a single example in the interpolations. But this example is obviously a marked exception. The verb "þancodan" clearly requires a dative argument in OE texts:

19) Interpolations c.656

	(nom.)	(dat.)	
þancod wurp hit		<u>þon</u> haege aelmihti God	
thanked be it		that high almighty God	
	(gen.)		
þis wurpſcipe		þet her is gedon	
(of) this worthy deed		that here is done	



It is apparent that the inflection which does remain explicit in the annals of Peterborough is distributed according to the ME generalization of Case and domain. With a few marked exceptions, all arguments which appear with prepositional forms are assigned inherent Case and all "direct" arguments of verbs are assigned structural Case. In the final continuation of the chronicle, the distinctive forms in the pronominal and the demonstrative paradigms are abandoned and only the configurational realization of Case remains. Clark observes that

"English is changing from a synthetic language to an analytic one before our eyes" (p. Lvii).

## 6.2 Functional Category Signals in ME

Each affix of substantive inflection in OE was a signal of the oppositions of several syntactic features. These features are specified in various elements of the underlyingly syntactic environment (e.g., Case from the verbal or prepositional lexical entry, gender from the noun, etc.). In the Peterborough dialect, affixes are less explicit individually. Often the properties which are signalled by a single OE affix must be expressed in a combination of ME forms (and through configuration):

- 20) c.1125 to ealle ([+Inh]) pa biscoprices ([+Plural])  
       c.1128 ofer bet ([-Animate]) wrecce stede ([+Inh])

In short, the "portmanteau" inflection of OE is "unpacked" in ME.

The loss of the portmanteau inflection meant the loss of the explicit system of Agreement signals which had permitted the flexible "scrambling" of word order in OE poetry and stylistic prose. Aside from the demonstrative paradigm in very early ME, each paradigm of ME inflection could only signal number or Genitive Case.

The other features in the syntactic environment (i.e., [+/-Inherent, +/-Accusative, +/-Feminine, etc.]) are usually only available in the signal of configuration. If a ME adjective were "scrambled", for example, its inflection would not provide an index to establish a link to the D-structure representation of one substantive phrase. This is not to say that the process of Agreement (=feature percolation) is not the same in OE and ME. The only difference is that in ME the lexicon does not provide a portmanteau signal of agreement. Lacking this signal, each element of a substantive phrase is required to signal its constituency by being realized in the appropriate environment for feature percolation at S-structure (as well as at D-structure).

As might be expected, the basic relation between functional and lexical category remains the same in OE and ME. So the

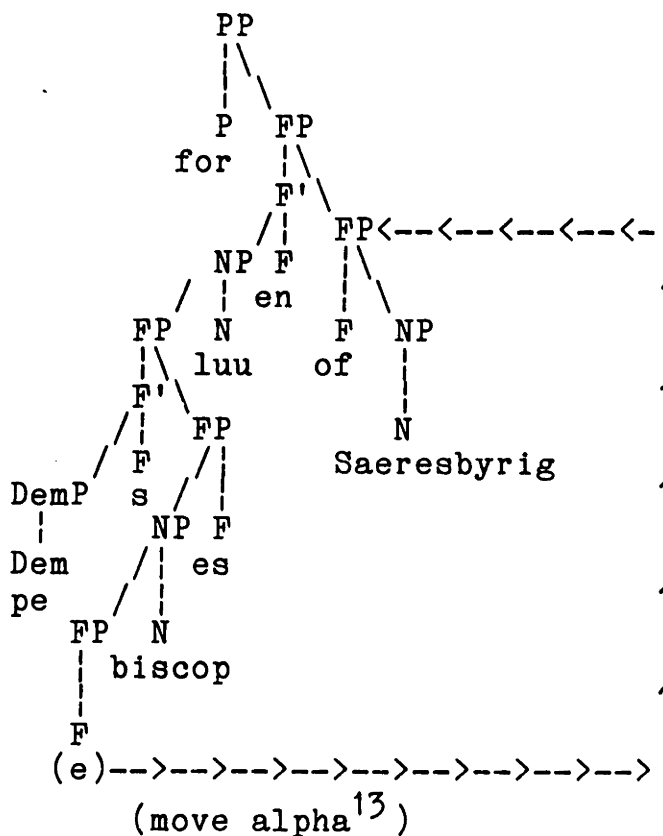
structure of the Peterborough noun phrase is familiar:

21) c.1123

ac se kyng hit nolde undon for  
 but the king it not wished (to) annul because of

pes biscofes luuen Saeresbyrig  
 the bishop's love (of) Old Sarum

(but the king did not wish to annul it,  
 for the love of the bishop of Old Sarum)



The specifier position in the phrase headed by the affix of nominal inflection is the same as in OE (i.e., a right-branch). Theta-assignment is still leftward. New considerations arise through new elements in the ME lexicon.

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13. Note that this "of" is an inserted preposition - a functional category rather than a preposition.

### 6.2.1 Inserted Prepositions

As Mitchell points out, the practice of glossing texts (e.g., Latin texts, etc.) with prepositions goes back to OE:

"the prepositions aet, for, from, mid, on and to were sometimes used by Anglo-Saxon glossators to mark the case of the noun or adjective over which they were placed" (§1158a).

I would argue that in ME, the use of these forms as Case markers had become an integral part of English speech.

According to Mustanoja:

"the use of the prepositions is greatly expanded and enriched in late OE and in ME. The syntactical relationships formerly expressed by means of the case endings now come to be expressed mainly by means of word order and prepositions. Of, for example, becomes a favourite equivalent of the genitive... to and for are widely used for the original dative... and mid, with, through, by and of, for the instrumental" (p.348).

This increase in the use of prepositional forms actually springs from two sources. Some prepositional forms in ME (as in OE) are real prepositions (lexical categories with LCS representations which "name" the theta-role which is assigned by the associated LCS predicate). Many of these constructions are the same or similar to those in OE (e.g., the use of "instrumental" prepositions). In ME, however, the preposition is sometimes required because the preposition domain is

necessary to signal the (default) assignment [+Inherent]<sup>14</sup>. These prepositions signal [+Inherent] by virtue of the ME redundancy rules.

Because these prepositions are used simply to provide a particular default domain, their semantic content (i.e., the interpretation of their LCS predicate) is not so important. Speakers began to use prepositions in a wider environment, with less attention to the sense of the prepositional predicate. This disregard for semantic content led to a further development.

Some prepositional forms in ME are not lexical categories. Some prepositions (such as "of, on, to, for, etc.") are matched with parallel "dummy" forms which have no categorial features and no LCS representation. These forms are simply signals of grammatical features. Like the affixes of inflection in OE, they are inserted into syntactic representations at S-structure. They signal the feature matrix of the functional phrase in the theta-position of substantive phrases.

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14. Recall that in OE and ME, [-Accusative] is assigned to representations during the derivation, according to the Linking Conventions. The substantive phrases associated with these prepositions are instrumental (not dative = [+Accusative]) because the LCS dictionary definition of the preposition forces a particular interpretation of the theta-role which is being assigned.

The "dummy" prepositions were not constrained by any LCS representation and this permitted them a wider distribution. The forms could be used whenever the Case features which they signal were specified in the matrix where they were to be inserted.

#### 6.2.1.1 "of"

In the Peterborough Chronicles, we see the first use of "of" for the "genitive of identification":

- 22) a) c.1123  
      se burh of Lincolne  
      b) c.1127  
          þone eorldom of Flandres

In OE, this construction was only signalled by the genitive affixes of substantive inflection. But the last examples of this type of genitive of identification are found in early ME (Mustanoja p.81):

- 23) Ormulum 9446  
      Rommess kineriche  
      (of) Rome kingdom

In present English, one cannot say "\*Lincoln's town" or "\*Flander's earldom". Similarly, Mustanoja notes that the regular use of periphrastic "of" for the possessive genitive is established in the twelfth century (p.74). Thus the form "of" develops new uses in early ME.

The use of the preposition "of" had come to be identified

with the feature [+Genitive]. In ME a new form "of" was introduced - a non-lexical (functional) category which was merely a signal of the feature. Mustanoja points out that although the "periphrastic" genitive is found in OE, it only spreads gradually in early ME. Around the thirteenth century when its use begins to increase rapidly.

In one example in the first continuation, the prepositional form was actually added after the original composition (i.e., above the line of script) in order to clarify the [+Genitive] Case specification of an argument which was already [+Inherent] by virtue of already being in the domain of a ME preposition:

24) c.1131

þa munecas of þa mynstre flemdon  
the monks of that monastery chased

se oþer abbot Heanri ut <sup>of</sup> þa mynstre  
the other abbott Henry out from that monastery

The point is that "ut" does not signal all of the pertinent Case features required for the interpretation of the associated substantive phrase<sup>15</sup>. If the argument were accusative then the sentence would mean that the monks chased

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15. Mitchell quotes Wende who includes the form "ut" among "a list of adverbs which can refer back to a word which precedes them, just as if they were prepositions in post-position" (\$1064). In OE, "ut" is not a preposition. Others on this list include "on, to, aer, inne and up".

Henry out to the monastery. If it were dative, then it would mean that the monks chased Henry out in the area of the monastery. If it were genitive (as the form "of" assures us that it is) then the monks chased Henry out from the monastery. In this example, the prepositional form "of" is being used solely as a Case feature marker.

On the other hand, Visser points out that even in OE, the partitive genitive construction often included the preposition "of". Here the transition from lexical category to functional category (from preposition to [+Genitive] marker) is not so obvious. But given the abundant use of the periphrastic "of" in ME, one might suppose that this transition did occur. In later ME the partitive usage always required the use of the prepositional form (e.g., "I ate of the loaf" but \*"I ate loaf's").

#### 6.2.1.2 "on"

The following example from the final continuation of the Chronicles shows another inserted prepositional form. Here, "an" marks the feature [+Inherent]:

25) c.1135  
he lai an slep in scip

According to Visser,

"already very early in the Middle English period we find the preposition on in the phrase of the type on live, on sleep represented by a. In the beginning



this a remained separated from the following noun,  
but soon it was joined to form one word" (§301).

The Peterborough example is a forerunner of the following:

- 26) a) c.1200 Moral Ode 23  
Hwile he beþ aliue
- b) c.1250 Layamon 1159  
Heo weren a-slepe
- c) c.13... Curs, M. 13617  
þai wald ha been awai ful fain

Clearly this form has a different character than its ancestor, the OE preposition "on". In early ME, the form "on" came to be seen as a functional category (in addition to its separate lexical entry as a preposition). As a functional category, it was used as a [+Inherent] marker in substantive phrases.

Later, as [+Inherent] arguments were generally abandoned in the drift of the English lexicon, this Case marker became isolated. In ME, this was a common and productive construction but in present English, many of the constructions have become lexicalized (e.g., afloat, alive, asleep, away, asunder, afire, aloft, astray, o'clock, etc.).

In present English, the form "a-" is no longer a signal of [+Inherent], but it is a signal that a functional category matrix has been provided in the D-structure representation (from the lexical entries of these adjectives). It is notable



### 6.2.1.3 "to" and "for"

Other prepositions which became markers for [+Inherent] in early ME were associated with particular classes of verbs which require [+Inherent] in their complements. These will be discussed in Chapter 7.

I suggest that these verb classes were "marked" (i.e., [+Inh]) in the early ME lexicon, so that "inserted prepositions" were required to signal this markedness. The subsequent drift in the lexicon encouraged revisions of many constructions involving prepositions or the parallel Case markers. The Case markers which were used with these verbs (e.g., "to" and "for") were abandoned in later periods as the verbs with which they occurred were converted to the "unmarked" accusative class. This process of reanalysis also encouraged a reanalysis of the parallel prepositions.

For example, the OE preposition "to" had allowed more than one specification of Case on its associated substantive phrase. According to Mitchell,

"the most common case is the dative, but the genitive is found and occasionally the accusative" (§1209).

But the later English "to" (from about c.1300, see Chapter 7) required [-Inherent] (accusative) Case. That is, in present English "He went to the house" can only mean "direction toward" (not "in the area"). In OE this particular meaning

was not signalled by the preposition alone - the substantive phrase was also required to realize [-Inherent, +Accusative] in its inflectional affix. In present English, "to" is a "marked" preposition. It's lexical entry specifies the feature [-Inherent] in a complement phrase:

29) The Lexical Entry for "to" (present English)

PAS: [-N, -V] [-Inherent]

LCS: locative

But this development already takes us well beyond the period under discussion here.

Although "to" is not used to signal [+Inherent] in the Peterborough Chronicle, there is some evidence that "for" was already a marker for this feature value. In OE, adverbial clauses were usually expressed as relative clauses headed by a Case marked demonstrative pronoun and with or without an accompanying preposition (e.g., "to þy þe" = in order to, "for þam þe" = because). As Clark points out, in the continuations of the Chronicles, these clauses are no longer relatives.

"The use of til as a conjunction... seems to be elliptical for til þat, based on the Norse til þess, possibly with some influence from the native to þam þat. Such ellipsis by which a preposition comes to serve as a conjunction is seen also in the substitution of for for for þam þe, for þy þe, found as early as the annal for 1123, and it may be compared with the reduction of þa hwile þe to wile, first recorded in the Final Continuation" (p.Lxv):

30) a) c.1123

ac it naht ne beheld for se biscop  
but it nothing not sustained because the bishop  
  
of Saeresbyrg waes strang  
of Old Sarum was strong

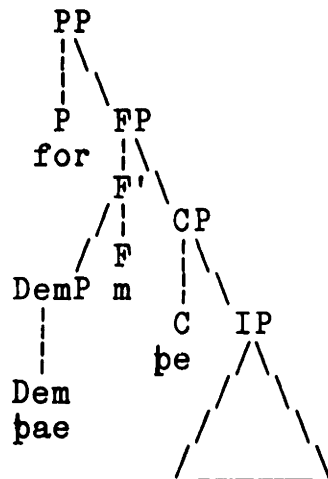
b) c.1137

dide aelle in prisun til hi iafen up here castles  
put all in prison in order that they give up their  
castles

Since the OE adverbial clause must be headed by a functional category signalling Case, it is natural to assume that the same is true of the clause in ME. I would argue that the crucial difference between the constructions in these two languages rests on the difference in the phonological specifications of the forms in the lexicon which signal Case.

In OE, the Case signals are affixes (i.e., phonologically incomplete), and they must appear with a stem. The stems, however, are lexical categories and they bring an LCS variable to the representation. Therefore they fix the reference of the variable which is assigned the pertinent theta-role. The stem and affix together are a well-formed substantive phrase. The content of the clause can only be associated with this substantive phrase by introducing it as a relative clause, with the demonstrative as the lexical head of the relative. In OE, the structure of such an adverbial clause is relatively complicated:

31) OE Adverbial Clause



In the language of Peterborough, however, the Case signal was not an affix (i.e., it was phonologically complete). Therefore, no stem was needed to permit a phonological representation. Since no lexical category was required (as a stem), the clause itself provided the reference of the variable which was assigned the theta-role and which realized Case. So the phonological independence of the ME Case signal permitted a much simpler structure:

32) ME Adverbial Clause



This analysis depends on the assumption that these adverbial clauses must be Case-marked in order that they are visible as subordinate clauses at LF. The differences between the OE and

the ME constructions may then be understood as springing from the distinction that in OE Case signals were affixes while in ME Case signals were phonologically independent.

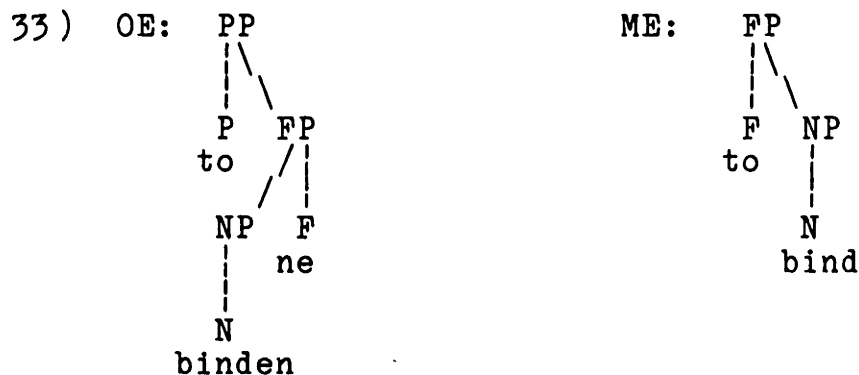
Another reanalysis of an OE prepositional form in ME may be observed in those constructions involving "to" and an infinitive. Mustanoja describes the OE infinitive as "originally a noun of action" (p.512). In OE, besides the bare-infinitive form, there was an expression (to indicate, among other things, "purpose", Mustanoja p.514) which involved the preposition "to" and an inflected infinitive (e.g., "bindan" -to bind, versus "to bindenne" -in order to bind).

According to Mustanoja, in early ME

"the to accompanying the infinitive loses its prepositional force and becomes a mere sign of the infinitive. This development begins early and is completed in the course of the 13<sup>th</sup> century... the to and the infinitive are looked upon as forming an inseparable unit equivalent to a noun and capable of being used, for example, as the subject and object of a verb. In late OE and early ME the use of the infinitive with to increases rapidly in comparison with the plain infinitive..." (p.514).

As in other paradigms, the inflection which appeared with OE infinitives was lost in the phonological evolution of English toward ME. The new ME "to" form was no longer a preposition. Since the "to" and the infinitive form are an inseparable unit which has the distribution of any substantive phrase, I suggest that in these construction, the "to" form was merely a Case signal - the ME equivalent of the OE affixes of

inflection. The "to" is a functional category marking the theta-position of the nominal infinitive phrase:



Notice, however, that I do not represent "to" as the head of a clause. I believe that "to" evolved further in the later history of English. As the markedness of the verb classes in the English lexicon was adjusted to the new default for the Case feature [+/-Inherent], there was less and less need for inserted prepositions to signal the marked value of this feature (i.e., [+Inherent]). When it was thus isolated, the use of the "to" form with the infinitive underwent a particular revision and became a signal of INFL rather than a signal of Case. The form "to" was seen as INFL (and the infinitive form was seen as verbal) only well after the beginning of ME<sup>16</sup>.

At the beginning of ME, other prepositional forms also began

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 16. For some discussion of the further development of this construction in the history of English, see Lightfoot (p.186-198)



to appear with the infinitive. Mustanoja mentions "at, till and for" (p.515). As Visser observes, however,

"this usage... never seems to have achieved the status of established idiom, except with for without to (Corineus was to wode ivane for huntī deor wilde), of which there are numerous examples in Middle English..." (\$976)

It seems that "to" and "for" are parallel in these constructions. Both are functional categories marking the Case of the theta-position of the substantive phrase.

### 6.2.2 Other Inserted Forms

The inserted prepositional forms were not the only markers of grammatical features which were initiated in the early ME lexicon. There is evidence that during this period the descendants of the OE demonstratives and the OE numeral "an+affix" (one) had lost their categorial features, even as early as the Peterborough chronicle. Similarly, certain WH-words were reanalysed in early ME.

#### 6.2.2.1 Determiners

In the final continuation of the Peterborough Chronicles, (c.1132-1154), the "demonstrative forms are reduced to "þe" (orthographically "þe/te/the"), "þa" and "þat" ("tat/that"). The inflected forms which had appeared in the first continuation had been abandoned (i.e., "se(o), þam/þon/þan, þone, þes"):

34) c.1140 com þe kinges cuen (first cont. =þes kinges)  
came the king's queen

According to Clark, in the final continuation the OE neuter form "þat" was no longer constrained to signal grammatical gender (although it did not occur with animate nouns). Moreover, the form had an emphatic interpretation (i.e., in opposition to "þis", etc.), "in such phrases as þat oper dei, al þat iren, to þat forwarde" (p.Lxiv). Similarly, the former OE plural form "þa" is emphatic. As Clark observes, this development is

"natural enough since it was only in stress that the [a:] was preserved: in all the examples here, þa rice men þe waeron swikes, þa opre, þa men þe hi wendon þat ani god hefden, þa xix wintre wile Stephne was king, the emphatic sense seems possible" (p.Lxix)

In contrast, the unstressed form "pe" (and the definite "an", also unstressed) were not emphatic. But even though they are not emphatic and even though these forms no longer provide signals of Case distinctions, they are widely used, even in environments which would not usually require a demonstrative pronoun in OE:

35) c.1135  
aet te Lammasse

c.1137  
henged up bi the fet.. bi the þumbes  
other bi the hefed

As Mustanoja points out (p.233), the definite article (the

descendent of the OE demonstrative) occurs not infrequently with the strong adjective in early ME - another innovation of this period:

36) c.1131 þes ilces geares (cf. OE þes ilcān geares)  
(of) the same year

In OE, of course, only weak adjectives were used in a substantive phrase with a demonstrative.

In ME. the forms "þe" and "an" were isolated from their previous OE paradigms. They were no longer configurations involving a stem and affix. Their distribution became wider and the frequency of their use increased. I suggest that, like OE inflection and like ME "inserted prepositions", the forms "þe" and "an" were functional categories. They lost their status as major categories and became merely signals of grammatical properties. Why are these signals required in ME?

The theory of interpretation proposed by Higginbotham argues that these are required for the process of theta-binding. In the present theory, theta-binding involves the realization of one (or more) of a language particular set of grammatical features in a matrix which governs the lexical category which must be theta-bound.

I suggest that in OE, the pertinent features were those of grammatical gender. It is significant that the loss of the

signals of grammatical gender and the rise in the use of these determiners took place during the same period in the history of English. The features of grammatical gender in OE and the features of determiners in early ME and later English serve parallel purposes in their respective grammars. The loss of gender signals encouraged language learners to look for a different set of theta-binding features. Because the affixes of the demonstratives had preserved gender and Case distinctions for a longer period than other paradigms, they were in frequent use in late OE. The early ME language learners no longer saw the gender and Case distinctions in these forms. But the demonstrative stems which remained could be interpreted as a signal of a different theta-binding feature (i.e., [+Determinate], [-Plural]). Where determiners were not used, the language learner found other grammatical properties (e.g., [+Mass, +Abstract, +Proper, etc.]). ME speakers initiated a new set of theta-binding features.

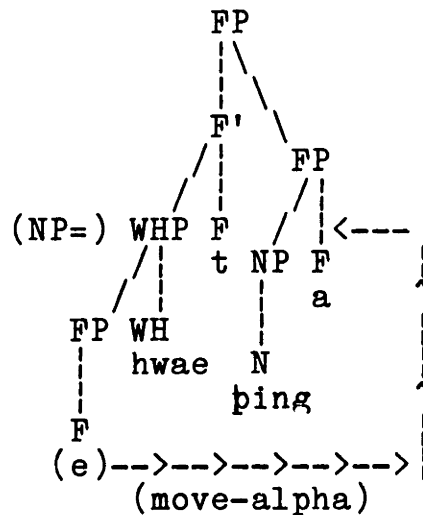
#### 6.2.2.2 "what"

It would seem that one of these new theta-binding features was [+WH]. Although I have found no examples in the continuations of the chronicles, Mustanoja points out that the interrogative pronoun "hwaet" is reanalyzed in late OE and early ME (e.g., in the Lindisfarne and the Rushworth Gospels and in the Ormulum):

"What in present-day English would be expressed by dependent what+noun (what thing) is expressed by hwaet+partitive genitive in OE (hwaet godes, hwaet pinga)" (p.182).

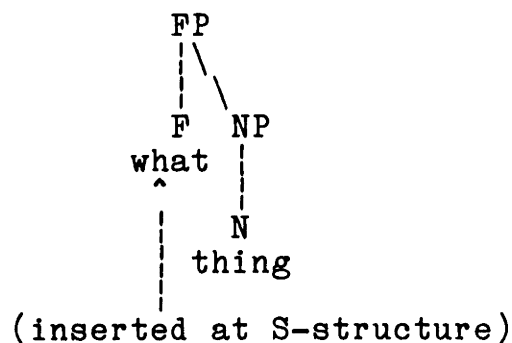
In OE, the interrogative form was the head of a noun phrase and the accompanying noun phrase was a complement of the interrogative noun:

37)



In the transition to ME, the "hwaet" form lost its categorial features and became a functional category - a mere signal of grammatical features. In the ME structure, only the accompanying noun phrase was a lexical category with its own LCS representation:

38)



Mustanoja points out that

"a contributory factor which must, of course, be taken into consideration is the effect of the weakening and disappearance of the genitive ending (e.g. hwaet þinga > hwat þinge > what þing)" (p.183)

The revision of the status of the form "hwaet" is quite parallel to the revisions in the determiners and inserted prepositions of ME. I suggest that [+WH] had also become a theta-binding feature for nouns in the new grammar. Note that "what" is in complementary distribution to the other "inserted" signals of theta-binding in present English:

- 39) a) \*the what thing  
b) \*what the thing  
c) \*a what thing  
d) \*some what thing  
etc.

### 6.3 Verb + Preposition Combinations

In prepositional phrases, the default value for [+/-Inherent] remained the same (i.e., [+Inherent]) throughout the history of English. But the use of "adverbial" prepositions was influenced by the reversal of this default in the verb phrase.

I assume (as discussed in Chapter 4, above) that adverbs and prepositions ([-N,-V] categories) do not bring an LCS variable to the syntactic representation. So these categories do not

participate directly in theta-assignment. To have an interpretation, they must be incorporated into the predicate of some other lexical category. This incorporation can indirectly influence the status of adjuncts and arguments in the thematic structure of the incorporating category, by explicating the details of that predication.

In OE, where [+Inherent] was the default in the verb phrase, adverbs were combined with verbs in such a way as to take advantage of this default. Visser points out that these combinations generally involved [+Inherent] complements (§321) (e.g., *aefterfaran* "follow", *aetwitan* "reproach", *began* "surround", *foresteppan* "advance", *oferdrencan* "flood", *ofniman* "take away", *onblawan* "blow against", etc.).

When the default in the verb phrase became [-Inherent], these verbs became "marked" in the new Middle English lexicon and eventually they were mostly abandoned or converted to structural Case complements (see the next chapter). At the same time, new verb+preposition combinations were introduced into English. These reflected the new orientation provided by the reversal of the default to [-Inherent] in the verb phrase.

Already in the continuations of the Peterborough chronicle, there are innovations which are indications of this change. Clark points out that many Norse words and constructions were adopted in the final continuation;

"the most significant of these are... the prepositional phrases, feren mid, gyfen up, leten ut, tacen to, and possibly to aeten bi" (p.Lxv).

These new verb+preposition combinations were merely the beginning of a general shuffle in the organization of the ME lexicon. Visser provides a list of

"a number of verbs...[where J.S.L.]...the preposition which originally formed a semantic unit with them was replaced by an other without change of meaning" (§398).

It is not clear to me that one can say that there is no change of meaning in such developments as "laugh of --> laugh at; listen on --> listen unto --> listen to; mock with --> mock at --> mock; hunt to --> hunt aefter --> hunt; etc.". I would argue that these revisions reflect the general drift in interpretation which swept through the English lexicon in the Middle Ages.

In ME, the [+Inherent] default in the verb phrase encouraged verb+preposition combinations which took [+Inherent] arguments - with the particular interpretation which that feature specification entails. The new default value made these OE combinations "marked" in the new lexicon and so they gradually disappeared. But the new default would open up the possibility of verb+preposition combinations which would take advantage of the new default value. These, of course, would be the combinations which could lend themselves to an interpretation which was compatible with [-Inherent]. This drift was merely beginning to blur the markedness of the



English lexicon in the language of twelfth century  
Peterborough.

#### 6.4 Complementizers and Relative Pronouns

Mustanoja points out that

"the OE combination of the demonstrative and þe (seþe, þone þe, etc.) survives down to the early 13<sup>th</sup> century as þe þe, þan þe, etc." (p..188, footnote).

In early ME, however, the forms "þe" (also "þa") and "þat" ("þet") usually appeared alone. Mustanoja asserts that "one feature characteristic of both þe and þat is that prepositions governing these relatives are placed immediately before the verb or at the end of the clause" (p..189)

That is, prepositions are always stranded, suggesting that these are complementizers - not relative pronouns.

In the Midlands dialect, these forms were opposed according to number and animacy<sup>17</sup>. Clark observes that in the final continuation of the chronicles, "þe" is used with an animate antecedent and "þat" with an inanimate,

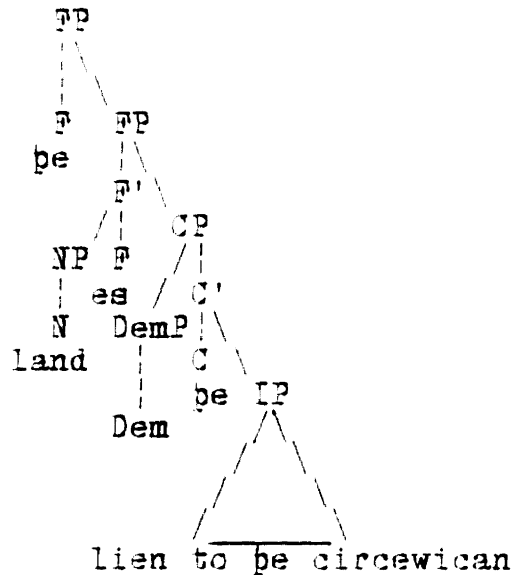
"without regard to number, the only exception being the inanimate plural, þe landes þe lien to þe circewican. The early beginnings of this usage can be seen in the First Continuation, where the distinction between plural þa

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17. There is an excellent article on this distinction in the Katherine Group by A. McIntosh, EGS I 1947-48 p.73-90.

and singular (animate) be... is almost lost, presumably owing to falling together in [be], and bet is occasionally used as the relative for the inanimate plural as well as for the singular" (p.Lxiv).

I suggest that the structure of relatives in early ME is quite parallel to that of OE:

40) be landes be lien to be circewican  
 the land that belongs to the churchland



Since it must agree in number and animacy with the substantive phrase which is the head of the construction, the complementizer must "percolate" its features to the functional category which dominates the substantive phrase. I assume that the lexical entries for the ME complementizers had the following lexical specifications:

41) ME Lexicon

be [+Tense]

ba [+Plural, +Tense]

(usually be in surface representations)

bat [-Animate, +Tense]

Since it was a signal of non-animacy, "þat" could never appear with animate heads. The form "þa" ("þe" on the surface) was used only intermitantly. This is another reanalysis of an OE demonstrative form - the plural marker "þa" had become a complementizer. Since complementizers (like determiners) are inserted signals of functional categories, this development goes hand in hand with those described above.

The levelling of the forms of the demonstrative paradigm meant that demonstratives were no longer useful as relative pronouns. That is, these forms no longer provided a signal of Case, gender, number, etc. as they had in OE. The new ME relative pronouns were drawn from the interrogative pronoun paradigm. Mustanoja observes that

"which (Northern quilk, quhilk) has occurred as a relative since earliest ME: - twa stanene tables breode on hwulche Almihti heofde iwriten þa ten lage (Lamb. Hom. II)" (p.195).

Similarly, "whose" and "whom" were also introduced "in earliest ME" (p.200-201):

42) a) Orm. 3425  
Crist whas moderr zho wass wurrpenn

b) Trin. Hom. 181  
for Adames gulte, to hwam ure Drihten seide...

The interesting point about these innovations is the fact that these forms were used to signal inherent Case arguments. Lightfoot says

"which was used at first almost exclusively with prepositions, so the new relative words served only for oblique cases" (p.320)

Similarly, the locative relative pronouns "where" and "there" began to appear with an attached prepositional form (i.e., a [+Inherent] marker, as in whereat, therein, etc. (see Visser (\$415) for examples)).

When ME speakers innovated forms to signal Case, they were signals of [+Inherent] Case (e.g., inserted prepositions, etc.). This is another piece of evidence pointing to the reversal of the default value for [+/-Inherent] in the ME lexicon. There is a great deal more evidence in the changes which swept the English lexicon in the ME period.

### 6.5 Adjective Phrase Complements

Mustanoja points out that

"in ME, even in early texts, the genitive governed by an adjective is a great deal less common than in OE" (p.87).

In contrast to noun phrases (where the genitive is used more freely than in OE) the genitive complements of adjectives are generally abandoned. Where they do survive (in both noun and adjective phrases), they are "normally represented by the of-periphrasis" (Mustanoja, p.87).

The dative complements of adjectives met a similar fate.

Visser comments on such OE constructions as "Ic waes him (dat.) leof" (I was him dear), "Hwaet him neh biþ" (what is near to him):

"the most remarkable features of this idiom are its enormously great frequency in Old English, its rapid decay in Middle English, and its total disappearance before the Pres. D. period" (§333).

He points out that this construction was replaced by one with a preposition quite generally, beginning in the early ME period:

43) c.1225 Ancr. R. 50

ge beop blake and unwurpe towarrde þe worlde  
you are black and unworthy toward the world

idem 204

Heo beop, more herm is, to monige alto kuþe  
She is, more harm (it) is, to many all too known

The loss of the OE adjective phrase complements in the dative and genitive follows from the revisions in the ME redundancy rules for [+/-Inherent], discussed above.. Since these complements were adjuncts (since adjectives cannot list complement matrices in their lexical entries), the pertinent functional category matrices were inserted after the imposition of the marked value of this feature. Since the OE adjuncts required a [+Inherent] interpretation,, they were abandoned as direct complements when [-Inherent] became the default value in ME adjective phrases. Those which survived at all appeared with a preposition (which provided a feature matrix and a [+Inherent] default assignment)



## Chapter 7

### Diachronic Drift in the English Lexicon

In this chapter, I will examine the population of verbs in the OE lexicon and compare this with the verbal lexicons of later stages of English. The comparison shows that OE had many inherent Case assigners and relatively few structural Case assigners, while the later stages of English have many structural Case assigners and relatively few inherent Case assigners. I will argue that in each lexicon, this asymmetry in the population of the various classes of Case assigners follows from an asymmetry in the lexical representation of one Case feature ([+/-Inherent]). The theory of features presented here not only predicts that all languages will have an asymmetry in the lexicon among various classes of Case assigners; the theory also provides an explicit account of a significant parameter of linguistic change.

In OE, the feature indicating structural Case ([-Inherent]) was specified in the lexical entries of verbs (and prepositions). The feature value for inherent Case ([+Inherent]) was not specified in lexical entries. The feature matrices in the syntactic representation were

specified for this value by rule during each derivation. In the East Midlands dialect the markedness of [+/-Inherent] was reversed in the verb phrase before the twelfth century. In the new grammar and lexicon, [+Inherent] was specified in verbal lexical entries while [-Inherent] was supplied by rule.

The reversal of the markedness of the feature [+/-Inherent] in the lexical entries of verbs is only gradually visible in the diachronic development of the English lexicon. This follows from the present theory with one additional assumption - I assume that language learners prefer minimal specifications in lexical entries. In the early stages of acquisition, each new lexical entry which the child initiates is considered to be unspecified for any syntactic feature until the data provide positive evidence to the contrary.

For example, a speaker with an OE grammar would assume that each newly-learned verb was not specified for [+/-Inherent] - until some instance in the data forced him to complicate that lexical entry with the specification [-Inherent]. Given this prejudice, it follows naturally that over generations of language learners, the OE lexicon would be encouraged to develop an optimal population of Case assigners: a minimal number of specified (structural) Case assigners and an unbounded number of unspecified (inherent) Case assigners.

The first ME speakers reversed the markedness of



[+/-Inherent] in the verb phrase. But they would still acquire their vocabulary of verbs from data supplied by OE speakers. ME speakers, of course, would also assume that each new Case assigner was unspecified for [+/-Inherent] - but they would look for positive evidence to assign a lexical entry [+Inherent] (not [-Inherent]). Since their data was originally supplied by OE speakers, there would be many instances of such positive evidence and many lexical entries marked [+Inherent]. Therefore, the first ME lexicon would not have an optimal population of Case assigners.

In constructions where a Case feature could be underlyingly specified (e.g., in the lexical entry of a verb), the reversal of the default for [+/-Inherent] was encouraged by an exponential rise in the use of ME prepositions as phonological signals of this Case feature (beyond the extent of present English usage). These signals permitted the marked ME verbs to be encoded as exceptions to the general assumption that matrices are unspecified.

Over generations of language learners, however, the ME lexicon would be encouraged to develop an optimal population of verbs: a minimal number of [+Inherent] Case assigners and an unbounded number of [-Inherent] Case assigners. Thus the number of [-Inherent] (direct) objects increased during the Middle Ages and the use of prepositions to mark [+Inherent] decreased accordingly.

This change in the underlying specification of verbs was accompanied by a semantic shift (a change in meaning), a phenomenon much discussed in the handbooks and literature. The suggested parameter of linguistic variation accounts for the gradual, item by item revision of the formal and semantic properties of verbs in the English lexicon during the ME period, the details of which shall be presented below.

In some constructions the reversal of the markedness of [+/-Inherent] produced an immediate change in usage. For some environments, it may be argued that there is no functional category feature matrix at D-structure which can be underlyingly specified for the marked value of [+/-Inherent]. I will argue that the subjects of absolute participles and various adjunct complements are in such environments. As the inserted feature matrix cannot be specified for the marked value of this feature, the default value is the only possible assignment for these arguments. Thus in OE, they receive [+Inherent] as default (i.e., dative, instrumental or inherent genitive Case), but in ME and later stages of English they receive [-Inherent] (i.e., accusative, nominative or structural genitive Case).

In many instances, these changes are not immediately obvious to the observer of ME usage. Because of the phonological levelling of the paradigms of inflection in late OE and crucially because of the coalescence of the OE

dative/accusative opposition in the ME pronominal system (e.g., OE "him" = dative, "hine" = accusative < ME "him" = dative/accusative - see Chapter 6), the only labelled constituents which appeared in default environments were ambiguous. Since the predicted diachronic shift is typically from dative to accusative, the coalescence of just these pronominal forms obscures the evidence in the crucial configurations.

But I shall argue that there is plenty of indirect evidence of this shift. Aside from the reversal of the markedness of various classes of lexical items which dates from this period and the parallel rise in the use of [+Inherent] markers (e.g., prepositions, etc.), the reversal of the markedness of [+/-Inherent] can be seen in the fact that the semantic and formal changes in transitive verbs are paralleled by the abrupt demise of many OE constructions involving genitive and dative adjuncts (with an inherent Case interpretation) and by the new use of accusative adjunct constructions (which lend themselves to a structural Case interpretation). The details of these will be presented below.

Given the reversal of the markedness of [+/-Inherent], it becomes apparent that the coalescence of the dative and accusative forms in the pronominal paradigms is not a coincidence. It is exactly this coalescence which permits the out-put of the OE and ME grammars to match word for word in

almost all utterances. In default environments, each grammar could interpret the ambiguous form (e.g., "him" = dative or accusative) according to its own default system.

The feature which distinguishes nominative from accusative Case ([+/-Accusative]) also reverses its default value in the history of English. I suggest that in late OE, [-Accusative] was the marked value for this feature, while [+Accusative] was the default value. Thus, the reversal of the default of the feature [+/-Inherent] in the twelfth century changed the "default Case" from dative to accusative (not to nominative). Around 1300, however, the default for [+/-Accusative] was reversed - [+Accusative] became the marked feature value, while [-Accusative] was default. At this point nominative became the default Case for English. This change is evident in the change of forms in environments where only default Case can be assigned. Some details of this change will be discussed below<sup>1</sup>.

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1. Another reversal in the markedness of the feature [+/-Accusative] in the history of later English is discussed in Klima's thesis.

## 7.1 Single Object Constructions

### 7.1.1 Single Dative Objects

In An Historical Syntax of the English Language<sup>2</sup>, Visser points out that verbs which assign dative to their sole complement are "of frequent occurrence in Old English" (§316). But these constructions have become rare in present speech<sup>3</sup>:

- 1) a) O.E. Gosp., Luke xxiv, 34  
(dat.)

Faeder, forgif him  
Father, forgive him

- b) Beowulf 227

(dat.)  
Gode þancedon  
God (they) thanked

- c) Wulfstan, Hom. (Napier) 149,27

(dat.)  
þær þonne ne maeg aenig man oþrum gehelpan  
there then not can any man other (to) help

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2. Most of the examples in this thesis are taken from this very helpful work. They can be found in the obvious sections for each type of construction.

3. Presumably, dative and genitive Case in present English is signalled by prepositions. See Chapter 6.

Visser provides over four hundred examples of verbs in this class in OE<sup>4</sup>. Many of these belong in the following "sense groups" (Visser(\$316)):

- 2) a) approaching, adhering, touching or the opposite
- b) following, serving or obeying
- c) liking, disliking, hating
- d) believing, trusting or the opposite
- e) injuring, harming or protecting or the opposite
- f) helping
- g) saying, confessing, reproaching, cursing or the opposite
- h) pleasing, comforting, honouring, flattering or the opposite
- i) happening

I reiterate Visser's descriptions of semantic content in support of the idea that there is a regular connection between this Case realization and certain semantic properties. Presumably, there are some common concepts involved and these notions are pertinent to the Linking Conventions described in Chapter 3.

According to Visser, OE dative objects require a careful translation. They denote

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4. "a fairly comprehensive list" (\$323)

"persons or things towards whom or which the action expressed by the verb is directed in such a way that they might be regarded as a kind of recipient; in other words the action is - either materially or non-materially - advantageous, servicable, profitable, harmful or injurious to the person or thing denoted by the object." (§316)

The translation of these constructions is not to be identified with the present English use of the preposition "to". In particular, I would suggest that the OE dative does not necessarily involve the notion "path". The phrase "oþrum gehelpan" does not mean "to help to the other", but rather something like "to help concerning the other". The notion "path" is introduced to the interpretation of some of these verbs in the transition from early ME to later ME<sup>5</sup>.

This is an optimal verb class in the OE lexicon. Because [+Inherent] is the default specification, supplied by rule in the derivation, none of these verbs need to be underlyingly specified for [+/-Inherent]. The non-delimiting interpretation is indicated in the syntactic representation without cost to the lexicon.

When the markedness of [+/-Inherent] was reversed in the twelfth century, this class of verbs was no longer optimal. In order to maintain the OE interpretation, each verb would have to be underlyingly specified [+Inherent]. In the new grammar, [+Inherent] was no longer supplied by rule. This

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5. See the account of the preposition "to" in the next section.

markedness explains the consequent erosion of the population of this verb class during the ME period. Since language learners would assume each lexical entry to be unspecified until proven otherwise, usage would gradually favour the [-Inherent] interpretation - among those predicates which were not required to have a non-delimiting theta-role by the nature of their semantic content.

Some verbs were simply abandoned. Visser points out that "verbs which survived tended to undergo a semantic change, so that what was originally the indirect object came to be looked upon as the direct object" (§317).

During ME, a semantic shift allowed the object of some verbs to be interpreted as "delimiting" the action of the verb. Each of these verbs dropped the marked feature specification [+Inherent] from its lexical entry. The new interpretation of the theta-role allowed the LCS variable to link to an unspecified Case matrix (which would be filled in as [-Inherent] in the derivation). The verb joined the optimal verb class in the new lexicon.

This process was no doubt hastened by the fact that a number of verbs taking dative objects already had an accusative alternation in OE (Visser (§319))<sup>6</sup>. These verbs presumably

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6. It is curious, however, that most of the examples of this alternation which Visser provides are taken from the Lindisfarne and Rushworth Gospels, two documents of OE known for their ME tendencies (see the account of absolute





Visser observes that in OE

"the number of verbs with a prepositional adverb as prefix (e.g. oferhieran) with a dative complement is strikingly great" (§21).

In OE, the default value was [+Inherent], so that the verb with the optimal specification (i.e., none) was one that assigned a theta role which did not delimit the action of the verb. I suggest that the prefixed adverbs of OE were added to verb stems to modify the theta-role assignment of the verb, in such a way as to ensure a non-delimiting interpretation of the object. That is, the LCS predicate of the verb by itself might be a delimiting theta assigner. The adverbial prefix altered the theta-role assigned by the LCS. For example, a normally intransitive verb could have a directional adjunct when it appeared with a prepositional prefix:

- 4) AElfred, Boeth. (Cardale) 70,25  
hu he him tocuman mihte  
how he (in the area of) him (to) come was able

According to Visser, many OE verbs with a "prepositional" adverb as a prefix

"also take an indirect object when not preceded by this prefix" (§21).

That is, the adverb is redundant to the assignment of [+Inherent]. The theta-role assigned by the verb is already non-delimiting. Presumably the usage with the prefixed adverb adds emphasis to this interpretation of the predicate.

### 7.1.1.1 The Diachronic Status of "to"

According to Mitchell, the OE form "to" is usually found with a dative complement - only "occasionally" with an accusative complement (§1209). I assume then, that in most OE dialects, "to" was an adverb. It only appeared in intransitive constructions or constructions with a [+Inherent] adjunct. Thus, the use of the adverb "to" to support a dative object

"occasionally occurred in Old English, where "to" was properly speaking redundant" Visser (§317).

Since the OE "to" was an adverb, it provided no variable in the LCS of its lexical entry (such variables are provided only by the lexical entries of verbs, adjectives and nouns). It was only indirectly associated with Case features (i.e., through its explication of the notion "to, at, alongside, for" (Mitchell, §1209) in the logical interpretation of the associated predicate):

5) a) Deor 1-3

			(dat.)		
Welund...	hafde	him	to	gesippe	sorge ond
"		had	himself	as companion	sorrow and
	longaþ				
	longing				

- b) Ps. 36.6  
    (gen.)  
    to middes daeges  
    around mid-day

But the OE verbs which had appeared with dative objects develop new patterns in ME involving the preposition "to" These new constructions

"began to appear - by the side of those without a preposition - at the beginning of the Middle English period" (Visser (\$687)).

The frequency of the usage with the preposition shows an interesting pattern:

"Before 1300 the number of examples is very restricted especially in the poetry... In the course of the 14<sup>th</sup> and 15<sup>th</sup> centuries the number increases with striking rapidity" (Visser (\$687)).

I suggest that the early ME "to" was derived from two lexical entries. One of these was a phonological signal of the feature [+Inherent] which was inserted as the head of a functional category (FP) to signal the non-delimiting interpretation of the linked LCS variable. Visser points out that in ME

"certain writers kept the indirect object character of the complement clearly alive by putting "to" before the object" (\$317):

- 6) a) c.1390 Wyclif, John V, 38  
    ye beleuen not to him
- b) c.1382 Wyclif Mt. vi 12  
    As we forgeue to oure dettours

- c) c.1382 Wyclif Deut. (earlier version) viii 10  
Whanne thou eetist...thou blesse to the Lord
- d) c.1340 Ayenbite 193  
Hit is wel rigt þet hit misualle to him  
(misfalls)
- e) c.1175 Lamb. Hom. 59  
Hercnip alle to þis writ  
Harken all to this writ

Obviously, since these are new environments, this new use of "to" is not the same as the OE usage, nor is it the same as present English usage. I suggest that there is minimal semantic content associated with this form "to". This form in this usage is the ME equivalent of the OE affixes of inflection - a mere morphological marker of the formal properties of the representation. Mustanoja points out that "of", "on" and "at" were found in the same environments and "many other prepositions are interchangeable to some extent such as "in" and "on", "in" and "into", "into" and "to", "to" and "at" (p.352). This flexibility follows from the use of these forms as mere signals of Case specifications.

The second "to" of early ME was the same as the OE "to" - an adverb.

As time passed, more and more of those verbs which had been specified [+Inherent] in early ME were converted to the unspecified classes. The use of the "dummy" preposition as a marker of [+Inherent] was, therefore, less and less necessary. Moreover, the independent adjuncts of time and

space (which had been rendered rather opaque by the levelling of inflection) were clarified by a reanalysis of the semantic content of certain prepositions.

I suggest that the "dummy" preposition "to" was gradually abandoned. Similarly, the adverb "to" was no longer used. From fourteenth century, the form "to" was increasingly derived from a different lexical entry. This new lexical entry was a preposition which provided D-structure representations with a functional category feature matrix which had a [-Inherent] specification.

To understand the significance of this change, it is necessary to reflect on the interpretation of OE dative objects. As Visser points out (see above), the notion can be summed up (vaguely) as a kind of "recipient". I would argue that the abandonment of the "dummy" preposition "to" (which in early ME had been a phonological signal of the [+Inherent] status of certain non-delimiting objects), was allowed by a reanalysis of the OE "recipient" theta-roles assigned to dative objects. The new theta-role was something like "goal". "Goals" are delimiting ([-Inherent]) objects which are assigned accusative Case (i.e, a "goal" is the endpoint of "direction toward"). The "goal" interpretation and the "recipient" interpretation are close enough to each other that in most instances there is no practical difference to the language users who thus differ in their grammar.

This preposition allowed verbs which were previously marked [+Inherent] in the early ME lexicon to become unspecified in the later ME lexicon. Many OE verbs had dative ([+Inherent]) objects. All those which were compatible with the notion "direction toward" began to appear with the preposition "to". This preposition guaranteed a delimiting interpretation (which required no formal specification in the new lexicon). Thus the lexical entries for "to" have the following diachronic evolution:

7) a)		OE	
	PAS:	to [-N,-V]	
	LCS:	location (adverb)	
b)		early ME	
	to [-N,-V]	:PAS:	to [+Inherent]
	location (adverb)	:LCS	(phon.signal)
c)		later ME	
	PAS:	to [-N,-V] [-Inherent]	
	LCS:	location (preposition)	

Some verbs continue to require the notion "direction toward" to be supplied by the LCS of the preposition and are still found only with the preposition (e.g., "hlystan" --> "listen

to", "hercnian" --> "harken to" (Visser (\$318)). Others have incorporated the notion "direction" into their own LCS predicate and may or may not appear with the preposition (e.g., Dative Shift verbs). Those verbs which were not easily understood as having a "path" complex in their LCS predicate (e.g., believe, help, etc.) maintained their [+Inherent] marking by using another preposition (e.g., in, on, etc.) or found some other (non-path) interpretation which would likewise allow them to be understood with a complement which was assigned structural Case.

#### 7.1.1.2 Changes in Loan-words

I think it important to recall that the immediate reversal in the markedness of [+/-Inherent] caused few catastrophic changes in usage. The lexicon of speakers with the new grammar would be heavily marked with [+Inherent] specifications which would allow the proper interpretation of the speech produced by the older grammar (where [+Inherent] was supplied by rule). That is, parent and child could understand in the same way all those constructions where the required feature values could be specified in the pertinent lexical entries or where they were imposed on the representation at D-structure according to the Linking Conventions. A difference in interpretation would be required immediately only in default environments, where no feature matrix could be provided from lexical entries. Thus early ME



was still a language with many non-delimiting theta roles. Only successive acquisition of the lexicon by generations of language learners would reduce this collection.

This perspective provides some insight into the otherwise surprising fact that

"a considerable number of verbs which made their first appearance in English after the Old English period (especially those of French origin such as (a)vail, command, escape, favour, obey, pardon, please, profit, serve, suffice) are found construed with objects that at first must have been viewed as indirect objects..."<sup>7</sup> (Visser (1925)).

The vocabulary of the early ME speaker was already crowded with verbs specified [+Inherent] which were not delimited by their objects. The new French verbs would not seem unnatural.

As the present theory predicts, however, the markedness of these loan-verbs became evident as time passed. Many of the borrowed verbs were associated with the preposition "to". Many have undergone the semantic shift and now take [-Inherent] objects. Visser points out that these verbs now appear in passives (e.g., "he was favoured, obeyed, pardoned, etc.), a transformation which seems to be limited to

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7. This collection of French verbs would seem to imply a rather grim relationship between the people borrowing verbs and the people who were the lenders.

accusative objects<sup>8</sup>. To Visser,

"The status of the object in Pres. D. English with these kinds of verbs seems to be that of direct object" (§325).

The loan-verbs have conformed to the same forces which have shaped the native verbs of English.

### 7.1.1.3 Other Dative Complements

A sub-set of OE verbs with dative complements underwent a remarkable and much discussed reversal of semantic and Case properties (e.g., "þam cyngre licodon peran" = "the pears pleased the king" became "the king liked pears"). These will be discussed below in the section on "impersonal" verbs.

With some verbs taking a dative complement,

"it is difficult to ascertain whether we have to do with an indirect object or an adverbial adjunct expressing instrumentality" (§321).

These will be discussed below, in the section on adjuncts.

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8. According to Mitchell in OE, "the basic situation...is that when the active verb can have an accusative object, that object becomes the subject of the passive verb, and that when the active verb is not found with an accusative object, we have the impersonal passive. The only exception I have noted is "fultumian" ["to help" J..S.L.]" (§856).



b) Genesis 464  
þæt þær ylðo bearn moste on ceosan  
that there old age must run (to) choose

(gen.)  
godes and yfeles  
(of) good and (of) evil

c) Beowulf 434  
se aeglaeca... waepna ne reccep  
that monster-hero.... (of) weapons not cares  
(gen.)

Visser provides over two hundred examples of verbs in this class. Many of them fall into the following "sense-groups" (from Visser (§378-390)):

- 9) a) rejoicing, mourning, sorrowing, regretting, fearing, feeling, boasting, wondering  
b) expecting, seeking striving, asking, desiring, longing, hoping, coveting, claiming, needing, persecuting, trying  
c) caring, heeding, considering, listening, pledging, preferring, not-caring, neglecting, forsaking, delaying, leaving off, failing to do, forgetting  
d) granting, loaning, refusing, depriving, withdrawing, robbing  
e) helping  
f) getting, begetting, gaining, obtaining, acquiring, buying, hiring, taking, earning, effecting, producing, losing, getting rid of, forfeiting  
g) eating, tasting, enjoying, partaking, employing, using, receiving  
h) touching  
i) trying, tempting, testing, probing

- j) having power over, ruling, controlling, directing, guiding, correcting, restraining, reproving
- k) having and possessing
- l) knowing, understanding, doubting, believing, trusting, mistrusting, being mistaken, erring
- m) being silent, abstaining from speaking

Visser suggests that in many of these constructions, "the verbs... are intransitive" (§370). These will be discussed in the section on adverbial adjuncts, below.

According to Visser, "nearly all the verbs... with a genitive also occur with a dative or accusative..." (§371). That is to say that the aspect of the interpretation which requires the [+Genitive] specification is "added on" to the "normal" interpretation of that complement. Thus, for example, the partitive reading requires a genitive argument where one might otherwise expect a dative or accusative. The specification [+Genitive] (outside of NP) stems directly from a semantic twist which is imposed on the interpretation of a theta-role. No verb, for example, has an LCS predicate which requires the notion "partitive" for the interpretation of its arguments.

Visser observes that

"many of the verbs which in Old English took a genitive complement are found with an of-phrase in Middle and early Modern English" (§375).

Some of these continue into present English (e.g., deprive of

XP, persuade of XP), etc.) But Visser points out that

"In Pres. D. English this "of" is no longer used with verbs of sense, eg. "feel, smell", with verbs of asking, as "ask, beseech" and with "forget" and the like" (§375)

These verbs had [+Inherent] genitive complements which gradually drifted to become structural Case complements to accomodate a new interpretation (losing their genitive status, as well).

"With others as "hope, look, thirst, etc.", "of" has been replaced by "for" or some other preposition" (Visser, §375).

Presumably, "of" now signals [-Inherent] genitives- those complements which retained their [+Inherent] status (through the lexical specification of the verb) needed another prepositional form to signal their inherent Case status. Numerous French loan-verbs also followed these patterns (Visser, §376).

#### 7.1.2.1 Summary

The OE verbs which had single genitive complements which were not adjuncts survived the transition to ME with a genitive interpretation by marking it with a "dummy" preposition (i.e., a Case marker, specified [+Genitive]). Although many of these genitive arguments clearly alternated with accusative or dative realisations, some were consistently genitive in OE and ME. As I suggested above, all of these may be seen as the semantic assignment of [+Genitive] at

D-structure.

OE permitted many more genitive complements than did later stages of English (but many of these were [+Inherent] adjuncts). The objects which appeared with the genitive in OE (either always or alternately) continued in ME with a preposition signaling their specification [+Genitive]. But this class eroded and the chief survivors of the drift in the lexicon through the Middle Ages are the [-Inherent] genitives (e.g., partitives, etc.).

### 7.1.3 Single Accusative Objects

While the number of verbs taking dative or genitive complements was much larger in OE than in present English, according to Visser,

"in Present Day English the number of verbs that take a direct object is enormously greater than that in Old English" (§419):

Some OE examples are:

10) a) Genesis 2840

(acc.)  
[He] burh timbrode  
He town built

b) Beowulf 970

(acc.)  
he his folme forlet... last weardian  
he his hand left... track (to) guard

c) Maldon 99  
    (acc.)  
    ...linde       baeron  
        shields (they) carried

This is not to say that accusative objects were rare in OE. In fact, as Mitchell points out (§1256), the accusative is the most common verbal Case. But it is much more common in present English.

The interpretation of accusative objects in OE was very flexible;

"the relation between this complement and its verb being too multifarious and too heterogeneous to be comprehended in one single term" (§418).

Since direct ([-Inherent]) arguments are "delimiting", they are more closely connected to the particular interpretation of the verb. Therefore, the particularity of their interpretation is not surprising.

The increase in the number of "direct" objects in ME follows quite directly from the reversal of the markedness of [+/-Inherent]. Verbs assigning [-Inherent] are an optimal class in the ME lexicon and in later stages of English. They require a delimiting object. In the ME and the later English grammars, the appropriate specification ([-Inherent]) is supplied in the derivation and these verbs may be unspecified in the lexicon. The ranks of accusative complements were also increased by the new ME accusative adjuncts (and objects) which appeared with previously intransitive verbs (see the



section on adjuncts, below).

## 7.2 Double Complement Constructions

### 7.2.1 Dative and Genitive

Some OE verbs appeared with both a dative object and a genitive adjunct (see the discussion of genitive adjuncts, below). Visser observes that "this construction is widely used in Old English"<sup>9</sup> (§676):

11) Beowulf 1467

þa he þæs waepnes onlah selran sweordfreca  
then he (of) that weapon lent better sword fighter

Again Visser cautions against a misleading present English translation:

"the person referred to by the indirect object (in the dative) must be seen as a kind of recipient, and... the object in the genitive denotes a thing or circumstance which occasions the action or with which the action has concernment" (§676).

Thus the interpretation of the example above is given by Visser as

"he made a temporary gift to a better swordwarrior with regard to (in the form of) the weapon" (§676).

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9. He provides over sixty examples.

Since the OE genitive complements were [+Inherent] adjuncts, as one might expect,

"at the end of the Old English and the beginning of the Middle English period the construction gradually died out" (§676)

The decline of the OE construction follows the patterns for single complements discussed elsewhere in this chapter. The dative (and occasionally the genitive) were sometimes supported by "dummy" prepositions (e.g., "to" and "of"). The dative or the genitive object began to be "apprehended as a direct object" (§576).

Some verbs were lost altogether. Their usefulness depended on the expression of a non-delimiting genitive adjunct which was interpreted as a "source". Such adjuncts became "inorganic" in ME because their interpretation was not in keeping with the new default value for [+/-Inherent] and these verbs simply fell out of use.

### 7.2.2 Accusative and Genitive

Some OE verbs appear with both an accusative and a genitive complement. Visser tells us that "this construction is as well represented in Old English" as the construction with a dative object and a genitive adjunct (§678). He points out that the construction "is still occasionally used in early Middle English", but the verbs of later stages of English "often appear with the preposition "of"" (§678)

12) Wulfstan, Hom. (Napier) 133, 20  
and helpes me biddap  
and (they) (of) help ask me

According to Visser,

"a striking feature is the large number of verbs expressing a kind of taking away from (or more properly of making less burdened, less rich, etc.)" (§678)

Verbs of deprivation retain their genitive objects because their interpretation is compatible with a [-Inherent] specification. Indeed, the changes in this construction are few, since even in OE the periphrastic construction with "of" was already "widely current" (§678). I presume that in OE, this "of" was merely an adverb emphasizing the notion of separation ("direction from" - not a Case mark, as in ME and later English).

### 7.2.3 Accusative and Dative/Instrumental

OE also had verbs expressing the notion of "deprivation" which appeared with both an accusative and a dative (or instrumental) object. According to Visser,

"after the Old English period, when there was no longer a [visible J.S.L.] dative case, the preposition "from" was used to express the idea of separation" (§680):

13) Genesis 362  
He us haefþ... heofenrice benuman  
He us has... (from) heavenly kingdom taken

Visser describes these verbs as being

"complemented in such a way that the person denoted by the direct object is represented as being separated from something that may be looked upon as being "possessed" by him (head, life, power, etc.)... "hi hine heafde beheowan" may be interpreted as "they separated him from his head [not: his head from him...] by hewing" (§680).

Thus the Linking Convention which associates [-Genitive] with the notion of inalienable possession determines the feature value for the objects of these verbs.

Note that Visser is careful to point out the asymmetry of the separation of the two objects. The action described by the verb is delimited by the accusative object (it is "hine" which is the thing separated). The dative (instrumental) object is circumstantial to the action (it is the source or origin of the separation).

The instances of the use of "from" in the ME version of this construction are not numerous. According to Visser, the loss of the overt dative inflection led to the coalescence of this verb class with those verbs taking an accusative and a genitive complement (discussed above).

#### 7.2.4 Dative and Accusative 1

Constructions with an accusative and a dative object were "extremely common in Old English with verbs whose fundamental meaning is that of giving, bestowing, granting, imparting, etc.... After the Old English period.... the indirect object can no longer be distinguished from the direct object by means of the difference in inflectional form. Henceforth the interpretation depends on context

and situation" (§682)<sup>10</sup>:

14) a) Beowulf 672  
he... sealde his... sweord... ombihtþegne  
he gave his sword servant

b) Waerferth, Dial. Greg. 239, 10  
þaet he befaeste... þam biscope  
that he entrusts... that bishop

c) Wulfstan Polity (Jost) p.49 §17  
þonne cyþ hit man þam cyninge  
then made it known one that king

(then one made it known [to] that king)

I would suggest that Visser's caution concerning the translation of OE dative arguments is very pertinent here. I suggest that the notion "recipient" with these OE verbs is completely typical of the interpretation of the single object datives discussed above. In particular, the interpretation of these objects did not include the notion "path".

The constructions with the preposition "to"

"began to appear - by the side of those without a preposition - at the beginning of the Middle English period" (Visser (§687)).

This pattern was discussed in the section on "to", above (8.1.1.1).

The OE verb had two objects, accusative and dative, where

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10. It may be that the Linking Convention which associates [+Inherent] with animacy is pertinent in this period.

the dative object had the normal OE "recipient" interpretation. When the default value of [+/-Inherent] was reversed, these verbs preserved this non-delimiting interpretation by specifying [+Inherent] in their lexical entry and by signaling this specification with the dummy preposition "to". But in many instances the specification was not overtly realised - the verbs own PAS specification was sufficient to ensure that its second object was interpreted as non-delimiting. The distinction between the two objects was left to other factors of realization (perhaps relying on the animate/inanimate opposition in the Linking Conventions for [+/-Inherent]).

The marked object, however, began to develop a delimiting interpretation (i.e., recipient --> path end-point) and began to be realised as accusative<sup>11</sup>. This object began to be interpreted as the "goal" with the verb assigning a theta role which included the notion "direction toward". Around 1300, the form "to" was reanalysed so that it was no longer a signal of [+Inherent] but rather a preposition (with an underlying feature specification for a [-Inherent] complement). The preposition had a new interpretation including the notion

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11. In most documents, this double accusative construction is less than obvious in the signal of inflection, since the only "inflected" paradigm (personal pronouns) showed no distinction between accusative and dative. But there are examples in the Peterborough Chronicles which reflect the accusative Case of the second object quite directly (see Chapter 7).

"direction toward". The new interpretation of the preposition was entirely compatible with the interpretation of the second accusative object of these verbs and the usage with the preposition increased rapidly.

Note, however, that the above analysis of the development of this verb class suffers from a serious failing. The ME accusative status for the second object in these constructions implies that these objects should have become acceptable passive subjects around the same period (the fourteenth century). But Mustanoja (p.440) points out that the second object began to appear in passives only during the fifteenth century. It is surprising to the present theory that this development was so delayed. I shall assume for the moment that some other constraint on passive formation had to be overcome with these verbs. What this "other constraint" might be, is not clear<sup>12</sup>.

#### 7.2.5 Dative and Accusative 2

Another construction with dative and accusative objects which "occurs with great frequency in Old English" (Visser (\$689), involves an indirect object of "advantage":

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12. Perhaps the difficulty involved the use of "path" arguments with nominative ([-Accusative]) Case while this feature specification was still linked to semantic content.

- 15) a) Exodus 389  
 se snottra sunu Dauides... getimbrede tempel gode  
 that wise son of David... built tempel (for) God
- b) Dream of the Rood 65  
 Ongunnon him þa moldern wyrcan  
 (They) began (for) him then sepulcher to make
- c) AElfred, C.P. (Sw.) 315, 13  
 Brec þaem hyngridum þinne hlaf  
 Break (for) those hungry ones your loaf

According to Visser,

"the indirect object represents a person not as a direct "recipient" of anything "given", but as a person to whose advantage or disadvantage an action is performed" (§689).

Like the double object construction with the verbs of giving, etc. discussed above, "after the Old English period this construction remains in frequent use" (§692). It seems to me that some of these complements have also been reanalysed. The OE "recipient" interpretation is no longer clear in many of the ME examples which Visser presents:

- 16) a) c.1350 Ywain & Gawain (ed. Schleich) 3821  
 þat beste... Likked his maister both  
 hend and fete
- b) c.1387 Trevisa Higd. 3, 297  
 He up wiþ a staf and smoot þe Frensche man  
 of þe heed

But others seem to have a benefactive sense - much as in OE:

- 17) c.1385 Chaucer Troil. 3, 88  
 Or was too bold, to synge a fool a masse



Since these verbs are incompatible with the notion "path", the use of the ME preposition "to" was inappropriate. There was no "direction toward" reanalysis of the semantics of these verbs. The closest present English paraphrase uses the preposition "for".

These verbs remain problematic in the present theory. Their complements are quite optional - they are not required by the verbal lexical entry. But it seems that when they are realized as a phrase, these complements are assigned the marked value, [+Inherent] - they are dative complements. For example, passives with these verbs are rather awkward (if not impossible) in present English:

- 18) a) ?He was sung a mass.  
b) ?The tramp was made a sandwich.  
c) ?The millionaire was built a house.

This specification for the marked feature value [+Inherent] implies that the pertinent functional matrix is there in the representation at D-structure - a hypothesis which is at odds with the observation that these are quite optional complements. I have no solution for this problem at the moment.

## 7.2.6 Double Accusatives

In OE, a very few verbs appeared in constructions with two accusative objects<sup>13</sup>:

"Laeran and gelaeran ["to advise, exhort" J.S.L.] are the only verbs that were regularly construed with two objects from the beginning of the Old English period" (§698):

- 19) Beowulf 278  
Ic... Hroþgar (acc.) maeg þurh rumne sefan raed (acc.)  
I... Hrothgar am able through detached mind counsel
- gelaeran  
to advise

Visser observes that the construction was maintained after the OE period,

"however, it was gradually incorporated into the large group to which "I gave him the book", "I showed him the way", "I taught him these words" belong" (§698).

Presumably the OE double accusative verbs were specified [-Inherent] in the lexicon for each of their objects. The obvious markedness of this verb class in OE is explained by the markedness of [-Inherent] in that grammar and lexicon.

The present theory predicts that the reversal of the markedness of [+/-Inherent] in the twelfth century should reverse the markedness of this verb class in the new lexicon. In contrast to Visser's perspective, I would say that the

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13. Visser provides ten examples.

previous accusative and dative double object verbs were gradually incorporated into the double accusative class through the addition of a "path" complex to their LCS predicate. In ME, however, the original OE double accusatives also converted to the "path" description of their second object (i.e., they moved from one type of double accusative to another), so Visser's observation is still pertinent.

### 7.3 Impersonals

Clauses which do not appear with a nominative argument are traditionally grouped under the appellation "impersonals". In these constructions, the verb does not show Agreement with any of the arguments in the clause. The verbal inflection is always third person singular - the default assignment.

According to Visser,

"in Old and early Middle English constructions of this type were of frequent occurrence" (§29):

20) a) AElfred, Oros. 92, 27

(dat.)

Hu þyncþ eow nu?  
How think you now?

b) Wulfstan, Hom. 17, 4

(acc.)

hine þyrste hwylum and hwylum hingrede  
him thirsted sometimes and sometimes hungered

c) AElfric Saint's Lives 288, 84

(dat.)

drince him aet ham  
drinks him at home

d) Beowulf 1987

(dat.)

Hu lomp eow on lade, leofa Beowulf?  
How befell you on journey, beloved B.?

e) Wife's Lament (Ex. Bk.) 14

(acc.)

mec longade  
me desired

As the examples above illustrate, these verbs might appear with a dative or an accusative object. Even the same verb might alternate. Compare 21)a) with b) and c) with d) below:

21) a) AElfric, Hom. I, 166, 12

(dat.)

sippen him hingrode  
after him hungered

b) OE Gospel Mt. IV, 2

(acc.)

þa ongan hine hungrian  
then began him (to) hunger

c) Vices and V. 103, 11 (c.1200)

(dat.)

ne rewþ hire naht after hire daedes  
not regretted her not after her deeds

d) Paris Ps. (Krapp) 105, 34

(acc.)

hreaw hine sona  
regretted him immediately

Presumably these verbs were entered in the OE lexicon with

no particular feature specification for [+/-Inherent] in the pertinent functional category matrix. When the argument had a delimiting interpretation, the feature value [-Inherent] was imposed on the matrix during the derivation (i.e., the object was realized as accusative). Thus "pa ongan hine hungrian" implies a specific endpoint in the change of state - the action is delimited in time - first he was not hungry; at point T = pa "then", he became hungry.

In contrast "sippen him hingrode" is not delimited in this way. Although we know that the period of hunger was after some point T, it did not necessarily begin at this point. If the object was not specified for the marked value ([-Inherent]) during the derivation, then it was specified [+Inherent] (dative) by the redundancy rule for that feature. This allowed a non-delimiting interpretation - there was no fixed end-point for the change of state in the complement.

From my own observation and from Visser's examples it appears that adverbs and verbs which support this delimiting interpretation of the complement (e.g., sona, onginnan) are found (as one would expect) in constructions with accusative impersonals. Moreover, since the negations of these verbs suggest that there has been no change of state, they naturally appear with dative complements (e.g., the Vices and Virtues example, 21)c), above).

Of course, the question remains as to why there is no



"accompanied by a complement in the form of a noun or pronoun in the genitive (e.g. "him sceamode þæs mannes") or by a preposition (for, of, aet, to, etc.) + noun (e.g. "Me sceamaþ for misdaedan")" (§30).

But he further states that

"originally such collocations as "him wlatep" (= "he feels disgusted") and "him gelustfullaþ" (= "he is glad or happy") were complete utterances and... what was added (whether in the form of a noun in the genitive, a noun preceded by a preposition, an infinitive or a clause) had the character of a causative complement" (§57).

That is, these verbs only required one object. The genitive argument was an adjunct similar to other adjuncts which will be discussed below.

The same verbs might appear with a noun in the zero (nom./acc.) Case, which might be construed as the present English "personal" construction:

23) AElfric, Hom. ii, 130, 9  
þa gelustfullode þam cyninge heora claene lif  
then pleased that king their clean life

When it is not clear whether there is subject/verb Agreement, it is equally unclear whether these are impersonals or personal constructions. Presumably, they were equally ambiguous to speakers of OE.

Some OE impersonals commonly appear with a clausal complement (tensed or infinitive):

24) a) AElfred, C.P. 151, 17  
hie forscamige þaet hie eft swa don  
them was shame that they after so did

- b) AElfric, Hom. I, 580, 33  
 Me gedafenap þæt ic nu todaeg þe gecyrre  
 me befits that I now today you submit
- c) OE Gospel Luke IV, 43  
 me gedafenap oprum ceastrum Godes rice bodian  
 me befits other city God's kingdom  
 (to) proclaim

As we have seen, Visser classes these with the "causative" adjuncts in the genitive, discussed above.

Visser points out that

"a considerable number of the verbs themselves fell into disuse either before or during the Middle English period."

This decline is the more remarkable since,

"the number of the "him griseþ" constructions would have been reduced to a negligible handful but for the addition in early Middle English of a number of, as it would seem, analogical formations such as "him irks, him drempte, him nedeth, him repenteth, me recheth, me seemeth, me wondreth, us mervailleth, me availeth, him booteth, him chaunced, him deynede, him fell, him happened, me lacketh, us moste, etc." (§34).

That is, the OE impersonals declined to a very few, but new ME impersonals filled up the ranks. Some of the new verbs seem to have meanings which are very similar to those which were abandoned (e.g., OE/ME: gelimpan/happen, gemaetan/dream, þurfan/need, etc.).

The decline of the OE constructions with the "causative" adjunct follows from the theory presented here. The usefulness of these verbs depended on their association with this [+Inherent] adjunct - that is, the sense of "him



gelimpap" or "him þurfe" ("happen (to) him", "need (to) him") was not very useful without the accompanying "source" (= "causative") adjunct. The reversal of the default for [+/-Inherent] led to the demise of these adjuncts (see below, in the section on genitive adjuncts). Without the adjunct to explicate the "source", these impersonals fell into disuse.

The survivors and the new ME impersonals had a [-Inherent] "cause" (not "source") theta-role and the argument could be assigned structural Case.

According to Visser

"in late Old English there appeared... the type "hit wlateþ me + infinitive or clause" (§57).

The pleonastic pronoun is in subject position (and assigned nominative Case) and the "cause" argument is coindexed with this element (and presumably replaces it in the representation at Logical Form - see Chomsky, 1986). The ME "cause" argument is an external argument, not an adjunct as the "source" argument is in OE.

These constructions underwent various changes in ME. Visser asserts that

"most of them remained unchanged as to outward form (it annoys me...) while the character of the object gradually changed from indirect to direct... in a few cases the "impersonal" construction was replaced by the "personal", e.g. "it lothith me > I loath it; it abhors me > I abhor it; it liketh me > I like it", whereas in quite a number of cases "to" was inserted between the verb and the object, indicative of the fact that the object was still realised as "indirect", e.g. "it spedith to him"..." (§324).

The "cause" argument was seen as external and the impersonal datives became accusative - sometimes through the addition of a "path" complex to the LCS representation of the verb.

There was a similar type of change in store for those OE impersonals which did not depend on the "source"

(="causative") adjunct. Visser notes that

"there was a tendency for those combinations that outlived the Old English period to be replaced by personal constructions or to develop into them, with the result that about the beginning of the sixteenth century they had practically all become obsolete... in a few cases the process may have been retarded by the use of "to" (or "till") before the object, stressing as it did the indirect character of this object" (§324):

25) a) c.1250 Layamon, B 13763  
he oft scamede (c.f. 1205, A: him ofte scomede)  
he often was ashamed

b) c.13... Curs. M. 19453  
þai harmed nathing mar in hert  
they were harmed nothing more in heart

Thus there are clearly two (or more) stages in the gradual loss of impersonal verbs in English:

In late OE and early ME (in a relatively short period), many OE impersonal verbs were abandoned and new ME impersonals were initiated. This development is explained by the reversal of the default value of [+/-Inherent]. The loss of the genitive adjuncts required a different theta-role than the OE "source". This new theta-role was introduced by reanalysing the survivors and the borrowed impersonal verbs as predicates

which take a "cause" external argument.

The second stage involves the gradual conversion of impersonals to personal constructions through the ME period. With some of these verbs, the cause becomes the external argument (i.e., a subject) and the dative becomes accusative. With others, the OE dative "recipient" object is reanalysed as an "experiencer" subject (external argument). Where this change takes place, the ME "cause" argument is reanalysed as a direct (accusative) object (e.g., "pleased the king-dative pears-genitive" -> "the king-nominative liked pears-accusative").

The impersonals died out in the sixteenth century. I assume that there is some connection between this event and the change in the manner of the assignment of the marked value of [+/-Accusative]. When this marked value was imposed on representations according to the Linking Conventions for that feature, impersonals continued. But when the marked value came to be assigned by rule, impersonals could not be continued. But this topic would lead the discussion beyond the scope of the present work<sup>14</sup>.

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14. More details of these changes are discussed in Lightfoot, 1979, p.229.

## 7.4 Adjuncts

In certain environments the Case assigned to an NP must be the default value of [+/-Inherent]. That is, some matrices are inserted into the representation after the imposition of the marked value for that feature. The value of [+/-Inherent] which is realized in an adjunct functional matrix in these environments is supplied by the general rules of the grammar. Object functional category matrices, on the other hand, may undergo the imposition of the marked value of this feature, because their functional matrices are supplied to the D-structure representation from lexical entries. The postulated reversal of the markedness of the feature [+/-Inherent] in the transition from OE to ME is predicted to have immediate consequences in these default environments.

### 7.4.1 Accusative Adjuncts

Visser points out that compared to present English, OE has a very large number of strictly intransitive verbs and relatively few verbs which alternate between intransitive and transitive (accusative) usage (his "amphibious" verbs)(\$132). That is, OE had very few verbs which had a clearly optional accusative complement (an accusative adjunct).

Moreover, it appears that those amphibious verbs which did exist in OE<sup>15</sup> are for the most part "middle" verbs. That is, the intransitive construction has a surface subject which in the transitive use, appears as the object. A new external argument is added and assigned a theta role "cause"<sup>16</sup>. Thus in the following examples, the verb "breacan" is intransitive and the subject is "the thing which breaks":

26) a) Wulfstan Sermo ad Anglos 42.3  
 ...hit is on us eallum swutol and gesene þæt we  
 it is in us all clear and visible that we  
 aer þysan oftor braecan þonne we bettan  
 before this more often broke than we mended

b) AElfred C.P. 277  
 hit abricþ ut on idle oferspræce  
 it breaks out in idle gossip

In the following, however, the verb "breacan" is transitive and the "thing which breaks" is the object:

27) a) Battle of Malden 277  
 He braec þone bordweall  
 He broke that shieldwall  
 b) Genesis 2491  
 Abrecan ne meahton... reced  
 (to) break not (they) could... (the) hall

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 15. Visser provides examples of 55 such verbs (§131).

16. Hale and Keyser (1986) provide an enlightening discussion of this verb class in present English.

Some others like "breccan" in Visser's examples of amphibious verbs are "acweccan "to shake", baþian "to bathe", blissian "to rejoice", byrnan "to burn", fleon "to flee", hefigan "to weigh" ("to burden"), openian "to open", wlitigan "to beautify", etc.. I presume that these all have a lexical entry which does not include a functional category matrix. Rather, there is a lexical process which adds the "cause" argument to the LCS representation and a feature matrix with the specification [-Inherent] to the PAS representation of these verbs. This process is sometimes signaled by umlaut (see below).

Thus it is clear that there are very few OE intransitive verbs (if any) which had the option of simply adding an internal argument to form a transitive construction. For example, according to Visser

"almost all verbs expressing motion (such as climb, bolt, bound, burst, creep, dive, flow, glide, run and spring) or human or animal sounds (such as bellow, crow, groan, grunt, laugh, lisp, neigh, stammer, weep, whisper and whistle) which were exclusively intransitive in Old English, are now found construed with a direct object as well" (§132).

He speaks of a "wholesale process of transitivity" since OE (§134) and provides hundreds of examples to back up this description.

Frequently, OE intransitive verbs had a parallel "derived" transitive form, the derivation being signaled by the addition of the prefix "ge-" (e.g., abidan "to remain", geabydan "to

wait for"; ceapian "to bargain", geceapian "to buy"; winnan "to struggle", gewinnan "to obtain by fighting")<sup>17</sup>. Other verbs were made transitive by the addition of the prefix "be-" (e.g., feallan "to fall", befeallan "to throw down"; dyrnan "to hide", bedyrnan "to conceal"; flowan "to flow", beflowan "to flow around"). These derivations were not fully productive, nor were their outputs always transparent (e.g., gan "to go", gegan "to occupy, subdue, overrun), but they were not rare.

The prefixed verbs were lost in late OE and early ME. The prefix "ge-" decayed phonologically (i.e., ge < gy < gi < i < 0 (\$134)). Most of the verbs with "be-" were simply abandoned (\$144). The loss of "ge-" and "be-" provided for two identical surface forms - one a transitive, the other an intransitive verb - hence an "amphibious" verb. Visser points out a similar process which phonologically levelled the umlaut alternation between intransitive strong verbs of the third class (e.g., sincan "to sink") and their causative parallels (e.g., sencan "to make sink")<sup>18</sup>. Again there are two identical surface forms, one intransitive, the other transitive; again an "amphibious" verb results.

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17. But note that even in OE, the prefix "ge-" was sometimes merely emphatic.

18. I assume that this is the same lexical process which forms other "middles" in OE, but here there is a morphological indicator.

Visser also speculates on the transitivizing influence of "the possibility of a twofold interpretation of the past participle of some intransitive verbs" (§139).

In earlier stages of English, the auxiliary "be" (not "have") was used with the past participles of intransitives to express a "resulting state" (e.g., "it was crumpled" = "it has crumpled"). According to Visser,

"it may be assumed that the formal identity of this combination with a passive construction occasionally suggested the operation of an agent and that this led the way to the transitive use of the verb" (§139).

Some intransitive verbs of motion in OE were construed with a dative adjunct (e.g., *flowan* "to flow", *speowan* "to spew", *swaetan* "to sweat, cry", etc.) as in the following:

28) Juliana 476

(dat.)

*paet*    *him* *banlocan* *blode* *spiowedan*  
so that his joints    blood spewed

Visser declares that the loss of inflection on this type of adjunct

"led to a functional and semantic shift" (§147).

In ME, the adjunct was perceived as a direct (accusative) object.

All of these points are indeed of interest and may be pertinent to the diachronic revisions of English speech patterns. The loss of the verbal prefixes "ge-" and "be-", the levelling of umlaut, the ambiguity of "be+past participle"



and the loss of overt inflection on dative adjuncts all seem to play a role in the development of amphibious verbs in English.

But why was it necessary to mark transitive/intransitive alternations with morphological indicators in OE, but not in later stages of English? This is particularly curious for those OE transitive verbs with the prefix "be-", since the "be-" forms were not blended with their intransitive alternates by phonological reduction, but rather they were abandoned wholesale or lexicalised in individual verbs (Visser (\$144)). One should ask why the "be+past participle" construction was not ambiguous in OE. Why didn't this construction encourage the amphibious interpretation of intransitive verbs in the earlier language? Why did the loss of the dative ending for the adjunct of intransitive verbs lead to a functional and semantic shift? Why wasn't the old interpretation maintained? While these observations describe the particulars of the changing constructions, they do not explain the underlying motivation for the revolution which is apparent across the centuries.

An account which stops at this point misses out on two large facts. Many of the conversions from intransitive to amphibious verbs do not fall into the classes described above. That is, the factors mentioned by Visser (e.g., the loss of verbal prefixes, etc.) leave many revisions simply

unexplained (e.g., climb, whisper, etc.). Why did these verbs become amphibious?

Moreover, the conversion of intransitive to amphibious verbs is parallel to the conversion of verbs with indirect objects to direct object verbs and with the loss of the OE inherent adjunct constructions. The parallel timing of these changes strongly suggests that they are related.

In the present theory, a verb which is amphibious (which varies between an intransitive and a transitive usage) will be represented in the lexicon lacking a PAS functional feature matrix for its "implicit" complement. Recall that these matrices can be inserted freely during the derivation, providing that they can be linked to an appropriate LCS variable. Presumably the LCS of amphibious verbs is such that it can provide such an implicit theta assignment.

But since there is no Case matrix in the lexical entry, these verbs cannot specify their complements with the marked value of [+/-Inherent]. Moreover, the matrix must be inserted after the marked value of [+/-Inherent] has been imposed on matrices according to the Linking Conventions. The theta assignment to the (optional) LCS variable must be compatible with the default value of that feature (i.e. [+Inherent] in OE). Since Visser's definition of "amphibious" verbs includes an accusative Case assignment ([-Inherent]), "amphibious" verbs are predicted to be non-existent in OE.

Given that [-Inherent] had to be marked in OE underlying representations, the OE predilection for morphological indicators of transitivity alternations is explained. The verbal prefixes (i.e. "ge-", "be-") and the umlaut derivation provide the required feature matrix and the [-Inherent] specification, allowing the lexical entries of intransitive verbs to remain unmarked. Further, it is apparent that the intransitive "be+past participle' (=result) construction was not likely to be taken for a passive in OE, since that assumption would again require that a feature matrix was linked to the underlying LCS variable in the lexicon (and that it was underlyingly specified [-Inherent]). But the intransitive use would belie this assumption.

When the default value of [+/-Inherent] was reversed in the twelfth century, "amphibious" verbs in the new grammar did not require the morphological addition of an underlying feature matrix. If the verb could be construed with a [-Inherent] theta-assignment, the feature matrix and the value [-Inherent] were supplied by a rule in the derivation. The verbal prefixes and the umlaut rule became redundant in the new grammar and were abandoned. If circumstances permitted a "be+past participle" construction to be interpreted as a passive, then nothing further was required. A lexical entry without a feature matrix was quite compatible with such an interpretation because the matrix and the default value of [+/-Inherent] were supplied in the derivation.

Finally, here is the basis of an explanation of the "functional and semantic shift" which revised the OE constructions involving an intransitive verb and a dative adjunct. Presumably, the OE adjunct was assigned a non-delimiting theta-role. When the [+Inherent] default was lost, these adjuncts could no longer be interpreted in this way. The LCS predicate of the same verbs, however, could be reanalysed with a delimited object, and the new [-Inherent] default encouraged this new interpretation. Since there was no overt inflection to contradict this interpretation, the constructions were reanalysed<sup>19</sup>.

The postulated reversal of markedness requires no catastrophic changes in usage for the OE intransitive verbs. What is predicted, is simply a tendency for each generation of language learners to convert intransitive verbs to "amphibious" verbs, to abandon the prefixes, and so on. In parallel to the gradual loss of inherent Case assigners in favour of structural Case assigners, this scenario seems to fit the facts.

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19. In fact it seems that the "spew" type verbs were reanalysed as middles (i.e. "Blood spewed (from the joints)"-->"The joints spewed blood").

#### 7.4.2 Cognate Adjuncts

Some of the new amphibious verbs of ME take direct ([-Inherent]) "cognate" complements. These begin to appear in OE, but Visser points out that

"Cognate objects [of intransitive type verbs, J.S.L.]... are somewhat rare in Old English; they are met with increasing frequency in Middle English and become quite numerous in the Modern period, where the usage, however, remains confined to literary diction" (§424):

- 29) a) AElfred, Bede 3, 27  
He lifde his lif  
He lived his life
  
- b) c1350 Will. of Palerne 536  
to gode here i gif a gif
  
- c) 1588 Shakespeare L.L.L. II, i, 179  
Thy own wish wish I thee

Since an object which reiterates the action is likely to delimit that action, the present theory would say that cognate complements are most easily interpreted as "affected". Since the required specification ([-Inherent]) is only available to adjuncts in ME, this theory predicts that the construction should be "inorganic" in OE but more natural in the later stages of English. So the present theory correctly predicts the rise in the frequency of this construction in ME and later English.

But Visser points out a somewhat parallel construction in OE



- b) Beowulf 1220  
 Ic þe þaes lean geman  
 I you (of) that reward remember
- c) AElfred, C.P. (Sweet) 248, 1  
 hwaet sceal ic þonne buton hliehhan þaes  
 what should I then but (to) laugh (of) that

As Visser points out, with these constructions

"it is essential to bear in mind that the verbs... are intransitive, and that the practice in dictionaries and glossaries of giving e.g. "to enjoy life", "to await judgement" as translations of "lifes brucan" and "domes bidan" is misleading, since it gives the impression that in these combinations "brucan" and "bidan" were transitive verbs" (#370).

Visser finds that the relation between verb and adjunct in these constructions is not always easy to determine:

"in a great number of cases - notably with verbs of rejoicing, regretting, boasting and wondering and the like - the causal notion is evident: "Ic gefeah paes weorces" = "I was glad because of or on account of that work"... in a number of cases "with regard to", "with respect to", "concerning" would not inaptly describe the relation: "he fultumes beþearf" = "he is in need with respect to help"... In some cases the interpretation is especially difficult on account of the fact that the original (intransitive) meaning of the verb used is not clearly known now: if in "he min hran" the verb "hrinan" was different in sense from the modern transitive verb "to touch", what then was its meaning? (#370).

Visser classes these constructions together under the admittedly defective appellation "causative object". I suggest that a more apt notion is "source", for this notion permits one to differentiate these arguments from the "cause" external arguments which are added to "middle" verbs by a lexical process (allowing their transitive alternation (e.g.,

sencan "to make sink")). These latter include a sense of "agency" which is lacking in the former.

Visser points out that

"Historically the most remarkable feature of the "causative object" in the genitive is its total disappearance after the Old English period, apart from a few isolated instances in earliest Middle English..." (#373).

In the present theory, the lexical entries of the verbs which appeared with these adjuncts in OE were not provided with a PAS feature matrix for the functional categories of these complements. This matrix would be inserted during the derivation. But the inserted LCS variable did receive a theta role from the verb. The LCS predicate of the verb was such that it could allow the complement to be construed as the "source" of the action described by that predicate. I presume that these interpretations were non-delimiting (i.e. the source of an action does not delimit that action, etc.).

Since these complements were adjuncts and their feature matrix was inserted by a general rule, the matrix could not be specified for the marked value of [+/-Inherent] in the lexical entry of the verb. Since the matrix was inserted later in the derivation, the marked value of [+/-Inherent] could not be imposed on the matrix. The matrix had to be assigned the default value ([+Inherent]) by rule in the syntax. In contrast, the marked value of [+/-Genitive] was imposed on the matrix (by reference to the Linking Conventions for that



feature). Presumably this imposition is later in the derivation than that of the marked value of [+/-Inherent].

When the default value of [+/-Inherent] was reversed in the twelfth century, the construction became impossible because of the conflict between the necessary [-Inherent] default specification and the required non-delimiting interpretation. Thus the present theory provides for the demise of these constructions in late OE.

#### 7.4.4 Dative Adjuncts

As we have seen, verbs with dative complements were very common in OE. As Visser observes, with some of these "it is difficult to ascertain whether we have to do with an indirect object or an adverbial adjunct expressing instrumentality" (§321):

33) a) Beowulf 2038

			(dat.)
penden	hie	þam	waepnum
as long as	they	(with)	those weapons
	wealdan	mostan	
(to)	have power	were allowed	

b) Genesis 1812

	(dat.)
[He]	wicum wunode
He (in) dwelling	dwelled <sup>20</sup>

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20. Note that I include here the "dative cognate complements" discussed above.

Another group of dative adjuncts seems to involve the notion of "inalienable possession":

34) a) AElfric, Gramm, 36  
(dat.)  
Me mistiap mine eagan  
Me mist my eyes

b) Judith 252  
(dat.)  
AERþon þe him se egesa on ufan saete  
Before that him that fear on above sat

c) Phoenix 567  
(dat.)  
Me þaes wen naefre forbirstep in breostum  
Me (of) that likelihood never burst asunder  
in breast

This group might include the "dative reflexives" which appeared with verbs of motion in OE (see below).

Visser suggests that the inalienable adjuncts resemble the ME "ethical dative":

35) a) c.1385 Chaucer, L.G.W. 46  
(dat.)  
in myn bed there dawith me no day that I ne am up

b) 1533 St. Th. More, Wks. (1557) 120 FI  
(dat.)  
Moreover loke me thorow christendome an I suppose ye  
shall finde...

But since his ME examples do not involve an inalienable relationship, the comparison seems wrong. To me, these seem to be instances of the dative of "advantage", discussed in the

section on double objects, above.

Visser points out that

"after the Old English period: "tears fell him", "the neck broke him", "my eyes mist me" with him and me as direct objects are non-existent" (§320).

Similarly, the instrumental adjuncts were abandoned in early ME. The disappearance of these dative adjuncts was paralleled by a rise in the use of preposition phrases (e.g., "with", "by", etc. provide for instrumental adjuncts in OE, ME and present English).

Again the present theory explains these changes. The adjuncts were assigned non-delimiting theta roles by the verb (e.g., "instrument", non-delimiting "recipient"). Being adjuncts, they had to rely on the insertion of a feature matrix during the derivation and on the redundancy rules for the appropriate [+Inherent] specification. The reversal of the default value of [+/-Inherent] made these adjuncts "inorganic" in ME. In later English, these concepts can only be expressed by using a preposition to provide a feature matrix at D-structure and a [+Inherent] default assignment during the derivation.

#### 7.4.5 Dative Reflexive Adjuncts

Transitive verbs in OE might appear with an accusative reflexive object (e.g., "hi hie up ahofon" "they raised themselves up"). But some OE "intransitive" verbs denoting motion or posture and a few others (e.g., "gebidan" "to pray", "ondraedan" "to fear"; "libban" "to live"), sometimes appear with a dative reflexive object:

36) a) AElfric, Hom. (Thorpe) I, 596, 35  
(dat.)

AEgeas him ondraed þa menigu  
AE. him feared that multitude

b) Beowulf 662  
(dat.)

gewat him ham  
(he) departed him home

c) Beowulf 1601  
(dat.)

Cnut wende him ut  
C. went him out

d) Daniel 695  
(dat.)

saeton him aet wine  
(they) sat them at wine

According to Visser,

"since all of these verbs more often occur without indirect complement, there must have been a reason for speakers or writers to add this complement in a specific case; it is possible that they did so when circumstances prompted them to give linguistic expression to the notion that the person denoted by the subject was particularly affected by the result of the action or event" (§328).

In the transition to ME, a number of these verbs were lost, but Visser points out that there were many survivors and even additions to this class from French borrowings (e.g., remember, repent, doubt, merveillen, avoid, etc) (§328). The following example from the Peterborough Chronicle (anno 1127), suggests that the ME complement was assigned accusative ([-Inherent]) rather than dative Case in ME<sup>21</sup>:

37) On ane circe þær he laei & baed hine to Gode  
in a church where he lay and prayed him to God

I assume that these dative complements are not listed in the lexical entries of the OE verbs with which they appear. That is, these are intransitive verbs with a dative adjunct. So the present theory correctly predicts that they will be assigned dative Case in OE. The reversal of the default value of [+/-Inherent] would then require that these adjuncts should have a delimiting interpretation in ME.

Besides the (rare) direct evidence of this change to [-Inherent] (as in the Peterborough example, above), there is indirect evidence. Although Visser is of the opinion that the ME construction "is clearly of the same type as that in the Old English construction" (§328), he does point out some

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21. The reader will recall that for a very short period, early ME speakers still distinguished accusative from dative in the paradigm of personal pronouns. Thus such examples as 37) are quite rare, but still provide a valuable hint as to the Case of various complements in early ME.

contrary developments. The usage with the verb "to lie" (OE "licgan") became "confused" with the transitive verb "to lay" (OE "lecgan"). According to Visser,

"the regular construction "I lie me down", "I lay [preterite] me down" was replaced by "I lay [present tense] me down", "I laid me down" (§328).

A similar confusion between "to sit" (OE "sittan") and "to set" (OE "settan") had a similar result. These "confusions" suggest that the verbs of posture were more like transitive (accusative assigning) verbs in ME than they were in OE. Such is the prediction of the present theory.

These observations, of course, do not explain all there is to know about these constructions in the various stages of English. The OE interpretation remains obscure. One might say that with all of the verbs in this class, the activity (departing, fleeing, creeping, praying, etc.) or the posture (sitting, lying, standing, praying, etc.) or the mental activity (fearing, dreading, praying, etc.) can be described as a state of the physical (or mental) apparatus which is inalienably possessed by the actor involved<sup>22</sup>. So these complements might be styled "inalienably possessed recipients" in OE. On the other hand, one might wish to relate these verbs to the impersonals. This would suggest that the complement is the "experiencer" of the activity involved. The ME

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22. In particular, these are all animate activities.

construction must have a delimiting complement - presumably the adjunct provided the boundaries of the activity described by the verb. But it is not clear how this should be translated in present English.

The vigour of these constructions continued into early Modern English. Visser declares that the construction died out "almost completely... after the seventeenth century" (328). The timing of their demise suggests that this construction in ME somehow relied on the semantic assignment of the marked value of [+/-Accusative]. But again this topic goes beyond the scope of this thesis.

### 7.5 Absolute Participles

Klima provides evidence which suggests that the subject of an absolute participle is assigned the default Case. During the Modern English period, an NP in this position was consistently realised with nominative Case (Klima p.125):

- 38) a) Paston Letters II 358  
I had with me on day at diner in my modyrs place,  
she being out, the Lord Scales...
- b) Mallory 137/4  
she came to the same Abbay... and she knowing he  
was there, she asked where he was

This use of the nominative continues even in present English

dialects, but contrasts with other dialects (such as my own):

39) a) Me being a linguist, I never get up before noon.

b) There we were, me grinning like an idiot and  
her laughing fit to be tied.

These and other facts lead Klima to suggest that one dialect has nominative as default, while the other has accusative and that both Cases (both values of [+/-Accusative]) are assigned by rule.

The same analysis of [+/-Accusative] is difficult in OE because the opposition would be between dative and instrumental forms - an opposition which was only rarely apparent in the signal of inflection. The reason for this difference is a familiar story. In the present theory, the matrix for the subject position is presumed to be inserted during the derivation. When there is subject Agreement with a [+Tense] INFL, the redundancy rules assign this matrix [-Inherent]. But in participle constructions, this Agreement is not found (i.e., participles are not [+Tense]). Therefore the subject substantive phrase must be assigned the default value of [+/-Inherent] by the more general redundancy rule. In OE, of course, this was [+Inherent].

In OE, such absolute constructions were typically realised with a dative (or instrumental?) subject (Visser (§1014):



40) Present Participles

a) AElfred, Bede 464, 14

aet nyhstan, him eallum fultumiendum waes Wilfrip  
at length, them all helping, was Wilfrip

onfangen in biscophad his cyricean  
received in bishopric (of) his church

b) OE Gospel MK. 5, 2

and him on scipe gangendum, him sona agen arn an man  
and him on ship going, to him immediately ran one man

41) Past Participles

a) OE Gospel Mt. 16, 4

him forlaetenum, he ferde  
him abandoned, he departed

b) AElfred Bede 220, 16

ond him forþferdum Itthamar gehalgode Damianum  
and him died, Itthamar blessed Damianum

The reader will observe that in OE, the participle itself was realised with dative Case. This fact might indicate that the subject of the absolute participle construction was dative because it had to Agree with the participle (rather than being assigned the default values of the Case features). But this simply pushes the question around without an answer, since presumably the later English constructions are parallel. In the examples above, there is no obvious lexical origin for the functional category matrix of the participle either. Again the evidence suggests that dative is the default in OE.

The subject in absolute participle constructions has a somewhat marginal status in OE. Mitchell (§3814) quotes Callaway (1889 p.p.51)

"Though seemingly frequent in some of the closer Anglo-Saxon translations from the Latin, the absolute participle occurs there chiefly in certain favourite phrases... ..the absolute construction is not an organic idiom of the Anglo-Saxon language".

In contrast, "free adjunct" participle constructions (which have a null subject (PRO) controlled by the subject of the phrase on which they depend) "occur with great frequency in Old English" (Visser (1962)):

42) OE Gospel Luke 23, 46  
þus cwepende, he forþferde  
thus speaking, he departed

The rarity of spontaneous absolute participle subjects is not surprising in the present theory. As subjects are otherwise usually realised with nominative Case (i.e. [-Inherent]), it follows that the theta-roles usually associated with the subject position are such that they map onto structural Case, rather than inherent<sup>23</sup>. But in OE, the default value was [+Inherent] and the subject of the participle construction must receive default Case (either directly or indirectly, through agreement with the participle). This contradiction renders the construction "inorganic" in OE.

In many OE "absolute" participle constructions it might be said that there is a potential Case assigner; a preposition

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23. See the discussion of the Linking Conventions, in Chapter 3.

(Visser (§1014)):

- 43) a) Exodus 323  
ne woldon be himm lifgendum lange þolian  
not wished while them living long to suffer
- b) AElfred, Bede 232, 21  
þa waes eft forthgomgendre tide staenan circe  
then was after passing time stone church  
  
getimbred  
built
- c) AElfric's Saint's Lives 206, 183  
Agathes... clypode mid astaehtum handum  
Agathes... embraced with raised hands

I would suggest that this use of prepositions weakens the force of the contradiction between the interpretation of the subject's theta-role and the default Case assignment. The preposition suggests an inherent status for the theta assignment to the subject and so helps to find an interpretation which is more compatible with the OE default Case assignment.

In some OE texts, the conflict between theta and Case in the subject position of absolute participle constructions was resolved in the other direction. Although dative was clearly the most common Case for these subjects in OE (Mitchell (§3816))<sup>24</sup>, a few texts provide examples of nominative or accusative subjects, notably the Lindisfarne and the Rushworth

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24. Or perhaps, instrumental, disguised as dative.

Gospels:

44) Accusative

a) Lindisfarne Gospel Mk. 10. 46  
hine farende in þa burug... blind gesaet  
him going into that town,... blind (one) sat

b) Rushworth Gospel John 8, 30  
þas hine sprecende monige gelifdum in hine  
because him speaking, many believed in him

45) Nominative

Lindisfarne Gospel Mk. 5, 35  
he sprecende cuomen... aldermenn  
he speaking, came... elders

Both of these northern tenth-century texts are remarkable in that their language already reflects some properties which are usually associated with early ME texts. In her discussion of the twelfth century continuations of the Peterborough Chronicle, C. Clark notes that

"Among the Old English texts, the nearest in language seems to be the tenth-century Rushworth Gloss to the Gospel of St. Matthew" (p.xxxi).

Similarly,

"The tenth-century Lindisfarne Gloss to the Gospels, in spite of being Northumbrian, provides some enlightening parallels, especially in morphological development" (p.xxxii).

She observes, for example, that the Peterborough text

"is by no means the earliest to use uninflected forms for the dative function, for such constructions already occur in the Lindisfarne Gospels and in Rushworth St. Matthew; but such usage is certainly Middle rather than Old English..." (p.L).

Similarly, Clark notes in the Chronicles

"the simplification of the adjectival inflection [weak forms become strong, J.S.L.], of which the beginnings are first seen in the Lindisfarne Gospels" (p.Lvi).

Further, in the first continuation of the Peterborough document,

"the nominative singular masculine of the demonstrative, "se" still predominates over the analogical "þe", although in the final continuation this latter form (which had been found as early as the tenth century both in the Lindisfarne Gospels and in Rushworth St. Matthew) is the normal one for both numbers and all genders' (p.Lvi).

In short, the language of these two documents (which supply most of the OE examples of nominative or accusative subjects in absolute participle constructions) is remarkably modern in other respects, as well. This is, of course, in keeping with the northern origin of these texts in that the OE-->ME changes often appear to have begun in the north. It would seem plausible, then, to set these examples aside from the more typical OE examples. Thus there are very few exceptions to the rule that the subject of the OE absolute participle construction received dative Case.

In late OE and early ME, the expression of Case through overt inflection was levelled except in the pronominal system and even there the dative/accusative opposition was levelled. This period provides no direct evidence to show whether the subject of the participle was inherent (dative) or structural (accusative). The present theory, of course, predicts that

the position was assigned accusative. Furthermore, this theory predicts that the new default made the construction more natural in English, so that the number of such constructions should have increased from the twelfth century. Unfortunately, I have not been able to get a clear statement of the pertinent statistics for the earliest part of ME.

But Mustanoja notes that "toward the end of the 13<sup>th</sup> century", the absolute subject is realised with nominative Case. Here, at least, it is evident that the default is structural Case:

46) 1345-6 Archives Comp. Grocers of London 120, 14  
That the maysters... goon and asseyen weyghtys,  
powdrez, And all athyr things... they taking in  
euere schope that they fyndyn defectyve (MMED)

By this time the absolute participle construction with an overt subject was in frequent use<sup>25</sup>.

## 7.6 The Default Default

The evidence presented above provides a strong argument that the default parameter for structural versus inherent Case was reversed in early ME. The question remains as to exactly why

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25. Visser (§1078) speaks of "frequent use" in St. Th, More and argues by example that "the construction occurs in Middle English with considerably greater frequency than the handbooks and grammars state."

this happened.

The analysis says that the OE inflectional affixes were phonologically reduced. This reduction encouraged the use of prepositions which could clarify the particulars of the theta-assignment which was involved in specific constructions. Eventually these prepositions lost their status as lexical categories in these constructions and came to be seen as merely Case-markers - phonological signals of the underlying feature specifications. But the new signals do not necessarily imply a new default setting. It is true that OE prepositions were used mainly in dative constructions but the fact that the prepositions were used to signal [+Inherent] still does not require a reversal of the default value for this feature in verb and adjective phrases. What factor caused this change?

The answer, I think, lies in the particular interpretations which are associated with the two values of [+/-Inherent]. The "delimiting" interpretation which is associated with structural Case is somehow more natural in [+V] categories. Verbal and adjective predicates define "actions and states" which naturally include participants in their LCS definition. That is, an action typically involves one or more participants and a state typically involves a participant property and a participant which possesses that property. These participants are central in the definition of verbal and adjectival LCS

definitions. On the other hand, nominal predicates define "things", and this concept is somehow complete whether or not there are associated participants. Prepositions do not provide LCS variables (participants) in the representation at all. It seems natural to assume, then, that a delimiting interpretation is the unmarked interpretation in verb and adjective phrases but not in noun and preposition phrases.

If this is so, then the process which is involved in the reversal of the default value of [+/-Inherent] is evident. The OE situation (where [+Inherent] was default everywhere except for subjects) is semantically marked. The [+Inherent] default was maintained in verb and adjective phrases through the explicit display of substantive inflection. When this signal was reduced, language learners reverted to the unmarked semantic system - [-Inherent] was assumed to be the default in verb and adjective phrases.

Of course, this raises another question: why did OE have the semantically marked default for [+/-Inherent] in those domains? I would argue that on the syntactic level, the OE situation was unmarked. Notice that the OE default rules are simpler than their ME counterpart:



47)

a)

OE

$$\left[ \begin{array}{l} \text{ } \\ \text{ } \end{array} \right] \begin{array}{l} \text{-->} [-\text{Inherent}] / [+Tense, \text{---}] \\ \text{-->} [+Inherent] \end{array}$$

b)

ME

$$\left[ \begin{array}{l} \text{ } \\ \text{ } \\ \text{ } \end{array} \right] \begin{array}{l} \text{-->} [-\text{Inherent}] / [+Tense, \text{---}] \\ \text{-->} [+Inherent] / [[-N] \text{---}] \\ \text{-->} [-\text{Inherent}] \end{array}$$

I assume that the first rule in each of these sets is a universal - all subjects which Agree with a tensed clause are assigned structural Case. No language learner has to learn this rule. So the OE speaker only had to learn one general rule, while the ME speaker had to learn a general rule and one with a particular environment.

The idea is that there are two levels where markedness is evident. On the conceptual level, the later English situation is unmarked and the OE situation is marked. On the syntactic level, OE is unmarked, while later English is marked. Language change in this parameter is a swing between these two poles of attraction.

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### Conclusion

The arguments which have been discussed or presented in this thesis suggest that syntactic and phonological representations have more in common than is generally assumed.

I have argued that all phrasal projections in syntactic representations are defined by matrices of syntactic features. Moreover, these features (in particular, grammatical features) have been shown to have a formal shape which is quite similar to that of phonological features. Both syntactic and phonological features are binary and both are represented in underspecified matrices which are filled in by rule during each derivation. Moreover, the matrices of syntactic features are parallel to those of phonological features in that both can enter the representation from lexical entries or be "inserted" during the derivation.

Further parallels have been noted in other research. For example, van Riemsdijk (1982) presents evidence from Warlpiri which suggests that Case is subject to locality conditions which are very much like those which have been observed in phonological representations. Case features in this language (and others) are associated with substantive phrases in a domain which is limited by other Case features - but this

association can ignore other (non-Case) features in the same representation. In current phonological theory, this kind of phenomenon is captured in an "auto-segmental" representation. Different features are on different tiers, so that adjacency can be defined separately on each tier. The evidence presented by van Riemsdijk suggests that Case features are on a separate tier from other syntactic features.

The same kind of insight has come up in more recent discussion. Yip, Mailing and Jackendoff (1986) present an elegant account of the difference between Ergative/Absolutive Case systems and Nominative Accusative systems. The account is based on the notion that Case features, like phonological features, may "float" in underlying representations. The floating features are associated with substantive phrases by a process in the derivation which simply links features and arguments in a linear sequence within a particular domain. In Ergative/Absolutive languages, the association proceeds from right to left, but in Nominative/Accusative languages, the process goes from left to right.

Again the analysis invokes mechanisms which are familiar from auto-segmental phonology. The evidence is building towards the conclusion that syntactic and phonological representations are very similar. I speculate that other long distance relations in syntax might be handled by an auto-segmental representation. We might say that the feature

[+WH] has an independent tier, so that question words are actually adjacent to their trace on this level. Similar accounts might be made for quantifiers, etc.. The door is opening to a rather radical view of syntax.

What about conceptual/semantic representations?

The account of conceptual structures in Jackendoff (1983) (and in other work) also uses the formalism of binary features. Moreover, in Jackendoff (1987)<sup>1</sup>, it is argued that different thematic roles should be represented on independent tiers. Jackendoff separates a "thematic tier" (e.g., THEME, GOAL, etc.) from an "action tier" (e.g., AGENT, PATIENT, etc.) and a "temporal tier" (e.g., P = point in time, R = region in time).

It seems then that all three levels of representation (i.e., phonological, syntactic and conceptual) may be argued to be similar in important respects. The unifying concept is the notion of binary features in underspecified matrices in auto-segmental representations. From this perspective, the general structure of a linguistic representation might be something like the following:

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1. See also the references in that article for other analyses along these lines.



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