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STUDIES IN LAKHOTA GRAMMAR

University of California, San Diego PH.D. 1984

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UNIVERSITY OF CALIFORNIA

SAN DIEGO

STUDIES IN LAKHOTA GRAMMAR

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Linguistics

by

Janis Shirley Williamson

Committee in charge:
Professor Sandra L. Chung, Chairman
Professor S.-Y. Kuroda
Professor Margaret Langdon
Professor Georges Anagnostopoulos
Professor Mark Wilson

1984

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University of California, San Diego

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For my parents

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Abbreviations and Symbols

\+ indicates morpheme boundaries in the Lakhota and the comparable English gloss

\- used in the English gloss when a morpheme boundary is not indicated in the Lakhota

* ungrammatical

ADJ	adjective
ADV	adverb; adverbial suffix
a-NS	singular non-specific indefinite determiner
a-S	singular specific indefinite determiner
BEN	benefactive
COMP	complementizer
CONJ	conjunction
DUR	durative
FOC	focus marker
HAB	habitual
IMP	imperative
INFL	inflection
INOBJ	indefinite object prefix
INSTR	instrumental prefix
LOC	locative prefix
NEG	negation
NOM	nominative Case
NZ	nominalizer
OBJ	objective Case
OBL	oblique prefix
PART	partitive
POS	possessor
PL	plural
PRT	sentence final particle
Q	question
RECIP	reciprocal
REDUP	reduplication
REFL	reflexive

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some-NS	plural non-specific indefinite determiner
some-S	plural specific indefinite determiner
the	definite determiner
the-P	past definite determiner
1	first person singular
1p	first person dual
2	second person
3	third person
3OBJ	third person plural transitive object

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Major Field, Linguistics

Studies in Syntax
Professors Sandra Chung, S.-Y Kuroda, and David Perlmutter

Studies in Semantics and Pragmatics
Professors Gilles Fauconnier, S.-Y. Kuroda and Mark Wilson

Studies in Applied Linguistics and Language Acquisition
Professors Leonard Newmark and Elissa Newport

Studies in Morphology and Phonology
Professors Mark Aronoff and Sanford Schane

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ABSTRACT OF THE DISSERTATION

Studies in Lakhota Grammar

by

Janis Shirley Williamson

Doctor of Philosophy in Linguistics

University of California, San Diego, 1984

Professor Sandra L. Chung, Chairman

Lakhota can be characterized as a language of remarkably free word order, flat structure, of rich and complex verbal morphology and a limited number of movement rules. While the existence of such languages is well-known, very few of them have been studied in great depth and it is unclear how different they are in a theoretically significant sense from the more familiar languages.

Our chief goal, then, is to provide a comprehensive description of the major subsystems of the language and evaluate the usefulness of certain analytic notions in present generative theory for our description. It is hoped that this thesis will contribute to the growing pool of well-documented exotic languages for which a true universal theory of grammar must countenance.

We examine a well-documented distinction in surface case for intranstive verbs in Lakhota and show that the split system of Case assignment poses substantive problems for the present conception of Case and its role in the Government and Binding framework. We docu-

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ment the range of possible obligatory coreference in Lakhota and situate the Lakhota facts within a GB theory of binding, which allows for substantial variation. We present a descriptive account of complementation in Lakhota that substantiates the GB view that inflection plays a significant role in determining the variety of surface complement types. We investigate the free word order of major constituents within the clause and its interaction with possible coreference of definite NPs. We find that the structural conditions generally assumed to be correct in GB fail to predict coreference possibilities, and that the notion of linear order is crucial for a correct account. Finally, we investigate the properties of question constructions which have no syntactic rule of Wh movement. Here, we find significant confirmation for the need of constraints on Wh movement in LF.

A present assumption of GB theory is that a single theory of government will provide the basis for the conditions on the various subsystems of the grammar. By presenting as complete as possible picture of these subsystems in Lakhota, we can see that this view is perhaps premature. The notion of government at the flat S-structure is, at best, irrelevant, while the notion of government on an abstract structure is needed at both syntactic and LF levels.

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INTRODUCTION

1.1 Goals of the Thesis

This thesis has two goals. The first is to provide a comprehensive description of the major subsystems of Lakhota grammar. Previous non-generative studies have left some notable gaps in the description of Lakhota syntax--in the areas of questions, word order properties and particularly, in complementation and pronominal coreference. Much of the basic data that we cite here has not been previously documented. In addition to these data, other new data will be cited that augment and extend previous descriptions, particularly in the areas of clausal syntax and constituent structure. These data are suggested by the explicit predictions of generative theory and its application to Lakhota.

And this brings us to our second goal: the proper choice of grammatical framework in which the right generalizations can be formulated and a level of explanatory adequacy achieved. We try to show in this thesis that the framework of the Extended Standard Theory (EST) and more recent developments (cf. Chomsky 1981) known as the Government and Binding Theory (GB) constitute such a framework. However, the fit between the predictions of the theory and Lakhota is not perfect and we shall indicate the relevance of the Lakhota facts for a re-evaluation of our present conception of Universal Grammar.

We have chosen the GB theory for several a-priori reasons. First, the GB theory, in the author's opinion, is the most comprehensive and explicit theory of grammar presently known. As such, it will

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be possible to discuss a wide range of constructions within a single coherent framework. Second, this framework provides a very concrete and explicit model of how languages with seemingly very different properties can still be related in Universal Grammar through the notion of parametric variation. In this model universal principles are not conceived as absolute principles, but rather as parametrized choices (for details, see Chomsky (1981)). The idea, then, is that languages may vary within limits severely constrained by the nature of the parameters made available by universal grammar. We will see that Lakhota differs from English in a number of parametric choices (such as non-configurational phrase structure rules, limited realization of Move a in the syntax). The seemingly radical differences between English and Lakhota will thus be traced back to a few different choices in the value of some parameters of Universal Grammar (UG). This is another appealing property of GB. Finally, the complex interactions among the sub-theories within GB result in predictions for various parts of the grammar. While it is not our purpose here to present a definitive grammar of Lakhota, we do wish to approach as near as possible a complete picture of the major subsystems of grammar in Lakhota, since only a comprehensive consideration to these subsystems will do justice to both the theory and the language.

Before we give an outline of GB theory and our thesis, we will present a brief background of Lakhota and the data presented in this thesis.

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1.2 Some Preliminaries on Lakhota

1.2.1 Genetic Classification

This thesis is based on the Lakhota dialect of the Sioux language, as spoken by the Oglala band of the Teton tribe. In order to situate this dialect it will be helpful to give a very brief overview of the history of the Sioux and their language.

Politically speaking, the term "Sioux" has referred to those people who had formed a loose confederation of seven tribes (the Sioux nation) at the time of white contact. The people in this confederation called themselves, depending on their dialect, the Dakota, Lakota or Nakota, meaning "allies" (Buechel 1970, 3).

This three way dialectal division corresponds to another nomenclature for the seven tribes in the confederation. They are the Santee (speakers of Dakota), the Teton (speakers of Lakhota), and the Yankton (speakers of Nokota) Sioux. The Santee (from isa+ati 'stone+encampment') comprised four of the seven tribes and lived in the easternmost regions; the Yankton (from iha+tuwa '?-camp') are comprised two of the seven tribes and lived in the westernmost regions, and the Teton (from ti+tuwa '?+camp') comprised the remaining tribe, the largest by far, itself split into seven subtribes or bands and living in the central prairie regions. These seven subtribes of the Teton Sioux are the Oglala, Brule, Hukpapa, Miniconju, Sans Arc, Blackfoot and Two Kettle bands. However, there are other tribes not belonging to the confederation that spoke closely related dialects. The Assiniboin and Stoney tribes were not confederation members,

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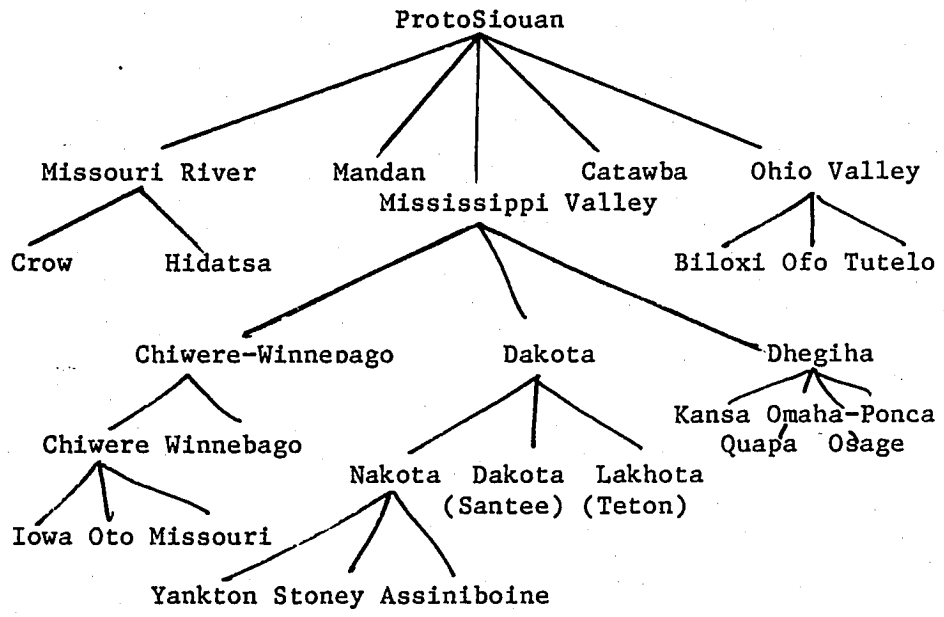
having split off from the Yankton tribes prior to 1640. Yet, linguistically speaking these people belong to the Nakota dialect.

The cover term used by most linguists for these major dialects has been "Dakota", in spite of possible confusion with the Santee dialect. In figure (1) below, we give the genetic classification of Dakota within the larger Siouan family, slightly modified from Dakota Phonology and Morphology (Shaw (1970).

1.



As Shaw (1976) has pointed out, the l/d/n correspondences that form the basis of this tripartite division are not completely straight forward, particularly the d/n correspondences. She also claims that there are significant differences in the published literature on the Teton dialects. This thesis is based on a Teton dialect, viz. that of the present day Oglalas. As we have not attempted any crossdialectal or historical comparisons, we simply present (1) with no further comment.

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1.2.2 A Brief Bibliography

The Sioux are perhaps one of the best known, or perhaps glamourized, group of American Indians in modern American popular folklore. The bravery and skill of their warriors at the time of white contact and encroachment has made them famous. It is not our purpose here to describe these people, their culture and their history, which I have been priveleged to receive a glimpse of while working with my consultants. For the interested reader who wishes to consult some studies on the Sioux people we present the following brief bibliography.

For general bibliographies on Indian studies, the reader might wish to consult Prucha (1977, 1982). For early ethnographic studies on the Sioux, see Demaille (1978) and Eastman (1904). For historical works, see Robinson (1908) and Anderson (1980). Early biographies and oral histories include Clark (1976), Standing Bear (1932) and V. Deloria Sr. (1971). For an autobiography of an extraordinary medicine man, see Neihardt (1932). For a comprehensive account of the years of Indian-white conflict in North America, see Brown (1971). For political and social commentaries by a contemporary Sioux, see Vine Deloria Jr. (1971, 1973).

1.2.3 Data Sources

As I have mentioned earlier, the dialect I am investigating in this thesis is Lakhota as spoken by the present-day members of the Oglala (lit. 'they scatter their own') band living on the Pine Ridge

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Reservation in southwestern South Dakota. This thesis is based on material I have collected from several speakers over a period of approximately six years.

My work in Lakhota began in a field methods class in 1975-76 under the direction of Professor Margaret Langdon. Shirley Murphy, originally from Kyle, South Dakota, was the consultant for the class. Her sensitivity to semantic nuances made my initiation into field work exciting and rewarding. Much of the description of the determiners and complementation is based on work with her. In 1978, I began to work with Charlotte Standing Buffalo Ortiz, also originally from Kyle, South Dakota. Her patience, good humour and endless generosity of her time were invaluable. Much of the data provided by Mrs. Murphy and Mrs. Ortiz was collected while they lived in southern California.

Two trips to the Pine Ridge Reservation in 1980 and 1981 were also valuable in confirming the judgments of these speakers and providing new data. Mr. Matthew Two Bulls and Mr. Edwin Fillspipe gave generously of their time and intuitions. In addition, discussions with Edna Apple, Louise Amiotte, Susy Bisonette, Edna Johnson, Cordelia Attack-Him, and Zona Fills the Pipe were helpful. I have also consulted with Marvin De Bear in San Diego.

All of my consultants were born and raised on the Pine Ridge Reservation. The youngest speakers I have worked with have been in their late thirties or early forties. The others have been in their late fifites and early sixties. All of them are bilingual Lakhota-English speakers and all of them learned Lakhota as their first language.

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From discussions with my consultants, it has become obvious to me that the Lakhota dialect is in the process of undergoing change. But it would take a large scale study to determine the direction of the changes and the reasons for them. Although age of the speaker is a factor in the changes, there are no simple generational differences. Some Lakhota speakers have been raised by grandparents or even great-grandparents and thus speak the "old Lakhota". A second factor is place of residence. In some parts of the reservation (particularly at the old agency town, Pine Ridge) English predominates and bilingual skills get "rusty". In other parts of the reservation Lakhota remains the language of the home. The data on which I have based this thesis is data that has been corroborated by several speakers who are considered to speak fluent conservative Lakhota.

I have also consulted earlier works on Lakhota, notably Deloria (1932), Boas and Deloria (1941) and Buechel (1939, 1970). There is at least a one generation difference between the people I have consulted and the people whose language is described in these works. But by and large, there are virtually no differences in the judgments of my consultants and what may be inferred from these works. Where I have found differences, I have noted them. Occasionally I will include data from these sources to corroborate the data I have collected.

1.2.4 Previous Studies

I have benefited from the wealth of data and insight provided by previous non-generative studies on Lakhota, including three in

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particular. Buechel (1939) provides a comprehensive description of Lakhota syntax. Although it is marred by the fact that many of the examples are Biblical translations, which results in an uncolloquial Lakhota, I feel that his overall assessment of the language is correct. Boas and Deloria (1941) has a richness of idiom and intuition that only a native speaker can provide. A reference grammar, it gives a detailed documentation of many phonological and morphological processes and some constituent analysis. Rood and Taylor (1976) is a pedogogical text with exercises and readings for the student and does not attempt to be as comprehensive as the other two works. But it is carefully done and the description that emerges from it is valuable.

In addition to these works, there have been more recent studies in the generative framework. Most notable is Shaw (1976). This disserta tion provides a comprehensive analysis of several dialects (including some previously poorly documented dialects--Stoney and Sioux Valley (Santee)). Other dissertations are Carter (1974) and Van Valin (1977). Carter (1974) is a study in phonology, primarily concerned with the stress rules of Lakhota. Van Valin (1977) is a study of some syntactic constructions of Lakhota (complementation and relative clauses) written within the framework of "role and reference grammar". For other works, the reader should consult the bibliographies on Siouan in general complied by Chambers (1968), Chafe (1972, 1178-1181) and Rood (1977).

1.2.5 Orthography

Several phonemically-based orthographies are presently used at

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the Pine Ridge Reservation. The most common are variants of Buechel's, but I will be using the orthography in Rood and Taylor (1976) which is based on that in Boas and Deloria (1941).

The major source of differences among these orthographies is the representation of the nasal vowels and the aspirated vs. unaspirated series of stop consonants. In Buechel's orthography, nasal vowels are indicated by the vowel and a following "ŋ": ie., aŋ, iŋ, and uŋ (oŋ). However, I have often seen these replaced by the vowel followed by a simple "n", leading to undesirable confusions about the phonetic values of the sequences V+nasal. On the other hand, Rood and Taylor, following Boas and Deloria, indicate nasality by a diacritic hook under the vowel: ą, į and ų. I have adopted this system.

The second difficulty with Buechel's system is that a two-way phonemic contrast between aspirated and unaspirated stops is ortho graphically represented by three symbols. Both the aspirated series (usually represented p^{ϵ}, t^{ϵ} and k^{ϵ}) and the unaspirated series (usually represented ṗ, ṫ and k̇) are sometimes represented by plain p, t and k. These diacritics are often dropped completely, resulting in the loss of phonemic contrast. Rood and Taylor's system (in which the aspirated series is indicated by a following h and the unaspirated series is unmarked) avoids both these difficulties and for these reasons, I have adopted their orthography.

The five oral vowels and three nasal vowels are:

2.

i e	į	u o ų
	a ą	

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The consonants are listed in (3), along with their phonetic values, when not standard IPA. The only non-phonemic consonant is g, which is an allophone of /k/ occurring in consonant clusters before [m], [n], [l], and [w]. ([b] may in most instances be similarly analyzed as an allophone of /p/.) The phonemic contrast between aspirated and non-aspirated /čh/ and /č/ is lost for some speakers.

3.

	bilabial	dental	palato-alveolar	velar	glottal
stops					
asp.	ph	th	ch [č^{h}]	kh	
plain	p	t	c [č]	k	
glottal	p'	t'	c' [č']	k'	ʔ
voiced	b			g	
fricatives					
vcless		s	š	ȟ [x]	
glottal		s'	š'	ȟ'	
voiced		z	ž	ǧ [ɣ]	
liquid		l			
nasal	m	n			
glides			y	w h	

1.3 A Sketch of GB Theory

In this section, we will briefly outline the theoretical framework that will be used in this thesis. This outline is based upon the theory of grammar discussed by Chomsky in Lectures on Government and Binding (henceforth, LGB). A more detailed presentaion of the theory will be given as we consider the particulars of Lakhota.

Government and Binding Theory (henceforth GB) assumes that the rule system of Universal Grammar is divided into the following sub components:

1. (i) lexicon
   (ii) syntax
      a. categorial component
      b. transformational component
   (iii) PF component ("phonetic form")
   (iv) LF component ("logical form")

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Let us briefly discuss the role of each of these components in the grammar.

The lexicon, which specifies the abstract morpho-phonological shape of each lexical item and its syntactic features (contextual and categorial), together with the categorial component, which specifies the grammatical categories of the language within some variant of X-bar theory, constitute the base. The base rules (phrase structure rules and lexical insertion) generate D-structures ("deep structures" in earlier generative theories). The transformational component consists of the various specific instances of the general schema Move alpha (henceforth Move a), which leaves traces coindexed with their antecedents. Move a, then, is the mapping from D-structure to S-structure. S-structure is thus an abstract level of representation, containing various empty categories. Following the usage in Chomsky (1981), surface structure is not synonomous with S-structure: the former term will be used in its earlier generative sense, viz., labelled bracketting at the PF level.

The syntactic component is thus D-structure, S-structure and the rule Move a. It is assumed that Move a may also apply in the other components. Whether or not languages have Move a in any of these three components is optional and subject to parametric variation.

It is hypothesized that S-structure is the input for the other two components PF and LF. The relationship between these components can be schematized as the following:

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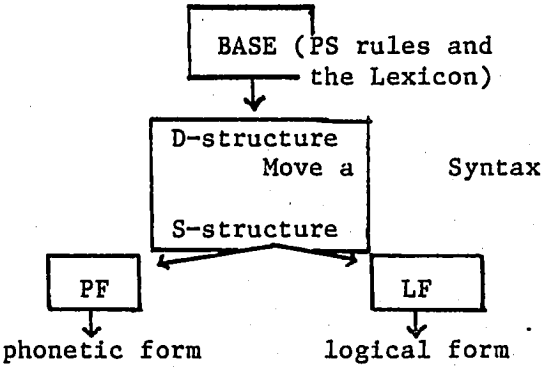
2.



This model claims that the PF is "blind" to the rules and structural representations in LF and vice-versa. The rules in PF have not been investigated in any great detail in LGB and their properties and nature is left open. However, it is suggested that they may include "stylistic" rules, rearrangement rules (cf. Chomsky and Halle 1968), and some movement rules, perhaps some cases of cliticization and the like.

LF (logical form) is a further level of representation, presumably subject to little variation among languages, derived from S-structure by Move a and interpretative rules. Among the rules of LF are QR (Quantifier Raising, cf. May 1977) and Wh movement (cf. Chomsky 1981, and Huang 1982). It is assumed that LF is not radically different in structure from S-structure and that it has the semantic properties of predicate calculus (ie., quantifiers and variables). This former assumption is made to follow from a proposed principle of UG, the Projection Principle, which will be discussed shortly. Note that it is an empirical question whether LF representations require further devices or a richer semantic interpretation.

The model of the rule system in (2) provides an explicit hypothesis concerning the basic question of descriptive linguistic

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science: how are the representations of form and meaning mediated? The basic question of theoretical linguistic science is perhaps: how are the rules of a grammar and the child's acquisition of a representation of these rules mediated? To answer this question, we must turn to the proposed principles of Universal Grammar, which constitute the child's innate language capacity and from which the various constraints of the rule system can be deduced. This general approach of searching for such principles is what has characterized the work done within EST as distinguished from other generative theories. GB departs from earlier versions of EST most strikingly in the scope and structure of its proposed systems and subsystems of principles.

The various principles form the following subsystems:

3. (i) bounding theory
   (ii) government theory
   (iii) θ-theory
   (iv) binding theory
   (v) Case theory
   (vi) control theory
   (vii) the Empty Category Principle (ECP)

I will briefly outline each of these in turn.

Bounding theory (or subjacency) constrains Move a applying in the syntactic component (there is some debate in the GB literature as to whether or not it applies in LF) and in effect prohibits unbounded movement rules by imposing locality conditions on them. There have been some proposals that subjacency also constrains Move a in LF (cf. May 1977) but there is evidence (cf. Chomsky 1981, Huang 1982, this thesis, chapter 7) to the contrary.

The skeleton on which GB fleshes out Case theory and binding theory is the theory of Government. The intuitive notion of govern-

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ment begins as a relation between the head of a phrase and its complement argument, a notion that comes to be defined, modified, and expanded structurally in terms of c-command. The theory of government allows the grammar to identify various arguments in terms of their unique governor.

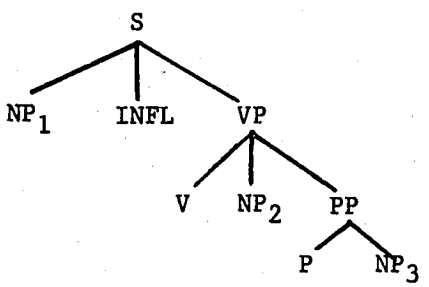
There have been several definitions of government proposed within the framework of GB and some discussion of various alternative formulations can be found in Chomsky 1981, 161 and op. cit.). We will assume the following definition:

4. a governs g in the configuration $[_b$ ...g...a...g...]
if and only if

(i) $a=X^0$ (ie., N, V, P, A and INFL)
(ii) where d is a maximal projection, if d dominates g, then d dominates a.
(iii) a is an immediate constituent of b.

(1i) requires that a be a lexical category at the X^0 level. INFL may be taken as a lexical category in that when it is [+tense], it must contain AGR, which in turn, through its identification with PRO, can be considered a lexical category N. (1ii) ensures that all maximal projections (\$ NP, VP, and PP) are barriers to government. Thus in simple clauses such as following,

5.



we have the following pairs of governors and governed elements. V

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governs NP_2 and PP, but not NP_3 (here, PP is a maximal projection and hence a barrier to government). P governs NP_3 and INFL when it contains [+tense] governs NP_1. VP c-commands NP_1 but it does not govern it, as the definition of government requires the governor to be a head (X^0 of (1i)). V does not govern NP_1, as VP is a barrier. One position in (5) can be ungoverned: the subject position of a non-finite clause.

Several issues arise with this definition, particularly when we extend this definition to NP structures. We will return to the definitions of government in the course of our discussion of Lakhota.

θ theory is concerned with the assignment of thematic roles (the term based on "theme", a semantic role defined in Gruber (1972), and abbreviated to "θ-roles") to referential NPs and possibly some PPs. θ-roles (some examples are agent, goal, source, benefactive, etc.) have been discussed and elaborated in many different theories of semantic description, including Gruber (1972), Fillmore (1968), and Jackendoff (1972). It is assumed here that the assignment of θ-roles is based on the meaning and the subcategorization features of a verb and conforms to the following criterion (θ-criterion):

6. Each argument bears one and only one θ-role and each θ-role is assigned to one and only one argument.

Note that θ-theory is parallel in certain respects to Government theory. First, all verbs both govern and θ-mark their subcategorized NP. Second, both theories treat the subject position in a unique way. Subject NPs may or may not recieve a θ-role from the VP, depending on the lexical properties of the verb. So, for example, Subject to Subject Raising verbs (<u>seem</u>, <u>be likely</u>, etc.) do not (com-

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positionally) assign θ-roles to the subject, while Equi verbs (try, be reluctant to, hope, etc.) do. Thus, just as the subject position is the only position that may be ungoverned at S-structure, the subject position is the only position which may lack a θ-role in D-structure.

Note that the θ-criterion predicts that movement can be from a θ-marked position to a non-θ-marked position but not to a second θ-marked position. Otherwise, an argument would receive two θ-roles. The θ-criterion together with the Projection Principle ensures that the reverse situation is also not possible, ie., that movement from a non-θ-marked position to a θ-marked position is ruled out. To see how this is accomplished, let us introduce the Projection Principle.

The Projection Principle requires that all levels of representations (D-structure, S-structure and LF) observe the subcategorization and thematic properties of lexical items. Furthermore, from the assumption that verbs must θ-mark the positions that they subcategorize for (an assumption which is incorporated into the formulation of the Projection Principle (Chomsky 1981, 38)), it follows that every NP occupying a subcategorized position receives a θ-role. Movement from a non-θ-marked position to a θ-marked position would require that at D-structure, the θ-marked position be empty (if it were filled, movement to it would violate the Principle of Recoverablility of Deletion). But such a D-structure would violate the θ-criterion, since at that level the argument in the non-θ-marked position would not bear a θ-role and the θ-role associated with the empty position would not be assigned to an argument. In this way, the Projection Principle rules out Subject to Object Raising as a possible instance of Move a.

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Thus, it can be seen that the Projection Principle, as an empirical hypothesis about language, rules out a great many possible derivations. But it may be that some modification of the principle must be made. Restructuring rules, which effect changes in government relations, are an obvious problem for the present definition of the Projection Principle. As a leading idea, the Projection Principle takes partial form in other theories, notably as the prohibition of dummies at the initial level in Relational Grammar. The other prediction of the Projection Principle (ie., no movement to a θ-position) has no parallel in RG.

Case theory, which deals with the assignment of abstract Case and its morphological realizations, in its broadest interpretation, determines the distribution of lexical NPs. Thus, Case theory is meant to hold even for those languages with no overt case morphology (and hence the orthographic distinction between "Case" in this theoretical sense and "case" in traditional linguistic usage). The distribution is achieved by rules which assign abstract Case to NPs and a Case filter which ensures that lexical NPs without Case are ruled out (*NP, if NP has a phonetic matrix and no Case). However, as with Binding theory discussed below, the assignment of Case is developed within the theory of government.

It is assumed that Case is typically assigned by the governor head of a construction to the governed NP. In English, only verbs and prepositions (ie., the [-N] category in X-bar terms) directly assign Case to the NPs that they govern; nouns and adjectives ([+N] in category features) cannot, (hence the need for <u>of</u>-insertion in English

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in argument structures such as destruction of the city and proud of him. It is further assumed that Case can be structurally assigned (these are the cases where it is assigned by a governor) or inherent. Some rules for Case assignment follow:

7. NP is nominative if governed by AGR
   NP is objective if governed by V with the subcategorization feature [+ _ NP], ie. transitive.
   NP is oblique if governed by P
   NP is genitive in $[_{NP}$ _ X]

These rules can be viewed as assignment rules applying at S-structure to NPs in S-structure representations or, alternatively, as Case checking rules which filter out NPs directly inserted in D-structure with Case at S-structure. These two approaches have the same empirical consequences. Note that because Case is determined by S-structure positions, the surface subject position is again uniquely identified, here as the only "nominative" NP. Case theory is used to force NP-movement. NPs in certain structures will not receive Case, in particular, in the subject position of a non-finite clause and the object of passive verb. Only Move a, which allows this NP to move to a position which is assigned Case, will save these structures.

The principles of Binding Theory deal with the relations between anaphors (reflexives and reciprocals), pronominals (pronouns), and referential expressions (names and variables) and their possible antecedents. Previous work (Chomsky (1980)) had already determined that the only "transparent" position, ie., a position where an anaphor may have an antecedent outside the clause in which it was contained, was the subject of a non-finite clause. In the terminology of On Binding, there were two opaque domains within which anaphors must be

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bound and pronouns must be disjoint in reference: the subject of a tensed sentence and the c-command domain of the subject of NP or S. In earlier work these domains were referred to by the Tensed S and Specified Subject Conditions. But these conditions are not related and their combined effect to single out the subject of a non-finite clause as the single transparent position does not follow from any more general principle. This conceptual problem, if indeed it is a problem, is overcome in the GB framework where the theory of binding is developed within the theory of government (which also, of course, is able to single out the subject of a non-finite clause, as the only ungoverned position). This is done by using the definition of government through the notion of governor in the definition of governing category (LGB, 188):

8. A is the governing category for B if and only if A is the minimal category containing B and a governor of B where A=NP or S.

With this definition, the governing category of an infinitival subject is not the clause that immediately dominates it, since this clause does not contain INFL with AGR, which is the governor of the subject position. In this case, the theory allows for two possibilities. Either the verbal element of the higher clause exceptionally governs the embedded subject position (as in the case of subject-to-subject raising vebs and the verbs believe, expect, etc., which have the additional property of assigning Case exceptionally to the subject), or the embedded subject position will be ungoverned, in which case PRO may occupy it. Now, all that remains is to state the principles for the binding possibilities for the different types of NPs.

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Binding Theory

9. A. An anaphor is bound in its governing category.
B. A pronominal is free in its governing category.
C. An R-expression is free.

Because of the formulation of the definition of governing category, there will always be a split in the behavior of an infinitival subject argument and all other arguments. Let us consider the case of the anaphors. Anaphors in object positions will always be bound to a c-commanding antecedent inside their own clause (or NP). This is because they are always governed by V (or N) and hence their governing category will always be the clause (or NP) that immediately dominates them. Anaphors in the subject of a tensed clause are governed by INFL and therefore their governing category will also always be the clause that immediately dominates them. However, principle A ensures that this case will always be ungrammatical since as anaphors, they must be bound, yet there is no c-commanding antecedent for them. Now consider the case of anaphors in the subject position of an infinitival clause (He believes himself to be a fool). There the governing category is a clause higher up and hence these anaphors can be bound by an antecedent from outside their own clause. The same remarks hold equally for the case of the pronominals. R-expressions (names and variables) must be free of a c-commmanding coindexed argument in every governing category. In other words, R-expressions cannot have argument antecedents.

The last subsystem of principles is Control theory, which determines the potential controllers for PRO, if any. This is the least-developed subsystem of GB and it is suggested that several

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factors interact, minimally including the θ-role of the antecedent, structural properties of the sentence, and the meaning of the verb, to determine control. In some work in the GB literature at least part of this theory has been argued to be subsumed by binding theory (see Manzini 1980).

However this issue is resolved, binding theory is crucial in determining the distribution of PRO in sentence structures. In GB theory, PRO is characterized as both a pronominal element and an anaphoric element. As such, it falls under both principles A and B of binding theory. But this will give rise to a contradiction, since an element cannot at the same time be free and bound in some domain. Then, it follows that PRO cannot have a governing category and, assuming the definition of governing category given above, that it is not governed. The occurrence of PRO is then restricted to ungoverned positions. This is what is sometimes called in the literature "the PRO theorem". Note that if we assume, as in LGB, that Case is assigned to the subject under government by the AGR element in INFL, PRO will not have Case. But this constitutes no problem since PRO does not have a phonetic specification and, as such, is not required by Case theory to undergo the Case filter.

The (generalized) Empty Category Principle (ECP) is a distinct principle of the grammar that deals with the "right" contexts in which an empty category (PRO or trace) may appear. Two different subprinciples must be recognized in the generalized ECP:

10. (i) An empty category (ec) is PRO iff it is ungoverned.

(ii) an ec is trace iff it is properly governed.

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As we saw above, (i) is completely reduceable to binding theory, where it constitutes the PRO theorem. (ii), however, remains as an independent principle and is usually referred to in the literature simply as the empty category principle (ECP). Below we give the definition of proper government.

11. A <u>properly governs</u> b if A governs b and:

(i) A is a lexical category X^0 (lexical government);

or (ii) A is coindexed with b (antecedent government).

This principle accounts for a number of subject/object asymmetries with respect to wh-extraction that have been observed in the literature. Since AGR is not considered a lexical governor (in languages like English), wh-extraction from the subject position will leave a trace which is not lexically governed, contrary to extraction from object position. Thus, unless this trace is antecedent-governed, the structure will be ruled out by the ECP. A relevant example here is the classical phenomenon of the [that-t] filter of Chomsky and Lasnik (1978):

12. *who$_i$ does he think [t_i that[t_i left]]?

13. who$_i$ does he think [t_i [t_i left]]?

14. what$_i$ does he think [t_i that [he read t_i]]?

In (12), the trace in subject position is neither lexically governed (since AGR is not a proper lexical governor in English), nor antecedent governed, since the COMP that contains the intermediate co-indexed trace branches, disallowing antecedent-government in this case. In (13), the subject trace is not lexically governed but is antecedent governed by the intermediate co-indexed trace (note that

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COMP does not branch, since it does not contain the complementizer that). In (14), the trace in object position is lexically governed by the verb and, thus, properly governed.

We will adopt here the view that movement at the LF level leaves a trace that must also be constrained by the ECP. This implies in turn that the ECP applies at LF, as was originally suggested by Kayne (1981). In this thesis, we will give additional support for this view of the ECP.

For recent discussions of the ECP offering support for this approach, see Huang (1982) and Lasnik and Saito (1983).

1.4 Organization of the thesis

In the following chapters we will discuss these various subsystems of Lakhota grammar. In Chapter 2, we begin by providing a general description of basic clausal constituents and their internal structure. The data presented here is essential to the issues and analyses discussed in later chapters. In Chapter 3, we discuss the agreement and Case-marking facts in Lakhota. We shall see that the simple Case-assigning rules presented in 3.3.2.2 are insufficient to account for the split in Case-marking of subjects that one finds in Lakhota. Case-marking interacts with reflexive structures, creating additional difficulties for this account of Case. In Chapter 4, we describe the complement system in Lakhota. In Chapter 5, we investigate the conditions on antecedent-anaphor and antecedent-pronoun relations in Lakhota. We shall argue that these constraints are defined on virtual structures in Lakhota. In Chapter 6, we describe a condi-

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tion on coreference between null pronouns and their possible antecedents which must be stated on the flat actual S-structure. The force of the facts and analyses of Chapters 5 and 6 leads us to propose a revision of the principles of Binding Theory. Finally, in Chapter 7, we discuss questions in Lakhota. No syntactic movement rule applies to derive this structure, yet we are led to an analysis in which Move a applies at the level of Logical Form. We argue that subjacency does not hold at LF, but that the ECP does.

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A GENERAL DESCRIPTION OF SIMPLE CLAUSES AND CONSTITUENT STRUCTURE

2.0 Introduction

The purpose of this chapter is to acquaint the reader with the basic elements of Lakhota clauses. Although most of this chapter will describe phrase structure of the clause and major constituents, one section is devoted to the morphological structure of the verb itself. We begin by describing certain salient properties of surface syntax (word order of major clausal constituents (section 2.1) and inflectional elements (section 2.2)). In section 2.3 we present in some detail the morphological structure of the verb. In section 2.4 the internal structure of the NP is presented and compared to clause structure in X-bar terms. And finally, in section 2.5 we introduce postpositional phrases in Lakhota.

2.1 Word Order

In Lakhota, NPs and adverbials scramble freely with one another within the clause and almost all word orders among these constituents are possible. These different word orders do not have any intonational differences that would distinguish them. We have not investigated the conditions which determine these orders--pragmatic and discourse factors seem to play a role. In the absence of any discourse context, SOV is the most frequent word order. Further evidence that Lakhota's unmarked word order is SOV comes from the rigid order imposed on NP arguments of a very small set of equative,

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"copula" verbs. Unlike most verbs, the first argument of these verbs must be interpreted as the subject and the second as the predicate NP. This is illustrated in (1) below.

(1) a. he John e.
that John be
'That is John.'
(*John is that.)

b. John Bill iyececa.
John Bill be like
'John is like Bill (in physical appearance).'
(*Bill is like John.)

As there is no overt morphological case system for NP's, the wide range of word order possibilities results in much potential ambiguity.

(2) a. John Edna wowapi wą k'u. 'John gave Edna a book.'
John Edna book a give

b. John wowapi wą Edna k'u.

c. Edna John wowapi wą k'u.

d. Edna wowapi wą John k'u.

e. wowapi wą John Edna k'u.

f. wowapi wą Edna John k'u.

All of the above word orders are possible for 'John gave Edna a book'. Of course, all of the sentences in (2) have other meanings where the thematic roles are reversed, i.e., 'Edna gave John a book', 'A book gave John to Edna' and 'A book gave Edna to John'. These latter two readings can be eliminated as semantically anomalous, given the state of the real world, but it must be borne in mind that even in the plausible cases it is context alone that reduces this inherent ambiguity.

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The scrambling possibilities are the same in complement clauses:

(3) a. [takuwe John wowapi ki he ophethų ki] slolwaye šni.
why John book the that buy COMP I-know NEG
'I don't know why John bought that book.'

b. [John takuwe wowapi ki he ophethų ki] slolwaye šni.

c. [wowapi ki he takuwe John ophethų ki] slolwaye šni.

d. [wowapi ki he John takuwe ophethų ki] slolwaye šni.

Verbs do not scramble with NPs and adverbials; thus the V is always the last major constituent in the clause (followed only by inflectional elements discussed in the following section):

(4) a. *John Edna k'u wowapi wą. 'John gave Edna a book.'
J M give book a

b. *John k'u Edna wowapi wą.

c. *k'u John Edna wowapi wą.

In addition, there are two marked constructions where a single NP or clause appears to the right of the verb: NP "Dislocation" and S' Extraposition. The former is preceded by an intonational pause. The latter has no intonational pause. S' Extraposition is presented and discussed in Chapters 6 and 7.

Scrambling facts such as those presented above have been the reason par excellence for assuming that a language has no VP node. Phrase structure rules which directly generate the sentences in (1-2) without requiring a "scrambling" transformation or a VP node have been proposed in a series of papers by Kenneth Hale. We will return to this issue in the final section of this chapter.

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2.2 Tense, Mood and Aspect

There is no morphological tense system in Lakhota. I will gloss most sentences in the past tense for convenience: in actual use, context determines the tense interpretation. Aspect and modality elements such as durative (ha), habitual (s'a), negation (šni), imperative (ye, yo, etc.), potentiality (future) (kta), and others are enclitics which follow the verb in a fixed order. Also, there are many adverbs which express tense, aspect, and mood.

Lakhota lacks what traditionally is referred to as 'voice'. That is, there is no passive construction. Arbitrary or unspecified subjects may be expressed by active clauses with third person plural subject agreement. Thus, these clauses are always ambiguous between a referential and a non-referential meaning.

(5) John o pi.
John wound PL

i. 'They (reference known) wounded John.' or
ii. 'They (reference indeterminate) wounded John.'
i.e. 'John was wounded'

This same ambiguity can be seen in English examples with they say... such as They said it would rain.

One curious fact about the aspect/modality enclitics is that they often induce morphological alternations in the quality of certain final a vowels of the preceding verb (or, sometimes, of a preceding enclitic). These alternations have been extensively discussed in the Siouan literature; see Shaw (1976) for a detailed account in a generative framework. Here we give only a few examples to illustrate the phenomenon using the verb apha 'to hit'. For example, sentence final

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position, šni 'negation' and s'a 'habitual', all induce the final a of apha to change to e.

(6) a. Bill hokšila ki aphe.
Bill boy the hit
'Bill hit the boy'

b. Bill hokšila ki aphe šni.
Bill boy the hit NEG
'Bill didn't hit the boy'

c. Bill hokšila ki aphe s'a.
B boy the hit HAB
'Bill frequently hits the boy'

Plural subject marker pi, question marker he, and imperative ye do not induce any change.

(7) a. Hokšila ki apha pi.
boy the hit PL
'The boys hit him'

b. apha ye!
hit IMP
'Hit him!'

c. Bill hokšila ki apha he?
Bill boy the hit Q
'Did Bill hit the boy?'

Finally, kta, the potentiality (future) marker, which itself contains a changeable a vowel, induces a to change to i:

(8) Bill hokšila ki aphį kte.
Bill boy the hit FUT
'Bill will hit the boy'

The relative order of these elements is fixed. I assume that these aspect and mood markers are generated under an INFL node in D-Structure and that they cliticize to the verb in the phonological component.

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2.3 Verbal Morphology

The typical verb in Lakhota consists of a bound stem or word (either of which may be compounded or single)[1] and a number of prefixes that occur in a fixed order. These verbal prefixes play a crucial role in the syntax of the clause, as shown in Chapters 3, and 5, and a basic understanding of them is essential to the issues and analyses discussed later.

2.3.1 Prefixes: Their Positions and Functions

The verbal prefixes have a number of functions and meanings: they may be, for example, instrumental and locative markers indicating the presence of an additional derived argument, nominalizers, or person agreement markers. The following table, modified slightly from Carter (1974), gives the positions of the eleven prefix slots. It will serve both as an introduction to, and a summary of, this section.

(9) VERBAL PREFIX POSITIONS

1	2	3	4	5	6	7	8	9	10	11	+STEM
wa-	o-	o-	khi-	wa-	wicha-	wa-	ya-	ki_1-	ic'i-	ya-	
	i-	i-		na-		ma-	ni-	ki_2-	kichi-	yu-	
		a-		wo-		ų-		kici-		ka-	
		e-				chi-				pa-	

(10) VERBAL PREFIX FUNCTIONS

1. wa- indefinite object marker (detransitivizes transitive verbs, nominalizes intransitive verbs)
2. Nominalizers.

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3. Locatives (often opaque, discussed in 2.3.2.2)

o- 'in, inside'
i- 'at, against'
a- 'on, surface'
e- 'at, place'

4-5. Instrumentals (cf. discussion in 2.3.2.1)

khi- 'through the middle'
wa- 'with sawing motion'
wo- 'force with pointed object (shooting)'
na- 'with the foot'

6. wicha- 3rd person plural object marker

7. wa- 1st person singular, Nominative
ma- 1st person singular, Objective
ɥ- 1st person dual, Nominative and Objective
chi- "portmanteau": 1st person Nominative and 2nd person Objective

8. ya- 2nd person, Nominative
ni- 2nd person, Objective

9. ki_1- dative argument prefix
ki_2- possessive argument prefix
kici- benefactive argument prefix

10. ic'i- reflexive
kichi- reciprocal

11. Instrumentals (cf. discussion in 2.3.2.1 cannot co-occur with instrumentals of classes 4 and 5)

ya- 'with the hand'
yu- 'with the mouth'
ka- 'with a striking force'
pa- 'with sustained pressure'

Detailed presentations of morphology and morphophonology can be found in Boas and Deloria (1941), in Shaw (1976), and to a lesser extent in Buechel (1939).

In general, these prefixes occupy a fixed position with respect to each other. (The exception is the class 3 locatives which may co-occur with one another; then, their relative order sometimes

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correlates with scope distinctions.)

Some prefixes alter the argument structure of the verb, either by subtracting arguments or by adding them. Still other prefixes may satisfy the argument structure, viz. the person agreement markers of Classes 7, 8 and 9. Here we will describe and illustrate the functions of those prefixes which alter the argument structure of the verb and are clearly derivational in nature. The person agreement markers, which we consider inflectional morphology, will be discussed in great detail in chapter 3. The reflexive, possessive-reflexive and reciprocals will be discussed in detail in chapter 5. There will be no attempt to describe nominalizers (cf. Buechel 1939, 175-181 and Boas and Deloria 1941, 33-34, 125).

2.3.2 Prefixes Indicating Argument Structure

Let us assume that the argument structure of a verb is the set of its subcategorized arguments, each of which must be identified with a semantic role determined by the verb. We will draw freely on the terminology of Gruber (1965) and Fillmore (1968): Actor, Theme, Goal, Source, Benefactive, etc., in describing these thematic roles.

2.3.2.1 Instrumental Transitivizing Prefixes

Instrumentals of Classes 4, 5, and 11 may be prefixed to intransitive stative verbs, forming transitive verbs. The productivity and transparency of these word formation rules (WFRs) depends on both the particular prefix and the verb. We illustrate instrumental prefixation with the verb sli, 'to ooze out, squirt out', to which

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most prefixes may be added.

(11) sli 'to ooze out, squirt out (from y)'

nasli 'to crush, to squeeze/squish x (from y) with the foot'

yasli 'to crush, to squeeze/squish x (from y) with the mouth'

yusli 'to crush, to squeeze/squish x (from y) with the hand'

wosli 'to push down in, as in churning (with pressure'

wasli 'to sever with edge (knife)'

kasli 'to strike and force something out, as water from a bladder (by striking)'

pasli 'to squeeze out by pressure'

In the above example, the contributions of the prefix to the meaning of the derived verb is transparent. However, there are numerous derived verbs in which the contribution of the prefix to the meaning is not clear. In (12) below are some examples taken from Buechel (1970)[2].

(12) a. pa+ǧo 'to carve, engrave'
pa+ẓuta 'to touch, (reach?)'
pa+ḫpa 'to throw, as a horse its rider'
pa+woslata 'to push up straight'

b. wo+hiḫpaya 'to make fall by shooting or punching'
wo+ka 'to punch or shoot off'
wo+špi 'to pick'

c. yu+ǧo 'to make scratches, to be tired'(slang)
yu+akiḫ'a 'to make starve'
yu+coka 'to make empty'

d. ya+ǧo 'to make a mark with the teeth'
ya+š'aka 'to be unable to bite or chew'
ya+homni 'to turn one around by arguments'

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e. ka+sni 'to put out, cool down'
ka+ska 'to bleach by striking'
ka+ǧo 'to draw a line, also to vaccinate'

f. na+ǧo 'to scratch, with shoes'
na+gmu 'to twist of itself'
na+wiža 'to trample down'

g. wa+t'a 'to kill with a knife'
wa+ȟpa 'to cut off and let fall'

h. khi+napha 'to come out of, through'
khi+naŝpa 'to break off about half way with the foot'
khi+wokŝa 'to shoot in two in the middle'

2.3.2.2 Locative Prefixes

The four locative prefixes are not as semantically transparent as the instrumentals, nor is their function always clearly to add an argument to the subcategorization frame of the verb. Let us present these prefixes in order of frequency.

Of the four prefixes a- 'on', surface', is perhaps the most transparent in meaning, usually indicating that the action of the verb is being done on something. Compare the transparent and additive use of a- which, when prefixed to the verb sloha 'to crawl', becomes asloha 'to crawl on'; with its opaque and non-additive value in apha 'to hit', where -pha, even as a bound form, does not appear in any other word. Some examples intermediate between these extremes are given below:

(13) i. iya 'to speak'
a+iya 'to speak about'

ii. šte 'to be sunny'
a+šte 'to be sunny on'

iii. paǧo 'to carve'
a+paǧo 'to carve on'

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The prefix i- 'at, against', has lost most of its original locative sense and broadly indicates the presence of an oblique argument. Buechel gives it the following meanings: 'to indicate an instrument "with"', 'on account of' and 'with reference to'. Some examples follow:

(14) i. cątewašte 'to be happy' (lit.'be of good heart')
i+cątewašte 'to be happy on account of'

ii. bleza 'to be clear'
i+bleza 'to be enlightened about, to understand'

iii. kağa 'to make'
i+cağa 'to become, to turn into'

iv. naži 'to be standing'
i+naži 'to stand up'

v). i+ȟake 'to laugh'
i+ȟa 'to laugh at, to make fun of'
i+šteca 'to be ashamed (of)'
i+tą 'to be proud (of)'

The third most common prefix, o- 'in, inside', indicates that the action of the verb takes place in or within something.

(15) i. yusloha 'to make slide'
o+yusloha 'to make slide in'

ii. yuka 'to lie down'
o+yuka 'to lie down in'

iii. yušta 'to finish'
o+yušta 'to finish within'

iv. k'u 'to give'
o+k'u 'to lend, share'

v. gle 'to set'
o+gle 'to set/place in'

And finally, a fourth locative prefix, e- 'at', indicates the place at which the action is carried out.

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(16) i. kte 'to kill'
ekte 'to kill at some place'

ii. thi 'to dwell'
ethi 'to encamp at'

iii. naži 'to stand'
enaži 'to stand up'

iv. egle 'to place, set at'
egnaka 'to lay down/away'

2.3.2.3 Dative and Benefactive Prefixes

The dative and benefactive prefixes form the most complicated and irregular set of prefixes. They often have overlapping functions and in many cases are homophonous with possessor expressions. And, to make matters worse, they are subject to considerable lexical idiosyncracy.

We distinguish two basic forms: ki- and kici- (which historically may have arisen from the reduplication of ki-). A third form also exists which is a morphophonologically reduced form of ki- (the difference is apparent in the first and second person paradigms). We will call the first and third forms of ki- 'dative' and 'reduced dative' respectively, and the second form kici- 'benefactive', as these terms reflect most clearly the core meaning and function they have.

Both ki- and kici- have two functions. First, they sanction the presence of dative (recipient) and/or benefactive arguments in the argument structure of certain appropriate verbs. Without them no such argument may be understood.

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(17) kici- (benefactive)

(i)	ole	'to look for x'
	o+kici+le	'to look for x for y'
(ii)	wiyopheya	'to sell x'
	wiyophe+kici+khiya	'to sell x for y'
(iii)	ophethu	'to buy x'
	ophe+kici+thu	'to buy x for y'
(iv)	yawa	'to read x'
	kici+yawa	'to read x for y'
(v)	wachi	'to dance'
	wakicichi	'to dance in his honour'
(vi)	kicika	'to be for, side with one'
(vii)	egnaka	'to put away'
	e+kici+gnaka	'to put away for someone'

(18) ki- (dative)

(i)	pazo	'to show x'
	ki+pazo	'to show x to y'
(ii)	oyaka	'to tell x'
	o+ki+yaka	'to tell x to y'
(iii)	yuȟalata	'to wave'
	ki+yuhalata	'to wave to x'
(iv)	naȟme	'to hide x'
	na+ki+ȟme	'to hide x from y'
(v)	epazo	'to point at/to x'
	ekipazo	'to point to/out/at x to y'
(vi)	ki+yuǧa	'to open to' (as a door)

(19) ki- (reduced form)

(i)	ki+cu	'to give back'
(ii)	i+ki+co	'to invite x to y'
(iii)	ki+ksuye	'to remember'

The second function that kici- (and to a lesser extent ki-) has is to indicate that the dative/benefactive argument is the posses-

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sor of the subject of the clause. For example, kici+nazi, 'x to stand for y' or 'y's x stands', in the following sentence:

(20) šųkawakhą ki kici+nažį he.
horse the BEN+stand DUR
'The horse is standing for him.' or
'His horse is standing.'

This construction is similar to the dative of interest in Romance and is restricted to intransitive verbs. Boas and Deloria (p.88) point out that when the prefixes have this latter function ("benefactive of interest"), they precede locative prefixes. That is, they do not appear in their customary class 9 position.

Dative and benefactive arguments will also be discussed in the sections on Agreement and Case assignment in chapter 3 and obligatory Coreference in chapter 5.

We conclude by pointing out another complication. Prefix ki- 'dative' is homophonous with a second ki- 'possessive' which marks a possessive-reflexive relationship between the subject of a clause and some other argument of the verb. Unlike the ki- 'dative', ki- 'possessive' has three morphological variants. This construction and its properties will be discussed in considerable detail later. Some examples from each of the three morphological classes will illustrate this construction.

(21) i. egle 'set down x'
ekigle 'to set down one's x'

ii. iyececa 'to look like x'
iyekceca 'to look like one's x'

iii. yuha 'to have x'
gluha 'to have one's x'
yušna 'to drop x'
glušna 'to drop one's x'

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Because this construction is completely productive and every appropriate verb has a possessive-reflexive form, we consider this prefix distinct from (though homophonous to) the dative ki-. Verbs that take dative arguments are lexically more restricted. The two prefixes are also different in that the ki- dative crucially adds an argument to the lexical structure of the verb, while the possessive-reflexive ki- does not.

2.4 Noun Phrase Structure

The phrase structure of the NP in Lakhota differs from that of English in a number of respects. There are no genitive or demonstrative specifiers, and there is only an extremely limited class of noun-modifiers. Furthermore, there are no deverbalized nouns with complement arguments of the sort the destruction of the city. These differences must be attributed in part to different phrase structure rules for NPs.

We shall assume that the PS rules conform to some theory of X-bar. Perhaps the most striking evidence for cross-categorial generalizations which X-bar theory so elegantly captures are complement structures for all major lexical categories. However, this prediction turns out not to be particularly impressive in Lakhota, since neither nouns nor adjectives appear as heads of maximal phrases with complement structures.

However, the division of functions of categories in X-bar theory (heads, specifiers, modifiers and complements) provides us with a convenient organization which we will follow. In the following dis-

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cussion I will give the PS rules in their most specific form.

In the simplest cases an NP consists of either a pronoun or a noun followed by a determiner. Head nouns may be preceded by a single complement NP (limited in type to possessors or partitives) and modified by a following verb. A limited class of inflectional elements (agreement, negation and irrealis) follow the optional modifier. This distribution may be formalized by the following PS rules.

(22) a. $NP^2 \longrightarrow \left\{ \begin{matrix} N^1 \quad DET \\ pronoun \end{matrix} \right\}$

b. $N^1 \longrightarrow$ (NP) N (MOD) INFL

Let us now describe in greater detail the subparts of these two rules. The discussion is presented in the following order: noun heads, noun modifiers, noun complements and noun specifiers. We conclude with a brief description of quantifiers.

2.4.1 Heads

Nouns form one of the basic lexical categories in Lakhota. In terms of their internal structure, nouns may range from the case of a single stem to a derivationally-complex sequence of stems and affixes. However, nouns do not have as rich an internal structure as do verbs, and, with the exception discussed in 2.4.3, their morphological structure does not interact with the phrasal structure of the NP.

Nouns in Lakhota do not inflect for morphological case or gender, however they are categorized into several classes based on spatial properties when being predicated by verbs of existence and/or location.[3]

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Plurality is not overtly marked on nouns, but is indicated in the determiner system: demonstratives and most articles have singular and plural forms.

2.4.2 Modifiers

Modifiers of nouns in Lakhota are limited to the lexical category of verb. Moreover, it turns out that only a very limited subset of verbs may be modifiers.

Let us begin by characterizing this class. Verbal modifiers are conceived as describing a permanent condition or state of the noun. So, for example, verbs denoting physical properties such as colour and size are appropriate modifiers:

ogle ša	'shirt red'
šųka sapa	'dog black'
phehį ǧiǧi	'hair brown'
wichaša hąske	'man tall'
šųkawakhą gleska	'horse spotted'

Many of these noun-modifier sequences become bound phonologically as a single lexical noun[4]:

šųgleska	'spotted horse'
ogleša	'red shirt'

Verbs which can describe either a permanent or a temporary condition have only the permanent condition meaning when used as modifiers. Kuža, 'to be sick' is such a verb. In the following example kuža can only mean 'sickly'. The temporary condition meaning must be expressed by a full relative clause.

(23) šųkawakhą kuža wą wąblake.
horse sick a I-see
(i) 'I saw a sickly horse.'
(ii) *'I saw a temporarily sick horse.'

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In many cases the verb can only be conceived as describing a temporary quality and the modifier construction is ungrammatical. Iyokipi 'to be happy' illustrates this.

(24) *wichaša iyokipi wą slolwaye.
man happy a I-know
'I know a happy man.'

Again, a relative clause is used to express this meaning.

The distinction between verbs denoting temporary and permanent states must not be confused with another important distinction between verbs that exists in Lakhota. As we shall see in chapter 3, the semantic distinction between active and stative verbs has a striking (though rough) correlation in Case assignment. But the class of verbs described here cuts across that distinction.

Stative verbs may be permanent (haske 'tall') or temporary (iyokipi 'happy'). Active verbs are generally temporary (cheya 'to cry'), but may be permanent and thus may be used as modifiers (akit'o 'to be tattooed'). We thus disagree with the factual claim of Van Valin (1977), that the active/stative distinction determines the class of possible modifiers.

In general these verb modifiers do not have complement arguments. There is perhaps one exception to this generalization. This is the verb thawa 'to belong to, own', which when used as an adjunct to a noun head, appears to be a kind of hybrid between a verb modifier and a relative clause modifier. Thawa is a "double object" verb: the possessed argument is an Objective Case subject, while the possessor argument is an oblique Objective Case argument. The latter possessor argument and the verb can form a modifying phrase. If the possessor

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argument is first or second person, it induces overt person agreement on the verb. If the possessor is a third person lexical NP, it triggers null person agreement on the verb and may precede or follow the head noun. These facts are illustrated below (cf. Chapter 3, section 1 for a discussion of agreement).

(25) a. mila mi+thawa wą 'a knife belonging to me'
knife 1OBJ+belong to a

b. mila ni+thawa wą 'a knife belonging to you'
knife 2OBJ+belong to a

c. mila Ed Ø+thawa wą 'a knife belonging to Ed'
knife Ed _+belong to a

d. Ed mila Ø+thawa wą 'a knife belonging to Ed'
Ed knife _+belong to a

The possibility of different word orders with respect to the head, illustrated in (25), is a property shared by relative clauses. Yet, in contrast to relative clauses, the head in (25) is not an indefinite NP. (The structure of relative clauses in briefly described in Chapter 7, section 7.2.2.1.)

We mentioned at the beginning of this section that only verbs may be modifiers. There are no predicate adjectives. In addition, postpositional phrases, postpositions, and adverbs are never modifiers, even when expressing permanent qualities. Their meanings when they modify a noun also must be expressed by a relative clause.

(26) a. *wichaša chą wą ų wą
man stick a with a
(A man with a stick)

b. *chą wakpala aglagla ki
tree creek edge of the
(The tree at the edge of the creek)

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Noun modifiers in Lakhota do not lend themselves to the X-bar analysis proposed in Jackendoff (1977) where modifiers are level 2. The noun-modifier phrase forms the innermost level, which then feeds into the complement/subject expansion. This position finds some interesting support in the fact that relative clauses (which semantically are modifiers) in Lakhota have internal heads and thus, cannot be analysed as level 2 constituents either.

2.4.3 NP Complements

Lakhota has no derived nominals of the type the destruction of the city, the delivery of a horse to the child, the amazement at the news, etc. (There is a gerund construction which looks very much like a finite clause and is discussed in chapter 4.) Thus there are no striking parallels between nouns and verbs in their lexical structures. This fact perhaps weakens the overall attractiveness of X-bar theory for Lakhota. However, there are two constructions in which a head noun arguably contains a complement argument, possessors and partitives; in both cases the complement NP precedes the head, as X-bar theory would predict.

In the first construction, the complement NP functions as a possessor of the noun. There are three morphologically distinct inflectional forms to indicate the possessor relation, depending on the noun class of the head: alienable, "ownable" nouns, such as horses, equipment, etc.; inalienable, "body part" nouns, such as feet, hands, etc., and certain incorporeals such as name, job, word and footprints/tracks, etc.; and kinship nouns.

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Alienable possession is marked by an inflectional prefix tha- on the head. Inalienable possession has a null inflection. For reasons independent of the morphology, this construction is rarely used for this class of nouns and a syntactically distinct construction not involving possessor arguments is used. Kinship nominals have highly idiosyncratic inflection, changing for almost every lexical item. However, in many cases the inflectional suffix -ku or one of its phonological variants (-cu, -kcu) appears on the head and we will use this as a general marker to indicate this entire class when necessary. Whatever the type of possession, the possessor triggers person marking on the head; the person agreement is discussed in Chapter 3. Below we list an example paradigm from each class.[5]

(28) Body Part Nouns

ma+si	'my feet
ni+si	'your (singular) feet'
Ø+si	'his feet'
ų+si pi	'our feet'
ni+si pi	'your (plural) feet'
Ø+si pi	'their feet'

(29) Alienable Nouns

mi+tha+mila	'my knife'
ni+tha+mila	'your (singular) knife'
Ø+tha+mila	'his knife'
ų+tha+mila pi	'our knife'
ni+tha+mila pi	'your (plural) knife'
Ø+tha+mila pi	'their knife'

(30) Kinship Nouns

mi+thakoza	'my grandchild'
ni+thakoza	'your (singular) grandchild'
Ø+thakozaku	'his grandchild'
ų+thakoza pi	'our grandchild'
ni+thakoza pi	'your (plural) grandchild'
Ø+thakoza pi	'their grandchild'

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We assume that the three classes can be generated by the following schema[6]:

(31) $N^1 \longrightarrow$ NP N INFL

The fact that these possessor NPs are governed by an inflectional element suggests that the possessors are subjects. On the other hand, since nouns do not have argument structures which could distinguish possessors from object arguments, these possessor NPs may also be thought of as complement arguments parallel to the English a book of mine, etc. It is curious to note that the PS rule in (31) does not force this choice upon us. If we think of NP as a maximal projection of N, then the possessor in (31) is a complement argument, and is an instance of the cross-categorial generalization of $X^1 \longrightarrow$ NP X. If we think of NP as cross-generalizing with S', and we shall see in Chapter 5 that there are strong reasons to believe that this is correct, then possessor NP generated in (31) is the subject of N^1, just as NPs are the subjects of S. (On this view, clauses are not maximal projections of V and S expands as S $\longrightarrow$ NP VP INFL.) Thus, in Lakhota, the dual view of S as a projection of V and as projection of INFL has a direct parallel in N^1: N^1 also may be viewed as a projection of N and as projection of INFL. We will leave this discussion of possessor NPs in this unresolvable dual state.

Combining the complement rule for the possessor argument with the lexical modifier rule, we can generate the following partial expressions (they still need a determiner to be complete):

(32) John tha+šų+gleska ... '...spotted horse of John's'
John POS+horse+spotted

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(33) mi+tha+wowapi thąka... '...big book of mine'
1OBJ+POS+book big

The second construction with a complement NP is the partitive. This construction is briefly described in section 2.4.5.

2.4.4 Specifiers

Lakhota has a particularly rich specifier system with many determiners and quantifiers. The specifiers play a very important role in the interpretation of relative clauses and it is here where the semantic properties are perhaps most interesting. A brief description of the structure of relative clauses is given in Chapter 7. In this section we shall briefly describe them.

2.4.4.1 Determiners

There are nine morphologically distinct determiners in Lakhota. In Chapter 4, we shall see that some of them function as complementizers as well. They follow the noun or noun-modifier. We begin with the two definite determiners listed in (34).

(34) a. k'ų/ų 'the aforementioned'
definite, singular and plural

b. ki/ki 'the'
definite, singular and plural

K'ų functions to tell the listener that the referent was previously mentioned in the discourse. Ki marks a uniquely-identified referent in the discourse, whose identification may not necessarily depend on previous mention. In this use ki is often omitted. Ki can also be used for non-existing or hypothetical referents.

In (35) and (36) we present the indefinite determiners, which

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have singular and plural forms. In (35) we give the indefinite specific determiners.

(35) a. wą 'a certain'
indefinite specific, singular

b. k'eya/eya 'some certain'
indefinite specific, plural

These mark referents that are new in the discourse. The speaker is not committed to believing in the existence of the referent. In the following example the use of wą does not entail that the speaker believes that ghosts exist.

(35) c. Mary wanaǧi wą wąyąke keye.
Mary ghost a see said
'Mary said she saw a ghost.'

In (36) we list the singular and plural indefinite non-specific determiners.

(36) a. wąži 'a (any)'
indefinite non-specific, singular

b. eta 'some (any)'
indefinite non-specific, plural

The contrast between (35a) and (36) reflects the classical distinction made in philosophy between the referential and non-referential indefinites; this distinction is most evident with intensional verbs (37a), imperatives (37b). and indirect imperatives (37c). In the examples below, the speaker has no particular apple, sticks, or dog in mind.

(37) a. thaspą wažį wa+chį.
apple a I-want
'I want an apple.'

b. chą eta aku wa!
stick some bring Imp
'Bring back some sticks!'

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c. šųka wąži ophethų ma+ši.
dog a buy me+ask/order
'He asked me to buy a dog.'

In all these examples, use of the specific indefinite determiners in (35a) would indicate that the speaker has a particular apple, sticks, or dog in mind.

In (38) we give the indefinite non-specific determiners of (35a) with a negative suffix -ni.

(38) a. wąžini 'not a (any)'
negative indefinite, singular

b. etąni 'not some (any)'
negative indefinite, plural

The suffix -ni is best considered a suffix of the entire NP which attaches to the rightmost element, which is either a determiner or, in the case of pronouns, the head itself (eg. tuwa 'someone', tuweni 'no-one'). The nouns specified by determiners with -ni are always in the scope of a negative, hence, in many cases any in English is a reasonable translation. But unlike English any, NPs with these negative suffixes never have a universal wide scope meaning. This is illustrated in (39).

(39) thaspą wąžini tebwaye šni.
apple not a I-eat up NEG
'I didn't eat up an/any apple.'

Finally, in (40) we give the indefinite focus determiner, cha.[7]

(40) cha 'indefinite focus, singular and plural

As a focus determiner for simple nouns, it indicates that the object, known to the speaker only, is being introduced into the discourse. As such, it is incompatible with simple contrary negation and

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irrealis mood. It is often translated by a cleft or contrastive stress in English:

(41) a. igmu cha wąblake.
cat FOC I-see
'It's a cat that I saw.' or
'I saw a CAT.'

b. *igmu cha wąblake šni.
cat FOC I-see NEG
'It's a cat that I didn't see.'

c. *chą cha aku we!
wood FOC bring back IMP
'It's wood that (you) bring back!'

Like the definite determiners, cha may function as a complementizer and a relative clause determiner. It is also used in a cleft construction which focusses definite NPs. This construction is discussed in some detail in Williamson (1977). Here, we will simply note its unusual constituent structure. The cleft construction is a biclausal structure, with the equative verb e 'to be' in a subordinate clause whose complementizer is cha. The focussed definite NP shows agreement with both the equative verb and the matrix verb. Although typologically strange, this structure has parallels with both questions and relative clauses. The following example illustrates the construction.

(42) [$_S$[$_S$ wichaša ki e pi] cha] wą+wicha+blake.
men the be PL FOC +3OBJ+1NOM+see
'It is the men that I see.'

2.4.4.2 Demonstratives

There are six demonstrative pronouns reflecting a tripartite division in deixis with singular and plural forms. They are:

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(43) a. le 'this one' lena 'these ones'
b. he 'that one' hena 'those ones'
c. ka 'that yonder one' kana 'those yonder ones'

They may appear in clauses as independent NPs.

(44) a. lena icu we!
these ones take IMP
'Take these ones!'

b. he wašteyalaka he?
that one you-like Q
'Do you like that one?'

They may also restrict an NP. In this function they may either precede or follow the NP though most often they follow it. (We have not investigated the differences in meaning (if any) that these word orders produce.) When they follow the definite determiner ki, the determiner is optional. The demonstratives agree in number with the NP which they "restrict".

(45) a. [wichaša (ki)] [he] 'that man'
man (the) that one

[he] [wichaša ki] 'that man'
that one man the

b. [wowapi eya] [lena] 'these books'
book some these ones

[lena] [wowapi eya] 'these books'
these ones book some

Given the demonstratives' co-occurence with determiners and their word order possibilities, there is no reason to consider these demonstratives as modifiers or specifiers. Based on their distribution, we may suppose that the demonstrative pronouns in (45) function as appositives. As such we might postulate the following rule to generate them[8]:

(46) $NP \longrightarrow NP_i \quad NP_i$

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As illustrated in (45b) above, indefinite specific NPs may co-occur with demonstrative pronouns. This might seem somewhat contradictory if one thinks of demonstratives as definites. However, the use of the indefinite indicates that the object is being introduced into the discourse at that moment in the conversation; the demonstrative indicates its known (hence definite) reference to other times or places. So, for example, in response to the question what are you doing?, the speaker might respond with:

(47) wowapi wą he owale he.
letter spec that one I-look for DUR
'I am looking for that letter.'

where the hearer already knows the letter the speaker is talking about but the speaker is mentioning the letter for the first time in the present discourse.

2.4.5 Quantifiers

We list here various quantifiers in Lakhota: universal quantifiers in (48a), existential quantifiers in (48b) and a very partial representative list of numerals in (48c).

(48) a. iyuha all/every, distributive
oyas'į all, collective
iyohila 'each'

b. ota many
ȟų́ȟ some, partitive
conala few
ȟų́ȟlala a very few
otaȟ'ca most

c. wąžį one
nų́pa two
yamni three
etc.

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It has been proposed (eg. Jackendoff (1977) that the term quantifier covers a mixed class of lexical items, some of which are generated under the determiner node and others under a quantifier node. The two classes are determined by their ability to co-occur with each other and with other determiners within the NP. This approach is quite plausible for Lakhota, in that the distribution of these quantifiers is exactly the same in Lakhota as in English. Consider the following distribution of quantifiers in Lakhota and their English glosses.

(50)	hoksila	waži	ki	'the one boy'
	(boy)	nųp	(the)	'the two boys'
	"	ota	"	'the many boys'
	"	conala	"	'the few boys'
(51)	*hoksila	otaȟca	ki	'*the most boys'
	* "	iyuha	"	'*the every boys'
	* "	iyohila	"	'*the each boys'

In Jackendoff's discussion of similar examples in English, he postulates that the quantifiers which do not co-occur with the determiners (ie., those in (51)) belong to the same syntactic category as ki 'the', viz., ART(icle). Let us assume that Jackendoff is correct for Lakhota also and that the quantifiers in (51) are determiners. We might take this approach one step further and suggest that the quantifiers which can occur with determiners are verbs, functioning as noun-modifiers, thus eliminating the syntactic category of quantifiers altogether. This is because it is precisely these quantifiers modifying plural nouns in (50) above that also function as main verb predicates.

(52) a. šųkawakhą ki yamni pi.
horse the three PL
'The horses are three.'

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b. blo cha conala.
potato FOC few
'There are few potatoes.'

Let us assume, then, that quantifiers do not belong to a separate syntactic class Q but are either determiners or modifying verbs (though special in that they are predicated of plural nouns).

Quantifiers also participate in the partitive construction. (This is the second construction with a complement NP mentioned earlier.) The syntax of the construction in English has been analyzed in great detail by Jackendoff and Selkirk in a series of papers (cf. Jackendoff 1977 and Selkirk 1977). The view of partitives that emerges from their works (that partitives are complement arguments of a null head noun) carries over reasonably straightforwardly into Lakhota. Below we give a few examples of this construction.

(53) [$_{NP}$ [$_{NP}$ wichaša ki] [ota]] 'many of the men'
men the many

[$_{NP}$ [$_{NP}$ wichaša ki] [tona]] 'how many of the men'
men the how many

[$_{NP}$ [$_{NP}$ wichaša ki] [ǩų̌ǩ]] 'some of the men'
men the PART

The partitive construction itself poses some thorny difficulties for a complete analysis, which we will not discuss. In several ways the syntax of the quantifiers and the head noun is underdetermined and does not provide an account for the various semantic restrictions placed on this construction. In Lakhota this construction has some interesting peculiarities with respect to the agreement system. A description and analysis of agreement is not presented until chapter 3, section 1. But we can illustrate the phenomenon

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here. Subject (and object) agreement in person and in number is with the head of the NP. But with partitives, person agreement is determined by the partitive expression, while number agreement is determined by the head. In the example below third person plural agreement is indicated by the enclitic pi following the verb.

(54) [[wichaša ki] hų̌] kuža pi.
men the some sick PL
'Some of the men are sick.'

Compare this agreement with the null agreement for the third person singular below:

(55) [[wichaša ki] wąži] kuže/*kuža pi.
men the one sick/sick PL
'One of the men is sick.'

However, when the partitive complement NP is first or second person, person agreement with the complement appears on the verb.

(56) [[ų́kiye pi ki] hų̌] ų́kuža pi.
us PL the some 1pOBJ-sick PL
lit.'Some of us we are sick.'

To account for this fact, we can propose that a feature-copying mechanism (or a feature-matching mechanism) ensures that inherent features of person hold between the partitive and the null head noun.

2.5 Postpositional and Adverbial Phrases

2.5.1 General Description of Postpositional Phrases

The great majority of postpositional phrases in Lakhota are expressions of location, direction, and time. Only a very few postpositions express other relations. Let us list these others first.

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(57)

ų	(i) instrumental, 'with'
	(ii) reason, 'because of'
kichi	comitative, 'with', singular object
ob	comitative, 'with', plural object
ųya	'without'
s'e	'like, as if'

Many other expressions which would be PPs in English are adverbs in Lakhota.

Considering now only the locative and temporal postpositions, we can distinguish two classes morphologically. One class of postpositions begins with the locative prefix i- 'against', whose contribution to the meaning of the postposition is virtually null. This class of postpositions "conjugates"; that is to say, its object, when a personal pronoun, triggers agreement on the postposition in the same way that a direct object triggers agreement on the verb. In (58) we list some of the postpositions of this class; in (59) we give an example conjugation.

(58) iyąkal 'upon', ihakab 'behind, after' (location and time), ihųkhul 'under', ikhiyela 'near to', ilazata 'back of', isakhib beside, 'next to', itehehą 'far from', iwąkab 'above'

(59)

misakhib	'beside me'
nisakhib	'beside you (singular)'
isakhib	'beside him'
ųkisakhib	'beside us'
nisakhib pi	'beside you (plural)'
wichisakhib	'beside them'

When these postpositions occur with lexical NP objects, the object precedes the "conjugated" postposition.

(60) wichaša ki hena wich + isakhib
men the those 3OBJ + beside
'beside those men'

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A straightforward extension of the agreement analysis of verbs will account for this construction (cf. 3.1).

The second class of postpositions are those that do not contain the i- prefix and do not conjugate. When the object of these postpositions is a personal pronoun the independent emphatic pronouns are used, though they have no emphatic or constrastive function in this context. In (61) below we list some of the postpositions of this class. Note that many of the postpositions in (58) are derived from the postpositions in (61). The postpositions listed in (57) also belong to this class.

(61) akąl 'on', egna 'among', ekta 'to, at', el 'in, to, at, from', etąhą 'from', etkiya 'towards', mahel 'inside', ohomni 'around, oȟlate 'under', opta across, through, by'

(62) miye etkiya 'towards me'
niye etkiya 'towards you (singular)'
iye etkiye 'towards him'
etc.

We suggest that these two classes of postpositions differ in their Case assignment properties. The conjugating Ps, like verbs, assign Objective Case to their objects; the non-conjugating Ps assign Oblique Case. It appears that no independent syntactic properties correlate with these two classes, so we don't pursue the matter here.

In section 2.6 of this chapter it is suggested that Lakhota is a non-configurational language. This means that PPs scramble freely with other NPs and adverbials in the clause. The sentence John found that letter under the bed may have any of the word orders in (63). The objects of postpositions must precede the postposition and are not free to scramble in the clause. This is illustrated in (64).

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(63) a. [$_{NP}$ John] [$_{NP}$ wowapi k'ų he] [$_{PP}$ oyųke ki oȟlate] iyeye.
John letter PDEF that bed the under find

b. [John] [oyųke ki oȟlate] [wowapi k'ų he] iyeye.
John bed the under letter PDEF that find

c. [oyųke ki oȟlate] [John] [wowapi k'ų he] iyeye.
bed the under J letter PDEF that find

'John found the letter under the bed.'

(64) *[John] [oyųke ki] [wowapi k'ų he] [oȟlate] iyeye.
John bed the letter the-P that under find

2.5.2 Adverbial Phrases

Lakhota is rich in adverbial expressions, including adverbs of time, place, manner and degree. Adverbs are often derived by word formation rules from verbs, nouns, and, more rarely, postpositions (cf. Buechel 1939, 183-195) for many examples). Consistent with Aronoff's claim that adverbs are a minor lexical category, we have no examples of adverbs forming the base for derived nouns, verbs or postpositions.

We will assume that adverbs form maximal phrases and that they have no complement argument structures. Locative and temporal adverb phrases scramble freely with other maximal phrases (i.e. NPs and PPs). Manner adverbs do not scramble freely but immediately precede the verb.

The fact that manner adverbs immediately precede the verb can be given a natural account in X-bar theory. Adverbs of degree (e.g. kitala 'somewhat, slightly', lila 'very', iyotą 'most', enaȟci 'just there') immediately precede the head, whether it be a verb predicate (65a), a postposition (65b), or a verb modifier (65c).

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(65) a. [$_{NP}$ [wichaša] [iyotą [hąške]] ki]
man most tall the
'the tallest man'

b. [$_{PP}$ [isto] [elaȟci [akąl]]
arm right there on
'right on the arm'

c. [$_{S}$ [lila [luze.]]]
very fast
'He is very fast.'

If we assume that manner and degree adverbs form a class of head modifiers abbreviated as deg (degree) below, we can account for their position with the following phrasal expansion.

(66) $X^1 \longrightarrow X^2$ Deg X

2.6 Lakhota as a Non-configurational Language

The absence of evidence for a VP node in Lakhota and the free word order of clausal constituents suggests that Lakhota might be a non-configurational language in the sense of Hale (1979, 1982). Hale proposed that there is a typological split in natural languages: configurational languages, characterized by the presence of a VP node, rigid word-order, lexical anaphors, and empty categories in the syntax; and non-configurational languages, characterized by the absence of a VP constituent, free word order, null anaphors, no empty categories in the syntax, and the use of syntactically discontinuous constituents.

In Hale (1979) it is claimed that the cluster of properties which distinguish configurational languages (of which English may be thought of as a canonical example) from non-configurational languages (eg. Warlpiri and Japanese) follow from differences in phrase struc-

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ture rules. Hale proposes that Warlpiri has the following base rule schemata (where X ranges over the lexical categories and $W^{2}*$ ranges over all maximal phrases):

(67) $X^{1} \longrightarrow W^{2}* \quad X$

This schema defines the structures of nominal expressions and infinitival clauses, where the head is final. Tensed finite clauses have the following rule schemata in Warlpiri:

(68) $V^{1} \longrightarrow$ AUX $W^{2}*$ V $W^{2}*$

He suggests that AUX and V form a discontinuous head for Warlpiri.

Since lexical insertion is free and the categories are not specified by the base, a seemingly random order of elements is possible. (Of course, in an instantiation of (67), the head must be final, whereas in an instantiation of (68), nominal phrases appear before and after the head verb). Thus the property of free word order among constituents follows from this view of phrase structure.

Let us adopt Hale's proposal for phrase structure for Lakhota. The rule schema, $X^{1} \longrightarrow W^{2}* \quad X$, is appropriate for Lakhota. The head is final in the general case; this schema defines structures for postpositional phrases and certain nominal expressions. Like Warlpiri, Lakhota requires a second rule schema for finite clauses: $S \longrightarrow W^{2}*$ V INFL. As we pointed out in our discussion of possessor NPs, the clause may be viewed as a projection of V, in which case we would assume with Hale that INFL forms a head with V. It can equally be viewed as a projection of INFL (where S' = INFL''). This rule would have to specify the predicate, since the predicate would no longer be the head. In adopting Hale's view of phrase structure we

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can account for its flat structure and free word order.

However, Hale claims that non-configurational languages share an additional cluster of properties, namely, extensive use of null anaphora, no empty categories in PS (and hence no Move a) and discontinuous constituents. These properties, however, do not follow directly from the non-configurational PS rules embodied in (67) and (68) but rather from an additional assumption that W* represents zero or more maximal phrases. We do not agree with this view. In Chapter 6 we will argue that only if we assume the presence of null pronouns in the flat structure generated by our non-configurational rules can we account for the conditions on possible coreference between pronouns and NPs. In the rest of the thesis, we will assume that non-configurationality represents a parametric choice for languages with respect to phrase structure only. We do not intend the term to refer to any larger typology of language.

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FOOTNOTES TO CHAPTER 2

1. The distinction here between bound stem and word is not important to our discussion. However, it does create some difficulty in the glossing of individual verbs. We will try to give each stem and prefix a gloss. But there are verbs for which this will be impossible--verbs whose prefixes or stems have lost whatever meaning they originally had. These prefixes and/or stems will be indicated by a short line, "_".

2. All examples of Buechel's will be cited here in the orthography adopted in this dissertation and not in the original.

3. See Rood and Taylor (1976) and Boas and Deloria (1941) for more detailed discussion and examples.

4. This phonological reduction is extremely productive and many compounds have both reduced and long forms. For differing views on these processes see Chambers and Shaw (1980) and Williamson (1980).

5. Note that the plural marker following the head noun indicates plurality of the possessor. Plurality of the possessed noun itself is indicated on the verb, subject to the usual conditions of animacy, etc. (cf. Chapter 3, section 3.2.1) or by the determiners.

6. We place the INFL node in a post-verbal position, on the assumption that INFL is post-verbal in clauses and given that some agreement and all aspect/mood inflectional elements follow the head whether verb or noun. On the other hand, since some inflectional elements (viz., agreement) often precede the verb and noun as prefixes, this decision may seem somewhat arbitrary.

7. As far as I can determine from unpublished sources, this determiner has been either lost or changed in function in the other Dakotan dialects. Cha marks indefinite relative clauses in Lakhota but in the papers on Santee relative clauses (Chambers (1973) and Drummond (1976)) no mention of this determiner is made.

8. An alternative way to generate these demonstratives exploits Hale's conception of phrase structure rules for non-configurational languages (discussed in section 6 of this chapter). This approach crucially assumes that the demonstrative does not form a constituent with the NP in syntax and thus they should be able to be separated by intervening lexical material. Yet intervening phrases produce ungrammaticality.

(i) *wichaša ki John hena wowichakiyake.
men the J those ones talk to-them
'John talked to those men.'

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Thus we conclude that the demonstratives do not provide any evidence in support of the W* nature of the PS rules in non-configurational languages.

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3.1 Verb Agreement.

Unlike most Indo-European languages, Lakhota has agreement markers for all the NP arguments of the verb, subject to certain restrictions of a morphophonological nature. These markers reflect person, case and number and appear as prefixes to the verb in the positions 6 through 8 (cf. 2.3.1 (8)). The order of these prefixes depends on the person rather than grammatical relation. The order is the following:

3rd person plural object	+	1st person sg. or pl. subj. or obj.	+	2nd person sg. or pl. subj. or obj.
wicha-		wa-, u-, ma-		ya-, ni-, chi-

In addition, plurality is generally indicated by an enclitic which follows the verb.

It will be obvious when we present the paradigms illustrating agreement (in section 3.3.2) that there are two sets of agreement markers--one that indicates agreement with subjects, and a second one that indicates agreement with what we will loosely call "objects". We consider these differences to be differences in Case (Nominative and Objective Case respectively), and we will argue for this analysis in the section on Case Assignment.

Here, however, we would like to abstract away from the differences in form that the AGR markers display, and concentrate on their relationship with the verbal arguments they mark.[1] We will suggest that this "richness" of AGR markers is possibly related to the fact

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that Lakhota has a flat, VP-less S-structure, where there are no asymmetries between subject and object(s) as far as government relations are concerned.

The basic point to be observed is that only NP arguments of the verb trigger AGReement on the verb.[2] This is illustrated below for subject NPs (1), object NPs (2), Locative NPs (3), Oblique NPs (4), Dative NPs (5) and Benefactive NPs (6):

(1) Hokšila ki lena napha pi.
boys the these run-away AGR
'These boys run away.'

(2) Wichįcala ki hokšila ki a+wicha+phe.
girl the boys the _+AGR+hit
'The girl hit the boys.'

(3) Zuzeca wą hokšila ki a+wicha+slohą he.
snake a boys the 'on'+AGR+crawl DUR
'A snake was crawling on the boys.'

(4) Mary hokšila hena i+wicha+ñaña šni.
Mary boys those 'at'+AGR+laugh NEG
'Mary didn't laugh at those boys.'

(5) John hokšila ki thapa ki a+wicha+ki+phį kte.
John boys the ball the _+AGR+DAT+hit FUT
'John will hit the ball to the boys.'

(6) Mary hokšila ki šųka ki he wicha+kichi+yužąžą he?
Mary boys the dog the that AGR+BEN+wash Q
'Did Mary wash that dog for the boys?'

Objects of postpositions in postpositional phrases do not trigger AGR on the verb: neither do the possessor arguments of a noun that are arguably contained in a larger NP. In the examples below, third person plural NP hokšila ki 'the boys' is the object of a postposition (7), and the possessor of a noun (8). Agreement on the verb is ungrammatical in both cases:

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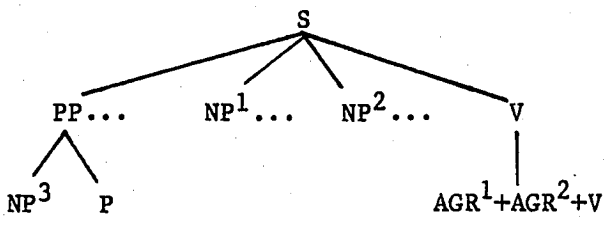
(7) *[hokšila ki wich+ikhiyela]$_{PP}$ blo wicha+bl+užąžą.
boys the them+near potatoes AGR+1NOM+wash
(I washed potatoes near the boys.)

(8) *[hokšila ki tha+iyechiķiyaka+pi ki]$_{NP}$ lila luza pi.
boys the POS+car+PL the very fast AGR
(The boys' car is very fast.)

There is one property that the above verbal arguments (including the subject) share, in a language like Lakhota, and which differentiates them from objects of postpositions or NPs contained in larger NPs. Lakhota has presumably a flat, VP-less S-structure, in which all the arguments of the verb are immediately dominated by the S node. Consider what the form of such an S-structure would be. (We assume that the AGR markers are prefixes on the verb).

(9)



In the flat, VP-less S-structure (9), V governs NP^1 and NP^2 (and also PP), independently of their grammatical relation. However, V does not govern NP^3, since this node is protected from government by a maximal projection, the PP node in which it is contained. (The same would be said for a NP contained in a larger NP). On the basis of this observation, let us then propose a more precise account of the association between arguments and AGR markers:

(10) An NP is associated with an AGR marker on the verb if it is governed by V in the flat, VP-less S-structure.

Once this is recognized, there are, however, several questions that immediately arise. What is the relationship of the AGR markers to

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Case? Recall that in this section we have been considering the AGR markers independently of their morphological form, i.e., independently of Case considerations. Once the rules for Case assignment are taken into consideration, is the notion of government defined on the flat structure still of any validity? We will postpone these problems until section 3.3.2. One other problem that arises is the proper matching of NPs (appropriately governed by V) and AGR markers. This problem has a "quantitative" side as well as a "qualitative" side. "Quantitatively", of course, we want the number of NPs to be the same as the number of AGR markers. "Qualitatively", on the other hand, we want each NP to be correctly paired with the "right" AGR marker.

As an answer to the first question, we assume that each AGR marker is indexed (through cosuperscripting, so as to distinguish this relation from the "usual" binding relations between NPs, for which we reserve subscripting) to an NP. We also assume that the AGR markers are base-generated with inherent Case in the verbal complex, and that a general checking procedure ensures that each (AGR, NP) pair matches in person, number and Case. Of course, this presupposes rules of Case Assignment to NPs that we still haven't discussed. We now impose the requirement that each AGR marker must match with at least one NP, ensuring that clauses with "dangling" AGR markers are filtered out. Technically, this might be achieved by a filter stated on the flat structure.

We now have to make sure that each NP is paired with at least one AGR marker. As we mentioned, Case is reflected in a "visible" way in the AGR markers. This "visibility" of Case in AGR will be consid-

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ered a necessary condition in order for the NP with which the marker is associated to receive a θ-role.[3] Then, if an NP is not associated with an AGR marker, the θ-criterion is violated. This will prohibit NPs governed by V in S-structure without an associated AGR marker.

We now have to prevent the possibility that one NP is associated with more than one AGR marker, since we also want to avoid a structure containing more AGRs than NPs. In fact, under our previous assumption that AGR markers reflect Case, Case Theory will rule out this possibility. Suppose that an NP is associated with two AGR markers. Then it is going to be associated with two Case specifications. If the Cases on the AGR markers are distinct, the structure is ruled out since an NP cannot have conflicting Cases. To prevent the other possibility, we should constrain the rules of Case assignment to an NP such that, for any given NP, the rules will apply only once, at a specified level of the grammar, but not at two distinct levels, assigning the same Case twice. This seems to be a reasonable proposal, in fact one that is implicitly incorporated in any account of Case assignment rules that we know of (see, e.g., Chomsky 1981). If this restriction holds, then each NP will only have one Case to match with the Case feature in AGR. Association with two AGR markers (thus, with two Case specifications) will thus be impossible.[4]

Let us now consider the "qualitative" problem of matching the right NP with the right AGR marker. Suppose that cosuperscripting is arbitrary, such that any AGR marker may be cosuperscripted with any NP. Then the matching procedure intervenes, making sure that the members of each pair match with respect to person, number and Case.

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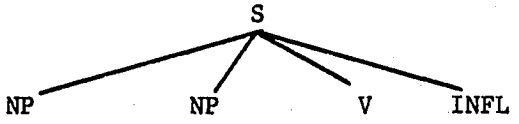
Unwanted associations (i.e., where one or more features are distinct) will be ruled out by a filter associated with the procedure.

3.2 Actual structures, virtual structures and government relations

We have presented an area of Lakhota grammar--the association of NP arguments with AGR markers--for which a notion of government defined on the flat, VP-less S-structure seems to be necessary, in order to capture the basic similarity between subjects and objects with respect to this phenomenon (recall that we put aside the fact that the AGR markers have different morphological forms for subjects and objects). Both subjects and objects are governed by V at S-structure in Lakhota, and this property seems to capture in a unitary way the fact that these are the elements that are associated with an AGR marker.

We now ask ourselves the following question. Is this notion of government defined on the "actual" flat S-structure of Lakhota of any validity when it is applied to other areas of the grammar of the language?[5] Consider what the flat structure for a Lakhota sentence with two arguments (for example, a subject and a direct object) looks like:[6]

(11)



Consider now the S-structure for a similar sentence in a configurational language like English, i.e., a language whose syntactic structure has a VP-node:

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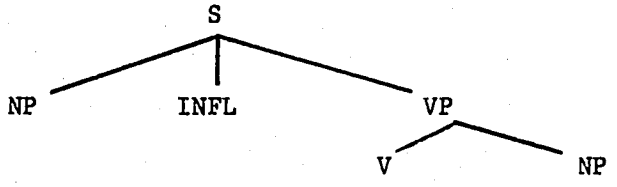
(12)



In (11), both NPs are governed by V (or INFL). There is no structural difference between them. In (12), however, one of the NPs is governed by the INFL node and is "higher" on the structure, while the other NP is governed by V and is "lower" on the tree than the previous one. Thus, government relations defined on a tree such as (12), with a VP, will distinguish between "subjects" and "objects", while government relations defined on a flat tree like (11) will not distinguish between "subjects" and "objects".[7]

One of the central claims of GB theory is that the notion of Government is central for the formulation of the sub-theories of Case and Binding. With this claim in mind, we can now reformulate the question that we asked just before diagram (11). Do these sub-theories in Lakhota distinguish between subjects and objects or do they not? In other words, do they make use of a notion of 'flat government' (there is no distinction between subject and object), or of a notion of 'hierarchical government' (there is a distinction between the two)? One of the aims of this thesis is to show that in fact Lakhota makes use of a notion of 'hierarchical government', much as English does, as far as the above mentioned theories are concerned. Furthermore, even for a correct account of the association between NPs and AGR markers, it is not enough to refer solely to 'flat government', as we will see in section 3.1. It seems that in this area of the grammar as well, a stronger requirement is needed, which refers

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crucially to 'hierarchical' government.

Consider also Control constructions as an example in point. It is assumed in GB theory that only an INFL with certain properties (namely containing AGR) governs the subject position. Whenever INFL does not contain AGR (in infinitival clauses), the subject will be ungoverned (unless some mechanism of Exceptional Government and Case Marking applies). The fact that the subject position may be ungoverned is used in GB theory to account for certain properties of "control" structures, namely the nature of the element (PRO) that occupies the subject position. Now, in a structure like (11), there is no way in which one position may be ungoverned. Suppose that INFL and not V governs the various NPs in (11). Then, if INFL does not have the required properties, every position will be ungoverned, not just the "subject". If the behavior of control structures in Lakhota displays the same crucial properties as their English counterparts, then a notion of 'flat government' will not be appropriate for Lakhota, despite the fact that the S-structure of the language does not have an actual VP node.

The same conclusion of inappropriateness of 'flat government' is reached by Chung (1983a,b) for Chamorro. She has in fact argued the the two notions of government are necessary to account for certain generalizations of Chamorro syntax. Binding theory and Case theory appear to be based on 'hierarchical' government. But, interestingly, she also argued that 'flat government' is necessary for a correct account of certain ECP effects in Chamorro.

It seems then that there is a large amount of evidence showing

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that it is necessary to recognize, for languages like Chamorro and Lakhota lacking an actual VP node in their constituent structure, an "abstract" or "virtual" S-structure in which such a node exists, such that the relevant notions of 'hierarchical government' might be defined.[8] This proposal is made explicit in Zubizarreta and Vergnaud (1981). In their view, the abstract structure is a "projection" of the flat syntactic structure, and is a "simultaneous" representation (it is not a distinct level of the syntax). Government relations can then be defined in this virtual syntactic structure, very much like they are defined in the actual S-structure of configurational languages like English. In addition, transformations may apply to these structures in the same way they apply to actual structures.[9] It becomes an important empirical issue, then, to find out which, if any, sub-theories of the grammar pick out government relations defined in this virtual structure, and which, if any, pick out government relations defined at the actual, flat, level of syntactic S-structure. As far as Lakhota is concerned, we will see that most sub-theories of the grammar require government relations defined in the virtual structure.

3.3 On the Necessity of Government Defined on Virtual Structures

In this section, we show first that a correct account of the association between AGR markers and NPs requires reference to a notion of 'hierarchical government' (3.3.1). In 3.3.2, we investigate the Case assignment rules in Lakhota, concluding that they crucially require a principled distinction between subjects and objects, i.e., in GB terms, they make use of the notion of 'hierarchical government'

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defined on virtual structures containing a VP node.

3.3.1 More on AGR

Recall that in 3.1, we concluded that 'flat government' was the appropriate notion to capture the occurrence of AGR markers in Lakhota clause structure. (10), which we repeat here, gives the basic generalization:

(10) An NP is associated with an AGR marker on the verb if it is governed by V in the flat, VP-less S-structure.

We will show now that this is not sufficient to capture the occurrence of AGR markers in Lakhota clause structure. The basic point is the following. There is one type of NP which is governed by V in the flat S-structure and which nevertheless is not associated with an AGR marker. This is the null element PRO that occurs in control structures. This type of construction is discussed in detail in chapter 4. Here, we will anticipate parts of the analysis that are presented later, but will not present the arguments that support it.

Before discussing control structures and the behavior of PRO with respect to AGR, it is first necessary to show that null syntactic elements may be associated with AGR markers. This will make it impossible to claim that PRO is not associated with AGR because it is a null element.

Lakhota makes extensive use of null pronouns. In fact, every personal pronoun in a position that is associated with an AGR marker may drop in Lakhota. It is tempting to relate this to the 'Null Subject Parameter' of the Romance languages (excluding French), and to

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the role played by Agreement as an account of the "pro-drop" phenomena (see Taraldsen 1978, Chomsky 1981, 1982, Rizzi 1982, chapter 4). The basic idea (which really is an idea that comes from the traditional grammarians of Romance) is that if a language has a sufficiently "rich" agreement system, then the subject can be dropped, since the deletion is recoverable. Chomsky (1982, 86) suggests that the "richness" may be characterized as the specification of Case for AGR at D-structure (in addition to number and person). The reasonableness of such a proposal is clear for Lakhota. Lakhota has also a rich agreement system, where features of person and number are specified. Futhermore, this "richness" is enhanced by the visible spellout of Case in the AGR markers. Note that in Romance, the proposed Case feature in AGR is invisible. The fact that Case is directly reflected in the Lakhota agreement morphology lends credence to this proposal. Some examples are given below.

(13) hokšila ki a+ya+phe.
boy the _+AGR(2NOM)+hit
'You hit the boy.'

(14) hokšila ki a+ni+phe.
boy the _+AGR(2OBJ)+hit
'The boy hit you.'

These examples show that a null element (a null pronoun) may (in fact must) occur with an AGR marker with which it is cosuperscripted.

Consider now a control structure like (16), in which the subject of the complement clause is also null. Crucially, there is no AGR marker associated with the subject in such a structure. In (15) we give the simplex complement clause in isolation. (16) is the grammatical control structure with no AGR marker. (17) shows that the

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structure is ungrammatical if the AGR marker is present.

(15) hokšila ki šųka ki a+wicha+pha pi.
boys the dogs the _+3OBJ+hit AGR(PL)
'The boys hit the dogs.'

(16) hokšila ki šųka ki a+wicha+phe wachį pi.
boys the dogs the _+3OBJ+hit try PL
'The boys tried to hit the dogs.'

(17) *hokšila ki šųka ki a+wicha+pha pi wachį pi.
boys the dogs the _+3OBJ+hit AGR(PL) try PL
(The boys tried to hit the dogs.)

In chapter 4 we show that the appropriate characterization of the complement subject position in control structures is that it is ungoverned in the virtual structure, thus allowing for the occurrence of PRO. What about the flat, VP-less structure? As we pointed out in 3.2, there is no way in which one NP immediate constituent of S may be ungoverned in the flat structure while another NP which is also an immediate constituent of S is governed. At best, either they will be both governed or both ungoverned. Now, in (16), the object of the complement clause is governed in the flat structure, since it is associated with an AGR marker (wicha). Thus, the null subject must also be governed. But if the null element is governed, according to (10) it should be able to trigger AGR in the verbal INFL. It seems then that a stronger requirement than (10) is necessary. In order to trigger AGR, an NP must be governed in both the flat structure and the virtual structure.

At this point, one might question whether a notion of 'flat government' is really necessary at all to capture the association of AGR markers and NPs, since a parallel requirement of government in the virtual structure is also required. But note that if one were to use

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solely a notion of 'hierarchical government', one would have to introduce a disjunctive statement in the formulation accounting for the occurrence of AGR: basically, that an AGR marker is associated with NPs governed by V or INFL (refer back to diagram 12). To the extent that the occurrence of AGR markers may be treated in a homogeneous way, we prefer to maintain the formulation in (10), which seems to us to capture a genuine generalization.

3.3.2 Case Assignment in Lakhota

In sections 3.1 and 3.3.1 we carefully avoided discussion of the morphological form of the AGR markers, and we mentioned only briefly (in 3.1) that subjects and objects are associated with different morphological classes of AGR markers. It is time now to consider this issue.

In Lakhota, then, the AGR markers reflect the Case of the NP with which they are cosuperscripted. Our proposal was that they are base generated within the verbal complex with inherent features of Case (and person and number) and that a matching mechanism would associate them with the "right" NP (having the same features of Case, person and number). It is natural then to claim that differences in Case assignment will have a reflection in the morphology of the AGR markers. It should be noted at this point that, in fact, lexical NPs do not exhibit overt morphological Case, and that only the AGR markers exhibit morphological Case. This doesn't mean, of course, that NPs do not have Abstract Case (in the sense of Chomsky 1980, 1981). Our strategy in the remainder of this chapter will be to take the morpho-

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logical Case in the AGR markers as a direct reflection of the Abstract Case of the NPs with which they are cosuperscripted.

The facts presented below were first discussed in Williamson (1979) within the framework of Relational Grammar (RG). Some comparisons of this approach to the one developed here will be made in the course of the discussion.

3.3.2.1 Two Classes of AGR Markers

There are two Cases that are distinguished in the Lakhota AGR markers: nominative and objective. But the range of NPs to which these Cases are assigned form an interesting set which will be difficult to characterize in a non-arbitrary way. We shall see that Government relations defined on a virtual structure containing a VP provide the basis for our analysis, but that other factors complicate the picture. Alternatively, in a theory like Relational Grammar (RG), the primitive notions of 'subject' and 'object' would provide the basis for an account of the Case assignment rules.

In section 3.1 we presented the AGR markers and their relative order with respect to one another within the verbal complex. Below, we identify these markers in the following chart. Note that there are two conjugation classes of Nominative Case AGR markers. The minor y-conjugation is given in parentheses.[10]

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(18)

	Nominative	Objective
Singular		
1st person	wa- (bl-)	ma-
2nd person	ya- ((ya-)l-)	ni-
3rd person	Ø-	Ø-
Plural		
1st p. dual	ų(k)-	ų(k)-
1st p. pl.	ų(k)-...pi	ų(k)-...pi
2nd person	ya-...pi	ni-...pi
3rd person	Ø-...pi	wicha-

Let us point out a few things in (18). First, note that first person plural and third person singular are not distinguished for Case. Hence, in our discussion of Case we will not give examples with these forms due to their unrevealing nature. Of course, we wish our account to generalize to them, these syncretisms being more or less accidental. Second, the third person plural forms in (18) are only for animate NPs, i.e., people and animals (although plurality of inanimate NPs is often marked by reduplication of the verb). Hence, we will limit our examples of third person agreement to animates.

Finally, some remarks should be made about the plural forms in general. Note that there are two morphemes that indicate plurality: pi and wicha-. Wicha- is restricted to third person objects (of transitive clauses), while pi occurs with every other person, independently of grammatical relation. pi is thus a "pure" morphological marker of number agreement, and does not reflect person or Case.

This situation is "masked" for third person, where pi is restricted to subjects, and wicha- marks objects (of transitive clauses). There is thus a gap in the distribution of pi. Our proposal here will be to say that wicha- is a suppletive form for pi in the specific context of third person objects of transitive clauses.

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Note that we still do not take wicha- as a marker reflecting Abstract Case, since it is missing in first and second person objects. However, it is also clear that its presence can be used as a diagnostic for the presence of Abstract Objective Case, since it is restricted to (third person) objects (of transitive clauses). For this reason, we gloss wicha- throughout this thesis as '3OBJ', although, strictly speaking, it does not in fact reflect Abstract Objective Case. This will become clear when we consider the "subjects" of stative verbs in section 3.3.2.3.1.

3.3.2.2 Case Assignment in Transitive Clauses

In transitive clauses the AGR marker cosuperscripted with the subject shows up with Nominative Case. The AGR marker cosuperscripted with the object shows up with Objective Case. Let us first illustrate Objective Case with an example containing a third person singular subject (i.e., with null agreement).

(19)
makte	'he kills me'
nikte	'he kills you sg.'
kte	'he kills him'
ɥkte	'he kills us dual'
ɥkta pi	'he kills us pl.'
nikta pi	'he kills you pl.'
wichakte	'he kills them'

In (20) we illustrate Nominative Case with the same verb as in (19) but with a third person singular object (again, with null agreement).[11]

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(20) wakte 'I kill him'
yakte 'you kill him'
kte 'he kills him'
ųkte 'we two kill him'
ųkta pi 'we pl. kill him'
yakta pi 'you pl. kill him'
kta pi 'they kill him'

In addition to direct objects, a number of other arguments trigger Objective Case on the verb. These are the arguments presented in chapter 2, section 2.3.2, whose presence is sanctioned by prefixes on the verb. Consider examples (21) and (22), with locative and oblique arguments, respectively:

(21) thųȟmuǧa eya a+ma+sloha hą pi.
fly some 'on'+1OB+crawl DUR PL
'Some flies are crawling on me.'

(22) hokšila hena i+wicha+wa+ȟaȟa pi šni.
boy those 'at'+3OB+1NOM+laugh PL NEG
'I didn't laugh at those boys.'

From these examples we can see that the locative and oblique arguments have the same form of agreement as the direct object arguments. In this respect, there is no distinction in Lakhota between "direct objects" and other "thematically" oblique arguments that trigger Objective Case. From now on, we will refer to these generalized class simply as "objects".

Dative and benefactive arguments also trigger Objective Case in their cosuperscripted AGR markers. Since these arguments often cooccur with direct objects, we find that the verb agrees with three arguments.

In the following examples, just the benefactive agreement is "visible" (since inanimates never agree and 3rd person singular agreement is null).

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(23) a. John thapa ki a+ni+ki+phį kte.
John ball the on+2OB+DAT+hit FUT
'John will hit the ball to you.'

b. John wowapi ki ni+cici+yawa hą he?
John letter the 2OBJ+BEN+read DUR Q
'Is John reading the letter for you?'

In the example below, the subject and object also "visibly" agree with the verb:

(24) a. Šųka ki wicha+chi+cici+yužaža kte.
dog the 3OB+1NOM/2OBLJ+BEN+wash FUT
'I will wash the dog for you.'

b. Šųka ki hena wicha+ma+yeci+yužaža he?
dog the those 3OBJ+1OBJ+2NOM=BEN+wash Q
'Did you wash those dogs for me?'

We thus see that in simple transitive clauses, Lakhota distinguishes between subjects and objects. Subjects have Nominative Case; objects have Objective Case. Only a notion of 'hierarchical government' defined on a virtual structure will be able to handle adequately this differentiation in Case Marking. On the basis of our discussion up to this point, we propose the following rules for assignment of Abstract Case to NPs (these will be reformulated in the course of our discussion):

(25) (i) An NP governed by INFL (with Mood) is Nominative.
(ii) An NP governed by V is Objective.

To illustrate, consider the example (26) below and its virtual structure (27):

(26) [[wichaša eya] [šųkala ki] [wicha+ma+ki+pazo pi]
men some puppy the 3OBJ+1OBJ+DAT+show PL
'Some men showed the puppies to me.'

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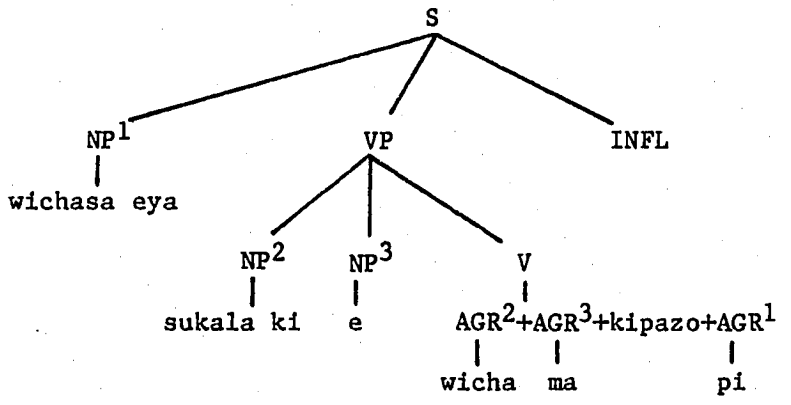
(27)



For ditransitive verbs such as kipazo 'to show to' in (26), we have not made any structural distinction between the object arguments. In the virtual structure in (27), the complex verb structurally governs both the direct and the indirect object.

In GB theory (cf. Chomsky 1981, 94) it is assumed (at least for languages like English) that the verb can only assign Case (through structural government) to a single adjacent argument. However, we are assuming that morphological word formation rules may add θ-roles (and allow for Case assignment) to the subcategorization frame of the verb. In some sense, the prefix within the word allows the V to govern and assign Case to the second object. Note that, as required, all objects are governed by V in virtual structure.

In a theory like Relational Grammar, the Case assignment rules needed to handle the facts of transitive clauses would likewise be extremely simple. Abstracting away for the moment considerations of grammatical level, the rules would have the following form:

(28) (i) Subjects are marked with Nominative Case.
(ii) Objects are marked with Objective Case.

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3.3.2.3 Case Assignment in Intransitive Clauses

Subjects of intransitive clauses--assuming for the moment that the argument of an intransitive clause in Lakhota is in fact its subject--are not marked for Case in a single way. Rather, there is a split between the subjects occurring with two distinct types of verbs--the "stative" and the "active" verbs. As we will see, subjects of statives are cosuperscripted with AGR markers with Objective Case; while the subjects of the active are cosuperscripted with AGR markers that have Nominative Case.

Lakhota divides intransitive predicates into two classes for the purposes of Case assignment. These two classes can be roughly characterized in semantic terms as active and stative predicates.[12] The argument of the "active" predicates triggers an AGR marker with Nominative Case, while the argument of "stative" predicates triggers an AGR marker with Objective Case. In (29a) below we list some examples of the Nominative class of intransitive predicates and in (29b), some examples of the Objective class of intransitive predicates.

(29) a. "Active" Predicates

lową	'to sing'	akit'o	'to be tatooed'
omani	'to walk'	khopha	'to be afraid'
wachi	'to dance'	lochį	'to be hungry'
cheya	'to cry'	nawizi	'to be jealous'
ya	'to go'	thi	'to live, dwell'
u	'to come'	ni	'to survive'
iȟa	'to laugh'	yuǧo	'to be tired'

(29) b. "Stative" Predicates

kakiža	'to suffer'	inihą	'to be frightened'
t'a	'to die'	ipuza	'to be thirsty'
sapa	'to be dirty'	watuka	'to be tired'
ǧi	'to be brown'	lakhota	'to be Lakhota'
waštе	'to be good'	hetąhą	'to be from there'

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If we compare the paradigms of these two types of intransitive predicates to the transitive paradigm, the split system of Case assignment becomes evident.

(30) a. Nominative Case Intransitive.

wa+cheye	'I cry'
ya+cheye	'you cry'
cheye	'he cries'
ų+cheya (pi)	'we cry'
ya+cheya pi	'you pl. cry'
cheya pi	'they cry'

(30) b. Objective Case Intransitive

ma+t'e	'I die'
ni+t'e	'you die'
t'e	'he dies'
ų+t'a (pi)	'we die'
ni+t'a pi	'you pl. die'
t'a pi	'they die'

(30) c. Transitive (w/ 3rd p. sg. object)

wa+kte	'I kill him'
ya+kte	'you kill him'
kte	'he kills him'
ų+kta (pi)	'we kill him'
ya+kta pi	'you pl. kill him'
kta pi	'they kill him'

(30) d. Transitive (w/ 3rd p. sg. subject).

ma+kte	'he kills me'
ni+kte	'he kills you'
kte	'he kills him'
ų+kta (pi)	'he kills us'
ni+kta pi	'he kills you pl.'
wicha+kte	'he kills them'

Comparing the forms in which the AGR markers are overtly realized (first and second person) in the four paradigms reveals that the subjects of the predicates in the stative class (30b) have the same Case as the objects of the transitive predicates (30d), and the subjects of the predicates in the active class (30a) have the same

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Case as the subjects of the transitive predicates (30c).

It is interesting to note that wicha- marks third person plural objects of transitive clauses but not the third person plural subjects of the stative intransitive verbs. Instead, the morpheme pi is used. This lends plausibility to our view of wicha in section 3.3.2.1 that it is nothing but a suppletive form of pi restricted to third person objects of transitive clauses, but not reflecting Abstract Case per se. In this sense, the plural part of the paradigm with stative intransitive verbs has no gap as far as the marking of plurality is concerned.

3.3.2.4 Case Assignment in Double Object Clauses

In this section, we will describe a third class of predicates. The predicates of this class, which we will call "double-object" predicates for reasons that will be obvious immediately, have two thematic arguments: a subject, which is in the Objective Case, and an oblique, which is also, not surprisingly, in the Objective Case. Some examples of this class are listed below.

(31) Double Object Predicates

iyececa	'to resemble, to seem the same as'
ececa	'to be like'
itą	'to be proud of'
ųspe	'to learn'
išteca	'to be ashamed of'
iwatuka	'to be tired of'
ithoca	'to be amazed at'

Double-object verbs can be contrasted with active verbs that also subcategorize for obliques. Some are:

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(32) ikhokiphe 'to be afraid of' (khokiphe 'be afraid')
iĦat'a 'to laugh at' (Ħat'a 'to laugh')
anawizi 'to be jealous of'(nawizi 'to be jealous')
acheya 'to cry over' (cheya 'to cry')

Consider the partial example paradigm of a double-object verb, ita 'to be proud of', given below.

(33) i+ma+ta 'I am proud of him, he is proud of me'
i+ni+ta 'you are proud of him, he is proud of you'
i+Ø+ta 'he is proud of him'
i+u+ta (pi) 'we are proud of him, he is proud of us'
i+ni+ta pi 'you pl. are proud of him, he is proud of you pl.'
i+Ø+ta pi 'they are proud of him, they are proud of you pl.'

When we look at the forms lacking third person plural arguments (because of the wicha- marker), we can see that because both arguments of the verb (whether subject or oblique) receive Objective Case, there is perfect ambiguity. Imatą above, means either 'I am proud of him' or 'he is proud of me'. Likewise, an example with two overt agreement markers such as inimatą [13] will mean either 'I am proud of you' or 'you are proud of me'. Only when we look at examples with third person plural arguments can we see that one argument is indeed a subject, and the other an oblique object. Compare itą pi 'they are proud of him' above with iwichatą 'he is proud of them'. Expressions with these arguments will always be unambiguous.

If we compare this class of verbs to active verbs which sub-categorize for obliques, we can think of the double-object class as completing a classification of verb types. Just as there are active verbs with obliques, so there are stative verbs with obliques.

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3.3.2.5 Against a Semantic Account

At this point, we would like to briefly consider and reject two possible accounts of this data. The first account is to say that Case marking is semantically determined by thematic roles and θ-theory. The second account is to claim that Case is lexically determined, or more precisely, that the Case "arrays" of arguments are arbitrarily stipulated for each verb.

This latter approach to Case can be found in Hale (1983). In his discussion of Case in Warlpiri, he suggests that future research into verbal meanings will reveal the general principles determining the choice of Case, but in the meantime, he adopts a lexical position: "I will take (Case categories) to be stipulated properties of lexical items." As this type of treatment is completely arbitrary and makes no predictions, it is a position to avoid if at all possible. To the extent that any other account can describe the data and make some predictions, we should prefer it to a purely stipulated one.

In spite of the 'incipient stage of our understanding of verbal meanings' (Hale 1983, 15), we will venture to say that a purely semantic account does not seem very plausible. Languages tolerate a certain amount of arbitrariness and we would like to suggest that the link between the thematic roles and grammatical functions at D-structure is one place for some arbitrariness.

In Williamson (1979) (which was written in the RG framework), we argued that the distinction in Case marking cannot be given in purely semantic (thematic) terms. In particular, it was claimed that it cannot uniformly be said that whenever the subject of a verb is a

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patient it receives Objective Case and conversely, whenever the subject is an agent or an experiencer it receives Nominative Case (since all perception verbs, e.g., slolya 'to know', wąyąka 'to see', iyukca 'to think', have Nominative Case subjects). There are, for example, pairs of verbs with very similar meanings and no arguable difference in thematic structure which nevertheless differ with respect to the Case marking of their subjects. One example is the pair yuǧo 'to be tired, beat', and watuka 'to be tired'. These are used in different contexts: yuǧo is more current, more "slangy", but this should hardly affect thematic structure. Some verbs which are stative in meaning belong to the "active" conjugation: consider lochį 'to be hungry', ų 'to live, be' and ni 'to survive', listed in (29a). A second set of counterexamples to a purely semantic determination of Case involve a small number of truly semantically active verbs whose subjects are Objective. They include wachį 'to try, intend', chanų 'to smoke', echų 'to do'. These verbs all contain nasal vowels, suggesting some possible earlier phonological rule for inducing the Objective Case paradigm (since Objective Case agreement contain nasals). Further arguments are presented in Williamson (1979).[14] In conclusion, we reject semantic and/or stipulative lexical accounts for Case marking and will attempt to provide a more general account, deriving Case marking from purely grammatical considerations.

3.3.2.6 A Preliminary Account of Case Marking

In this section we will offer a preliminary analysis of the data presented up until now. [15] The facts to explain are:

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(i) why do intransitive verbs split into two classes with respect to Case marking?

(ii) how do we account for the fact that the subjects of stative intransitive verbs and the subjects of double-object verbs have the same Case marking as the objects of transitive clauses?

The fact that the intransitive verbs form two classes for the purpose of Case marking has a very simple and elegant account in Relational Grammar. There, it is claimed that intransitive verbs universally split into two classes according to the initial grammatical relation of their argument. In one of these classes, the final subject is also an initial subject. The characterization of the status of the argument of the other class is called in the literature of Relational Grammar "the Unaccusative Hypothesis". We will state it in (34) below.

(34) Some intransitive verbs take an initial direct object but no initial subject.

Intransitive verbs that take an initial direct object are called "unaccusative verbs". On the other hand, intransitive verbs that take an initial subject are called "unergative verbs". A rule of "Unaccusative Advancement", which promotes the initial direct object of the unaccusative verbs to subject, accounts for the fact that the argument acts as a final subject. This advancement satisfies the Final 1 Law postulated in the RG framework, which requires every basic clause to have a final subject (partially parallel in intent to the Extended Projection Principle). For details, see Perlmutter (1978, 1983), and many of the papers in Perlmutter (ed.)(1982) and Perlmutter and Rosen

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(eds.)(to appear).[16]

Speaking now in RG terms, if we say that the class of verbs illustrated in (29b) uniformly have initial direct objects while those in (29a) uniformly have initial subjects, then the difference in Case assignment can be accounted for by a syntactic generalization in terms of grammatical relations. That is, in intransitive clauses, initial objects are assigned Objective Case; and initial subjects are assigned Nominative Case.

The Unaccusative Hypothesis can be applied to the double-object verbs as well. Recall that these have a final subject which has Objective Case. The second argument of these verbs has also Objective Case and is an Oblique. It is clear that the Case marking pattern of the final subject is similar to the one displayed by the arguments of the unaccusative verbs. We will thus say that here as well the final subject is an initial object of the double-object verb, and it therefore receives Objective Case.

The leading idea of the Unaccusative Hypothesis was introduced into GB theory, developed, and defended in Burzio (1981). In GB terms, a clause with an unaccusative verb (called "ergative" in Burzio's terminology, which we will not use here) contains an NP which is base-generated in direct object position (i.e., governed by V) and which then moves into subject position (governed by INFL) as an instance of the general transformational rule Move a.

If we adopt for Lakhota Burzio's "translation" of the Unaccusative Hypothesis into GB theory, it is clear that virtual structures are the relevant ones in which to state the generalizations for Case

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assignment, since reference to subjects and objects is, as we have seen, crucial. The question to ask now is the following: what is the level of representation (D-structure or S-structure) to which the rules of Case assignment for arguments of intransitive verbs should refer? Intuitively, it appears that D-structure is the appropriate level (alternatively, the initial level in an RG framework), since presumably at S-structure the NP object of an unaccusative verb will have undergone Move a in the virtual structure (alternatively, Unaccusative advancement), becoming an S-structure subject, thus being indistinguishable from the S-structure subject of an unergative verb. Note that this forces us to recognize a level of <u>virtual D-structure</u> as necessary for the formulation of grammatical statements, in addition to the independently necessary virtual S-structure.

However, the assumption that Move a applies in virtual structure[17] in the unaccusative case might be challenged. In GB theory, Move a applies to an NP in order for it to satisfy the Case Filter. Thus, Move a will apply whenever an NP is in an un-Case marked position, moving the NP to a position in which it can receive Case. The θ-criterion, on the other hand, ensures that movement is to a non θ-position. This is the case of passives as discussed in the literature. Passive morphology has two properties: it does not assign Case to the object position and it "suspends" assignment of θ-role to the subject position. In order to get Case, the object has to move to a Case marked position. By the θ-criterion, this position must not be a θ-position. The NP in object position thus will move to the non-θ subject position of the passive. See Chomsky (1981, chapter 2) for

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details.

Burzio's characterization of the unaccusative verbs in Romance is in many ways parallel to the characterization of passivization just presented. In fact, unaccusative verbs in Romance assign a θ-role to their objects but do not assign them Case. On the other hand, they do not assign a θ-role to the subject position. Movement of the D-structure object to subject position is thus made necessary by the Case filter. The NP moves to subject position so that it can receive Case.

Consider now the arguments of unaccusative verbs in Lakhota. In order for these to be distinguished from the arguments of unergative verbs, we are led to conclude that Case assignment is at D-structure. However, saying this amounts to the view that unaccusative verbs, contrary to their Romance counterparts, do in fact assign Case to their objects, as well as a θ-role. From this it follows that movement (to subject position) is not necessary, since the NPs can receive Case in the position they occupy at D-structure. There is thus no a priori reason to consider that in Lakhota the virtual S-structure of clauses with unaccusative verbs is different in any respect from the virtual D-structure. If this is so, then the rules for Case assignment could refer to the level of S-structure, since the differentiation between arguments of unaccusatives and arguments of unergatives would still exist at this level. Note that this view implies that there is a null expletive subject at S-structure in unaccusative clauses.[18]

However, it is possible to show that the NP arguments of un-

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accusative verbs in Lakhota are in fact subjects at S-structure (final subjects in the framework of RG) by considering their behavior in control complements. In chapter 4, we argue that only subjects may be the target of control. The NP argument of an unaccusative verb may be the target of control. Therefore, it must be a subject at S-structure. This is illustrated in (35) with the unaccusative verb istime 'to sleep, be asleep'.

(35) a. m+ištįme.
1OBJ+sleep
'I am asleep.'

b. ištįme wa+kuze.
sleep 1NOM+pretend
'I pretend to sleep'.

We therefore reject an analysis is which the arguments of unaccusative verbs are S-structure objects. We are forced to conclude that the assignment of Case to arguments of intransitive clauses in Lakhota must make reference to their D-structure position. Note that this has implications concerning the status of the rule Move a with respect to the Case Filter, to which we return still in this section.

The overall situation concerning Case assignment is thus the following. Subjects of transitive and unergative clauses are Nominative. Subjects of unaccusative clauses and double-object clauses are Objective. And lastly, objects of transitive clauses and double-object clauses are Objective.

This "distribution" of Case can be described by a very simple set of rules of Case marking, on the condition that reference to D-(virtual) Structure is possible. The data suggests that whenever an NP is governed by V at D-structure it receives Objective Case. This

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will be the case for subjects of unaccusative and double-object verbs, as well as objects of transitive verbs (and the oblique NP arguments in general, including the one in double-object verbs). Consider now the form of the rule for subjects of unergative and transitive verbs (for Nominative Case). These are subjects at both levels of structure (D- and S-structure). At first sight, reference to S-structure seems sufficient. But in fact, if we choose S-structure as the relevant level for the statement of the rule of Nominative Case assignment, we will have to introduce a disjunction in order to distinguish subjects of unergative and transitive clauses from the (final) subjects of unaccusatives. Thus, the simplest rule for Nominative Case assignment is the one that refers also to D-structure, where the two types of final subjects are unequivocally distinguished. We present our rules of Case assignment in Lakhota below.

(36) (i) An NP governed by V in the virtual D-structure is Objective.
(ii) An NP governed by INFL (containing Mood) in the virtual D-structure is Nominative.

The rules in (36) certainly enrich our notion of "possible rules" for Case assignment. In the languages for which analyses in GB theory have been proposed, rules referring just to S-structure have proved adequate. The Lakhota facts, however, cannot be adequately described without recourse to reference to government at D-structure.

We will conclude this section with a few remarks about the interaction of Move a and the Case Filter. Since the objective Case-marked argument of clauses with unaccusative verbs and the non-oblique Objective argument of double-object verbs are subjects at S-structure, this shows us that in Lakhota Move a at virtual structure is indepen-

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dent of the need to survive the Case Filter. We conclude that in Universal Grammar there should not be such a tight relation as is assumed between Move a and the Case Filter.[19]

In the following section we present the last set of objective Case subjects-those subjects which are the antecedents of reflexives.

3.3.2.7 Reflexive Clauses and Case Assignment

The fourth and final class of arguments to receive Objective Case is the class of antecedents of reflexive clauses. A complete discussion of reflexivization is presented in chapter 5. Here, we will just briefly mention the details relevant for Case assignment. First, only one argument (corresponding to the antecedent) and one AGR marker (cosuperscripted to it) occur in reflexive clauses. It may be shown that this argument must the subject of the clause (for discussion, see chapters 4 and 5). Second, there are no overt anaphors; rather, an invariant reflexive prefix is attached to the verb. There are three morphological shapes for the reflexive: ic'i- for most verbs, igl- for verbs of the y-conjugation, and ikp- for verbs beginning with the instrumental prefix pa-. Third, the AGR marker reflects Objective Case, and not Nominative Case. Regardless of the Case of the subjects of non-reflexive clauses, the subjects of reflexive clauses are always cosuperscripted with an AGR marker that has Objective Case.

As an illustration, consider the following paradigms. (37a) is a reflexive clause with naňtaka 'to kick', a regular active transitive verb, (37b) is a reflexive clause with yužaža 'to wash', an

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active transitive verb of the y-conjugation, and (37c) is a reflexive clause with pazo 'to show', an active transitive with the instrumental prefix pa-. The AGR marker cosuperscripted to the subject antecedent (a null pronoun) is underlined. As is clearly seen, it belongs to the Objective paradigm.

(37)a.
na+mic'i+ʼtake	'I kick myself'
nanic'i+ʼtake	'you kick yourself'
na+ic'i+ʼtake	'he kicks himself'
na+uk+ic'i+ʼtake	'we (dual) kick ourselves'
na+uk+ic'i+ʼtaka pi	'we pl. kick ourselves'
na+n+ic'i+ʼtaka pi	'you pl. kick yourselves'
na+ic'i+ʼtaka pi	'they kick themselves'

(37)b.
miglužaža	'I wash myself'
niglužaža	'you wash yourself'
iglužaža	'he washes himself'
ukiglužaža	'we (dual) wash ourselves'
ukiglužaža pi	'we pl. wash ourselves'
niglužaža pi	'you pl. wash yourselves'
iglužaža pi	'they wash themselves'

(37)c.
mikpazo	'I show myself'
nikpazo	'you show yourself'
ikpazo	'he shows himself'
ukikpazo	'we (dual) show ourselves'
ukikpazo pi	'we pl. show ourselves'
nikpazo pi	'you pl. show yourselves'
ikpazo pi	'they show themselves'

The same paradigm occurs in reflexive clauses in which the antecedent is the subject and the anaphor is an oblique argument. This is true also of double-object verbs in which, as we have seen, the (final) subject is an initial object. (38a) contains a double-object verb išteca 'to be ashamed of' and (38b) contains a transitive (taking an oblique object instead of a direct object) iʼhat'a 'to laugh at'.

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(38) a. imic'išteca 'I am ashamed of myself'
inic'išteca 'you are ashamed of yourself'
i?ic'išteca 'he is ashamed of himself'
iyukic'išteca 'we (dual) are ashamed of ourselves'
iyukic'išteca pi 'we pl. are ashamed of ourselves'
inic'išteca pi 'you are ashamed of yourselves'
i?ic'išteca pi 'they are ashamed of themselves'

b. imic'iȟat'e 'I laughed at myself'
inic'iȟat'e 'you laughed at yourself'
i?ic'iȟat'e 'he laughed at himself'
iyukic'iȟat'e 'we (dual) laughed at ourselves'
iyukic'iȟat'a pi 'we pl. laughed at ourselves'
inic'iȟat'a pi 'you pl. laughed at yourselves'
i?ic'iȟat'a pi 'they laughed at themselves'

The paradigms of (37) and (38) illustrate the fact that all subjects of reflexive clauses receive objective Case, even if the subject of the corresponding non-reflexive clause would normally be assigned Nominative Case (e.g., *wa?ic'ikte, *wa?igluzaza, etc.).

Several pieces of evidence establish that the agreement marker in these clauses is cosuperscripted with the subject and not with an object. The AGR marker is missing when a reflexive clause is the complement of an EQUI construction. In chapter 4, we show that only subjects may be the target of control in EQUI constructions. This is shown by the fact that, in these constructions, only the AGR marker corresponding to the subject may be absent (in fact, must be absent). That the only AGR marker normally present in a reflexive clause is missing in an EQUI construction is shown below, in (40). In (39) we give the simple reflexive clause with the AGR marker underlined.

(39) na+n+ic'i+ȟtake.
INSTR+AGR+REFL+kick
'You kick yourself.'

(40) na+ic'i+ȟtake yakuza he?
INSTR+REFL+kick you+pretend Q
'Did you pretend to kick yourself?'

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Secondly, in third person plural reflexive clauses, the plural marker is pi, and not wicha. Recall that wicha occurs only as a plural marker for third person plural objects of transitive clauses. Pi occurs with all the other plural NPs. If the argument of the reflexive clause were an object, we would expect wicha and not pi (on the assumption that reflexive clauses are transitive). This is illustrated below.

(41) iglužaža pi.
'they wash themselves.'

(42) *wichiglužaža.

Note that this data provides further evidence against a purely semantic account of Case. The argument structure of a verb (i.e., the set of arguments with their associated θ-roles that a verb takes--see chapter 5, section 5.1.3.2 for discussion) is not changed by coreference between two of its arguments. Yet, no matter what conjugation class the verb belongs to, no matter what thematic role the subject has, it receives objective Case in the reflexive construction.

These facts concerning reflexives are not accounted for by our rules in (36) either. In GB theory, there is no reason to think that the S-structure subject of a reflexive clause is an object at D-structure. Rather, reflexive clauses usually involve (obligatory) coindexation between an antecedent and an anaphoric (lexical or null) element. In the "GB view" of reflexive clauses, there are two positions involved, not just one. We would then expect the subject of reflexives in Lakhota to be assigned the same Case that it has in clauses where no obligatory coindexing exists. But this is false in Lakhota, as we have seen.

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The assumption that there are two positions involved, however, does not hold in the framework of Relational Grammar, where it is claimed that reflexive clauses have initial representations that are quite different from non-reflexive clauses (see, for example, Rosen 1980). In these representations, a single argument "bears" two initial grammatical relations, subject and object. Such representations are called in RG "multi-attachment". Thus, in RG, the subject of a reflexive clause is both an initial subject and an initial object. At the final level of structure, however, this single argument bears only the subject relation. See Rosen (1980) for detailed discussion of the structure of reflexive clauses in the framework of RG.

Taking advantage of this view of reflexive clauses, it is immediately apparent that the NP subject of a reflexive clause in Lakhota will also fall under the Case marking rule for Objective Case given in (36i). Since the subject of a reflexive clause is also a direct object at the initial level of representation, it will receive Objective Case marking under rule (36i)[20]. This analysis, in a slightly different form, was proposed in Williamson (1979), in a RG framework.

However, when translated into GB theory, this treatment runs into certain difficulties. In GB theory, we would have to say that the same NP occurs in two distinct θ-positions, subject and object (crucially, the subject of a reflexive clause is a θ-position). But this is ruled out by the θ-criterion, which states that a given argument can have at most one θ-role.

One possible parallel treatment to multiattachment in the GB

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framework would be to use and extend the notion of chain of Chomsky (1981) to include the coindexed arguments of reflexive clauses. Briefly, a chain is the representation in S-structure of the "movement history" of a given NP under Move a. It thus comprises the set formed by the NP--the Head of the chain--and the traces that signal the positions occupied by the NP at D-structure and intermediate levels of representation.

An extension of the notion of chain to reflexive clauses would take the subject NP antecedent of the reflexive and the NP corresponding to the anaphor as forming a single chain. Under this view, a chain would now comprise the set formed by an NP and the elements that are coindexed to it. This set still includes traces, but not just traces. Once this step is taken, we could formulate the rules in (36)--namely (36i)-- in such a way that they refer to chains instead of NPs. (36i) would state that if one of the members of a chain is governed by V then the chain receives Objective Case. This Case would then be "distributed" among its members, along the lines proposed in Chomsky (1981). Note that since the rule refers to chains, it is not necessary anymore to say that it applies at D-structure, since chains are defined at S-structure.

However, we doubt that such an extension of the notion of chain is possible. In the definition given in Chomsky (1981), each chain is assigned a single θ-role, regardless of the number of NP positions in the chain. Crucially, "new" θ-role positions break a chain. Coindexed arguments do not form a chain, precisely because each one has its own θ-role. Obviously, modifying the definition of

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chain to include reflexive coindexing would have enormous theory internal consequences for Case assignment, Binding theory, Control theory, etc. Therefore, we will not pursue this possibility here.

Another treatment, similar to the one proposed in Burzio (1981, 1983) for the phenomenon of Italian auxiliary selection studied in detail by David Perlmutter in unpublished work, and actually constituting a direct translation of the account provided by RG for such phenomena, would consist in taking coindexation per se as the relevant aspect for Case assignment. In Burzio's treatment, an index spanning the verb determines selection of essere (vs. avere). This covers unaccusative constructions (his ergative constructions), reflexive constructions, and also restructuring constructions with volere type verbs and unaccusative complements under his Subject Substitution Hypothesis (Burzio 1983).

Unaccusatives and Reflexive clauses in Lakhota now share the property of having their S-structure subject coindexed with an anaphor: a null anaphoric element in reflexive clauses, and a trace left by movement of the D-structure object (note that we are now talking about traces existing in virtual structure). We could then reformulate the rule for Objective Case assignment in the following way:

(43) At S-structure, an NP governed by V or coindexed with an anaphor governed by V is Objective.

This rule successfully accounts for Objective Case marking in Lakhota. Two remarks should be made before we conclude. First, note that this is a disjunctive rule, which treats direct objects of transitive

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clauses in a way distinct from subjects of unaccusative and reflexive clauses. Second, note that the rule is now formulated to apply to S-structure and not to D-structure. Although this may make the Case rules appear more like the Case rules proposed in LGB, there is still a sense in which they are different and that is in the mentioning of a coindexing requirement for Case assignment. Note though that the pattern revealed by the Lakhota facts of Case assignment--which force us to a rule like (43)--is not unfamiliar at all. On the contrary, they are strikingly identical to patterns that occur in many languages with respect to the most varied phenomena, which have been uncovered by many recent studies in Relational Grammar. As in Lakhota Case assignment, this pattern usually groups the following elements:

(44) (i) objects of transitive clauses;
(ii) subjects of unaccusative clauses;
(iii) subjects of reflexive clauses.

3.3.3 Some Remarks on Reciprocals and Case

In this section we will briefly discuss one of the two reciprocal constructions as it relates to Case assignment.

Reciprocal clauses in Lakhota are like reflexive clauses in many respects. Like reflexives, they contain null anaphoric element, and, also like reflexives, only the subject may be the antecedent. Reciprocal morphology appears as an invariant prefix on the verb in the same position as the reflexive. This prefix has only one form, kichi-, regardless of the morphological class of the verb.

The reciprocal construction differs in at least two respects from reflexives. First, while the antecedent subjects of reflexives

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have Objective Case, the subjects of reciprocals have Nominative Case. This is evident in the AGR markers of the second person forms, which are y-. Below we give two example paradigms.

(45) a. a+u+kichi+pha pi. 'We hit each other.'
on+1plNOM+RECIP+hit PL

b. a+y+echi+pha pi. 'You hit each other.'
on+2NOM+RECIP+hit PL

c. a+kichi+pha pi. 'They hit each other.'
on+RECIP+hit PL

(46) a. na+u+kichi+wizi pi. 'We are jealous of each other.'
_+1plNOM+RECIP+jealous PL

b. na+y+echi+wizi pi. 'You are jealous of each other.'
_+2NOM+RECIP+jealous PL

c. na+kichi+wizi pi. 'They are jealous of each other.'
_+RECIP+jealous PL

Thus, if we assume that reciprocals have the same analysis as reflexives--that is, that there are two coindexed arguments in virtual structure--reciprocals are a counterexample to the Case assignment rules formulated in (43). The antecedent of a reciprocal would be falsely assigned Objective Case by virtue of the fact that it would be coindexed to an NP governed by V in deep structure.

If there were a completely predictable switch in Case marking for reciprocals, there would be no reason to suppose that notion of coindexing is needed at all. One could simply lexically mark reflexives as requiring the Objective Case paradigm for subjects and the reciprocals as requiring the Nominative Case paradigm. The generalization expressed by (43) would lose most of its empirical content.

However, there is a second difference between this reciprocal construction and the reflexive construction. Double object predicates

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do not participate in this construction. Note that in the paradigms given above, both verbs are active: (45) contains the active transitive apha 'to hit' and (46) contains the active intransitive+oblique nawizi 'to be jealous of'. Below, we give some examples illustrating the fact that double-object verbs do not allow reciprocals.

(47) a. *iyo+kichi+kiphi pi.
+RECIP+be happy on account of PL
(They are happy on account of each other.)

b. *i+yechi+ta pi sni he?
+2NOM=RECIP+proud of PL NEG Q
(Aren't you proud of each other?)

This fact suggests that the differences are deeper than a simple switching of lexical paradigms.

The proper analysis of reflexives and reciprocals is the topic of Chapter 5. There we will consider a lexical analysis of Lakhota reflexives and reciprocals in which reciprocals do not involve coindexed arguments. Note that if an analysis which does not involve coindexing is possible, we will not have to give up the generalization for Case marking in (43).

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FOOTNOTES TO CHAPTER 3

1. By "verbal arguments" here, we have in mind the set comprising the elements subcategorized by the verb as well as the subject.

2. Note that with the term "trigger" we do not imply any specific mechanism with some kind of directionality, but simply mean to state that there is an association between NPs and AGR markers.

3. The dependency of θ-role assignment on presence of Case, for a given NP(≠PRO) is proposed in Chomsky (1981, 336ff). Our requirement on page 81 is somewhat stronger, in that it requires visibility of Case in the AGR markers. Note that this "visibility" must still be stated at a reasonable level of abstraction, since there are cases in which the AGR markers are ∅ morphemes.

4. An alternative solution to the "quantitative" problem which might have some interesting consequences for Lakhota is the following. Suppose that the presence of an AGR obligatorily triggers the assignment of a θ-role. Then, in order not to violate the θ-criterion at D-structure, every AGR must be associated with one and only one NP. Note, however, that this requirement is extremely strong, in that it rules out the possibility of expletive pronouns in Lakhota, as well a rule of passive. Suppose that Lakhota had passive morphology associated with the usual properties of "suspending" both the assignment of the "external" θ-role to the subject position and Case to the object. The empty subject position is associated with an AGR with Case, since the object must get Case, and the subject position is the only one available for movement (since it is a non θ-position). But this is a contradiction with our previous assumption. Since the subject position is associated with AGR, then a θ-role is assigned, and not only movement to subject will be impossible, but also the position must be filled at D-Structure with an argument. To the extent that Lakhota has no expletive pronouns and no rule of Passive, this might be considered a viable proposal, worth exploring.

5. For convenience, we will call the notion of government defined on the flat S-structure "flat government", as opposed to "hierarchical government", which will be the term we will use to refer to government defined on a structure with a VP node.

6. Here, we have strictly in mind the pre-theoretical, traditional sense of "subject" and "direct object".

7. In fact, a configuration such as (12) serves as the basis for a definition of the formal notions of 'subject of' and '(direct) object of', in the theory of generative grammar (see Chomsky 1965, chapter 2). In the framework of Relational Grammar, 'subject', 'direct object', etc. are taken as primitives of the theory and thus are not defined. Note that both theories do not have different terminologies

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for the theoretical notions (defined in GB theory, primitives in RG) and the pre-theoretical notions of 'subject', 'object', etc. Likewise, we have been using and will be using these terms both in their pre-theoretical and their theoretical sense. We hope that the context of the discussion will be sufficient to ensure recoverability of the intended sense.

8. Note that "virtual" projections are in fact a recognition of the necessity of postulating an abstract level where grammatical relations are defined and distinguished from one another. This makes GB-theory very much like Relational Grammar, as was recognized by Chung (1983b).

9. In fact, Zubizarreta and Vergnaud develop an idea that was first presented in Chomsky (1981, 127ff).

10. Lakhota has two sub-sets or "conjugation classes" of Nominative AGR markers, the choice of which is lexically determined by the verb. The most common conjugation is illustrated in (i) below with the intransitive verb cheya 'to cry'. The more restricted conjugation, which we refer to as the "y-conjugation, is illustrated in (ii) with the intransitve verb ya 'to go'. The y-conjugation is restricted to a few lexically marked verbs which begin with [y] and to verbs with either the prefix ya- or yu- of class 11 (cf. chapter 2).

(i)	wacheye	'I cry'	ʉcheye	'we two cry'
	yacheye	'you cry'	ʉcheya pi	'we pl. cry'
	cheye	'he/she/it cries'	yacheya pi	'you pl. cry'
			cheya pi	'they cry'
(ii)	ble	'I go'	ʉye	'we two go'
	le	'you go'	ʉya pi	'we pl. go'
	ye	'he/she/it goes'	la pi	'you pl. go'
			ya pi	'they go'

Let us point out a few things about these agreement markers. First, there are two forms for the English 'we' which do not correspond exactly to the first person plural inclusive and exclusive. Rather, ʉ- is an inclusive "dual", meaning 'you and I', and ʉ--pi is simply 'plural', meaning 'we, more than two', inclusive or exclusive'. Second, although it encliticizes to the verb, the plural marker pi is independent in the orthography (reflecting its irrelevance in determining word stress, contrary to the prefixes). Third, there is no overt agreement marker for third person singular. One might propose that there is no agreement at all, but such a position is not satisfactory, for as we have already seen in section 3.3.1, it is the lack of agreement that determines PRO in control structures. In order to provide a unified analysis of agreement, we will assume that the "spellout" of third person singular is null and that the feature of plurality gives it a visible form, viz., pi and wicha.

11. The full range of possible combinations of (Nominative) subject and (Objective) object agreement in active transitive clauses is given

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below. The subject markers are on the vertical axis; object markers are on the horizontal axis.

SUBJECT-AGR MARKERS	OBJECT-AGR MARKERS		
	1st pers	2nd pers	3rd pers
	Singular		
Singular			
1st pers	--	chi	wa-Ø (bl-Ø)
2nd pers	ma-ya (ma-yal-)	--	ya-Ø (l-Ø)
3rd pers	Ø-ma	Ø-i	Ø-Ø
Plural			
1st pers	--	ų-ni	ų-Ø
2nd pers	ma-ya...pi (mayal-)	--	ya-Ø-pi (l-)
3rd pers	ma-Ø...pi	ni-Ø pi	Ø-Ø pi
	Plural		
Singular			
1st pers	--	chi...pi	wicha-wa (wicha-bl-)
2nd pers	ų-ya (pi) (ų-yal-)	--	wicha-ya (wicha-yal-)
3rd pers	Ø-u (pi)	Ø-ni pi	Ø-wicha
Plural			
1st pers	--	ų-ni...pi	wichų
2nd pers	ų-ya...pi (u-yal-)	--	wicha-ya pi (wichal-)
3rd pers	ų-Ø pi	ni-Ø pi	wicha pi

The gaps in the above paradigm represent obligatory reflexive clauses. Third person plural (wicha) > first person > second person (classes 6, 7 and 8 respectively, as noted in 2.3.1 (8)). Note that there is a single merged prefix chi- for 'I subject/you object' instead of the additive *wa-ni (*bl-ni). Note also that there is a

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certain amount of ambiguity with respect to the plural forms. Consider the combination ni...pi in chart. This combination has three distinct meanings which are illustrated below with wayaka 'to see'.

(i) wa + ni + yaka pi 'they see you (pl.)'
__ + you see PL 'they see you (sg.)'
'he sees you (pl.)'

In this example, the plural marker can indicate the plurality of the subject, object or both in this example.

The last possibility (that pi in (i) may indicate plurality of both subject and object) is due to a restriction in Lakhota that prevents homophonous agreement markers from co-occuring. For example, a double pi is ungrammatical, *waniyaka pi pi 'they (pl.) see you (pl.).' The restriction can also be illustrated with the third person plural marker wicha- 'them'. As shown in (ii) both animate indirect objects (iia) and animate direct objects (iib) trigger the AGR marker wicha- on the verb k'u 'to give'.

(ii) a. wakayeza eya thaspa ki wicha+wa+k'u.
child some apple the them +I +give
'I gave the apples to some children.'

b. šuka yamni ki Bill wicha+wa+k'u.
dog three the B them +I +give
'I gave the three dogs to Bill.'

As we see in (iic), double marking of wicha- on the verb is not possible.

(ii) c. wakayeza eya šuka yamni ki (*wicha+)wicha+wa+k'u.
child some dog three the (them)them +I +give
'I gave the three dogs to some children.'

This restriction on homophony must find its explanation in a theory of morphology (cf. Stemberger 1980 for discussion).

12. This semantic distinction was described in Boas and Deloria (1941). As they observe, most active verbs reflect activities related to human or living beings, as actors or experiencers. Stative verbs ("neutral" is their term) express states and processes.

13. The order of the AGR markers for double-object predicates differs from the usual order (presented in 3.1). For these predicates second person AGR precedes first person AGR.

14. The reader is referred to Rosen (1983) for discussion and arguments against a semantic account of the facts handled by the Unaccusative Hypothesis, based on consideration of many languages. The Unaccusative Hypothesis will be the basis of our account of Case assignment.

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15. The data on reflexive clauses presented in the next section will force us to review and extend the account of this section.

16. There is now a substantial literature providing evidence for the Unaccusative Hypothesis in a wide variety of unrelated languages. See, among others, Davies (1980) for Choctaw, Raposo (1981) for Portuguese and Rosen (1980) for Italian. The reader should consult Dubinsky and Rosen (1983) for a bibliography of studies within the framework of Relational Grammar.

17. The rule Move a in virtual structures is referred to by Chomsky (1981, 129) as Assume GF. It is presumed to have the same properties as its analogue Move a in actual structures.

18. This is forced upon us by the "Extended" part of the "Extended Projection Principle", which stipulates that all clauses must have subjects (see Chomsky 1982, 10).

19. Note that if the approach described in footnote 4 above is taken, i.e., where the presence of AGR requires the assignment of a theta role, then the Extended Projection Principle will force Move a in Lakhota, since there can be no expletive subjects to fill the empty position.

20. It will also receive Nominative Case marking. If one assumes that these rules are disjunctively ordered and that (36i) must apply first, we can avoid double Case-marking of the subjects of reflexives. There are other conceivable alternatives as well.

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BICLAUSAL STRUCTURE

4.0 Introduction

In this chapter we shall describe the complement system of Lakhota and present an account within the framework of GB theory. In LGB, very little in the way of a formal theory of complementation is presented. However, certain assumptions give rise to an implicit theory. The Projection Principle forces a common D-structure for all complement types, a position for which there is independent evidence. Interactions among matrix verbs, complementizers and the subordinate clause INFL node are viewed as a matter of subcategorization (and possibly selectional restrictions). Clauses are not considered projections of V, as some have proposed, but expand by a unique PS rule. The goal of this chapter will be to investigate the usefulness of these assumptions for Lakhota.

Any analysis of complement clauses must include an account of control complements (or the "Equi" construction). Control complements raise two distinct issues. The first directly addresses the topic of this chapter: why must the subjects of control complements be "missing" and in complementary distribution with lexical NPs? In GB theory, the explanation for this follows from the interaction of our "implicit" theory of complements and the theories of government and Case. And, as we have seen from the previous chapter, government and Case must be defined on virtual structures. The second issue is why the "missing subject" generally requires an antecedent and shares certain similarities to reflexives. This issue has been discussed in

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the GB literature and we will consider a particular proposal which subsumes the facts under binding theory in the following chapter.

Our description of the complement clause system in Lakhota differs from previous descriptions (occasionally, from Beuchel (1939) and more often from Boas and Deloria (1941) and Van Valin (1977, 1980)). We recognize the category of "complementizer" and discuss the syntactic and semantic role complementizers play in the complement system. Previous descriptions have not acknowledged their contributions. In addition we have attempted to provide a systematic description of various types of complement clauses without overt complementizers and their distinguishing properties. Previous accounts have been sketchy at best. Specific differences will be pointed out and discussed at the appropriate time.

Subcategorized complements in Lakhota can be divided into roughly two syntactic types. One type consists of a clause followed by an overt complementizer: it scrambles freely with NPs and adverbials and displays no interaction between the arguments of its predicates and the matrix verb. The second type contains no overt complementizer: it immediately precedes the verb and is dependent in various ways (which we will make more precise) on the matrix verb.

This chapter is organized as follows. In the first section we will discuss complement clauses with overt complementizers. We describe the meaning and function of the complementizers, and their similarity with the determiners. We point out the significance of the Lakhota facts for a theory of complementation. In the second section we will discuss complement clauses with no overt complementizers.

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This broad category includes subject and object control clauses, "small" clauses and the complements of a small class of restructuring verbs. A comparison between control clauses and the other complements reveals an important correlation between finiteness and mood. An analysis of small clauses suggests that the lack of INFL accounts for their properties.

4.1 Complement Clauses with Overt Complementizers

In many languages the relationship between the matrix verb and the complementizer of its complement clause is so close and predictable that in the early years of generative theory it was felt that the complementizer had no meaning independent of the context in which it occurred and could be inserted by a syntactic transformation (cf. Rosenbaum 1967). This syntactic approach has changed in that it is now generally believed that complementizers are base-generated under a complementizer node (cf. Bresnan 1972). However, the general predictability of the complementizer from the matrix verb has led to a close identification of complementizers with semantic types of complements. In English, for example, $\pm$wh has been directly identified with the general semantic type of "question". In early years of generative grammar, questions (direct and indirect) were represented in the syntax by an abstract morpheme, +Q (cf. Baker 1970). But in more recent years, it has been claimed that one expansion of COMP is the choice of $\pm$wh, which is directly equated with the choice of semantic complement type, ie. the choice between indirect question or declarative.

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Grimshaw (1979) has argued very convincingly that grammatical theory must distinguish between syntactic subcategorization and semantic selection for complement types in English. So, for example, predicates with the syntactic subcategorization of +wh (eg. believe, know, ask, etc.) can semantically select for either questions ((1a) below) or "exclamatives" ((1b) below).

(1) a. It is unclear how tall she is.

b. It is amazing how tall she is.

Grimshaw argues that as a syntactic type, +wh complements share certain syntactic properties. On the other hand, there are other properties based on semantic type that can and must distinguish the two complements in (1).

We concur with this general approach and will be assuming a distinction between semantic selection and syntactic subcategorization for our description of the Lakhota complementizer system. The Lakhota complementizer system provides further evidence for this view.

We shall see below that indirect question complements are not overtly marked or distinguished from non-question complements. In cases where predicates select for two semantic types (eg. slolya 'to know', kiksuya 'to remember', etc. select for both question and declarative complements) the sentences are ambiguous between the two readings.[1] Furthermore, in Lakhota the complementizers are not in complementary distribution. On the contrary, most predicates co-occur with all three of them. Of course, the contexts in which they are used are clearly different and this we attribute to the meaning of the complementizer itself. The independent contribution of meaning to the

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clause that the complementizer gives goes beyond the contribution of semantic type (which we atttribute to the selectional properties of the verb). This kind of system is only possible if semantic and syntactic properties are kept distinct. Let us now proceed to the particulars.

4.1.1 The Complementizers

In Lakhota, there are three complementizers: ki, cha, and k'ų/ų. These are a subset of the set of determiners described in Chapter 2. They follow the clause and all inflectional elements. For this discussion, let us assume that they are generated under an COMP node by the following rule.

(2) S' ⟶ S COMP

The complementizer ki is the most pervasive, occurring with indirect question complements, factive and irealis declarative complements. In comparison with the other two complementizers, it is semantically the least marked. We will treat it as the "elsewhere" case. Below we give some examples illustrating the range of complements with which it occurs.

Indirect question complements are discussed in detail in chapter 7. Here, we give some examples with the verb pasi 'to make an inquiry into, investigate', which selects for indirect question complements; the verb slolya 'to know', which selects for indirect questions and declaratives; and the verb iyukcha 'to think'. In all three cases, ki is the unmarked complementizer.

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(3) a. wawoyuspa ki [[takuwe t'a pi] ki] pasi pi.
police the why die PL COMP inquire PL
'The police inquired into why they died.'

b. [[tuktel John mazaska ki egnaka] ki] slolwaye.
where John money the put COMP I-know
'I know where John put the money.'
'I know that John put the money somewhere.'

c. [[wakąyeza ki skata hą pi] ki] iblukcha.
children the play DUR PL COMP I-think
'I think that the children are playing.'

The factivity of the declarative complement clause appears to affect the presence of ki. When the complement is non-factive and thus typically contains the irrealis/future marker kta, the complementizer is usually omitted.

(4) a. [[hų+ku ki ewablakį kte] (ki)] owichawakiyake.
mother+POS the I-look on FUT COMP I-them-tell to
'I told them (that) I would look in on their mother.'

b. [[wowakipha kte] (ki)] ikhowakiphe.
I-have bad luck FUT COMP I-be afraid
'I was afraid that I would have bad luck.'

The lack of an overt complementizer creates a partial similarity to control complements, which never have overt complementizers. But we will argue that they are a distinct complement type in section 4.2.1.2 below.

The verb chį 'to want' is another verb of this type, as are most impersonal verbs. Typically, impersonal verbs are non-factive, have no complementizer, and contain kta 'irrealis/future'. The presence of ki is optional. Some examples are given below with the verbs waše 'to be good', thąį 'to be clear, visible', and iyececa 'to be fitting, proper'. The verb waše is less typical in that kta, the irrealis marker, is not required and for at least one speaker the presence of ki is preferred, rather than simply optional.

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(5) a. [[wichaša ki zuzeca ki kte] ki] waštę.
man the snake the kill COMP good
'It would be good if the man would kill the snake.

b. [[tokel ecamų kte] (ki)] thąį šni.
how I-do FUT COMP clear NEG
'It isn't clear how I am to do it.' Beuchel (1970, 479)

c. [[wowapi wą lawa kte]]iyececa.
book a 2NOM-read FUT be fitting, proper
'There is a (certain) book that you should read.'
lit. 'It is proper that you read a (certain) book.'

The second complementizer is k'ų/ų. It indicates that the event expressed by the complement clause has already taken place relative to the time of the matrix verb. Like ki, it may mark indirect question complements and declarative factives.

(6) a. [[tuwa itowapi ophethų] k'ų] Bill imųğe.
who pictures buy COMP-past Bill I-ask
'I asked Bill who had bought the pictures.'

b. [[thašųkawakhą manu pi] k'ų] weksuye.
his-horse steal PL COMP-past I-remember
'I remember that his horse had been stolen.'

Since it marks past and thus factive complements, it is ungrammatical with the inflectional irrealis/future marker kta.

(7) *[[owasechų ki he iwacu kte] k'ų] iblukcha.
job the that I-take FUT COMP-past I-think
'I am thinking that I will take the job.'

The third complementizer is cha. It is used when the speaker knows that the proposition expressed by the complement is true and believes that the hearer is not aware of it. It therefore functions as an assertion marker. Consider the example below. (8a), with cha as the complementizer, was felt to be less immediate to the context--"after the fact"--as if the hearer hadn't known of some past event, viz., that the man came. (8b) was more appropriate when the speaker

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and hearer together were witnesses to the fact that the man came and one told the other that Mary noticed it.

(8) a. [[wichaša ki hi] cha] Mary ableze.
man the come COMP-new Mary notice
'Mary noticed that the man came.'

b. [[wichaša ki hi] ki] Mary ableze.
man the come COMP Mary notice
'Mary noticed that the man came.'

Further evidence that cha is an assertion marker comes from its interaction with negation and questions. First, cha cannot mark indirect question clauses. If the matrix verb selects for only indirect question complements and the complement clause is marked with cha, then the sentence will be ungrammatical. On the other hand, if the matrix verb selects for both indirect question complements and declarative complements, then the reading with the indirect question complement is ungrammatical and the sentence has only a declarative reading. This is illustrated in (9). Iyuğe 'to ask' selects only for indirect questions. Wąyąka 'to see' selects for either indirect question complements or declaratives.

(9) a. *[[taku manu pi] cha] imuğe.[2]
what/something steal PL COMP-new I-ask
'I asked what was stolen.'

b. [[taku manu pi] cha] wąblake.
what/something steal PL COMP-new I-see
*'I saw what was stolen.'
*'I saw whether something was stolen.'
'I saw that something was stolen.'(new to hearer)

Second, given its assertion meaning, cha is incompatible with non-factive verbs of various types: verbs of saying, propositional attitude verbs, etc. Some examples follow. (10c) is interesting as

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it shows that one cannot assert that something is true and simultaneously predicate that it is true.

(10) a. *[[Bill Kyle ekta iyaye] cha] iblukcha.
Bill Kyle to go COMP-new I-think
'I think that Bill is on his way to Kyle.'

b. *[[taku eye ki he hecetu] cha] cet'ųwagle.
what say the that be-that COMP-new I-doubt
'I doubt that what he said is that way.'

c. *[[thipi ki hugnaga] cha] wowichakhe.
house the burn COMP-new be true/fact
'It is true that the house burned down.'

Furthermore, the complementizer cha is ungrammatical in the scope of matrix negation and/or questions. Compare the grammatical (8a) above with (11).

(11) a. *[[wichaša ki hi] cha] Mary ableze šni.
man the come COMP-new Mary notice NEG
'Mary didn't notice that the man came.'

b. *[[wichaša ki hi] cha] Mary ableza he?
man the come COMP-new Mary notice Q
'Did Mary notice that the man came?'

The sentences in (11) are grammatical with the glossed meanings if the complementizer ki is substituted for cha. The ungrammaticality of cha in the scope of negation and question is consistent with its function as a complementizer indicating assertion. One cannot assert a fact that is new to the hearer and simultaneously question or deny it. This property of cha has a direct parallel in its function as a focus determiner of simple nouns (cf. chapter 2.4.4.1).

Boas and Deloria (1941) and Van Valin (1977, 1980) do not recognize cha as a complementizer or as a determiner. This is because they equate it with what we claim is a homophonous reason conjunction cha meaning 'and so, therefore' (cf. footnote 2). This confusion not

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only results in a rather arcane analysis of complement clauses (sentences such as (9b) above are translated as "something was stolen, it being so, I saw it", which does not capture the meaning of the construction), but fails completely to identify the function of cha as a determiner marking indefinite relative clauses and as a focus determiner for simple nouns and the cleft construction.

The indefinite determiners do not have complementizer functions. However, there is one impersonal verb, yąka 'to be, exist' that takes a complement clause marked by wą. The force of this construction is to make the expression more "weighty". An example is given below.

(12) [[wowapi ska ota ų pi kta] wą] yąke.
paper white many use PL FUT COMP be
'A lot of blank paper will be used.'
lit. 'there is that much white paper will be used.'

4.1.2 Constituent Structure

The complement clauses discussed above bear many obvious similarities to NPs. First, they occur in subcategorized positions, satisfying the argument structure of the verb. Second, they scramble freely with NPs and adverbials with no change in meaning. This is illustrated below. Complement clauses are preferred in S-initial position, a stylistic preference much like "Heavy NP Shift" in English.

(13) a. John [[tuwa itowapi ophethų] ų] imųğe.
John who picture buy COMP-past I-ask
'I asked John who had bought the picture.

b. [[tuwa itowapi ophethų] ų] John imųğe.
who picture buy COMP-past John I-ask
'I asked John who had bought the picture.'

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(14) a. Bill [[wichaša ki kichiza hą pi] cha] wąyąke.
Bill men the fight DUR PL COMP-new see
'Bill saw that the men were fighting.'

b. [[wichaša ki kichiza hą pi] cha] Bill wąyąke.
men the fight DUR PL COMP-new Bill see
'Bill saw that the men were fighting.'

Also like NPs, complement clauses may be marked with the demonstratives for more emphasis.

(15) a. [[Bill tuweni waštelake šni] ki] he slolwaye.
Bill no-one like NEG COMP that I-know
'I know that, that no one likes Bill.'

b. [[Bill hi] ki] he yuši+ye+ma+ye.
Bill come COMP that wrinkle+cause+1OBJ+cause
'That Bill came surprised me.'
lit. 'That Bill came made me wrinkle.'

c. [[Agnes mnipiğa yatke] ki] he wachį.
Agnes beer drink COMP that 1NOM-want
'I want that, that Agnes drink beer.'

And finally, they are marked by the same determiners as NPs. The semantic similarity between the functions of ki, k'ų/ų and cha in complement clauses and in NPs is obvious. K'ų as a complementizer marks past events relative to the discourse or matrix verb; as a determiner it marks previously mentioned referents in the discourse. Cha as a complementizer marks new asserted facts; as a determiner it focusses and introduces new referents into the discourse. Ki as a complementizer marks factive and non-factive propositions; as a determiner it marks previously known or non-existing referents. These similarities are not accidental and our analysis should capture them.

One account would be to say that complement clauses and NPs are the same grammatical category: for example, one could claim that the category S' does not exist and that all complement clauses are

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NPs. The fact that determiners and complementizers are drawn from the same set in Lakhota would follow from the fact that they belong to the same minor lexical category--determiners. One problem that this account has is how to distinguish these complements from a gerund-like construction which is a true nominalization.[3] However, $\bar{X}$-theory allows us to make certain cross-categorial generalizations without reducing the inventory of grammatical categories.

Similarities across lexical categories are captured by a feature theory of major lexical categories. In the system proposed in Chomsky (1970), nouns are [+noun, -verb], verbs are [+verb, -noun], prepositions are [-noun, -verb] and adjectives are [+verb, +noun]. But these features do not capture the similarities between S and N. It is really at the level of PS and not complement argument structure that these similarities are found.

How do we capture the relationship between complementizer, tense/mood and subject on the one hand, and determiner, and optional tense/mood and subject on the other? We have no solution to offer. Jackendoff (1977) has proposed that the functions argument, modifier and specifier be identified with levels of categorical expansion (specifiers are level 3). One could propose a set of categorical features for determiners and complementizers in which they share a crucial feature, suppose [+specifier]. One could further add "subcategorization" features, so that determiners are [$+N^2$ __] and complementizers are [$+S^2$__]. But this is an unsatisfactory mechanical solution.

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Assuming that complementizers and determiners are both specifiers, how do we distinguish the various semantic types (question, declarative and imperative) of complements that the matrix verbs select for? It is generally assumed that the expansion of COMP includes the choice of ±wh. In other words, the choice of semantic type is syntactically encoded for S' only. If we assume that the semantic type if a complement clause is assigned by the verb (much as a θ-role is assigned), how is the well-known interaction between complementizer and this "clause-role" accounted for? The Xapproach that we have sketched out above suggests that NPs and S's should be parallel in this respect.

In chapter 7 we shall see that a proper account of questions in Lakhota requires that there be a coindexing relation between constituent question words and direct and indirect question clauses. We will assume that semantic type (eg. +Q) is encoded in the specifier, COMP for S' and DET for NPs.[4]

This concludes our discussion of the complement system in Lakhota. We have argued that the complementizers of complement clauses in Lakhota bear striking similarities to the determiners and observe that this fact is an example of the well-known parallels between S and N. Familiar restrictions between matrix verbs and the semantic type of complement clause are viewed as semantic selectional restrictions, while the choice of the complement clause itself (as opposed to NPs and gerunds) is viewed as a syntactic subcategorization. We have not yet provided an account of the interaction between

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the complementizers and INFL. We reserve this topic until we have presented the facts concerning the other complement types.

4.2 Bare Complements

In this section we will discuss complement clauses which have no overt complementizers. We have chosen the term "bare" as a theory-neutral label to refer to the various complements of this class. Unlike the complements that we saw in the previous section, bare complements do not freely scramble with other sister constituents. The clause must immediately precede the matrix verb.

The first case of this type that we will discuss are the complements of the verbs of control. We will also briefly discuss several other types of verbs subcategorizing for bare complements, including a class of restructuring verbs and a class of verbs with "small" clause complements. They may be usefully contrasted with the (also bare) complements of impersonal verbs.

4.2.1 Control Clauses

4.2.1.1 A General Description

The complements of the verbs of control belong to the general category of "bare" complements. In addition to their lack of an overt complementizer, they are further characterized by their lack of an overt argument--the subject. The reference of the "missing" subject is determined by one of the matrix arguments, depending on the particular verb.

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Let us begin with some examples. In (16) we present some examples of subject-controlled "Equi". In all of the examples the complement verb is grammatical only if there is no subject agreement (whether nominative or objective) at all.

(16) a. chąnųp/*chąnųmųpa ina+wa+khiye.
smoke/*I-smoke _+1NOM+quit
'I quit smoking.'

b. wasicu iya/*iwaya ųmaspe.
whiteman speak/*I-speak _+1OBJ+learn
'I learned to speak English.'

c. waksu/*wayaksu wa+l+upike.
do beadwork/*2NOM+do beadwork _+2NOM+be skillful
'You are skillful doing beadwork.'

d. ištįme/*mištįme wachame.
sleep/*1OBJ+sleep I-try, intend
'I tried to sleep.'

e. wowapi ki yawa/*blawa ibluthe.
book the read/I-read I-try, test
'I tried out to read the book.'

Other verbs which have subject-controlled complement subject empty categories include kųza 'to pretend to', kinica 'to be anxious to', ku 'to want, desire to', kapį' 'to be reluctant to', ikiphi 'to be worthy to', inaǹni 'to be in a hurry to', and wohitika 'to be energetic to'.[5]

The empty category in the sentences in (16) is not a third person null pronoun and there is no null third person agreement on the verb, as can be seen from the meanings of the sentences. That is, (16a) for example, does not mean I quit that he smoke or (16b) I learned that he speaks English, etc. In (16) the empty category must be interpreted as having the same reference as the matrix subject.

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We can also demonstrate that it is only an argument with the grammatical function of subject that may be so interpreted. In the examples below we use overtly marked arguments (rather than third person singular arguments) to illustrate this fact. The complement clause has subject agreement and no object agreement: the result is ungrammatical.

(17) a. *John a+wa+phe iyuthe.
John _+1NOM+hit try
'John tried that I hit (him).'

b. *wo+(ma)+ki+yaka pi i+ma+khipi šni.
_+(1OBJ)+DAT+tell PL 1OBJ+be worthy NEG
'I am not worthy that they talk to (me).'

In (18) we give examples of object-controlled complement subject empty categories which are controlled by objects. We have only found three verbs of this type: -si 'to request, ask one to', -khiya 'to intentionally cause, make one to' and -ya 'to unintentionally cause, make one to'. These verbs have no other subcategorizations and thus only appear in this construction. (In contrast, some of the subject-controlled verbs allow "gerunds" and simple NP objects.)

(18) a. mağazu cha inakhiye+wicha+wa+khiye.
rain CONJ quit+3OBJ+1NOM+cause
'It was raining so I made them quit.'

b. wakąyeža ki ištįme+wicha+wa+khiye.
children the sleep+3OBJ+1NOM+cause
'I made the children sleep.'

c. John wakąyeža ki taku wą ophe+kici+thų+wicha+ši.
John children the something a _+BEN+buy+3OBJ+ask
'John asked the children to buy something for him.'

d. kte ma+ya+ye.
kill 1OBJ+2NOM+cause
'You unintentionally made me kill it.'

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e. hokšila ki igmu wą mnit'e+ye.
boy the cat a drown (lit. water-die)+cause
'The boy made the cat drown.'

Also with these verbs, the empty category in the complement clause must be interpreted as having the same reference as the matrix object. There is no reading where the complement subject is a third person singular argument non-coreferential with the matrix controller. And again, the empty category must be the subject of the complement clause. This is illustrated below.

(19) a. *wa+kte+ya+ye.
1NOM+2kill+2NOM+cause
'You made him that I kill (it).'

b. *John nape (ni)+yuza+pi+chi+ši pi.
John hand (1OBJ)+hold+PL+1NOM=2OBJ+ask PL
'I asked you that John shake hands with (you).'

The fact that only subjects of complement verbs may be "missing" provides an argument for the analysis of Case presented in chapter 3. There we argued that certain arguments with Objective Case agreement are subjects: the subjects of "unaccusative" verbs, "double-object" verbs, and reflexive clauses. Note that these arguments may be the "missing" argument of complement clauses embedded under control verbs. For example, the verb ištįma 'to sleep' is an unaccusative verb, yet it may be embedded under control verbs as (16d) and (18b) above demonstrate. We give more examples below.

(20) a. kuže/*ma+kuže šni wachąme.
sick/*1OBJ+sick NEG I-try
'I try not to be sick.'

b. wowapi ki yawa+(*m)+ic'i+khiye wachame.
book the read+(*1OBJ)+REFL+cause I-try
'I tried to get myself to read the book.'

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c. si ki hlihlila a+(*ma)+ceca šni wachame.
feet the mud _+(*1OBJ)+be like NEG I-try
'I tried not to be muddy feetwise.'

These facts provide further evidence that it is the syntactic notion of subject that characterizes the empty category and not a semantic notion of thematic role (such as actor).

As mentioned above, bare complement clauses do not scramble with other matrix constituents. Compare the (a) examples of (21-22) with the (b) examples:

(21) a. John nape ni+yuza+wa+ši.
John hands 2OBJ+shake+1NOM+ask
'I asked John to shake hands with you.'

b. *nape ni+yuza John wa+ši.
hands 2OBJ+shake John 1NOM+ask
'I asked John to shake hands with you.'

(22) a. miye šų akąl yąke i+ma+kiphi šni.
1EMP horse on sit _+1OBJ+be worthy of NEG
'I am not worthy to sit on (ride) horses.'

b. *šų akąl yąke miye i+ma+kiphi šni.
horse on sit 1EMP _+1OBJ+be worthy of NEG
'I am not worthy to sit on (ride) horses.'

We conclude this section by pointing out a fact about control verbs, a phenomenon that can only be obvious in a language such as Lakhota, which has non-uniform Case marking for its surface subjects. In Lakhota, both unaccusative and unergative verbs may be control verbs.

4.2.1.2 A GB Analysis of Lakhota Control Complements

In generative theory, the proper analysis of control clauses has been the subject of some debate. One issue is whether or not the complement of the control verb is a full clause or a VP. A VP analy-

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sis is a minimalist position: If a lexical NP never appears in a certain position, then the simplest explanation is to say there is no such position. A VP analysis claims that there is no subject position in control clauses. On the other hand, a clausal analysis must justify several different kinds of empty elements: the empty subject, an empty COMP, and an impoverished INFL. To the extent that the clausal analysis succeeds, a VP analysis will fail, for the latter analysis would then be forced to duplicate structure for VP complements just in these cases to the point where the clausal analysis and the VP analysis would become notational variants and no empirical differences between the two could be discerned.

In GB theory, a very simple account of the structure of all complement clauses is proposed: that S' expands by the rule in (2). Furthermore, the expansion of INFL in S includes an option for ±tense. Control complements correlate with the absence of [+tense][6] and not with the lack of S. This account straightforwardly predicts the possibility of control complements with different semantic types of complements. In English this prediction is borne out, as complements of control predicates may be indirect questions (eg. I don't know [what [PRO to do]]). A VP analysis fails to capture this generalization in any insightful way.

As we noted in our introductory remarks about GB theory, the subject position is governed by [+tense]. If this option is not chosen, and this is what is claimed by GB theory to be the case for control complements, then the subject position is ungoverned. Moreover, it is claimed that Nominative Case is only assigned by INFL when

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it contains [+tense]. Since control clauses are [-tense], no Case can be assigned to the subject. This predicts that lexical NPs will never appear in this position, since they will be rejected by the Case Filter. PRO, being an empty category, will escape the Case Filter. Since PRO is both an anaphor and a pronominal, it falls under both principles A and B of the binding theory. PRO vacuously satisfies these principles because it is ungoverned and thus has no governing category.

4.2.1.3 The Lakhota Fit

Control complements in Lakhota share most of the properties associated with this general view of control and, in addition, have a few language particular properties that must be explained (these complements are not free to scramble). In adopting the GB analysis, it is obvious that the definitions of government and Case, in which [+tense] governs and assigns Case to the subject, must apply to virtual structures in Lakhota. We begin by applying the GB analysis to the basic facts of Lakhota.

First, we will show that the "missing" subject NP of a control complement must be assigned a θ-role. In (26b) below, we demonstrate that the impersonal verb iyececa 'to be proper, fitting', which sub-categorizes for an irrealis complement, does not assign a θ-role to a subject NP. In (27) we show that it cannot be a control complement.

(26) a. [wowapi wąži lawa kta] iyececa.
book a-NS 2NOM-read FUT be proper
'You should read a book.'
lit.'It is proper that you would read a book.'

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b. *John [wowapi wąži lawa kta] iyececa.
John book a-NS 2NOM-read FUT be proper
(John is proper that you read a book.)

(27) a. *[[wowapi wąži lawa kta] iyececa] yakapi.
book a-NS 2NOM-read FUT be proper 2NOM-be reluctant
(You are reluctant to be proper to read a book.)

b. *John [wowapi wąži lawa kta] iyececa] kapi.
John book a-NS 2NOM-read FUT be proper be reluctant
(John is reluctant to be proper that you read a book.)

The ungrammaticality above is accounted for if we assume that complements of control verbs have an empty subject position which must be assigned a θ-role. Another property of control complements--that the reference of the missing subject is determined in part by the matrix verb--is also found in Lakhota; We have already seen examples of "subject" control and others are "object" control verbs. We will assume that a theory of control will partially account for this fact. Other facts concerning the reference of the missing subject will be made to follow from a different formulation of Binding Theory, as discussed in the following chapter.

Let us now consider the internal structure of the complement clause and what independent justification Lakhota provides for it.

The simplest assumption for complement structures is to assume that there is a single rule to generate all complement clauses, and in fact, all sentences--the rule in (2), repeated here as (28) for convenience.

(28) S' $\longrightarrow$ S COMP

Furthermore, the simplest assumption for S is to assume a single rule for its expansion, viz. (29).

(29) S $\longrightarrow$ NP VP INFL

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One type of evidence for this analysis and against a VP analysis of control complements would come from the possibility of clausal (as oppposed to VP) elements in control complements. There is evidence of this type in Lakhota. For example, negation and certain modality elements, which are generated under the INFL node, are possible in control clauses. Examples with negation were presented in (20a, c) above. In (30) we show that habitual s'a is also possible.

(30) hechų s'a wachąni he?
that-do HAB 2NOM-intend Q
'Do you intend to do that regularly?'

A VP complement analysis would be forced to duplicate an INFL node to generate these elements.

Recall that in GB it is claimed that the expansion of INFL and the expansion of COMP are independent of one another, although there will be various interrelations among these elements. If Lakhota displays this same type of independence we will have further evidence for a clausal analysis of control complements. The strongest evidence for this approach in English comes from the existence of indirect question control complements. However, this evidence cannot be duplicated in Lakhota. Indirect question complements are not control complements. But if control complements have the expansion of (27) we would expect some variation of semantic complement types. We claim that there are two types of control clauses: declaratives and imperatives. Imperative clauses are characterized by their inducement of the non-specific determiner on complement constituents. This same inducement occurs in the complements of the verb šį 'to request, bid'.

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(31) a. mila wąži yuha ya ye!
knife a-NS have go IMP
'Take along a knife.'
lit. 'Go, carrying a knife!'

b. mila wąži yuha ye niši.
knife a-NS have go 2OBJ-request
'He asked you to take along a knife.'

Unfortunately, ši, as we mentioned earlier, only subcategorizes for control clauses. This leaves us with only the declarative complement clause which may be either control or non-control.

Perhaps the strongest and most interesting claim that GB theory makes about control clauses is that the absence of a lexical subject, and in fact, the necessity of an empty subject, is directly attributable to the lack of tense/AGR in control complements. Recall that INFL governs and assigns Case to the subject, just in case it is [+tense]. In control clauses, INFL is [-tense], and therefore neither governs nor assigns Nominative Case to the subject, thus forcing PRO in subject position. If this analysis holds for Lakhota we have strong evidence both for the clausal analysis of control complements and the correctness of the GB approach. We claim that the analysis does hold, with some qualifications about the details of the analysis.

In Lakhota the INFL node generates elements with a variety of functions. Included are AGReement, aspect and modality elements. Lakhota does not mark tense, as we remarked in Chapter 2.2, so it would not make much sense to talk of a choice between [±tense] in the expansion of INFL. However, some notion of abstract mood is a possible candidate as the determining factor for finiteness. The irrealis mood element kta appears to correlate with governed subjects (whether lexical NPs or empty categories governed by AGR) in the

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following sense. Whenever kta is present, PRO subjects are ungrammatical. In other words, control complements do not allow kta. However, the absence of kta does not mean that PRO must appear, any more than the absence of kta in a main clause means that PRO must appear. This suggests that kta is a possible manifestation of [+mood] in a clause but it is not [+mood] itself. Control complements do not allow kta because the matrix verb does not subcategorize for [+mood] in its complement clause. We demonstrate this correlation between kta and control complements below.

(32) gives an example of a control construction with the verb kapį 'to be reluctant to'. (32a) shows that the presence of kta renders the control construction ungrammatical. (32b) shows that even with a coreferential lexical subject in the complement clause, the example is ungrammatical; that is, the verb kapį subcategorizes for only control clauses.

(32) a. *[hel yį kta] wakapį.
there go FUT 1NOM-be reluctant
(I am reluctant to (FUT) go there.)

b. *[hel mnį kta] wakapį.
there 1NOM-go FUT 1NOM-be reluctant
(I am reluctant to (FUT) go there.)

Let us compare the distribution of grammaticality in (32) to (33). (33) contains the verb yuštą 'to decide', which does not subcategorize for control complements and does allow complements with kta. Note that the presence of kta in (32b) forces a lexical subject (or agreement), even if the matrix subject and the complement subject corefer. The fact that the subject of the complement clause in (33c)

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must always be interpreted as third person singular indicates that the complement is not a control complement.

(33) a. [wayaka ki ų́kte pi kta] yuštą pi.
captive the 1pNOM-kill PL FUT decide PL
'They decided that we would kill the captive.

b. [wayaka ki kte pi kta] yuštą pi.
captive the kill PL FUT decide PL
'They decided that they would kill the captive.'

c. [wayaka ki kte kta] yuštą pi.
captive the kill FUT decide PL
'They decided that he/she/it would kill the captive.'
*They decided to kill the captive.'

Buechel (1939, 276) is somewhat misleading when he claims that the use of the irrealis/future mood marker substitutes for an infinitive of purpose, citing, among various examples, (4b). Buechel translates (4b) with an English control complement: I was afraid to have bad luck. It is misleading in that these complements are not control complements and in fact do not always require that the subject of the complement clause have the same reference as any of the matrix arguments. This is illustrated with an example below.

(4) wayaka ki ų́kte pi kta yuštą pi.
captive the we-kill PL FUT decide PL
'They decided that we would kill the captive.'

These facts argue that finiteness and mood correlate in a way strikingly similar to the way that finiteness and tense correlate in English. The lack of tense forces an empty subject in English just as the lack of mood forces an empty subject in Lakhota. (Note also that finiteness does not directly correlate with an empty COMP. In our discussion of the overt complementizers, we noted that non-factive complements (such as yuštą in (33)) usually omit the complementizer. Yet they are finite clauses. We return to this below.)

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However, the mechanism proposed in GB for exploiting this correlation will not work in Lakhota. Recall that it is claimed that INFL governs and assigns Nominative Case to the subject at S-structure if it is [+tense]. A straightforward translation of this approach would be to claim that INFL in Lakhota governs and assigns Nominative Case to the subject if it is [+mood]. But we have seen that the assignment of Case to the subject in Lakhota can be effected through its coindexing to trace. In English there is a one-to-one correspondence between the structural position of an NP and the Case which is assigned to the NP accupying that position. In Lakhota, however, Case is not uniformly assigned to an NP occupying the subject position. The lack of [+mood] will prevent Nominative Case from being assigned to the subject position in Lakhota but it will not, of course, prevent Objective Case from being assigned to a subject coindexed to its trace. Yet both Objective Case-marked subjects and Nominative Case-marked subjects must be prohibited from this position. Thus, contrary to the claims of GB, Case theory and the Case Filter are not sufficient to force PRO in the subject position of control complements in Lakhota.

Our starting assumption for the analysis of Case was to view the morphological case of the agreement markers in Lakhota as directly reflecting Abstract Case. In languages where morphological case is determined by S-structure positions, this assumption is viable. However, in Lakhota, the assignment of Case is, in part, determined by coindexation. The descriptive notion of "subject subject" and the correlation between [+mood], finiteness and bearing Case in Lakhota

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cannot be captured if we maintain that the morphological case of the subject is a direct reflection of Abstract Case. These facts suggest that Abstract Case should not be identified so completely with the morphological case systems that are found in languages. The rules which determine morphological case must be sensitive to government (as we have shown), yet the actual assignment of that case to the NP must require its government at virtual S-structure.

4.2.2 Other Bare Complements

In addition to control complements, there are a small number of other types of bare complements, all of which may be described in terms of differing government and agreement facts. Buechel (1939) provides a fairly comprehensive illustration of many of these constructions. However, in our own field work, we have found that the clear-cut distinctions suggested by Buechel's classifications are not always replicated. More work must be done before the analyses given below may be considered complete.

4.2.2.1 The Lack of Subject Raising Complements

The impersonal verbs discussed in section 4.1.1 do not occur with infinitival object complements, nor do they allow referential subjects. In GB theory these two properties characterize the raising construction. An example of this construction in English contrasted with a non-raising complement is given in (34) below. In (35) we give a parallel pair of examples in Lakhota which illustrate that the raising construction is ungrammatical.

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(34) a. It seems that they are quarrelling.
b. They seem to be quarrelling.

(35) a. Ed na Mary ohoye+kichi+ya pi kta s'e lececa.
Ed and Mary send voice+RECIP+make PL FUT like seem
'It seems like Ed and Mary will quarrel.'

b. *Ed na Mary ohoye+kichi+ye (kta) s'e lececa pi.
Ed and Mary send voice+RECIP+make (FUT) like seem PL
(Ed and Mary seem to be quarrelling.)

(36) a. wana ku pi iteke.
now come home PL be likely
'It is likely that they are coming home now.'

b. *wana ku iteka pi.
now come home be likely PL
(They are likely to be coming home now.'

In Lakhota, impersonal verbs subcategorize for finite irrealis mood complement clauses only.

In the following section we discuss a construction which conceivably involves raising as part of a general restructuring rule.

4.2.2.2 Restructuring and Complement Clauses

Buechel (1939) cites a case of restructuring between verbs of motion and infinitival complements of purpose. This restructuring is optional as the following examples taken from Buechel (1939, 273) illustrate.[8]

(37) a. wą+wicha+yąk wa+i.
+3OBJ+see 1NOM+go
'I went to see them.'

b. wąyąk wicha+wa+i.
see 3OBJ+1NOM+go
'I went to see them.'

The restructured example is (37b). Note that the AGR marker associated with the logical object of wąyąka 'to see' appears prefixed

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to the matrix verb. This shows that this argument is now governed by the matrix verb, and not by the complement.

We propose a dual subcategorization for these verbs. Where no restructuring has taken place, a straightforward extension of the analysis of control complements will account for the empty (and obligatorily ungoverned) subject of infinitives of purpose. But the cases where restructuring has taken place have parallels with other verbs which we wish to present before giving an account.

A similar restructuring occurs with the verbs of position ų 'to be, stay' and yąka 'to be, sit'. These verbs express a continuation through time, much as the progressive auxiliary verb be+ing does in English.

(38) a. awąyąk ma+ų ye.
watch over 1OBJ+be IMP
'Be watching over me.' (Beuchel 1939, 273)

b. niye echela awachį ni+ų pi.
2EMP only think of 2OBJ+be PL
'They are thinking of you only.'(Beuchel 1939, 273)

The third verb which undergoes restructuring is the verb iyaya 'to go'. This verb expresses a quickness or suddenness of the action of the complement verb. It may be the matrix verb or very often will itself be the complement of the control verb ya 'to cause intentionally' in an abbreviated form (ie. iye+ya from iyaye+ya). Below we illustrate this with an intransitive complement verb, kagmigma 'to roll'.

(39) a. thapa ki kaiyoȟpaya kagmigma+iyaye.
ball the downhill roll+go
'The ball went rolling downhill.'

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b. thapa ki kaiyoȟpaya kagmigma+iye+wa+ye.
ball the downhill roll+go+1NOM+make
'I made the ball go rolling downhill.'

The restructuring is not evident in (39) because the complement argument is inanimate. In the following examples, we show that the locative and direct objects of the complement verb okoȟ'ol- , which when combined with iyeya means 'to throw into', show agreement on the highest verb.

(40) a. nųğe ki el okaȟ'ol+iye+ki+ye.
ears the in _+go+PREFL+make
'He$_i$ threw him$_j$ into his$_i$ ears.

b. thapa ki si el akaȟ'ol+iye+ma+ye.
ball the feet at _+go+1OBJ+make
'He threw the ball at me "feetwise".'

c. wakpala wą el okaȟ'ol+iye+ma+ye.
creek a in _+GO+1OBJ+make
'He threw me into the creeek.'

The construction illustrated in (37-40) raises two issues, which we will only briefly address. The first issue is the general problem of reconciling restructuring rules with the Projection Principle. The second issue is the proper status of the empty category in subject position of the complement of these restructuring verbs. In some sense, these matrix verbs resemble auxiliary verbs in other languages with their modal-like meanings and verb-like syntax. Is the complement a raising complement or control?

We suggest that (37-40) are examples of control and not raising. This is because the Case marking of the subject of the restructured verb is the same as it is when these verbs of motion and position are simple verbs with PP complements. The verb yąka 'to be, sit' is unaccusative, while the verb u 'to be, stay' is unergative.

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While one might wish to argue that a raising analysis is still possible with this split in person marking ultimately reduced to distinct D-structures for raising complements, the behavior of iyaya makes this unlikely. As a simple verb iyaya may be either unaccusative or unergative, reflecting a difference in the agency or control of the subject. This is illustrated below.

(41) a. mni mahel el i+ma+yaye.
water inside in _+1OBJ+go
'I accidently went into the water.'

b. mni mahel el i+blable.
water inside in _+1NOM-go
'I deliberately went into the water.'

This same contrast can be observed in iyaya as a restructuring trigger verb.

(42) a. kaiyoȟpaya kagmigma iblable.
downhill roll 1NOM-go
'I deliberately go rolling downhill.'

b. kaiyoȟpaya kagmigma imayaye.
downhill roll 1OBJ-go
'I accidently go rolling downhill.' (as, for example, out of control in a wagon)

These facts provide very strong evidence that the subjects are assigned θ-roles by the matrix verbs and thus are the antecedents in a control construction.

4.2.2.3 Small Clauses

A number of verbs in Lakhota take complements that are more than "bare". Not only do these complements lack an overt complementizer and even [+mood] as control verbs do, but they also appear to lack all INFL elements. These complements typically consist of a verb and nothing more. They do not allow sentential negation, aspect, or

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subject inflection. In addition, the thematic subject argument of the complement verb triggers objective Case agreement on the matrix verb, a fact that we have argued indicates that it must be governed by that verb.

We propose to analyze these complements as "small clauses", i.e., clausal (S) non-maximal constituents which form a constituent with their thematic argument at S-structure, thus obeying the Projection Principle. This structure is illustrated below for a V-final language such as Lakhota.

(43) [NP [[NP ... V]$_S$ V]$_{VP}$ INFL]

The matrix verbs which subcategorize for these "small" clauses may be divided into two classes: transitive and intransitive. The transitive verbs are a small set of what we call "judgment" verbs, ie., la 'to consider', yawa 'to read, count', kağa 'to make (out as)'. The intransitive verbs are aya 'to become', owąyąka 'to look', hįgle 'to suddenly become', and icağa 'to grow'. In (43) below we give some examples with transitive verbs.

(44) a. ų̌ni wicha+wa+lake.
poor 3OBJ+1NOM+consider
'I feel sorry for them.'
lit. 'I consider them poor.'

b. Bill takuni ų+y꞉wa pi šni.
Bill be nothing 1pNOM+count PL NEG
We don't count Bill as anything.'

c. tuwa e ma+ya+kağa pi so?
who be 1OBJ+2NOM+make PL Q
'Who do you make me out to be?' (Buechel 1939, 303)

In these examples the thematic subject argument of the complement verb (ie., null third person plural pronoun (which triggers wicha-), Bill and first person singular pronoun (which triggers ma-) in

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(44a), (44b) and (44c), respectively) is marked with Objective Case on the matrix verb and there is no subject agreement on the complement verb. That the marking for third person plural arguments is the suppletive objective Case wicha- argues that this nominal is governed by the matrix verb in virtual S-structure. A second argument that the thematic subject is governed by the matrix verb and not by the complement predicate comes from the fact that active predicates in the complement are possible. The thematic subject in these constructions has Objective Case agreement, and not Nominative Case as one would expect if the thematic subject were governed in the complement:

(45) a. lila wa+ksapa šni.
very 1NOM+wise NEG
'I'm not very wise.'

b. lila ksapa+ma+la šni.
very wise+1OBJ+consider NEG
'He doesn't consider me very wise.'

Further evidence that these nominals are verb-governed is the fact that this argument may be a reflexive anaphor, coreferential with the subject of the matrix verb. In the following chapter we demonstrate that only verb-governed positions may be so "absorbed" by the reflexive morphology ic'i-. Consider (45c) below.

(45) c. lila ksapa m+ic'i+la šni.
very wise 1OBJ+REFL+consider NEG
'I don't consider myself very wise.'

The complements of these verbs are restricted in several ways. As we mentioned earlier, they do not allow INFL elements such as negation and aspect. This is illustrated in (46) below. Note the contrast in grammaticality between (*46b) and (45c).

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(46) a. *cheya hą ya+la he?
cry DUR 1NOM+consider Q
(Do you consider him crying?)

b. *lila ksapa šni m+ic'i+la.
very wise NEG 1OBJ+REFL+consider
(I consider myself not wise.)

c. *John ohiye s'a wa+la.
John win HAB 1NOM+consider
(I consider John always winning.)

There are also semantic restrictions on the complement verb. Generally, only verbs expressing a condition or property are acceptable. For this reason (46a) and (46c) are also ruled out. This restriction prohibits expressions of weather (cf. footnote 9 below) and most active verbs from appearing in the complement. However, the restriction cuts across the active/stative distinction. Both active and stative verbs may be complements of these verbs, as we mentioned above.

Let us now look at some intransitive verbs which select small class complements.

(47) a. theca o+wąyąka pi.
young _+see PL
They look young.

b. ite zi o+ni+wąyąke ke.
face pale _+2OBJ+see PRT
'Your face looks pale.'
lit. 'You look pale "face-wise".'

c. hąške i+ni+cağe.
tall _+2OBJ+grow
'You are growing tall.'

d. akisni a+ma+ye.
recover _+1OBJ+become
'I am getting better.'
lit. 'I become recovered.'

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e. atąįsni hįgle.
invisible become suddenly
'He suddenly became invisible.' (Buechel 1939, 214)

The complements of these verbs share many properties of the complements of the transitives. The thematic subject of the complement verb shows objective Case agreement on the matrix verb and there is no agreement on the complement verb. No clausal negation or aspect is allowed in the complement. This is illustrated in (48).

(48) a. *ite zi s'a o+ma+wąyąke.
face pale HAB +1OBJ+see
(I look regularly pale "face-wise".)

b. *kuže šni a+ni+ye.
sick NEG +2OBJ+become
(You are becoming not sick.)

The complement verbs may be active or stative, as long as they express a condition or property. Again, this is a property shared with the transitive predicates subcategorizing for small clauses.[9] All of the examples in (47) contain stative predicates. But this is not necessary. In (49) below we give some examples containing active verb complements.

(49) a. iya kaphį o+ma+wąyąka he?
speak be reluctant +1OBJ+see Q
'Do I look reluctant to speak?'

b. lila wakhopha o+wąyąka pi.
very fearful +see PL
'They look really afraid.'

The Objective Case-marked arguments of the intransitive matrix verbs are matrix <u>subjects</u> governed by matrix INFL in virtual S-structure. The two "tests" we have established for the subjecthood of an argument support this analysis. First, the ability to take -<u>pi</u>, the plural agreement for S-structure subjects establishes that the argu-

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ment of the intransitive verbs in (47a) and (49b) is the surface subject. Further evidence for this comes from control complements. The subject position of a control complement must be empty, since it is ungoverned. The fact that the argument of the intransitive in (50) must be missing when this verb occurs in a control complement argues that the argument is a subject.

(50) a. theca o+(*ma)+wąyąke wachame.
young _+(*1OBJ)+see I-try
'I tried to look young.'

b. alošˇ higle ma+ya+khiye lo.
be scorched become suddenly 1OBJ+2NOM+make PRT
'You made me suddenly angry.' (Buechel 1970, 78)
lit. 'You made me become suddenly scorched.'

Finally, there is one more property that characterizes the small clause construction. The object of the complement clause cannot be coreferential with the subject of the matrix clause.

(51) a. *Bill i+ic'i+tą ma+la.
Bill _+REFL+proud of 1OBJ+consider
(Bill considers me proud of himself.)
(I consider Bill proud of myself.)

This fact argues that the complement is an opaque domain for binding theory.

We will now briefly sketch how small clauses are accounted for in GB theory. The starting assumption for these complements is that the argument governed by the matrix verb is not a subcategorized argument of that verb. Its subcategorization and hence, its θ-role, are determined by the complement verb. The matrix verb subcategorizes for the complement. There are different proposals concerning the constituent category of the complement. Crucial to all GB accounts, the NP governed by the matrix verb is the subject of the complement

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predicate. In this way the complement will meet the definition of governing category for the binding theory and the facts on anaphors illustrated in (45) and (51) can be straightforwardly accounted for (cf. chapter 5).

In (52), we present the argument structures for both transitive and intransitive small clauses. The constituent category of the complement is not immediately relevant to our discussion, so we have simply labelled the complement as XP.

(52) a. transitive clauses:

[NP [NP XP]$_{XP}$ V INFL]

b. intransitive clauses:

[e [NP XP]$_{XP}$ V INFL]

Intransitive clauses are further distinguished from the transitive clauses in that NP Movement (Raising) applies to the complement subject, raising it into subject position of the matrix verb.

The Projection Principle requires that the θ-structures in (52) be maintained at all levels of the grammar. So the question becomes: how can a subcategorized argument of the complement predicate come to be governed by a matrix verb in this particular case? What distinguishes this type of complement from the control complements? In LGB the distinction reduces to claiming that the complements under discussion must be a non-maximal projection, S, and possibly other categories, while the control complements are maximal projections.

In control complements the subject position is ungoverned, due to the lack of [+mood] in the complement clause. It is protected from

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government by the matrix verb by the fact that its clause is a maximal projection (S'). Suppose, on the other hand, that the complements in (52) are not maximal projections, and therefore obligatorily undergo S' "deletion", as the complements of raising and believe-type verbs in English exceptionally do. Then the complement subject position would not be protected from government by the matrix verb.

This is essentially the proposal in LGB (105 ff.). The complement is a "small" clause, a non-maximal projection lacking INFL (and, in English, a copula) which undergoes S' deletion and thus permits government of its subject by the matrix verb. This analysis groups small clauses and raising and believe-type verbs in one class as S-complements and control complements in a second class as S'-complements. The analysis predicts that PRO will only be found in this latter complement type since it is only the maximal projection of S' which protects PRO from the government of the matrix verb.

This analysis carries over for Lakhota. We can propose that small clause complements undergo S' deletion. (Raising and believe-type constructions do not exist in Lakhota so the parallel in English is not complete.) Small clauses, lacking INFL, cannot govern the subject position. The matrix verb governs and assigns objective Case to the small clause subject. In addition, the small clause subjects embedded under intransitive matrix verbs undergo Move a. It is interesting to note that in terms of government, Move a does not distinguish so-called SSRaising from "Unaccusative Advancement". In both cases, a verb-governed, Objective Case-marked NP is a virtual S-structure subject.

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This analysis makes no attempt to account for the differences between true Raising verbs and small clauses in English. The lack of INFL and copula are purely stipulative. However, the fact that Lakhota also lacks the INFL suggests that these properties of small clauses are not accidental.

Note that small clauses in Lakhota do not lack the copula, as they do in English. Small clauses in Lakhota have the same predicates as simple sentences. They simply lack INFL. For example, nouns (N^0s) may function as predicates in both types of clauses.[10] Compare the small clause in (43b) above where the complement predicate is takuni 'nothing' to (53) below.

(53) John takuni šni.
John nothing NEG
'John isn't anything.'

In addition, there are several equative predicates, including e 'to be' and ecetu 'to happen like'. These two-place verbs are predicates in small clauses.

Suppose we characterize the difference between small clauses, and and raising and control complements as the absence or presence of INFL, respectively, and that it is this lack of INFL requires S' deletion. Under this analysis, the subject position in control complements is ungoverned since there is no [+tense] and the maximal projection, S', protects it from matrix verb government. In small clauses, the subject position is governed by the matrix verb because of the lack of INFL and the concomitant S' deletion. Raising and believe-type complements are grouped with control complements since they contain INFL. LGB claims that there is exceptional S' deletion to

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account for the governed nature of the subject position for the raising complements. But if we wish to maintain our analysis that S' deletion is determined by the presence of INFL only, then (albeit [-tense]) another analysis, not dependent on S' deletion, would be necessary to account for the properties of the exceptional cases of Raising and believe-type verbs in English.

An even more radical departure from this approach is to relate the government of the subject position directly to the presence of INFL, denying the need for null COMP nodes to ensure maximal projections in the definition of government. This analysis is only possible if an alternative analysis of Raising can be maintained. One language internal advantage to this approach in Lakhota would be that all the bare complements we have been discussing in this section can be distinguished as a class from the complements with complementizers in section 4.2. The latter are S's--maximal categories to be freely inserted by the W* base rule. The former are simple Ss--non-maximal categories inserted in a pre-verbal position.

The lack of a copula in English has led to questioning the clausal nature of the complement. Stowell (1980) for example, has proposed an analysis whereby these complements in English may be non-maximal projections of APs (adjective phrases), NPs, etc. and not necessarily Ss.[11] But under this analysis we must assume that the phrase structure rules for APs, NPs, etc. include an expansion with subjects, an assumption needed only for this construction. Furthermore, this analysis poses severe difficulties for the θ-criterion and the Projection Principle. Williams (1983) goes even further,

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claiming that the subject-predicate relation is crucial and the notion of clause only derivative. It is beyond the scope of this discussion to provide an alternative account for the lack of the copula in English. Perhaps it can ultimately be related to the lack of INFL in small clauses (the copula in English being primarily a tense/agreement marker).

The Lakhota facts suggest that it is the lack of INFL and not the copula that characterizes small clauses in universal grammar. We conclude by observing that small clauses in Lakhota follow the generalization that clauses must have subjects and do not support claims such as Williams (1983) to the contrary.

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FOOTNOTES TO CHAPTER 4

1. There are distributional differences with complementizers which distinguish the two types. These are discussed below in 4.1.1.

2. The complementizer cha is homophonous with a reason adverbial conjunction cha, chake 'and so'. Thus, (9a) has a second constituent structure and meaning which is grammatical: Something was stolen and so I asked about it. There is both syntactic distributional evidence (their interaction with negation, word order possibilities and coreference facts) and meaning differences that distinguish these homophonous lexical items. In distinguishing these two homophones, we deviate from the claims of Van Valin (1977, 1980) and Boas and Deloria (1941). On the hand, Buechel (1939) makes this distinction.

3. These "gerund-like" nominalized clauses are often indistinguishable from regular complements. All arguments, including subjects have regular Case and agreement on the "nominalized" verb. Inflectional elements, including mood, aspect and negation are possible. They are distinguished from true complements in two respects. First, these gerundive NPs take the full range of determiners including indefinite specific and not-specific determiners wa and wazi. True complement clauses do not allow these determiners as complementizers. Second, expressions of arbitrary reference use the gerund with third person plural subjects. (Recall this use of third person plural in simple clauses.) Below we give a few examples of this construction illustrating these properties.

(i) a. New York ekta oma+wa+ni ki 'my trip to New York'
New York to _+1NOM+walk the

New York ekta oma+wa+ni kte wąžini eyecetu sni.
New York to _+1NOM+walk FUT a happen NEG
'One of my trips to New York didn't happen.'

b. ma+kuže ki 'my illness'
1OBJ+sick the

ma+kuže ki ų John chąnųp inakhiye.
1OBJ+sick the because of John smoke quit
'John quit smoking because of my illness.'
lit. John quit to smoke because of my illness.'

c. wachi pi ki 'dancing' or 'their dancing'
dance PL the

wachipi ki wašte+wa+lake.
dancing the _+1NOM+like
'I like dancing.'

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4. This analysis suggests a straightforward account of so-called concealed questions (eg. I guessed the number of jelly beans in the jar). Concealed questions have long been a problem for a Montague grammar approach where the syntactic type (here NP) receives a single semantic interpretation.

5. Van Valin (1980) has claimed that control constructions do not exist in Lakhota, citing the verb chi 'to want' as an example. Chi, as I mentioned earlier, is a non-factive, irrealis mood complement. It optionally allows kta in the complement, the complementizer ki is possible, particularly if it is clefted or followed by the demonstrative. These characteristics clearly argue for its inclusion in the category of the non-factive, non-control complements discussed in section 4.1.1 above. Thus, chi does not bear on the issue of whether control complements exist or not in Lakhota.

6. There is some discussion of whether it is the absence of [+tense] or [+AGR] which determines the absence of Case assignment. We return to this issue below.

7. The analysis of SSRaising is discussed below in the context of small clauses and their proper analysis.

8. In the field work I have done, examples of restructuring with these verbs were not spontaneously given, although they were accepted.

9. However, unlike the transitive small clause complements, intransitives permit weather expression complements. This is illustrated in (i). The quasi-argument status of weather expressions has been noted in the literature (cf. eg., Chomsky (1981, 324). We feel that the contrast in (i) may be attributable to differing thematic requirements of the matrix verb, unexpected in the GB analysis where the matrix verb simply subcategorizes for a complement.

(i) a. wa šme aye.
snow deep become
'The snow is becoming deep.'

b. *wa šme wa+la.
snow deep 1NOM+consider
(I consider the snow deep.)

10. This observation can be captured in X-bar theory, given certain assumptions. Suppose that INFL is the head of S, as it is often suggested in GB. Then S is not a maximal projection of V. One may propose that the correct expansion of S is NP XP (INFL), where XP is a non-maximal projection of X ranging over language particular categories. In Lakhota, for example, the head of XP may be verbs or nouns. In other languages, prepositions may be predicates. This way we may preserve the generalization that subjects are obligatory arguments of clauses. This analysis is only possible in a theory of constituent structure where S is not a projection of V.

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11. Chomsky justifies this analysis by claiming that the following contrast proves that the matrix verbs subcategorize for different categories of predicates.

(i) a. I consider John the best candidate.

b. *I prefer John the best candidate.

And since these verbs subcategorize for predicates, this fact can only be captured if the predicates are the heads of the complement. First, I would say that the ungrammaticality of (i2) is not due to the fact that prefer does not subcategorize for NPs (cf. the grammaticality of I'd prefer John the greatest fool of Totoland.) but rather to selectional restrictions. Both Lakhota and English have severe semantic selectional restrictions on this construction, which we have already pointed out. This restriction is not due to a syntactic subcategorization on the "predicate" category but rather the general semantic requirement that the small clause express a condition or property of the subject. This is illustrated in (ii).

(ii) a. I consider John over the hill.

b. *I consider John under the bed.

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OBLIGATORY REFERENCE AND BINDING THEORY IN LAKHOTA

5.0 Introduction

The results of this chapter and of the following chapter will provide us with a fresh perspective on the role of phrase structure and grammatical relations in syntax. In this chapter, we will consider the conditions on coreference: obligatory coreference of anaphors and disjoint reference of pronominals. We shall see that the conditions must be stated on virtual structures, where subjects and objects are distinguished. The government relations defined on the actual flat structure, and the relative word order among constituents at actual S-structure, are irrelevant to these conditions. In the following chapter, we shall investigate the conditions on possible coreference between pronominals and NPs which are not in the same cyclic domain. Here we find that the contrary situation obtains: the government relations defined on virtual structures are irrelevant, and the relative surface word order among constituents becomes crucial.

This is an important result, for the number of sub-systems which depend on virtual structures raises the question of whether the non-configurational phrase structure of W* languages plays any role at all in the grammar.

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5.1 Obligatory Coreference in Lakhota

5.1.1 Statement of the Problem

In this section, we shall consider the properties of the NPs whose reference is obligatorily stipulated by the grammar. Obligatory coreference is viewed in GB as an (obligatory) coindexation between arguments. In Lakhota, obligatory coreference arises in the case of reflexives, reciprocals, and possessor reflexives.

In GB Theory, conditions restricting the coindexing relations are part of the Binding Theory. In particular, anaphors are constrained by the following principle:

A. Anaphors must be bound in their governing category.

As mentioned in our discussion of Case, reflexive clauses (as well as the other cases of obligatory coreference) contain no lexical anaphors. Reflexive morphology appears as an invariant prefix in the verbal complex. We thus assume that these clauses have a null anaphoric pronoun. This lack of overt NPs should not be very surprising, given the extensive use of null pronouns in general in Lakhota. We might wonder whether these null anaphoric pronouns have any special properties that would distinguish them from the governed, Case-marked empty pronouns associated with AGR in clauses with no stipulated coreference. We shall see that these pronouns are never cosuperscripted with AGR. This recalls our analysis of the lack of AGR associated with the complement subject of a control structure in chapter 3.3.1 and chapter 4, which also cannot be associated with AGR. If we maintain our analysis that the association between an NP and an AGR

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marker requires government of the NP at the virtual S-structure (as well as government in the flat structure (see chapter 3.3.1)), then we must conclude that the coindexed null anaphors in Lakhota are ungoverned in virtual structure. This conclusion has consequences for the formulation of the binding conditions on obligatory coreference.

The binding conditions on obligatory coreference in Lakhota are more restrictive than Principle A. In particular, only subject NPs may be antecedents and only subcategorized objects may be anaphors.

These restrictions suggest that obligatory coreference in Lakhota might be viewed as a lexical operation. Under this analysis, reflexive verbs are lexically derived via the addition of a prefix. This prefix has the property of being "argument reducing", i.e., it would reduce the syntactic realization of the argument structure of the verb by one argument. Under this analysis, reflexive clauses do not have an "empty" anaphoric pronoun. Instead, the argument corresponding to the anaphor would be entirely missing. Besides certain theoretical problems that this approach entails, this alternative raises other questions that we will consider in a section 5.5.

5.1.2 A Description of Obligatory Coreference Constructions

5.1.2.1 Plain Reflexives

As mentioned above, reflexive clauses do not contain lexical anaphors. Reflexive morphology appears as an invariant prefix in the verb. As we saw in chapter 1, these prefixes have a fixed position in the verb structure, immediately preceding the stem/word. There are

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three forms, depending on the morphological class of the verb. In chapter 3, section 3.3.2.7, we presented the paradigms exemplifying these three forms.

Only subjects may be the antecedents of reflexives. Evidence that subjects may be antecedents comes from control constructions (cf. Chapter 4). Evidence that only subjects are antecedents in plain reflexives is presented below along with the possessor reflexive construction.

We will assume in the remainder of this chapter that reflexive clauses contain an empty anaphoric element. This empty element must be different in nature from the null element cosuperscripted to an AGR marker. To see this, let us compare the following minimal pair. In both, there is an empty element. In (1), however, this empty element is cosuperscripted with an AGR marker. In (2), on the other hand, there is no AGR marker and the reflexive prefix ic'i- is present.

(1) Hokšila ki [e] waše+wicha+laka pi.
boys the _+3OBJ+like PL
'The boys like them.'

(2) Hokšila ki [e] waše+ic'i+laka pi.
boys the _+REFL+like PL
'The boys like themselves.'

In (1), there is obligatory disjoint reference between the subject NP and the empty element cosuperscripted with AGR, as we would expect if the empty element is a pronoun, given principle B of the Binding Theory. In (2), on the other hand, there is obligatory coreference between the subject NP and the empty element. Again, this is expected, if the empty element is an anaphor, given principle A of the Binding theory.

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We now have to interpret the fact that the null anaphor in (2) is not associated with an AGR marker--contrary to the null pronoun in (1). Our account is the following. Recall that, in chapter 3, we established as a necessary condition for an NP to be associated with AGR that it must be governed--in fact, as we pointed out, governed in both the flat and the virtual S-structure. We thus interpret the absence of an AGR marker associated with the null anaphor in reflexive clauses as an indication that the null anaphor is ungoverned in the virtual structure. This may be achieved if we construe the reflexive prefix ic'i- as having the property of absorbing the government and Case of the (null) NP to which it is related.[1]

5.1.2.2 Possessor Reflexives

The possessor reflexive construction is just one of five syntactically distinct devices used in Lakhota to express the semantic notion of "possessor". (Three constructions were described in chapter 2: possessors as arguments of nouns, as modifiers of nouns, and as predicates of noun phrases. The fifth construction is for inalienable possessors.)

The possessor reflexive construction expresses obligatory coreference between the subject of a clause and the possessor argument of a noun in that same clause. So, for example, in both (3) and (4) below the subject is the possessor of the shirt.

(3) ogle wą wa+k+pabla he.
shirt a 1NOM+PREFL+iron DUR
'I was ironing a shirt of mine.'

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(4) John ogle wą k+pabla ha he?
John shirt a PREFL+iron DUR Q
'Was John ironing a shirt of his?'

As in the plain reflexive, there is no lexical anaphor in the clause. And like the plain reflexive, there are three forms : k- for verbs beginning with the instrumental pa-, gl- for the verbs of the y- conjugation, and ki- for all the remaining verbs. Example paradigms are given below. As they show, the subject antecedent bears Nominative Case.

(5) a. wakpabla 'I iron mine' (pabla 'to iron')
yakpabla 'you iron yours'
kpabla 'he/she/it irons his/hers/its'

ųkpabla 'we two iron ours'
ųkpabla pi 'we pl. iron ours'
yakpabla pi 'you pl. iron yours'
kpabla pi 'they iron theirs'

b. waglužaža 'I wash mine'(yužaža 'to wash')
yaglužaža 'you wash yours'
glužaža 'he/whe/it washes his/hers/its

ųglužaža 'we two wash ours'
ųglužaža pi 'we pl wash ours'
yaglužaža pi 'you pl. wash yours'
glužaža pi 'they wash theirs'

c. wiyophewakiya 'I sell mine'(wiyopheya 'to sell')
wiyopheyakiya 'you sell yours'
wiyophekiya 'he/she/it sells his/hers/its'

wiyopheųkiya 'we two sell ours'
wiyopheųkiya pi 'we pl. sell ours'
wiyopheyakiya pi 'you pl. sell yours'
wiyophekiya pi 'they sell theirs'

The possessor reflexive construction is not used equally with all three noun classes of possession. Pure kinship terms do not have non-possessed forms, and the co-occurrence of the possessor reflexives with these NPs is sporadic. Body parts and incorporeal parts (eg. caže 'name', owe 'footprint', etc.) usually participate in this con-

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struction but in a small number of cases a distinct "inalienable possessor" construction must be used (cf. Buechel 1939, 217, Boas and Deloria 1941, 129 and Williamson 1981). Alienables regularly participate in the construction and our discussion will be based on examples drawn mostly from this class. Below we give some examples. (6) contains examples with alienable expressions and (7), with body parts.

(6) a. wiyatke ki o+wa+gl+ušpe.
cup the loc+1NOM+PREFL+hold
'I held (onto) my cup.'

b. hokšila ki o+gl+ušpį na yuchąchą.
boy the loc+PREFL+hold and shake
'He$_i$ grabbed his$_i$ boy and shook him.'

(7) a. nape wa+gl+ušpe.
hand 1NOM+PREFL+hold
'I held my hand.'

b. išto ki nagleš+ki+ye.
eye the pop out+PREFL+make
'He$_i$ made his$_i$ eyes pop out (in surprise).'

As with plain reflexives, the coreference relation is obligatory in this construction: (4), (6b), and (7b) are ungrammatical under the reading where the subject and the understood possessive NP are not coreferential. In order to express this reading, one must use the NP construction with a possessor argument or possessor modifier. Compare the examples in (8).

(8) a. hokšila ki wowapi ki glogli pi kte.
boys the books the PREFL-bring home PL FUT
'The boys$_i$ will bring home their$_{i/*j}$ books.'

b. hokšila ki tha+wowapi ki agli pi kte.
boys the POS+books the bring home PL FUT
'The boys$_i$ will bring home their$_{*i/j}$ books.'

Note that a coreferential reading is not possible in (8b), and a disjoint reference reading is not possible in (8a).[2] This comple-

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mentary distribution is just what we commonly find with pronominals and reflexive anaphors. We hypothesize that there must be a null element functioning as an anaphor in the possessor position in the nominal wowapi ki in (8a), which is distinct from the pronominal null element in the nominal thawowapi ki in (8b). The former requires obligatory coreference with the subject; the latter, obligatory disjoint reference.

There is a difference between the simple reflexives we discussed earlier and these reflexive possessors. In the case of obligatory coreference with plain reflexives, the anaphor occupies a subcategorized position usually governed by V and thus is always in complementary distribution with lexical NPs. On the other hand, in the case of obligatory coreference with possessive reflexives, the possessor is an optional expansion of NP and thus is not always in complementary distribution with lexical NPs.

Recall that nouns were divided into three classes: alienables, which took the inflectional marker tha- ; inalienables, which had a null inflectional marker ∅; and kinship terms, which took a number of irregular inflectional markers which we represented as ku-. These three classes of noun inflection are instances of the following general schema, where INFL is tha-, 0-, or ku-.

(9) $NP \xrightarrow{1} (NP)\ N\ INFL$

We assume that the possessor NP is optional because NPs without possessor arguments in simple clauses (where the verb lacks the ki- morphology we are presently discussing) simply do not have a meaning where a possessor is understood. This fact conforms with what

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would appear to be a universal distinction: clauses require subjects, NPs do not.

Like NPs in clauses, the possessor NPs are also cosuperscripted with an AGR marker prefixed to the noun, which reflects the person, number, and Case of the possessor. We thus assume that the possessor NP is governed by the INFL node which contains the AGR marker and tha-, a verbal-like element. The presence of the INFL marker determines the presence of the optional NP. Then it will be governed and assigned Case by INFL. Suppose the NP option is not taken. Then there is no reason for INFL to be there. Suppose that it is expanded by rule (9). Then, we will have a "dangling" AGR marker which is not cosuperscripted to any NP. This situation is ruled out by the same principle that rules out uncosuperscripted AGR markers in clauses (see the discussion in chapter 3, section 3.1). Suppose now that the NP option is taken but that the Case-assigning INFL is not expanded. We have the following situation in simple clauses.

(10) [[NP* N DET] ... V]

NP* is now ungoverned and Caseless. If NP* is lexical or pronominal, it must receive Case. But there is no INFL to assign Case to it and therefore the Case Filter will rule the structure out. Hence, we can predict that (10) will always be ungrammatical.

Consider now (11) where the same expansion of NP as (10) is taken but where the verb has the prefix ki-, indicating obligatory coreference between the subject of the clause and NP*.

(11) [NP_i ... [NP^*_i N DET] ... ki-V]

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In this configuration NP* is never lexical, but it can and must be an null anaphor. Note that if NP* were lexical or pronominal in (11), the structure would be ungrammatical. By our assumptions, this means that the position of NP* in (11) is ungoverned, and that it can only be occupied by an element that may occur in ungoverned positions. It appears that the ki- prefix in some way ensures that NP* is ungoverned, just as ic'i- ensures an ungoverned argument in plain reflexives. We will assume that ki- absorbs the government properties of the NP-internal INFL. As we would expect in this situation, there is no AGR marker prefixed to the noun and cosuperscripted with the null possessor reflexive anaphor. We shall see that this relationship between ki- and the "host" NP of the possessor anaphor is subject to the same constraints as the relationship between ic'i- and the plain anaphor.

Thus, the possessive-reflexive construction shares the following crucial properties with the plain reflexives:

1. The anaphor is an empty category.
2. The antecedent is a subject.
3. When the NP option is selected in (9), the anaphor is in complementary distribution with pronominals and lexical NPs.

5.1.2.3 Reciprocals

As we noted in Chapter 3, section 3, there are two constructions in Lakhota which express reciprocal meanings. One construction is like the reflexive construction in many respects, but differs with respect to the Case marking of its subject antecedent. Reciprocal

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morphology appears as an invariant prefix on the verb in the same position as the reflexive. This prefix has only one form, kichi-, regardless of the morphological class of the verb.

Only subjects may be the antecedents of reciprocals. If we compare sentences with reciprocals (in (3)) to sentences without them (in (4)), we find that the "missing" element cannot be cosuperscripted with AGR.

(3) [[hena ec waš̆te+kichi+laka pi kta] iblukcha].
those ones good+RECIP+consider PL FUT 1NOM+think
'I think that those ones will like each other/*them.'

(4) [[hena ec waš̆te+wicha+laka pi kta] iblukcha].
those ones +3OBJ+like PL FUT 1NOM+think
'I think that those ones like them/*each other.'

There is no "possessor reciprocal" morphology and, for most speakers, possessor reciprocal interpretations cannot be inferred from these clauses:

(5) (*waksupi ki) waš̆te+u+kichi+laka pi.
beadwork the 1pNOM+RECIP+like PL
'We like each other (*'s beadwork).'

Before we conclude this brief description, we will observe that there is a second reciprocal construction, whose properties we have not investigated in any detail. This reciprocal has a distinct prefix ichi- which precedes all other prefixes. The difference between the two reciprocals is described and illustrated in Boas and Deloria p.103. Whereas the reciprocal kichi- expresses a reciprocal relation that holds between pairs of members of a set, (eg. in (5) above 'I like you and you like me') the reciprocal ichi- expresses a reciprocal relation between two referents with respect to a third referent. For example, Boas and Deloria cite the following contrast:

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(6) a. na+kichi+wizi pi.
+RECIP+jealous PL
'They are jealous of each other, without reference to the object of jealousy.'

b. ichi+nawizi pi.
RECIP2+jealous PL
'They are jealous of each other with reference to the object of jealousy.'

In my own field work I have found the following pair.

(7) a. iwo+u+kichi+to pi.
+1plNOM+RECIP+bump PL
'We bumped into each other (head on).'

b. ichi+iwo+u+to pi.
RECIP2+ +1plNOM+bump PL
'We bumped into each other (in a crowded room).'

With this reciprocal the "third referent" is not an argument of the verb and the two reciprocals appear to be syntactically similar. However, Boas and Deloria cite examples where the second reciprocal ichi- can express a reciprocal relation among the members of the set expressed by a non-subject argument. For example,

(8) ichi+wa+wicha+yake. 'He sees them (comparing)
RECIP2+ +3OBJ+see one to the other.'

This suggests that the ichi- is not indicating a coindexation between an anaphor and an antecedent. It is perhaps better to view ichi- as an adverbial-like modifier meaning "together". Unlike the first reciprocal with kichi-, this construction allows repciprocals with double object verbs.

(9) a. ichi+khoyaka pi.
RECIP2+be stuck PL
'They are stuck to each other (together).'

b. *i+kichi+khoyaka pi.
+RECIP1+be stuck PL
(They are stuck to each other.)

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We have not investigated the properties of this construction at all.

5.1.3 Possible Anaphors

In this section, we will establish that the anaphor in the case of plain reflexive and plain reciprocal clauses, and the "host" NP in the case of possessor reflexive clauses, must be NP arguments governed by the verb. In order to maintain this position, however, we will have to make some distinctions among the various types of postpositional phrases.

Direct object can be anaphors or hosts of anaphors, as shown in sections 5.1.2.1, 5.1.2.2, and 5.1.2.3, and in the examples below.

(12) a. lila tąyą m+ic'i+chuwa.
very well 1OBJ+REFL+treat
'I treat myself very well.'

b. igmu ki lena lila tąyą wicha+wa+ki+chuwa.
cat the these very well 3OBJ+1NOM+PREFL+treat
'I treat these cats of mine very well.'

c. n+ic'i+caȟniga he?
2OBJ+REFL+choose Q
'Did you choose yourself?'

d. the+kichi+ȟila pi.
+RECIP+care for PL
'They care for each other.'

Obliques subcategorized by verbs containing one of the "locative" prefixes can also be anaphors or hosts of anaphors. This is true regardless of how transparent the contribution of the prefix is to the meaning of the verb. We illustrate this below with one transparent example, ali 'to step on', and some rather opaque examples: ikhopha 'to be afraid of', acązeka 'to be angry at', and okaȟniga 'to understand'.

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(13) a. i+kho+m+ic'i+phe.
OBL+ +1OBJ+REFL+be afraid
'I am afraid for myself.'

b. o+m+ic'i+caȟnige šni.
OBL+1OBJ+REFL+"choose" NEG
'I don't understand myself.'

c. oyate o+ki+caȟnige šni.
people OBL+PREFL+"choose" NEG
'He doesn't understand his own people.'

d. a+m+ic'i+cązeke.
LOC+1OBJ+REFL+angry
'I am angry at myself.'

e. si ki a+wa+ki+li.
foot the on+1NOM+R.PREFL+step
'I stepped on my foot.'

Another case of subcategorized arguments we must distinguish are source/goal arguments. Semantically, source/goal arguments are distinguished from both the locative/oblique arguments and dative/benefactive arguments. Morphologically, they are distinguished in that there are no prefixes which systematically indicate them in the verbal complex. These arguments can be optionally indicated by the pospositions el 'to, at, from' or, more rarely, etąhą 'from'. The lack of a systematic use of prefixes to mark this argument and the corresponding optional use of postpositions raises the following question: are these arguments subcategorized NPs with optional transparent postpositions or are they subcategorized PPs with optionally empty postpositions? We will argue for the former position. The following are examples of this type of verb with no coreferential arguments.

(14) a. thaspązi wą (etąhą) hąpi bl+usli.
orange a (from) liquid 1NOM+squeeze
'I squeezed juice from an orange.'

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b. ɬliɬlila John ite el wapakiṭe.
mud John face from 1NOM+wipe
'I wiped mud from John's face.'

Let us consider more closely two verbs of this type, iyų 'to rub/apply something onto something' (derived from i- 'at, against' plus ų 'to use') and apazo 'to point something at someone'. These verbs select for an agent, a theme, and a goal obligatorily. Consider the following examples with no coreference among the arguments.

(16) a. John (el) islaye ɬųɬ i+wa+ų kte.
John on ointment some _+1NOM+rub FUT
'I will rub some ointment on John.'

b. šųka ki el chą wą a+wa+pazo.
dog the at stick a _+1NOM+point at
'I pointed a stick at the dog.'

Both the goal argument and the theme argument may be anaphors. Goal anaphors are illustrated in (17) and theme anaphors in (18).

(17) a. John islaye ɬųɬ i+ic'i+yų kte.
John ointment some _+REFL+apply FUT
'John will rub some ointment on himself/*him.'

b. John islaye ɬųɬ si ki el i+ki+yų kte.
John ointment some foot the on _+PREFL+apply FUT
'John$_i$ will rub some ointment on his$_{i/*j}$ foot.'

c. chą wą a+mi+k+pazo.
stick a loc+1OBJ+point at
'I pointed a stick at myself.'

If the theme argument of these verbs is human, the reflexive clause usually has a metaphorical sense.

(18) wowaš?echų ki el i+m+ic'i+yų kte.
work the to _+1NOM+REFL+apply FUT
'I will apply myself to the work.'

These verbs often admit a second thematic structure (as do some of their English translations) which is illustrated below in (19).

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(19) a. islaye ɱųɱ ų John i+wa+yų kte.
ointment some with John _+1NOM+apply FUT
'I will rub John with some ointment.'

b. chą wą ų šųka ki a+wa+pazo.
stick a with dog the _+1NOM+point at
'I pointed at the dog with a stick.'

In these examples what was the goal argument is now the theme and what was the theme is now expressed in an instrumental postpositional phrase. But in this case, the instrumental cannot be interpreted as an anaphor. Compare (20), where the theme is an anaphor or host of an anaphor, to (21), where the instrumental is the host of the intended anaphor.[3]

(20) a. islaye eya ų i+m+ic'i+yų kte.
ointment some with _+1OBJ+REFL+apply FUT
'I will rub myself with ointment.'

b. islaye ɱųɱ ų si ki i+m+ic'i+yų kte.
ointment some with foot the _+1OBJ+REFL+apply FUT
'I will rub my feet with some ointment.'

c. chą wą ų a+mi+k+pazo.
stick a with loc+1OBJ+REFL+point at
'I pointed at myself with a stick.'

(21) a. *itephakįte/nape ų John i+wa+ki+yų kte.
towel/hand with John _+1NOM+PREFL+apply FUT
(I will rub John with my towel/hands.)

b. *chą wą ų šųka ki a+wa+k+pazo.
stick a with dog the loc+1NOM+PREFL+point at
(I pointed at the dog with my stick.)

The fact that the object of the instrumental postposition cannot be interpreted as an anaphor holds even for verbs which do not have alternate subcategorizations: objects of instrumental PPs are never anaphors or hosts of anaphors. These facts suggest that instrumentals have a different status than the goal/source arguments. We

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will return to a discussion of instrumentals again when we consider more generally the question of whether PPs may contain anaphors.

Other verbs have this dual subcategorization: pakite 'to wipe', ipakite 'to wipe off', ayuchacha 'to shake something at something', aphaha 'to raise something over/above someone'. With all these verbs, the goal argument is optionally marked by el 'to, at, in, from'.

It is difficult to determine the conditions under which the postposition is present. The general direction appears to be the following: these postpositions are optionally present with third person lexical nominals (cf. 14a, 15a). They are not present when the argument is an anaphor or even small pro coindexed to overtly Case-marked agreement. For example, the verb epazo 'to point at/out something' (a verb subcategorizing for an agent and goal only, in contrast to apazo above) shows this same pattern of lexical NP with postposition or ec without postposition.

(22) a. paha ekta e+pazo.
hill to loc+point out
'He pointed at/out/to the hill.'

b. nata (el) e+wa+k+pazo.
head to loc+1NOM+PREFL+point out
'I pointed to my head.'

c. e+y+echi+pazo pi he?
loc+2NOM+RECIP+point to PL Q
'Did you point at each other?'

d. e+ci+pazo.
loc+1NOM=2NOM+point to
'I pointed to you.'

These postpositions seem to be "transparent" to government of the NP by the verb. This is probably related to their optionality.

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These "transparent" postpositional phrases also differ from true postpositional phrases. Whether true PPs are subcategorized or not, whether the verb is intransitive or transitive, obligatory coreference between the subject antecedent and the object of the postposition (or the possessor of the object of the postposition) is ungrammatical. In the examples below, the ungrammaticality is for the gloss given: often the transitive clauses will have grammatical readings where coreference involves the direct object. Coreference is intended to be between the object of the postposition and the subject antecedent.

(23) a. nata el iwąkab chą wą oblušpe/*owaglušpe.
head at over stick a 1NOM+hold/*1NOM+PREFL+hold
'I held a stick over my head.'

b. *oyuke ki oȟlate wowapi wą nakiȟme.
bed the under book a PREFL+hide
'He$_i$ hid a book under his$_i$ bed.'

c. *o?kayąke ki ilazata waglušna.
chair the behind 1NOM+PREFL+drop
'I dropped it behind my chair.'

d. *atkuku ki isakib ki+naži he.
father the next PREFL+stand DUR
'He$_i$ stood next to his$_i$ father.'

e. *wiyatke wą chakpe u owaglušpe.
cup a knees with 1NOM+REFL+hold
'I held onto a cup with my knees.'

f. *thalo ki mila ki u wa+wa+ki+ksa.
meat the knife the with instrum+1NOM+PREFL+cut
'I cut the meat with my knife.'

g. *John mazakhą ki oyuke ki oȟlate ekignake.
John gun the bed the under loc+PREFL+put
'John$_i$ put the gun under his$_i$ bed.'

h. *hokšila ki u John cąnųp inakichiye.
boy the because of John smoke PREFL+quit
'John$_i$ quit smoking because of his$_i$ boy.'

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Semantically coherent readings of coreference with plain reflexives and PPs are more difficult to construct, but they, too, do not allow obligatory coreference.

(24) a. *(m+)ilazata m+igl+ušna.
(1OBJ)behind 1OBJ+REFL+drop
'I dropped it behind myself.'

b. *John wowapi ki isakib ic'i+gnake.
John letter the beside REFL+keep
'John keeps the letter beside himself.'

The verbs egle 'to set down (somewhere)' and egnake 'to put somewhere' do not allow coreference with the objects of contentful locative PPs, as seen above. However, if the postposition is a less contentful one (i.e. el 'to, at') possessor reflexives are optionally possible.

(25) a. i el owa(ki)gnake.
mouth in 1NOM+PREFL+put
'I put it in my mouth.'

b. oyuke ki el o(ki)gnake.
bed the on (PREFL)+put
'He put it on the/(his) bed.'

We suggest that the postpositions in (25) are likewise "transparent" to government of the NP by the verb, parallel to the examples with source and goal arguments we saw in (22), etc. Unlike the cases with true PPs, the locatives in (25) are NPs, governed by the verb.

The last set of subcategorized arguments to be considered are benefactives and datives. The expression of these datives and benefactives in clauses containing reflexives and reciprocals is, in general, prohibited (independently of obligatory coreference). None of the prefixes indicating datives and benefactives co-occur with each other or with the various anaphoric prefixes. The one exception to

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this are the verbs of motion and their derivatives, which allow benefactives with possessor reflexives (eg. kichigloya to take one's own to another'). This means that reflexive predicates do not allow benefactives and datives to be expressed as arguments of the verb. Benefactives, however, can be expressed by the sentential postposition u- 'because of, for the sake of' and datives, by the postposition el 'to, at, in' (eg. (26)).

(26) a. *wich+ik+pazo pi.
3OBJ+REFL+show PL
'They showed themselves off to them.'

b. wichota el ik+pazo pi.
many people to REFL+show PL
'They showed themselves off to many people.'

When we consider dative and benefactives as anaphors themselves, we find different facts: for certain verbs, dative and benefactive anaphors may be inferred in spite of the lack of overt dative or benefactive morphology which must be present to indicate their presence in non-reflexive clauses.

(27) a. owiža etą ophe+m+ic'i+thu wa+chi.
quilt some +1OBJ+REFL+buy 1NOM+want
'I want to buy some quilts for myself.'

b. h+e+m+ic'i+ye.
that+loc+1OBJ+REFL+say
'I said that to myself.'

These examples give some idea of the idiosyncracy and complexity of the data with benefactives and datives. We have no explanation to offer for the general incompatability among datives, benefactives and anaphors. The phonological similarity among the prefixes indicating these arguments is obvious and perhaps it is for this that the combinations have been avoided.

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In the examples we have considered so far, the possible anaphors of the reflexive have been subcategorized arguments of the verb. This, of course, is expected if the appropriate condition on anaphors requires that they be governed by the verb. In Chapter 4, we discussed two cass of "exceptional" government--restructuring verbs and small clause complements. In both cases, arguments of a complement clause show AGR on the matrix verb, indicating that they are governed by the matrix verb. These arguments may also be anaphors:

(28) a. witkotkoka u+kichi+la pi.
crazy-REDUP 1p+RECIP+consider PL
'We consider each other crazy.'

b. nuge ki el okah'ol+iye+ki+ye.
ears the in _+go+REFL+make
'He$_i$ threw him$_j$ into his$_i$ ears.'

We conclude from these facts that government by V and not subcategorization is the appropriate condition.

This concludes our study of possible anaphors/hosts of anaphors in Lakhota. We have argued that only NPs in positions governed by V can be anaphors or hosts[5]. In doing so, we have distinguished two types of postpositions: the "transparent" postpositions, which allow government of the NP contained in them by the verb, and "true" Ps, which govern and assign Case to their objects. The fact that anaphors and hosts of anaphors are restricted to V-governed positions suggests that there might be a relationship between the morphological prefix and the type of argument position that it may be coindexed to. In order to absorb the government relation, the prefix itself must govern the position in virtual structure. Since the prefix is verbal,

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the position of the potential anaphor or host of the anaphor must be one governed by the verb.

5.1.4 The Domain of Obligatory Coreference

In this section we will discuss the restrictions which must be placed on the coindexation between an anaphor and its possible antecedent. In GB theory, this is the work of the principles of Binding Theory.

Obligatory coindexation in Lakhota is subject to some familiar restrictions. Both non-finite control complement clauses and finite clauses are domains in which coindexation must take place. The traditional extension of governing category to NPs can be made in Lakhota, though here the condition applies vacuously: since nouns in Lakhota do not have complement object arguments, there can be no possible anaphors with which the possessor antecedent could be coindexed.

First, an anaphor in a tensed subordinate clause cannot be bound (coindexed) to a (subject) antecedent in the matrix clause. If there is an appropriate antecedent in the subordinate clause to which the anaphor may be bound, there will be a grammatical reading of the sentence. In the examples below, the grammatical judgments are for the glossed readings.

(29) *[John [Bill lila tąyą ic'ichuwą ki] kiksuye.
J B very well REFL+treat COMP remember
'John$_i$ remembers that Bill treats himself$_i$ very well.'

(30) *[Anna phehi ki akibleza kta] awaphe.
A hair the PREFL+notice FUT 1NOM-wait for
'I$_i$ waited for Anna to notice my$_i$ hair.'

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Second, anaphors in the c-command domain of the subjects of control clauses (PRO) cannot be bound to an antecedent in a higher clause. This is illustrated below with the object control verb ši 'to request'. Compare (31a), where there is no anaphoric binding, to (31b), where anaphoric binding is attempted.

(31) a. hokšila ki wąmayą u wicha+wa+ši.
boys the 1OBJ+see come 3OBJ+1NOM+request
'I asked the boys to come see me.'

b. *hokšila ki wąic'iyą u wicha+wa+ši.
boys the REFL+see come 3OBJ+1NOM+request
'I asked the boys to come see me.'

(32) makes the same point for possessor reflexives.

(32) glul ma+ši.
PREFL+eat 1OBJ+request
He$_i$ asked me$_j$ to eat mine$_j$/*his$_i$.'

The facts in (29-32) demonstrate that the reflexive anaphor must be bound to an antecedent in the same clause, whether the clause is finite or non-finite. In terms of GB Theory, this is because both finite and non-finite clauses contain an accessible SUBJECT (AGR/TENSE in the former case, and PRO in the latter). To see how binding theory accounts for these facts, let us briefly outline the conditions on anaphora.

In GB Theory, the restrictions on possible antecedents for anaphors is part of Binding Theory and is formulated as the following ("Principle A"):

(33) Anaphors must be bound in their governing category.

"Bound" is defined as 'coindexed with a c-commanding antecedent' and "governing category" is defined below.

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(34) B is a governing category for A if and only if B is the minimal category containing A, a governor of A, and a SUBJECT accessible to A. (p. 211)

The term SUBJECT is used, in part, in its ordinary sense to include the subjects of complement clauses and the subjects of NPs. This accounts for the well-known distribution of reflexives and reciprocals within complement clauses and NPs in English, as illustrated in the following examples. In (35) the governing category is indicated by curly brackets, the accessible subject is capitalized and the anaphoric binding is indicated by subscripting.

(35) a. John tried [$\{$ PRO_i to shave $himself_i$ $\}$]

b. $\{OUR_i$ [stories about $each\ other_i$] $\}$ ...

In finite clauses (or rather in clauses containing AGR), the SUBJECT is finite INFL.[4] The inclusion of INFL as a "SUBJECT" in (34) accounts for the ungrammaticality of "nominative" anaphors and anaphors contained within nominative NPs. We illustrate these two cases in (36). Again, the governing category is indicated by curly brackets, and the SUBJECT by capitalization.

(36) a. * {Myself [$_{INFL}$ tense AGR] likes tea.}

b. * {[stories about $himself_i$] [$_{INFL}$ tense AGR] please please $John_i$.}

The notion of "accessible" SUBJECT allows an anaphor to "search" in a higher clause for its antecedent under certain conditions. These conditions are never met in Lakhota so we will not persue this question.[5]

The lack of subject anaphors in Lakhota will follow from the present formulation of the Binding Theory, just as it does in English. Recall that there is no possible antecedent with which a plain subject

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anaphor in a simple tensed clause could be indexed to (without violating the definition of 'bound'). Likewise, the ungrammaticality of possessor anaphors whose host NP is the subject of a tensed clause is also ruled out. Examples of these two cases are given below in (37) and parallel the English examples in (36).

(37) a. *wakalyapi waŠte(m)+ic'i+lake.
coffee +(1OBJ)+REFL+like
(Myself likes coffee.)

b. *šųka ki m+igl+aȟtake/ma+gl+aȟtake.
dog the 1OBJ+REFL+bite/1OBJ+PREFL+bite
(My$_i$ dog bit me$_i$.)

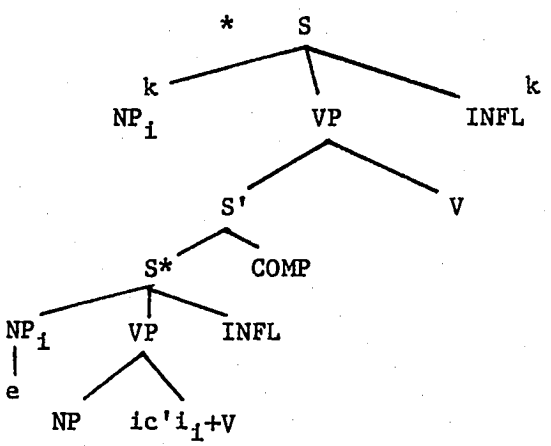
When we consider examples such as (37) embedded as a complements, we find the same facts. In Lakhota, these types of clauses are always ungrammatical.

(38) a. *[John [wakalyapi waŠte+ic'i+lake] keye].
John coffee +REFL+like say
(John$_i$ said that himself$_i$ likes coffee.)

b. *[John [šųka ki ma+gl+aȟtake] keye].
John dog the 1OBJ+PREFL+bite say
(John$_i$ said that self$_i$'s dog bit me.)

The examples in (38) have the following virtual structures:

(39) a.



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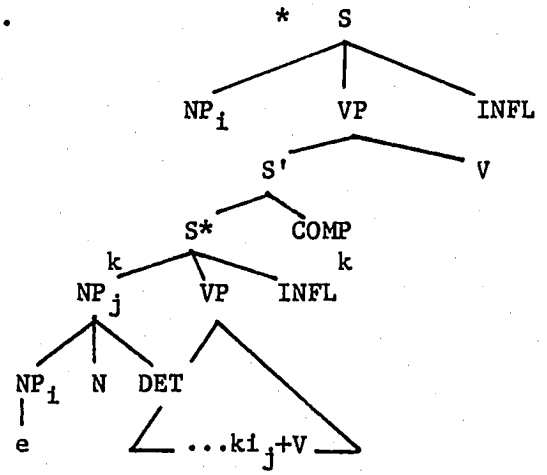
b.



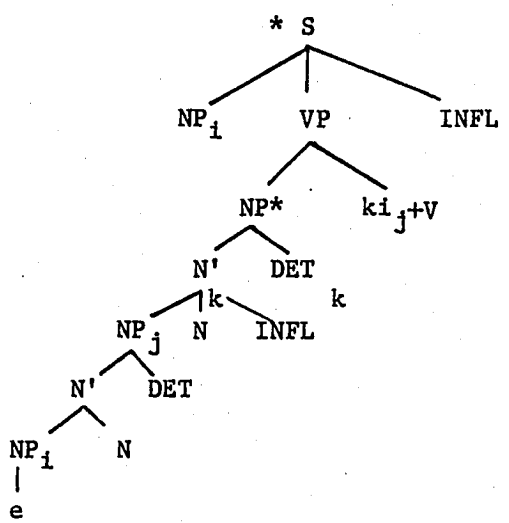
We can also give examples parallel to (38b) with NP domains. In (40) we give two examples to demonstrate that a possessor reflexive anaphor of a host NP which is itself a the possessor argument of an inflected noun cannot be bound to a higher subject.

(40) a. *tiblo si ki a+ya+ki+li.
older brother foot the loc+2NOM+PREFL+step on
(You stepped on your brother's foot.)

b. *wakąyeža ki tha+wowapi ki i+wek+cu.
children the POS+book the _+1NOM=PREFL+take
(I took my children's books.)

The examples in (41) have the following virtual S-structure.

(41)



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In (41), NP* is the governing category of the empty anaphor as it is the minimal category containing an accessible subject, viz., the INFL of the subject possessor. But just as in (37) and (38), there is no possessor antecedent with which the anaphor may be coindexed within its governing category. These facts argue that the S* in (39) and the NP* in (41) must be identified as the governing categories in which an anaphor must be bound. If there is no appropriate antecedent in S* or NP*, as is the case here, then Principle A in (33) will ensure their ungrammaticality.

There is, however, an alternative account that does not involve Binding Theory. Rather that saying that (37), (38) and (39) are ruled out because there is no possible antecedent for the subject anaphor, we may instead say that the subject NP is not a possible anaphor. On this view, the ungrammaticality of these structures would be attributed to a constraint on the coindexing relation (indicating absorption of government) between the reflexive prefix morphology and the anaphor or host of the anaphor. Note that (39) and (41) already fall under the restriction that we have noted in 5.1.3.1, viz., that the position of the anaphor/host must be governed by the verb to which the reflexive is attached. In (40) the host is governed and assigned Case by the INFL in NP*. Similarly in (37) and (38): the (P)REFL+V does not govern the subject position of the clause.

In other words, if this approach is correct, we would be attributing the lack of subject anaphors in tensed clauses and inflected NPs to a condition on what constitutes a possible anaphor, which we have informally stated as: an anaphor must be in a position gov-

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erned by V in virtual structure. In so doing, the inclusion of AGR as an 'accessible SUBJECT in the definition of governing category becomes superfluous.

5.1.5 Towards a Proper Account of Reflexives

As we mentioned in the introduction to this chapter, the rather stringent requirement on possible anaphors in Lakhota and the fact that only subjects may be antecedents of reflexive, reciprocal and possessor reflexive anaphors suggest that obligatory coreference might be viewed as a lexical operation in Lakhota. In this section we shall propose a lexical account and evaluate the "cost" of certain assumptions which have been made for lexical rules. We will reject the lexical account and propose an alternative account which is based on virtual structures.

5.1.5.1 Some Arguments Against a Lexical Analysis of Reflexive and Possessor Reflexive Clauses

Let us suppose that the argument structure of a verb specifies the arguments that the verb takes--including the subject--along with information concerning their θ-roles and category type. These arguments are subdivided into two sub-sets: the set consisting of the subject, which is not subcategorized by the verb (call it the "external argument") and the set comprising the arguments subcategorized by the verb (call these the "internal arguments"). Let us further assume that lexical operations induced by morphological change on the lexical entry will have as a "side effect" a "transformation" of the lexical

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argument structure of a verb (elimination of one argument, for example, or the addition of an argument (we can consider the locative and oblique prefixes and the transitiving instrumental prefixes described in Chapter 2, section 2.3 as examples)).

A lexical analysis of reflexive, reciprocal, and reflexive possessor clauses in Lakhota could then be argued for along the following lines. Reflexive, reciprocal and possessor reflexive verbs are lexically derived via the addition of a prefix, ic'i-, kichi, and ki-, respectively. Reflexive, reciprocal, and possessor reflexive morphology would then have both syntactic and semantic effects.

Syntactically, this morphology would be "argument reducing", i.e., it would reduce by one the number of arguments that are realized in the syntactic structure, deriving an intransitive verb. The unrealized argument would presumably correspond to the anaphor in syntactic reflexive constructions for other languages.

Semantically, we cannot characterize the reflexive, reciprocal and possessor reflexive forms as indicating obligatory coreference between two arguments since the subcategorization frame has only one argument. This approach is ruled out by the Projection Principle. We will suppose that the verbs have an inherent reflexive sense, perhaps analogous to expressions like self-destruct in English.

In this analysis, then, contrary to the one that we adopted in the previous section, there is no null anaphoric element in the syntactic virtual structure, in object position for the reflexive and reciprocal clauses, and in the possessor subject position for the possessor reflexive clauses. Instead, those positions are simply

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"missing". This is an intuitive property of the lexical analysis, since it would account easily for the fact that there are no lexical anaphoric NPs in Lakhota. Since "bound anaphora" is lexical and the anaphor position is not realized syntactically, there could not possibly be lexical anaphors, for the simple reason that the syntactic position is missing.

The question to ask now is the following: what is the position in the argument structure of the verb, corresponding to the anaphoric element, that is syntactically "blocked"? In other words, what position is missing in the syntactic structure of reflexive and possessor reflexive clauses? It is here that we have serious doubts concerning a lexical analysis of the type sketched above.

Consider first possessor reflexive clauses. It is widely assumed in the literature that only the elements in the argument structure of the verb can be affected by lexical rules. But in fact, with possessor reflexive clauses, the syntactic position affected is in no way related to a position in the argument structure of the verb. Rather, it is contained in a position that is part of the argument structure of the verb. We see no way at present to overcome this problem that would face the lexical analysis.

Consider now reflexive and reciprocal clauses. Here, there is, a priori, a choice. Either the subject is not realized syntactically, or the object. In the previous section, we have argued that the anaphor corresponds to an element subcategorized by the verb. Futhermore, the behavior of reflexive clauses as complements to Control structures shows that the antecedent NP (syntactically realized)

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is the subject (see chapter 3, 3.3.2.7). This strongly suggests that the single argument of the intransitive is the subject.

What we would like to suggest here is that this analysis would be reasonable for the reciprocals but not for the reflexives. Recall that reciprocals differed from reflexives in two respects: one, the subjects of reciprocals were Nominative and two, only active transitive verbs had reciprocal forms. The lexical account sketched above will account for these facts. Under the lexical account, the subject "antecedent" of the reciprocal is the subject at every level of representation--D-structure and S-structure. Futhermore, there is no object at any level of representation--D-structure or S-structure.

Recall that in our analysis of reflexives, the subject antecedent received Objective Case by virtue of being coindexed to an argument governed by V. Assuming that reciprocals involved coindexing, they were a counterexample to our account of Case. With the lexical rule for reciprocals, however, we can attribute the lack of Objective Case to the lack of coindexing. Moreover, the fact that there are no reciprocals for double-object verbs is the kind of restriction we would expect of a rule based on thematic structure. Reciprocal formation would apply to verbs with thematic subjects, thus excluding double-object verbs.

But this analysis would fail to account for the reflexives for the ·ame reasons that it succeeds for reciprocals. The generality of reflexive clauses for all types of transitive verbs is lost: each clause type would require a distinct rule. In addition, there would be no account of Objective Case for reflexives, since, as we concluded

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in Chapter 3, the presence of an object at the level of D-structure was crucial in this account. A lexical analysis would thus be forced to find another plausible "source" for the Objective Case in the subjects of reflexives.

Suppose, however, that one argues that for reflexives, the subject is in fact the missing position. The antecedent NP is an object at D-structure, and moves to subject position at S-structure by application of Move a. This lexical approach still maintains an "argument reducing" analysis, but claims that all derived reflexive verbs are, in effect, unaccusatives, whose single subcategorized object undergoes Move a in syntactic virtual structure. This would account for both the NP's behavior as a subject in complement clauses under Control verbs and its Objective Case marking.

Again, two distinct rules would have to be formulated, given the distinct thematic structures. For the active verbs, the subject argument position is lost and the object must undergo Move a. But this rule will not apply to verbs with double-object verbs. Recall that double-object verbs have an argument structure with a "direct" object and an "oblique" object, but no subject. The lexical rule forming the "reflexive" verb will be unable to operate, since there is no subject argument in the argument structure. Hence, a second rule must be formulated to eliminate, presumably, the object argument position. In this case, and the case of the unergative+oblique, the thematic oblique will undergo Move a.

Cumbersome as these rules are, they will provide an account of the Case marking facts. However, they still fail to account for

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reflexives with dative and benefactive anaphors and direct objects. For these verbs, presumably the active subject will be eliminated (since there is Objective Case marking on the subject). But how do we ensure that the NP corresponding to the anaphor position undergoes Move a and not the direct object? It is essential to this account that the derived subject correspond to what would be the antecedent in nonlexical analyses in order to ensure the correct interpretation of the predicate. We see no motivated account for these cases.

This approach also creates complications for the interaction of reflexives and control phenomena. There are obvious selectional restrictions involved between the subjects and adverbials and purpose clauses. Jackendoff (1972) observed that a subset of subject-oriented adverbs require agentive arguments. Observe the contrast between John deliberately created the disturbance and *John is deliberately tall. This contrast remains under passive: The disturbance was deliberately created (by John). This effect on control has been observed by Manzini (1980) for purposives. Chomsky (1981, 143) cites the following contrast of hers:

(41) a. They decreased the price [to help the poor].

b. The price was decreased [to help the poor].

c. *The price decreased [to help the poor].

This type of contrast can be established for reflexives and purposives in Lakhota. Purposives may be infinitival or expressed by a gerund which is the object of the reason postposition ų 'because, by, on account of, etc. In both types of adverbials, an agentive subject must control the subject of the purposive in contrast to true

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unaccusatives which lack a thematic subject. Like the passive example in English above, the reflexive (in the (a) examples) patterns with the transitive form (in the (b) examples) and not the unaccusative (in the (c) examples):

(43) a. takuwe wayawapi ki ų kuže+n+ic'i+ya he?
why going-to-school the by sickr+2OBJ+REFL+make Q
'Why do you make yourself sick by (you) going to school?'

b. takuwe wayawapi ki ų kuže+Ø+ya+ya he?
why going-to-school the by sickr+3OBJ+2NOM+make Q
'Why do you make him sick by (you) going to school?'

c. wayawapi ki ų ma+kuze šni.
going-to-school the by 1OBJ+be sick NEG
*I am not sick by (me) going to school.
I am not sick by (them) going to school.

(44) a. glasuta spa+ic'i+ye.
confirm burn+REFL+make
'He burned himself to confirm (his words).'

b. glasuta spa+ye.
confirm burn+make
'He burned it to confirm (his words).'

c. *glasuta spa.
confirm be-burned
(He is burned to confirm (his words).'

The lexical analysis would be forced to claim that the lexical rule of reflexives, in addition to eliminating the subject argument position, also transfers the theta role of the subject argument to the single object argument. It seems unlikely that one would wish to allow this type of manipulation of semantic roles. But a lexical account is forced to say that the object argument has an agent theta role in order to capture this generalization of the antecedent of purposives and reason gerunds.

A similar phenomenon are the so-called "deep structure" constraints (Perlmutter (1968)). In Lakhota, we have documented two

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verbs which subcategorize for irrealis complement clauses with obligatory coreference requirements between the complement subject and a matrix argument. One verb is kicuza 'to vow, promise for one'. This verb has a same subject requirement.

(45) a. wiȟpeya bluha kte (ki) w+e+cųze.
give away I-have FUT COMP 1NOM+DAT+vow
'I vowed to him that I would have a give-away.'

b. *wiȟpeya yuha kte (ki) w+e+cųze.
give-away he-have FUT COMP 1NOM+DAT+vow
(I vowed to him that he would have a give-away.)

c. wiȟpeya bluha kte (ki) m+ic'i+cųze.
give-away I-have FUT COMP 1OBJ+REFL+vow
'I vowed (to myself) that I would have a give-away.'

Again, for the reflexive form of the verb, we must specify an alternative deep structure constraint, since under the lexical analysis we are considering, reflexive verbs have no subject antecedent. Objects may be the controller just in case the predicate is reflexive, otherwise they are ungrammatical (45b).

We conclude that this view of lexical rules fails to account for reflexives and possessor reflexives in Lakhota. On the assumption that the thematic structure of the verb is represented at D-structure and that a reasonable theory of the lexicon will prevent rules which transfer semantic roles, we conclude that reflexive and possessor reflexive clauses contain empty thematic arguments at D-structure. This is the assumption that we have been making in this chapter. In the following section we will provide an account of the conditions on anaphors based on the assumption that this empty category is PRO.

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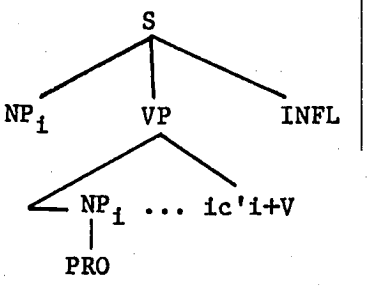
5.1.5.2 A Principle for PRO in Lakhota

In chapter 3, we showed that only governed NPs in virtual structures were coindexed to an AGR marker. In control complements, there was no subject AGR. We concluded that the subject position was ungoverned due to the lack of [+mood] in INFL. Recall that reflexive clauses contain only one (subject) argument coindexed with AGR. We propose that the lack of AGR in this case also indicates an ungoverned anaphor in the virtual structures of reflexive clauses.

We may say that in both types of reflexive clauses (plain reflexives and possessor reflexives), the prefix which is attached to the verb absorbs the government and Case marking of the position of the anaphor. Therefore, this anaphoric null element is PRO. While the structural position of the NP with respect to the verb remains unchanged, the normal Case relation between REFL+verb and the anaphor has been suspended. It is in this sense that we mean that that the anaphor is ungoverned. We may schematize the virtual S-structure of a simple reflexive clause as the following:

(46)



The S-structure of a reflexive possessor is schematized in (47).

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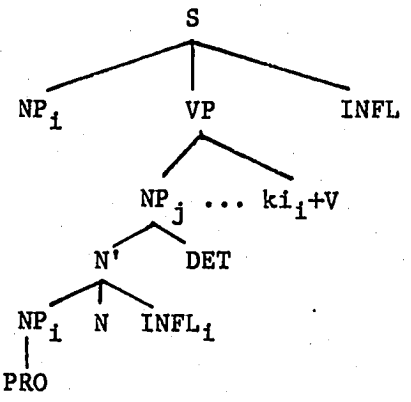
(47)



We assume that the coindexing between the antecedent and anaphor indicating obligatory coreference is distinct from the index of the host NP. With distinct indices, we can account for the fact that the subject antecedent does not have Objective Case. Assuming the analysis of Case assignment presented in chapter 3, no Objective Case will be assigned, since the antecedent is not coindexed to an NP governed by the verb at virtual S-structure.

The analysis of obligatory coreference which is embodied in (46) and (47) raises some new issues for binding theory.

In GB theory, the restriction on pure anaphors assumes that they are governed NPs. As such, they have a governor and a governing category. But if the reflexive anaphor is an ungoverned empty element in Lakhota, as we proposed in (46) and (47), then Principle A will apply vacuously and will not account for the restrictions that we described in the previous section. We must insure that the antecedent of our null anaphor PRO is the subject of the clause which contains it. PRO, being both anaphoric and pronominal should be subject to both Principle A and Principle B of the binding theory. But the theory escapes this contradiction by claiming that PRO has no gov-

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erning category and thus vacuously satisfies both Principles. The conditions on the possible antecedents for PRO are left to Control theory.

If our PRO anaphors have no governing category, how do we ensure that they are not improperly bound? We would like to approach this problem from a different point of view, one argued for by Manzini (1980), based on the properties of PRO in control constructions.

Manzini argues that PRO must be bound in its minimal domain-governing category (MDGC), where MDGC is defined as the following:

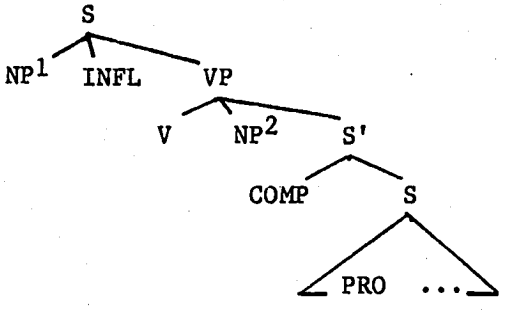
(48) A is the minimal domain-governing category for B iff A contains B, a governor for the domain of B (the minimal X'' category dominating B) and a subject accessible to B.

She claims that:

(49) PRO is bound in its MDGC, otherwise PRO is optionally coindexed with an NP in this context or else interpreted as arbitrary in reference.

This definition ensures that either NP^1 or NP^2 in (50) below are possible antecedents for PRO.

(50)



In (50) the domain-governing category of PRO is S' (the minimal X'' category dominating PRO). The matrix S is the MDGC in which PRO must

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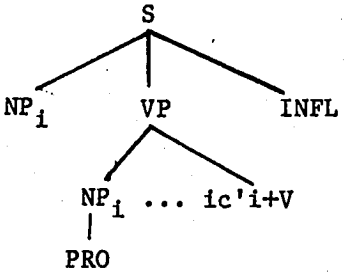
be bound, as it contains an accessible subject, the domain of PRO, and a governor of the domain, namely, V. If this S did not contain an accessible subject (a situation which arises when the subordinate clause is itself the subject), then PRO has arbitrary reference, by the second part of the condition in (49).

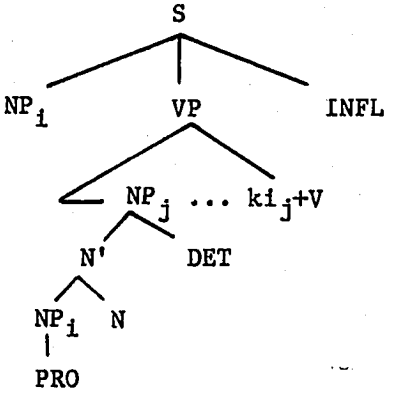
Do Manzini's definitions and condition extend to the Lakhota case of PRO in reflexive clauses? Let us consider the structures in (46) and (47), repeated here for convenience.

(46)



In (46), VP is the domain of PRO: ie, it is the minimal X'' category dominating the ec. S will be the MDGC if it contains an accessible subject (which it does) and a governor of VP (assuming INFL governs VP). Consider now (47).

(47)



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In (47), the host NP is the domain of PRO. Again S will be the MDGC if it contains an accessible subject (which it does, also) and a governor of the host NP (the VP).

Manzini's definition also contains the notion of "accessible" SUBJECT. She differs from Chomsky in her approach by claiming that if there is no accessible SUBJECT, then arbitrary reference is possible. But the examples in (38) and (40) equally argue against this analysis for Lakhota. The anaphors in (38) and (40) do not have arbitrary reference.

Let us then formulate a principle for PRO, using Manzini's definitions.

(51) A is a domain-governing category for B iff
A contains B, a governor for the domain of B
and a SUBJECT.

(52) PRO must be subject-bound in its MDGC; otherwise *.

In both (46) and (47), S is the MDGC and PRO is coindexed to the subject of that clause. Coindexing outside of S (if S itself were a complement clause) is prohibited by principle (52).

Lakhota, like many languages, allows only subjects to antecede an anaphor. This restriction is stipulated in the condition in (52). Without this stipulation, an antecedent may be any nominal which properly binds the anaphor; in other words, any c-commanding nominal may be an antecedent, crucially allowing direct objects, etc. to be antecedents. This prediction is false, as the following examples demonstrate.

(53) a. *wichasa ki wa+ic'i+c'u kte.
man the 1NOM+REFL+give FUT
(I will give the man to himself.)

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b. *Bill wa+ic'i+ci+pazo.
Bill 1NOM+REFL+DAT+show
(I showed Bill to himself.)

In some sense, the domain of PRO is opaque for coindexing in Lakhota. Further work needs to be done in order to determine whether this must be a stipulated property (as we have done in (52)) or whether it follows from some other, more basic, property of language.

5.2 Obligatory Disjoint Reference in Lakhota

In this section, we briefly consider the binding conditions on null pronominals within their governing category. We shall see that null pronominals must be disjoint in reference with all arguments in their governing category. This fact will serve to make two points. First, the conditions on disjoint reference cannot be the "mirror-image" of obligatory coreference conditions in Lakhota. This suggests that any proposal that is based on a complementarity between the anaphors and pronouns cannot be universal. Thus, a very interesting proposal of Reinhart (1980) to derive disjoint reference pragmatically from the speaker's non-use of obligatory coreference will fail for Lakhota. Second, the condition on pronominal disjoint reference applies at virtual (S-)structure. We mention this here, for in the following chapter, we shall see that this state of affairs is very different from the condition on coreference for non-pronominal NPs. Non-pronominal coreference must be defined on the flat, non-configurational structures generated by the W* base rules.

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The complementary distribution between pronouns and anaphors in simple clauses has received explicit treatment within EST and its later forms. Consider the following:

(54) a. $John_i$ likes $himself_{i/*j}$

b. $John_i$ likes $him_{j/*i}$

In GB theory the complementarity in (54) follows from the first two principles of Binding theory, stated below:

A. An anaphor must be bound in its governing category.

B. A pronominal must be free in its governing category.

In this chapter, our analysis of anaphors in Lakhota led us to propose the following condition:

C. PRO must be subject-bound in its MDGC.

Abstracting away from the differences between anaphors in English and Lakhota, if the complementary nature between anaphors and pronominals in English is not accidental, but rather follows from some general organizing principle of UG (precisely the Binding theory), we might expect that the condition on pronominals in Lakhota to be not B, but D:

D. A pronominal must be subject-free in its governing category.

A general principle of this sort was proposed and parametrized by Anderson (1982). There, in his analysis of Icelandic reflexives, he distinguished between two types of anaphor, each subject to a distinct binding condition. The binding condition for pronominals is the inverse of just one of these conditions. "It appears that the choice of binding principles for elements without independent refer-

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ence constrains the disjoint reference principles applicable to other pronominals in a language" (p.28).

In this section, we will consider the distribution in Lakhota of null pronominals in their governing categories. Unfortunately, we will see that there is a paucity of relevant data and the issue is further obscured by morphological restrictions of an arbitrary nature. However, the evidence is in favour of B over D. B predicts that pronominals cannot corefer with non-subject sister arguments, thus revealing an asymmmetry in the binding conditions for Lakhota.

As a point of departure, let us look at some examples in English that require the more general condition A for anaphors. As (55) demonstrates, non-subjects may be the antecedents of reflexives.

(55) a. I remind Fred $_i$ of himself$_i$

b. I talked to Martha$_i$ about herself$_i$

c. I sent John$_i$ shoes for himself$_i$

d. I sold the two neighbours$_i$ food for each other$_i$'s party.

And, as (56) shows, pronominals must be disjoint with non-subjects:

(56) a. *I remind Fred$_i$ of him$_i$

b. *I talked to Martha$_i$ about her$_i$

Examples parallel to those in (55) are virtually impossible to construct in Lakhota. Let us consider them in turn.

(57) a. Fred ic'i+ksuye+wa+ye.
Fred REFL+remember+1NOM+make
'I remind Fred of himself.'

b. Bill o+ki+bl+ake.
Bill +DAT+1NOM+tell
'I told it to Bill.'
*'I told on Bill$_i$ to him$_i$.'

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c. islaye eya (*si ki) ophe+m+ici+thų.
ointment some foot the +1OBJ+BEN+buy
'He bought me ointment (*for my foot).'

d. Bill wa+ki+pazo.
Bill 1NOM+DAT+show
'I showed it to Bill.'
*(I showed $Bill_i$ to him_i.)

e. *(miye) ųspe+ma+khiye.
EMP learn+1OBJ+make
'He taught me about me.'

f. Taku slol+m+ic'i+ye šni ki ųspe+ma+khiye.
what +1OBJ+REFL+make NEG DET learn+1OBJ+make
'He taught me what I didn't know about myself.'

Consider first the example in (55a). If translated into Lakhota as in (55a) this becomes a biclausal control construction, literally "I make Fred remember himself". Fred in this case is not directly the antecedent of the reflexive, but rather is the controller of PRO, which is the (subject-) antecedent of the reflexive). Next consider (57b-c). In Lakhota oblique arguments, datives and benefactives, are not expressed by optional prepositional phrases as they are in English, but are "bare" NPs whose presence is sanctioned by morphological prefixes. The number and combination of these prefixes are subject to morphological idiosyncrasies. For example, consider the verb oyaka 'to tell something' or 'to tell on someone'. With the addition of the dative prefix ki the second gloss is lost. Okiyaka only means 'to tell something to someone'. It cannot mean 'to tell on someone to someone' (57b). Hence, this verb cannot be used to test the formulation of the binding principle. Datives and benefactives do not co-occur, e.g. (57c).

Examples such as (55d) also cannot be constructed. Nominals do not allow NP complement arguments, thus this type of structure

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cannot be tested. Finally, the semantics of most ditransitive verbs rule out any coherent coreferential meanings as shown in (57 d,e,f).

There remains only one potential test case that we are aware of. Lakhota has several instrumental prefixes which add a causal argument to certain verbs, including double-object verbs. Pairs of these verbs, with and without the instrumental prefix yu 'with the hand', are given below:

(58) a. cązeka 'to be angry'
yu+cązeka 'to make angry'

b. a+cązeka 'to be angry at'
a+yu+cązeka 'to make angry at'

c. nawizi 'to be jealous'
yu+nawizi 'to make jealous'

d. a+nawizi 'to be jealous of'
a+yu+nawizi 'to make jealous of'

Overt reflexivization marked on the verb to indicate coreference between the experiencer/patient and the oblique argument is ungrammatical, as predicted by our condition on anaphors:

(59) *a+ic'i+ma+ya+lu+cązeke.
OBL+REFL+1OBJ+2NOM=INSTRUM+angry
(You made me angry at myself) or
(You made me angry at yourself)

Double object marking of the experience/patient and the oblique made the sentence more comprehensible but still ungrammatical:

(60) *a+m+ic'i+ma+ya+lu+cązeke.
OBL+1OBJ+REFL+1OBJ+2NOM=INSTRUM+angry
(You made me angry at myself) or
(You made me angry at yourself)

Let us now consider the case with third person pronominals. As the glosses in (61) indicate, coreference is not possible between sister arguments in a single clause:

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(61) Hokšila ki a+wicha+blu+cązeke.
boy the OBL+3OBJ+1NOM=INSTRUM+angry
'I made the boy angry at them.'
'I made the boys angry at him.'
*(I made the boys$_i$ angry at themselves/them$_i$.)

If the condition on pronominal reference were the inverse of the condition of obligatory coreference, we would expect that disjoint reference would only hold between the oblique and subject. As (61) demonstrates, the oblique argument must also be disjoint with the object argument. Thus it appears that (61) provides some evidence that the condition on pronominals within their governing category is not the inverse of (C) (viz., that they must be subject-free in their governing category) Instead, pronominals are more generally constrained and the binding condition must be (B): pronominals must be free in their governing category.

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FOOTNOTES TO CHAPTER 5

1. See Jaeggli (1980) for an account in which object clitics in Spanish also absorb government and Case marking of the object position, which therefore must be occupied by PRO. We assume here that the null anaphor in Lakhota is coindexed to the reflexive prefix, ic'i-.

2. Discourse factors may override obligatory disjoint reference.

3. The ungrammaticality of the examples in (21) is for the intended readings given in the translations. (21b) is grammatical if the intended anaphor is the possessor of the dog.

4. Chomsky (1981) discusses the possibility that it is AGR in INFL, rather than tense that determines opacity of the subject position in a clause. On our view presented in chapter 3 and 4, it is the presence of mood in S and tha- in NPs that determines opacity.

5. Accessibility is defined so as not to violate the i-within-i condition. This condition is given in (i) and the definition of accessibility in (ii).

(i) *$[_a \ldots b \ldots]$, where a and b bear the same index

(ii) A is accessible to B if and only if B is in the c-command domain of A and assignment to B of the index of A would not violate (i).

Chomsky proposes to use the accessibility definition to account for the following contrast.

(iii) a. *They expected $[_S$ me to hear [stories about each other]]

b. They expected that $[_{NP}$[stories about each other] would be circulated]

In (iiia) the governing category in which the anaphor must be bound is the embedded clause since the embedded clause contains an accessible SUBJECT (me). There is no appropriate antecedent within this category to which the anaphor may be bound, and so the sentence is correctly ruled out by Principle A. In (iiib) the embedded clause does not contain an accessible subject (since the potential assignment of the anaphor's index to AGR would result in a violation of the i-within-i condition. But (iiib) shows that anaphoric binding is possible if there is a higher antecedent and so we allow the matrix clause to become the governing category in which anaphoric binding is possible.

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The notion of "accessible" SUBJECT allows an anaphor to "search" in a higher clause for its antecedent if possible coindexation would violate (i) or if AGR did not count as an accessible SUBJECT. But Lakhota, unlike English, does not have anaphors in noun complements, so examples parallel to (iiib) do not exist. Furthermore, AGR is always an accessible subject in Lakhota, so a subject anaphor will never "search" into a higher clause for its antecedent.

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PRONOMINALS AND COREFERENCE

6.0 Introduction

In our discussion of pronominal coreference in Lakhota, we will address several issues which overlap to a great extent. One issue is the structural conditions on possible coreference. Given that Lakhota is a non-configurational language, what role do we expect hierarchical notions such as "c-command" to play? What role will non-hierarchical notions such as linear order play? Assuming there to be differences, can they be reduced to one or perhaps more binary parameters?

A second and related issue will be the formulation of the interpretive rule for pronominal coreference. Is it a rule that specifies coreference between two NPs or non-coreference? What is the relationship between this rule and the rules of reflexives and possessor-reflexives which specify obligatory coreference?

Finally, several other issues will arise in the course of our discussion. What is the domain of coreference? Should it be stated in terms of the notion "c-command", cyclic domain or in terms of the more elaborate notion of GB-Theory, "government"? Should it be defined on virtual structures, S-structures or both? What role do pragmatic considerations play? In what component is (non-) coreference determined?

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6.1 Some Preliminaries On Null Pronouns.

We make three uncontroversial assumptions about Lakhota S-structure: 1. Lakhota has a flat tree structure (and, crucially for this discussion, no VP node). 2. Sentences consist of a verb preceded by unordered strings of maximal phrases. 3. There are null third person pronouns.

The first two assumptions have been discussed and justified in Chapter 2. The third assumption needs some comment.

To make the discussion concrete, let us consider (1) below:

(1) a. Lochi.
hungry
'He is hungry.'

b. Bill lochi.
Bill hungry
'Bill is hungry.'

There are two basic positions that one can take towards a sentence like (1a). One position (and the one which we support) is to say that the surface structure of (1a) contains a null third person pronoun. Under this view, both (1a) and (1b) have the same tree structure (i.e., $[_S$ NP V]). The only difference is that in (1b) NP has expanded with a lexical phrase and in (1a) it has not. The second position is to say that the surface structure of (1a) consists simply of a verb, in other words: it lacks an NP argument.

This second view has been argued for in Hale (1983). There, it is claimed that the base rules of non-configurational languages allow a sequence of zero or more maximal categories as arguments of the head. Thus (1a) would be an example of a sentence where the zero option for NP argument is taken. This "zero option" raises a number of questions of a very general sort that we will not discuss. However, Hale has made a very clear claim about the S-structures of non-

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configurational languages: there are no empty categories in the sytax, including null pronouns.

In this chapter, we shall provide what we consider to be irrefutable evidence against Hale's claim. We shall demonstrate that there is a constraint on coreference between null pronouns and their possible antecedents: a constraint that is sensitive to the linear order of constituents in a flat S-structure. This condition can only be formulated on the assumption that there are null pronouns occupying NP positions at S-structure.

In GB-theory, Hale's approach to null pronominals is ruled out by the Projection Principle. The Projection Principle states that representations at each syntactic level observe the subcategorization and thematic properties of lexical heads. Hence, at S-structure, both (1a) and (1b) contain a (subject) NP. Assuming the Projection Principle is part of UG (Universal Grammar), we are forced to the position that Lakhota has non-controlled null pronouns.

In recent work in the GB-theory, it is claimed that the distribution of all null NPs is determined by a number of independent conditions. These conditions conspire, in effect, to limit the number, type and position of null elements at S-structure. In Chomsky (1982) it is recognized that there are four types of empty categories: PRO, pro, NP-trace and wh-trace. We have discussed the distribution of PRO in Chapters 4 and 5 and NP-trace in Chapter 3. Here, we assume that the null third person pronouns in Lakhota are instances of "small" pro.

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This assumption is based on the fact that the properties of these pronouns, with certain qualifications, coincide with the present conception of the properties of pro. "Small" pro is a "pure" pronominal. As a pronominal it is antecedent-free in its governing category (in this respect it is like PRO). Unlike PRO, it is not an anaphor, and hence not A-bound by an antecedent in a θ-position.

Unlike small pro in pro-drop languages, small pro in Lakhota is not restricted to subject position. Null pronouns may be direct objects, objects of postpositions, and possessors. Following the account of pro in Chomsky (1982), we relate this possibility to the "rich" agreement system of Lakhota, which is not restricted just to the subject. (cf. our discussion in Chapter 3). Local determination of the content of pro with other grammatical relations is thus made possible in Lakhota. We illustrate the possibilities in (2). The associated S-structures for the sentences in (2) are given in (3).

(2) a. Bill wąyąke.
Bill oee
'Bill saw him.'

b. ekta ogle ki iyeyawaye.
to shirt the I-send
'I sent the shirt to him.'

c. Bill tha+mila ki ų he.
Bill POS+knife the use DUR
'Bill is using his knife.'

(3) a. $[_S\ [_{NP}$ Bill$]\ [_{NP}$ e$]\ [_V$ wąyąke$]\ ]$

b. $[_S\ [_{PP}\ [_{NP}$ e$]$ ekta$]\ [_{NP}$ ogle ki$]\ [_N$ iyeyawaye$]\ ]$

c. $[_S\ [_{NP}$ Bill$]\ [_{NP}\ [_{NP}$ e$]$ thamila ki$]\ [_V$ ų$]$ he$]$

We assume that null pronouns are marked for person, animacy, number and possibly for Case (see Chomsky 1982). Thus marked, they will

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"feature-match" with the corresponding AGR nodes in the verbal inflection. Compare the verbal form in (4a) (with a lexical NP object) with the one in (4b) (with a null object pronoun):

(4) a. Bill šųka eya wą+wicha+yąke.
Bill dog some +3OBJ+see
'Bill saw some dogs.'

b. Bill wą+wicha+yąke.
Bill see+3OBJ
'Bill saw them.'

They must also be allowed to serve as antecedents for controlled PRO and reflexives. Examples of these are in Chapter 4 and 5.

Henceforth, we assume that null pronouns are instances of small pro. In the following sections, we explore the coreference properties of these pronominals. In 6.2 we give an overview of the accounts proposed to handle coreference facts. In 6.3 we present the Lakhota facts and argue against a c-command restriction. In 6.4 we formulate a condition to account for the distribution of possible coreference, arguing that notion of linear order is crucial to the correct account. In 6.5 we consider an extension of the condition to account for some additional facts. We summarize our results in 6.6.

6.2 Pronominal Coreference in Generative Grammar

It has long been known that the relationship between pronoun and its antecedent is not unconstrained. Consider the distribution of grammaticality in (5) below. Intended coreference is indicated by subscripts.

(5) a. $John_i$ thinks that he_i is unpopular.

b. *He_i thinks that $John_i$ is unpopular.

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c. That $Oscar_i$ is unpopular doesn't bother him_i.

d. That he_i is unpopular doesn't bother $Oscar_i$.

Based on these facts (and others not immediately relevant here) Langacker (1969) gave the following condition on the pronominalization transformation:

(6) An anaphor cannot bear all primary relations, i.e., it cannot both precede and command its antecedent.

Subsequent work in generative linguistics led to the abandonment of a transformational rule of pronominalization. It is now assumed that pronouns are base generated. Under this conception, (6) can be viewed as a condition on an interpretive (co-indexing) rule that assigns coreference.

This approach was rejected in part by Lasnik (1976), who argued for two major modifications. First, he claimed that there is no rule that determines coreference per se but rather that the rule of Disjoint Reference (DR) should be extended to account for (5b). DR is syntactically assigned and coreference is pragmatically inferred. Previously, DR (cf. Chomsky (1973)) was limited to account for the non-coreference of pronouns and full NPs in simple clauses like "$John_i$ likes him_i". Lasnik's reformulation was intended to collapse the coreference possibilites within the sentence with pragmatically-determined coreference across sentence boundaries ("Where's John? He left two hours ago."), which is independently needed. Thus, the determination of coreference in cases such as (5a, d) are claimed to be determined by discourse principles beyond the level of sentence-grammar. In addition, DR was stated in such a way as to rule out coreference between two lexical NPs, e.g., "$John_i$ thinks $John_i$ is

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unpopular", as well as the case with a pronoun. (i.e., 5b). This position is still held in GB theory and has only recently been criticized (cf. Evans (1980) and Reinhart (1980)).

Secondly, Lasnik also argues that the notion of command formulated by Langacker defines too broad a domain. Instead, both NP and S are the proper domains for (non-) coreference. He bases this claim in the following judgments (the grammatical status of (7d) is disputed by some):

(7) a. $John_i$ loves his_i mother.

b. *He_i loves $John's_i$ mother.

c. $John's_i$ mother loves him_i.

d. His_i mother loves $John_i$.

e. *$John's_i$ mother loves $John_i$.

He formulates his extended Disjoint Reference rule as:

(8) A nonpronominal NP must be interpreted as disjoint in reference with any NP which precedes and k-commands it.

where A k-commands B iff the first cyclic node dominating A also dominates B and the minimal cyclic nodes are S or NP. It should be noted that although (8) is intended as a reformulation of DR, it does not exclude the case of DR in simple clauses (e.g., "*$John_i$ likes him_i").

Reinhart (1979, 1981) proposes a more radical re-definition of the domain of non-coreference, a definition currently espoused by GB theory. She claims that the sentence level semantic rules (including DR) only operate on nodes just in case one node is in the domain of

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the other. A node A is in the domain of node B just in case B c(constituent)-commands A, where "c-command" is defined as the following:

(9) A node A c-commands a node B if the first branching node that dominates A either dominates B, or is immediately dominated by a node C which dominates B, where B and C are of the same category type (e.g., S and S', VP and VP', etc.).

DR is now formulated simply as (10):

(10) A non-pronominal NP must be interpreted as non-coreferential with any NP that c-commands it.

(10) suffers from the same problem noted for Lasnik's DR rule, viz., it does not account for disjoint reference in simple clauses. The present position on coreference held in GB theory retains the essential structural core of (10) but partially rectifies this problem by dividing binding theory into three principles, holding for different types of NPs. Principle B, as the reader will recall from our discussion in chapters 1 and 5, ensures that pronominals are disjoint in reference from c-commanding NPs in the pronominal's governing category. (10) is subsumed under Principle C of the Binding Theory, which states that R-expressions are free.

With the formulation of (10), Reinhart explicitly rejects S and NP as appropriate domains. Moreover, she also explicitly rejects the claim that linear order plays a role in backwards anaphora. She claims that the notion of "precede" is simply an artifact of right branching languages (like English) and of the inability of the notion "command" to distinguish subjects from objects.

The c-command condition on pronominal reference has two important properties: 1. it is defined on branching S-structures, and 2. it is non-directional (in the left-to-right or right-to-left sense).

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Given the view of the base rules adopted in this work for Lakhota, viz., that a clause is an unordered non-hierarchical sequence of maximal phrases in no fixed order, we must wonder whether such a condition on coreference is possible in Lakhota.

In the following sections we will present evidence that demonstrates that the c-command condition for pronominals is untenable at flat S-structure and/or virtual structures in Lakhota. We begin by considering coreference possibilities when the NPs are in different complement clauses, relative clauses and adverbial clauses. We show that c-command cannot account for the distribution of facts. When we consider the evidence from possessive NPs, we conclude that Lasnik's cyclic domain is more useful. We also also consider the facts involving PP nodes and find crucial evidence that linear order is also necessary. We will propose the following condition:

(11) An antecedent NP cannot be bound by a pronominal which precedes it within its cyclic domain (i.e., NP or S).

We conclude by considering some language particular constructions and propose an extension of the condition to accomodate them.

6.3 The Lakhota Data

6.3.1 Interclausal anaphora

In this section we survey the coreference properties of pronominals and possible antecedents when they do not share a common clause. This situation arises in the case of relative clauses, complement clauses, and adverbial clauses. In each case, the coreference facts are the same and lead us to the general result: the c-command

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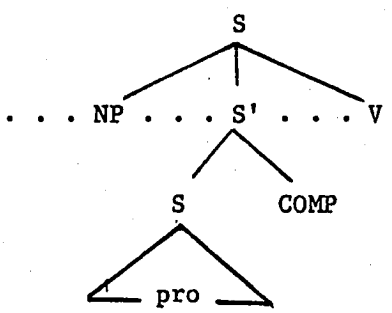
condition makes false predictions about the coreference possibilities and is, at best, irrelevant for this body of data.

6.3.1.1 Complement Clauses

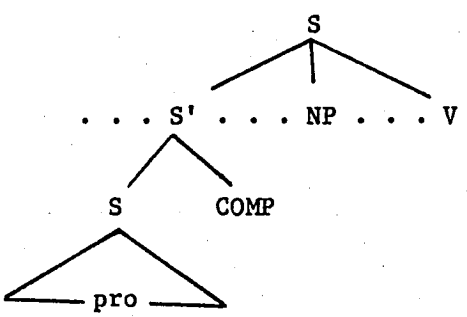
Let us begin with complement clauses. Given the fact that a clause in Lakhota has no VP node in flat S-structure, object complements will be sisters to subject NPs of the matrix clause. This configuration is schematized below. (Optional phrases have been ignored in the diagram.)

(12)



Furthermore, given the fact that phrases are unordered within their clause, the matrix NP in (12) can appear to the left of the right of the complement clause.

(13)



The c-command relations between NP and pronominal in (12) and (13) are the same and the condition given in (10) predicts that coreference in both cases should be grammatical. Of course, the simple

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command relation also predicts these facts. Examples of this are given below:

(14) [Steven Charlotte [[takuwe wayawapi ki ų ikaǧį+
Steven Charlotte why school the with bother+

ic'i+ye] ki] iyųǧe].
REFL+make COMP ask

'Steven asked Charlotte$_i$ why she$_{i,j}$ was bothering herself with school.'

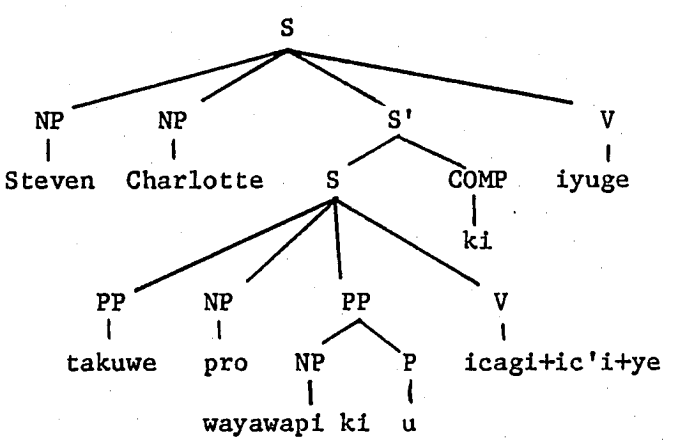
(15) [[[takuwe wayawapi ki ų ikaǧį+ic'i+ye] ki]
why school the with bother+REFL+make COMP

Steven Charlotte iyųǧe].
Steven Charlotte ask

'Steven asked Charlotte$_i$ why she$_{i,j}$ was bothering herself with school.'

Examples (14) and (15) have the S-structures of (16) and (17), respectively. Since the c-commanded NP is the pronominal, (10) does not apply and coreference is possible (as is indicated by the glosses).

(16)



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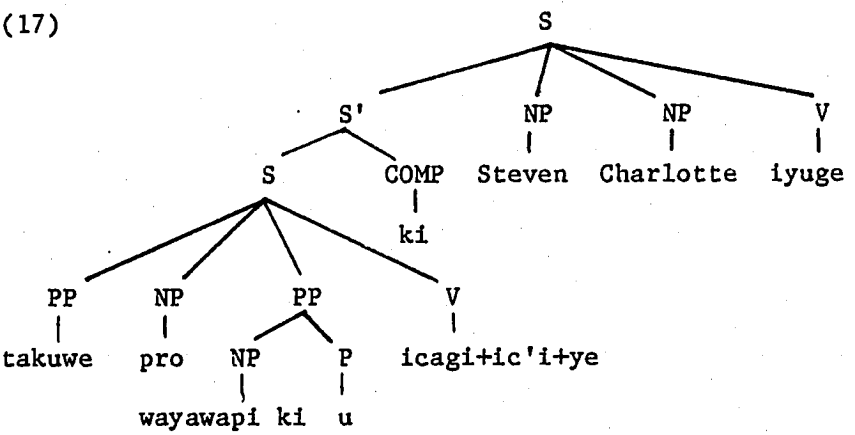
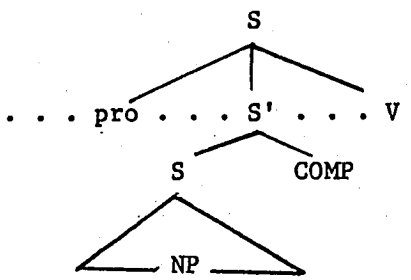
(17)

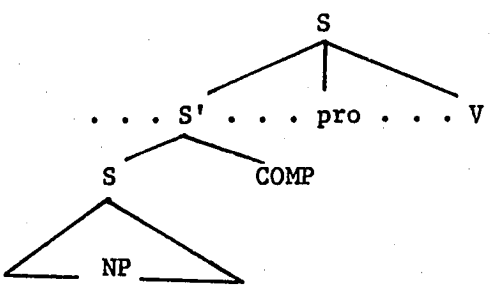


But now, consider the structures that result from reversing the position of the lexical NP (the antecedent) and small pro. Assuming that small pro has the same distribution as lexical NPs, we have the following two S-structures to consider:

(18)



(19)



But, as the reader can appreciate, (18) and (19) are indistinguishable at the PF level. It is relatively easy to construct an example sentence where the lexical NP is unambiguously inside the complement clause. This is important, for many sentences are ambig-

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uous between (19) and (12), where the antecedent NP can be parsed as either in the matrix or the subordinate S. In contrast, because the pronominal NP is null we have no way of determining where exactly small pro is. (I am assuming that native speakers have no direct access to the positions of null elements.)

However, given the present conception of pronominal coreference in GB theory this problem is simply a red herring; it is precisely for structures of the kind in (18) and (19) that the c-command domain makes the same prediction for coreference. In both (18) and (19), small pro c-commands the potential antecedent. Word order is irrelevant. Regardless of which S-structure we assign, (11) predicts that the antecedent cannot be bound by the c-commanding small pro and hence any coreferential reading will be ungrammatical. This is simply false as the following examples illustrate.

(20) a. Steven [takuwe Charlotte wayawapi ki ų
Steven why Charlotte school the with

ikaǧį'ic'iye ki] iyųǧe.
bother-REFL-make COMP ask

'Steven asked her$_{i,j}$ why Charlotte$_i$ bothered with school.'

b. [Owayužaža wą hihąni John ophethų ki]
tub a morning John buy COMP

omakiyake.
me-DAT-tell
'He$_{i,j}$ told me that John$_i$ bought a tub this morning.'

These examples also demonstrate the futility of appealing to virtual structures with VP nodes. In (20a) both the indirect question complement and the dative object small pro are under the virtual VP

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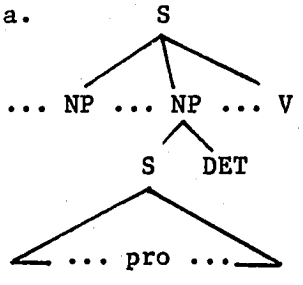
node, and small pro would continue to c-command the antecedent. In (20b) small pro would also continue to c-command the antecedent, this time as a subject. Direct counterevidence to a condition on virtual structures is pointed out in section 6.3.4.

Since it is impossible to construct ungrammatical examples, we cannot tell whether some other (non-c-command) condition is needed for (20) or whether no condition at all is necessary. In section 6.3.3 we shall present evidence that we do, indeed, need some condition. But before we discuss these cases, we will show that parallel facts to those exemplified in (14-15) and (20) obtain for relative clauses and adverbial clauses.

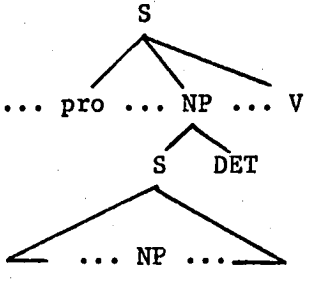
6.3.1.2 Relative Clauses

Again, there are four possible S-structures that we must consider. These are schematized below.

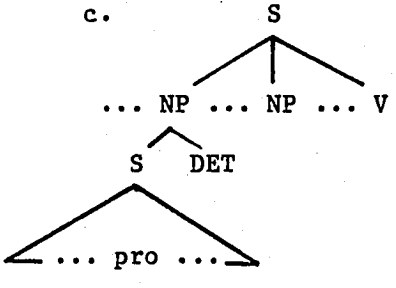
(21) a.



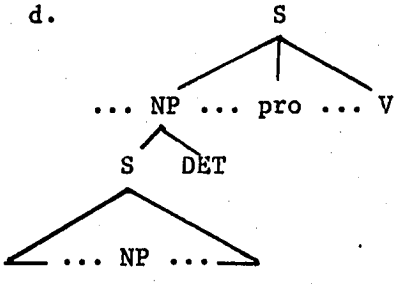
b.



c.



d.



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In (21a) the ec pronoun is within the subordinate relative clause (though not the head of the relative clause) and the potential NP antecedent precedes and c-commands the relative clauses. In (21b) the positions of the pronominal and potential NP antecedent are reversed: small pro precedes and c-commands the relative clause which contains the antecedent. In (21c) small pro is contained in the relative clauses but the potential antecdent follows (and c-commands) the relative clause. In (21d) the positions are again reversed: the potential antecedent is within the relative clause and small pro follows the relative clause. Once again, we cannot, in principle, distinguish (21b) from (21d), since small pro is "invisible".

Coreference is possible in all of these configurations, providing further evidence that the c-command condition fails to account for (21b/d). The sentences in (22), (23) and (24) below have the S-structures in (21a), (21c) and (21b/d), respectively. In each case the relative clause has been bracketed and the antecedent underlined to facilitate the exposition. In all of these examples, coreference is optional and there is always a reading where the pronoun refers to some object in the discourse. We are not concerned with these readings and will henceforth ignore them. Examples and judgments of grammaticality will refer to intended coreference only.

(22) a. Mary [hokšila eya apha hą pi ki hena] waštewichalake šni.
Mary boys some hit DUR PL the those _+3OBJ+like NEG
'Mary doesn't like the boys that were hitting her.'

b. Mary [owiža eya kaǧe ki hena] wiyophe+ki+ya he?
Mary quilt some make the those _+PREFL+sell Q
'Does Mary sell the quilts that she makes?'

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c. wakąyeža ki [wowapi wą yawa hą pi k'ų he] Mary wicha+khi.
children the book a read DUR PL the-P that Mary 3OBJ+take
'Mary took the book that they had been reading from the children.'

(23) a. [hokšila eya apha hą pi ki hena] Mary waštewichalake šni.
boys some hit DUR PL the those Mary _+3OBJ+like NEG
'Mary doesn't like the boys that were hitting her.'

b. [owiža eya kağe ki hena] Mary wiyophe+ki+ya he?
quilt some make the those Mary _+PREFL+sell Q
'Does Mary sell the quilts that she makes?'

c. [wowapi wą yawa hą pi k'ų he] wakąyeža ki Mary wicha+khi.
book a read DUR PL PDEF that children the Mary 3OBJ+take
'Mary took the book that they had been reading from the children.'

(24) a. [hokšila eya Mary apha hą pi ki hena] waštewichalake šni.
boys some Mary hit DUR PL the those _+3OBJ+like NEG
'Mary doesn't like the boys that were hitting her.'

b. [owiža eya Mary kağe ki hena] wiyophe+ki+ya he?
quilt some Mary make the those _+PREFL+sell Q
'Does Mary sell the quilts that she makes?'

c. [wowapi wą wakąyeža ki yawa hą pi k'ų he] Mary wicha+khi.
book a children the read DUR PL PDEF that Mary 3OBJ+take
'Mary took the book that they had been reading from the children.'

In the (a) sentences of (22-24), the grammatical relations in both clauses are unambiguous by virtue of the plural subject and object agreement on the verbs. Note that the sentences in (22) need not be parsed as indicated. Mary can be an argument of the relative clause in both (22a) and (22b), in which case it has the structure given in (21b/d). The (b) sentences in (22-24) are also unambiguous with respect to the grammatical relations, but for pragmatic reasons. The (c) sentences in (22-24) are unambiguous for both pragmatic and grammatical reasons. Khi is a 3-place verb meaning 'to take from with force'. The plural agreement ensures that wakhąyeža ki 'the children'

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will be the source argument of the matrix clause. Pragmatics eliminates the nonsensical readings where wowapi 'book' and Mary are reversed.

The fact that coreference is possible in these configurations (crucially in (24)) is not predicted by condition (10).

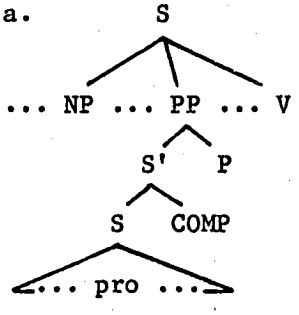
6.3.1.3 Adverbial Clauses

Adverbial clauses expressing temporal order consist of a clause (S') followed by a postposition such as hąni and ithokab 'before' and iyohąkab 'after'. A second construction is also used for adverbial relative clauses; it differs only in the fact that the postposition has absorbed a demonstrative pronoun. These differences are irrelevant to our present concern and clauses of both types will be schematized alike. We assume that there is no special adverbial node but that these clauses are generated by the PS rule:

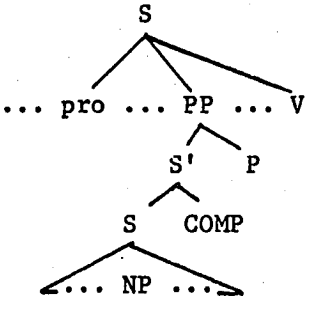
PP ⟶ S' P.[1]

We might expect all adverbial clauses to "scramble" with NP arguments, giving rise to four possible word orders, just as we have seen for complement clauses and relative clauses. These possible structures are given in (25).

(25) a.



b.



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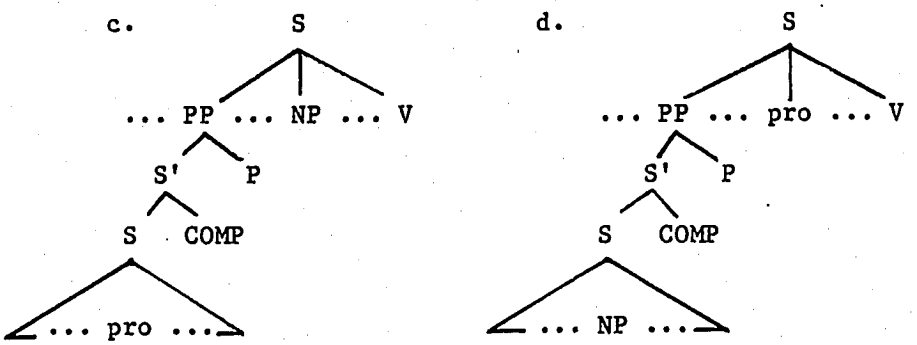

However, temporal clauses are strongly preferred in initial position. Consider the following example with no potentially coreferential arguments. It illustrates that even a "light" temporal clause is not acceptable with unmarked intonation.

(26) ?John [[wa hiha šni ki] hehą] gli.
John snow fall NEG COMP then go home
'John, before it snowed, went home.'

(26) becomes acceptable if given as a response to a question about John and uttered with a marked intonational pause after the first NP. But these sentences have a topic/comment structure and must be distinguished from a simple "scrambled" clause. Locative adverbial clauses are perfectly acceptable in non-clause initial positions.

(27) John [[tuktel ų́yąka pi ki] ekta] iyąke.
John where we-sit PL COMP to run
'John ran to where we were sitting.'

Based on the contrast in (26-27), we assume that adverbial clauses can scramble, but that temporal adverbial clauses are strongly preferred in initial position. Thus, adverbial clauses do not always display the full range of coreference possibilities that we have seen with complement and relative clauses. But as the reader will have already noted, it is the grammaticality of coreference in the structure (25d) that will provide evidence that condition (10) does not

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hold. And, not surprisingly, sentences with the structure of (25d) do allow coreference. In (28) below we give examples of adverbial clauses containing a null pronoun and followed by the antecedent, as in (25c). In (29) we give examples of the antecedent contained within the adverbial clause followed by a c-commanding null pronoun, as in (25d). Again, we have underlined the antecedent and bracketed the adverbial clause for ease of exposition.

(28) a. [[lechel kte pi šni k'ų] hehą] lila oyate ota
this way kill PL NEG COMP then very people many

Iya thebwichaye.
Iya eat-them

'Before they had killed him this way, Iya had eaten up many people.'

b. [[wąmayąka] chąšna] Bill atewaye ki kiksuyewaye keye.
see-me whenever Bill my father the I-remind say

'Whenever he sees me, Bill says that I remind him of my father.'

c. [[tohąyą hųku ki kichi thi ki] hehąyą] John wakąmna.
how-long mother the with live COMP that-long John earn-living
'As long as he lived with his mother, John earned a living.'

(29) a. [[Iya lechel kte pi šni k'u] hehą] lila oyate
Iya this way kill PL NEG COMP then very people

ota thebwichaye.
many eat-them

'Before they had killed Iya this way, he had eaten up many people.'

b. [[Bill wąmayąka] chąšna] atewaye ki kiksuyewaye keye.
Bill see-me whenever my father the I-remind say
'Whenever Bill sees me, he says that I remind him of my father.'

c. [[tohąyą John hųku ki kichi thi ki] hehąyą] wakąmna.
how-long John mother the with live COMP that-long earn-living
'As long as he lived with his mother, John earned a living.'

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Thus, adverbial clauses provide further evidence that the c-command condition on S-structures or virtual structures incorrectly predicts that the sentences in (37) are ungrammatical.[2] In the next section, we will show that a reformulation of the coreference condition still based on c-command is also incorrect.

6.3.1.4 An Incorrect Alternative Proposal

We have demonstated that the c-command condition of (10) cannot predict the coreference possibilities between an antecedent and its pronominal in different clauses. As examples (19), (24) and (28) demonstrate, small pro can c-command its antecedent.

One might propose that condition (10) is incorrect but that c-command still figures into the conditions on coreference. In all of the examples we have considered so far either the antecedent has c-commanded the pronoun or vice-versa. One could propose something like the following:

> A (non-pronominal) NP must be interpreted as non-coreferential with any NP which neither c-commands nor is c-commanded by it.

If correct, this condition would provide evidence that the notion of c-command is relevant in determining the conditions on possible coreference. However, we can easily demonstrate the falsity of this condition. In the following examples, coreference between antecedent and pronominal is still possible, even though neither antecedent or pronominal c-command each other.

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(30) [[tohąyą hųku ki kichi thi ki] hehąyą]
how long his mother the with live COMP that long

[John tha+mazawakhą wą] mų.
John POS+gun a I-use

'As long as he lived with his mother, I used a gun of John's.'

(31) [šųkala eya wicha+chį ki hena] [Mary ekta] iyeyawichawaye.
puppy some 3OBJ+want the those Mary to I-send-them
'I sent the puppies that she wanted to Mary.'

(32) [hokšila eya wąyą+u pi ki hena] [Mary šųka wą waštelake
boys some see+come PL the those Mary dog a like

ki he] manu pi.
the that steal PL

'The boys who came to see her stole the dog that Mary likes.'

6.3.2 Pronominals in NP-domains

Before we consider examples of coreference with NP domains, let us briefly review the stucture of NPs. In chapter 2, we argued for the following expansion of NP:

(33) NP ⟶ N' DET

N' ⟶ (NP) N INFL

The presence of an overt possessor NP (or small pro) is sanctioned by the presence of the INFL element tha-, in the case of alienably possessed nouns, or -ku. Moreover, a possessor NP is required, even in the absence of a lexical argument. This is illustrated below.

(34) a. Ed tha+mila ki phe šni.
Ed POS+knife the sharp NEG
'Ed's knife isn't sharp.'

b. tha+mila ki phe šni.
POS+knife the sharp NEG
'His knife isn't sharp.'
*The knife isn't sharp.

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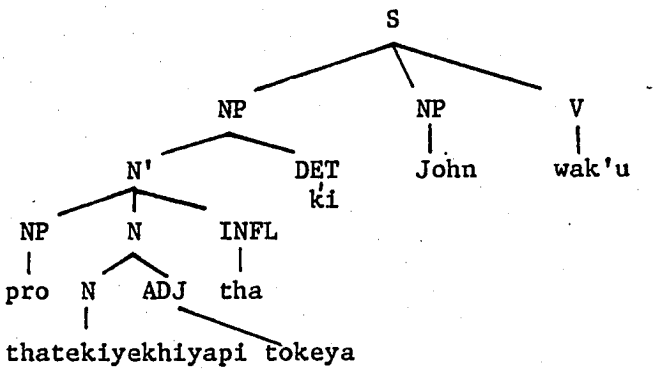
Consider the following grammatical sentence.

(35) tha+thatekiyekhiyapi tokeya ki John wa+k'u.
POS+wind-plane first the John 1NOM+give
'I gave his$_i$ first kite to John$_i$.'

This sentence is unambiguously assigned the following S-structure.

(36)



(36) is an instance of the general schema in (37).

(37) [[$_{NP}$ pro tha+N DET] ... NP ... V]

The possibility of coreference between small pro contained in an NP-domain, such as (36), and a following antecedent parallels the possibility of reference between small pro in a subordinate clause (cf. (15), (23) and (26)). We will now demonstrate that this parallelism between S' and NP domains is complete by examining the remaining configurations.

Consider, then, the following sentence.

(38) John tha+thatekiyekhiyapi tokeya ki wak'u.
John POS+kite first the I-give

(i) I gave John$_i$'s first kite to him$_i$.'

(ii) I gave John$_i$ his$_i$ first kite.'

As we have seen in the previous section, the absence of a rigid word order and the invisibility of small pro make it impossible to deter-

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mine where exactly small pro is in a sentence like (38). A priori, we cannot rule out any of the following three structures:

(39) a. [... NP ... [pro tha+N DET] ... V]

b. [... [NP tha+N DET] ... pro ... V]

c. [... pro ... [NP tha+N DET] ... V]

In (39a), the antecedent NP is a sister to the possessed NP containing small pro. In (39b), the possessed NP contains the antecedent NP and small pro is presumed to be a following sister NP. In (39c), the possessed NP also contains the antecedent but here small pro is presumed to precede the sister NP. Putting aside for the moment this latter possiblility, how can we distinguish structures (39a) and (39b)?

When we considered interclausal anaphora, we could always construct unambiguous cases where the antecedent was contained in the subordinate clause by surrounding the antecedent with clearly subordinate clause constituents. But in an NP domain, this is not possible because the possessor NP is always in the leftmost position given that it is the only complement constituent ever generated. Let us assume that the structures in (39a) and (39b) are possible since the phrase structure rules will allow either NP to expand as a pronoun. Do we have any independent evidence for the existence of the two structures?

(39a) can be assumed to exist, if the antecedent NP is free to scramble with other optional elements, such as in the following structure:

(40) [. . NP ... ADV ... [pro tha+N DET] ... V]

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On the other hand, if (40) is ungrammatical, we could conclude that (39b) is the only possible structure for (38). Interestingly enough, sentences with the structure of (40) are acceptable, as is illustrated in (41a) below, but much preferred are examples where the antecedent immediately precedes the possessed nominal, as in (41b).

(41) a. ?John hekta wetu tha+thatekiyekhiyapi ki wak'u.
John last spring POS+kite the I-give
'I gave John last spring his first kite.'

b. hekta wetu John tha+thatekiyekhiyapi ki wak'u.
last spring John POS+kite the I-give
Last spring I gave John's first kite to him.'

The grammaticality/acceptability of (41a) argues that structure (39a) is possible. But since we cannot attribute the preference of (41b) over (41a) to the word order properties of adverbial elements, we must conclude that the preference for adjacency provides some indirect evidence that (39b) is also possible. Further indirect evidence comes from the fact that sentences such as (38) are often translated by my consultants as (38i), even when the result in English (due to differing word orders) is strange. The English translations are attempted without a topicalization intonation. The example below has the translation provided to me by my consultant.

(42) John tha+mila wą phe šni ki he thehą yuha.
John POS+knife a sharp NEG the that long time have
"John's knife that isn't sharp he has had for a long time."

Assuming then that both (39a) and (40b) exist, we see that the parallelism between clauses and NPs is total. All four possible configurations for subordinate clauses are also possible for NPs. (37) corresponds to (13), (21c) and (25c); (39a) corresponds to (12),

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(21a) and (25a); (39b) corresponds to (19), (21d) and (25d); and finally, (39c) corresponds to (18), (21b) and (25b).

In addition to the structural correspondences, we note a complete correspondence in the grammaticality of coreference for these structures. In (35) we noted that the antecedent may follow an NP containing its coreferential small pro. This corresponds to the grammaticality of an antecedent following a complement clause containing small pro (15), a relative clause containing small pro (23), and an adverbial clause containing small pro (28). In (38) we noted two grammatical parsings. In the non-preferred reading the antecedent precedes the NP containing small pro. This corresponds to the grammaticality of an antecedent preceding a complement clause containing small pro (14), a relative clause containing small pro (22), and non-temporal adverbial clauses containing small pro. In the preferred reading the antecedent is contained within the NP and small pro either precedes or follows it. This corresponds to the grammaticality of an antecedent contained within a complement clause (20), a relative clause (24), and an adverbial clause (29), coreferring with small pro in the matrix clause. In these cases, we cannot determine whether small pro precedes or follows the antecedent-containing constituent.

Thus, we now have some evidence that the c-command condition also makes false predictions for anaphora in NP domains. The c-command condition (10) predicts that (38) is ungrammatical under one parsing (ie., 39b). But this is, in fact, the preferred parsing for (38).

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We will conclude this section with some additional data. The following examples are given to illustrate that coreference involving kinship possessor NPs has the same distribution of grammaticality as we have seen for alienably possessed NPs. (43a) is parallel to (35), and (43b) is parallel to (38).

(43) a. khǫšit+ku ki Molly na M.J. i+wicha+tą.
grandmother+POS the Molly and M.J. _+3OBJ+proud of
'Their grandmother is proud of Molly and M.J.'

b. Molly na M.J. khǫšit+ku ki i+wicha+tą.
Molly and M.J. grandmother+POS the _+3OBJ+proud of
'Molly and M.J.'s grandmother is proud of them.'

We now turn to the crucial set of examples, which demonstrates that there are some constraints on coreference between small pro and its antecedent, and which will allow us to rule out the cases where small pro precedes (and c-commands) its antecedent in principle.

6.3.3 Pronominals and Linear Order

In the preceding sections we have demonstrated the falsity of the c-command condition for pronominal coreference. But the data we have considered could be accounted for if we were to say that Lakhota simply has no restrictions on possible coreference. In other words, coreference is free. If this were the case, it would argue strongly for the existence of a unique structural condition for coreference, viz., (10): we could propose that non-configurational languages take the zero option for this condition. In other words, there will be parametric variation as to whether or not the structural condition is used but there is no other possible condition based on diffferent concepts or primitive notions.

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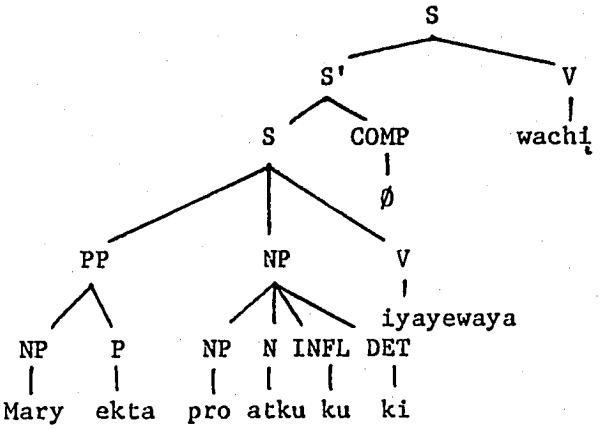
In fact, we will show that Lakhota does have some restrictions on possible coreference and furthermore, that these restrictions must be formulated in terms of linear order. Thus, we will have positive evidence that there is no unique universal structural condition on anaphora. The evidence comes from a consideration of postpositional phrases.

Consider the following sentence.

(44) Mary ekta atku+ku ki iyeyawaya wachi.
Mary to father+POS the I-send I-want
'I want to send to Mary her father.'

This sentence is structurally unambiguous and has the following S-structure (For simplicity, we have surpressed the empty category corresponding to the subject position):

(45)



In (45) no c-command relation holds between the antecedent and the null pronoun. Furthermore, the antecedent precedes the pronominal. Scrambling of the constituents in (45) does not affect the coreference possibilities:

(46) atku+ku ki Mary ekta iyayewaya wachi.
father+POS the Mary to I-send I-want
'I want to send her father to Mary.'

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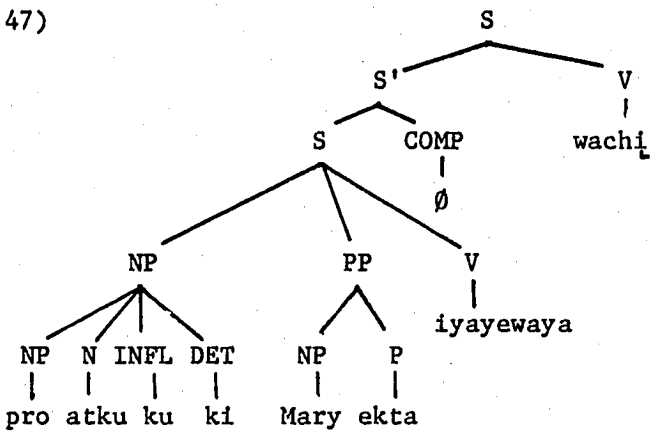
(46) has the structure:

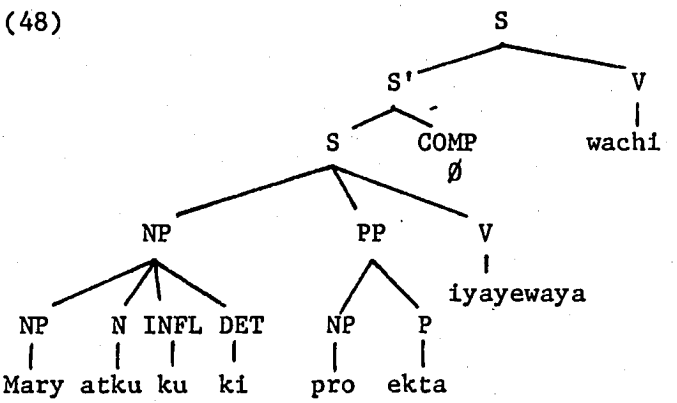
(47)



Again, no c-command relation holds between the antecedent and the null pronoun and coreference is possible.

Let us now consider these cases with the positions of the antecedent and the null pronoun reversed. First, consider the case with the word order of (46). It would have the following structure.

(48)



This sentence is grammatical and is given in (49).

(49) Mary atku+ku ki ekta iyayewaya wachi.
Mary father+POS the to I-send I-want
'I want to send Mary's father to her.'

Of course, (49) is ambiguous. It also has the meaning I want to send Mary to her father where the theme and the goal are reversed. But

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this latter reading is irrelevant to the present discussion. Crucial here is the fact that (49) has the meaning where Mary is the goal. This reading can only have (48) as its constituent structure. A similar example is given below.

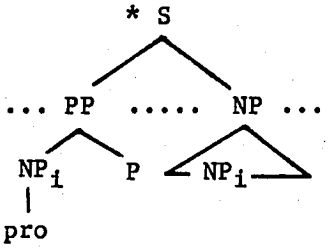
(50) Mary atku+ku ki ekta iye ki waštе.
Mary father+POS the to go COMP good
'It would be good if Mary's father went to her.'[3]

So far, we have presented the cases where coreference appears to be free. We now present the case where it is not.

(51) *(le wetu ki) ekta Mary atku+ku ki iyeyawaya wachiŋ.
this spring the to Mary father+POS the I-send I-want
(I want to send Mary's father to her (this spring).)

Here, the positions of the antecedent and the pronominal are the reverse of (44). This order of constituents does not allow coreference. It is an instance of the following generalized tree diagram:

(52)



The following set of examples illustrate the same distribution. (53a) is parallel to (44); (53b) to (46); (53c) to (49); and (53d) to (51).

(53) a. Mary ikiyela tha+šųka ki ȟpaye.
Mary near POS+dog the lie
'Her dog lay down near Mary.'

b. tha+šųka ki Mary ikiyela ȟpaye.
POS+dog the Mary near lie
'Her dog lay down near Mary.'

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c. Mary tha+šųka ki ikiyela Ḧpaye.
Mary POS+dog the near lie
(i) 'Mary's dog lay down near her.'
(ii) 'Mary lay down near her dog.'

d. *ikiyela Mary tha+šųka ki Ḧpaye.
near Mary POS+dog the lie
(Mary's dog lay down near her.)

The structural condition (10) fails to account for this ungrammaticality. In all these cases, neither the antecedent nor the prnominal c-commands the other and coreference should be possible. Crucially, the notion of c-command does not distinguish a possessor small pro from a postpositional small pro; both are dominated by a branching node (PP or NP) dominated by S and hence have parallel domains. And yet, the facts are quite clear: a preceding small pro can be coreferential with its following antecedent if small pro is in an NP domain (ie. the possessor complement argument). If small pro is the object of a postposition, it cannot. The c-command condition fails as it predicts that both cases are grammatical.

6.3.4 Pronominals and PPs

Before we return to the issue of how best to formulate the condition on coreference, let us digress a bit and point out that the PP evidence just presented differs strikingly from the English facts involving PPs, which by and large provide solid evidence for the c-command condition. But there is, prima facie, some counter-evidence to the c-command condition in English. What we wish to make clear in this section is the point that the English "counterevidence" is not of the same order as the Lakhota counterevidence.

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PPs in both languages present a messy set of data for anaphora in general. In Lakhota, we have seen that postpositions may be divided into two classes with respect to anaphors and obligatory reference. Recall that a subset of VP postpositions are transparent to government and a second subset of VP postpositions form true PPs and block government by the verb. The latter are parallel to the sentential PPs. We argued that only the NP objects of the former class are possible anaphors in Lakhota. This division will prove useful in our account of coreference as well, for it is precisely this class of transparent PPs which does not display the word order restrictions that we have noted in the previous section.

The English data is also complex and Reinhart (1981) goes a long way towards sorting out a wealth of apparent counterexamples to her c-command condition involving PPs. We will not summarize all her arguments and data but restrict our discussion to two sets of data.

The first set of data involves a class of PPs which are subcategorized by the verb (cf. Reinhart (1981) and Higginbotham (1980) for discussion). Even though the pronouns in these PPs do not c-command an antecedent NP, they cannot be coreferential with it. For example:

(54) *I talked to him$_i$ about Max$_i$.

Thus, in some sense we would like these NPs to "c-command" other VP constituents, just as "bare" NPs do.

As the reader can appreciate, this is not the situation that we have been describing in Lakhota. First, although many of the PPs that we have discussed are occur within VP in virtual structure, they

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do not contain a preposition with little or no inherent semantic content like the English example in (54) above. Reinhart suggests (and we concur) that this type of counterexample to the c-command condition is best dealt with by assuming that these prepositions are simple "Case-markers".

In Lakhota, oblique arguments of the kind illustrated in (54) are NPs whose thematic role and subcategorization are indicated by oblique prefixes on the verb; these NPs may be "bare" or marked by "transparent" postpositions. In chapter 5, we argued that pronominals in V-governed NP positions must be free in lexical structure. We expect that this generalization would extend to these oblique arguments, whether or not they are marked by a transparent postposition. Furthermore, we do not expect the linear word order in S-structure to alter this obligatory disjoint reference. These expectations are borne out, as much as one can hope for, given the extreme difficulty of constructing potential test cases. This difficulty is further aggravated by the fact that Case-marking postpositions are optional with lexical NPs and disappear with null pronouns.

(55) John el epazo.
John to point
'He$_i$ pointed to John$_j$.'
(?John$_j$ pointed to him$_i$.)

Because the postposition is unnecessary with small pro, we cannot conclusively determine the relative order of the ec pronominal and the disallowed antecedent. The fact that the relative order can never be determined suggests that we are correct in assuming that it is irrelevant for these cases.

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The second set of data involves a distinction between VP and sentential PPs. Reinhart is able to show that sentential and verb phrasal PPs in English show systematic differences in their coreference possibilities when preposed, differences that provide further evidence for the c-command condition. Consider some of her examples below.

(56) a. In John's picture of Mary, she looks sick.
b. *In John's picture of Mary, she found a scratch.

(57) a. According to Ben, he won the race.
b. *In front of Ben, he held a candle.

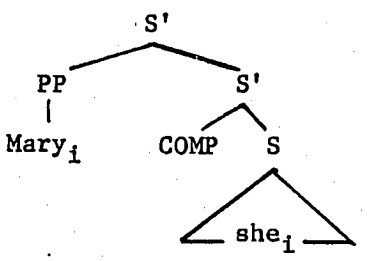
The (a) sentences contain sentential preposed PPs; the (b) sentences contain preposed verb phrasal PPs. There are certain semantic and syntactic properties that distinguish these two types of PPs. We will give just one such "test": Pseudocleft Formation. Note that only sentential PPs are allowed in the pseudocleft clause.

(58) a. What Mary did in John's picture of her, was look sick.
b. *What Mary did in John's picture of her, was find a scratch.

(59) a. What he did according to Ben, was win the race.
b. *What he did in front of Ben, was hold a candle.

Reinhart provides independent evidence that the sentential PPs, such as those in (56a, 57a), are preposed into a pre-comp position, while VP PPs, such as those in (56b, 57b), are preposed under COMP itself. These two structures are illustrated in (60).

(60) a. sentential PPs



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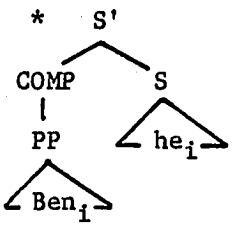
b. VP PPs



Given these structural differences, the coreference facts fall out--in the case of preposed sentential PPs, the subject pronouns do not c-command the NP and thus coreference is possible. In the case of preposed VP PPs, the subject pronouns do c-command the NP under COMP and coreference is disallowed.

Some kind of distinction between sentential and VP PPs must be made in Lakhota, too, presumably in virtual structure. This constrast will account for the difference of grammaticality in the following question/answer pairs.

(61) a. Q: chą thąka ki iyoȟlate John taktokhą he?
tree big the under John do-what Q
'What is John doing under the big tree?'

A: John yąka he.
John sit DUR
'John is sitting.'

(62) a. Q: oyųke ki oȟlate John taktokhą he?
bed the under John do-what Q
'What did John do under the bed?'

A: *wowapi ki iyeye.
book the find
(He found the book.)

(61-62) demonstrate that sentential PPs may co-occur with the verb taktokhą 'do what', while VP PPs cannot.

But it is not at all obvious that these PPs differ at S-structure in Lakhota. We have been assuming that there is no VP node in flat S-structure in Lakhota. If this is true, we do not expect

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there to be any D-structure or S-structure differences between sentential modifiers and VP modifiers, other than in virtual structure. Both types of modifiers would be immediately dominated by S. Both would be free to scramble with sister constituents. And, generally speaking, this is the case.

Examples are given below to illustrate the scrambling possibilities of both types of PPs. In (63) we give examples containing VP PPs; in (64) the examples contain sentential PPs. We assume that temporal PPs such as those in (64b) are sentential PPs.

(63) a. John miyoȟlate wowapi ki naȟme.
John under me book the hide

miyoȟlate John wowapi ki naȟme.
under me John book the hide

'John hid the book under me.'

b. oyų̨ke ki oȟlate John iyaye.
bed the under John go

John oyų̨ke ki oȟlate iyaye.
John bed the under go

'John went under the bed.'

(64) a. miye ų̨ John hi.
1EMP on account of John arrive

John miye ų̨ hi.
John 1EMP on account of arrive

'John arrived on my account.'

b. hokšila ki hų̨+ku ki iyohakab hi pi.
boys the mother+POS the after arrive PL

hų̨+ku ki iyohakab hokšila ki hi pi.
mother+POS the after boys the arrive PL

'The boys arrived after their mother.'

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In the previous section we have seen examples involving coreference between objects of VP PPs and the possessors of NPs. Let us consider now the coreference possibilities with sentential PPs.

In (64b.) coreference between the NPs is possible with either order. But these examples do not establish the crucial contrast between PPs and NPs. In both cases, small pro is contained in an NP. Let us then consider the sentential postposition ɥ which has the meaning of 'on account of, for the sake of' when its object is an animate NP. In the following pair of examples, we see that a small pro contained in a preceding PP is ungrammatical. These judgments confirm those that we have already seen in the previous section.

(65) a. Bill ɥ wąyą wa?i.
Bill on account of see I-go
'For Bill's sake, I went to see him.'

b. *ɥ Bill wąyą wa?i.
on account of Bill see I-go
'For his sake, I went to see Bill.'

The postposition ɥ also has a VP-modifier function as 'instrumental with' when the object of the postposition in inanimate. We give two examples below. I am not sure whether the PP in (66) is best thought of as an example of this instrumental use or as a sentential subject-oriented PP, but in either case, it provides a further illustration that ec pronominals can be coreferential to a following antecedent, provided they are in NP domains. The preferred reading is (66a); (66b) was judged as "not explanatory" without the emphatic pronoun.

(66) a. [[ista] ɥ] John wąyąke.
eyes with John see
'John saw it with his own eyes.'

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b. John [[iye ista] ų] wąyąke.
John 3EMP eyes with see
'John saw it with his own eyes.'

(67) [[tha+mila ki] ų] hokšila ki thalo ki phate.
POS+knife the with boy the meat the butcher
'With his knife, the boy butchered the meat.'

Again, a minimal contrast between objects of instrumentals and complement possessors of NP cannot be constructed, because of the anomaly of animate instrumentals. However, these facts amply demonstrate the pattern of coreference that we have seen earlier: viz., that if the ec pronominal of a PP precedes its antecedent, coreference is ungrammatical. On the other hand, if the ec pronominal of an NP precedes its antecedent, coreference is grammatical.

In the examples involving VP PPs that we have considered so far, we have avoided examples involving coreference between the objects of true PPs and subcategorized NPs. Coreference has been between the object of a (true) PP and the <u>possessor</u> of a second subcategorized NP, as schematized below.

(68) a. * [pro P] ... [NP tha+N DET] ...

b. [pro tha+N DET] ... [NP P] ...

c. [NP P] ... [pro tha+N DET] ...

d. [NP tha+N DET] ... [pro P] ...

But what about examples involving two subcategorized constituents parallel to those in (68)? They may be schematized as:

(69) a. [pro P] ... NP ...

b. pro ... [NP P] ...

c. [NP P] ... pro ...

d. NP ... [pro P] ...

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Note that we have already established that sentential PPs in sentences with the structures in (69) show the same pattern of grammaticality as that in (68). For example, (65a), which is grammatical, has the structure of (69c), and (*65b), which is ungrammatical, has the structure of (69a). Let us now consider examples of sentences with the S-structures of (69) where the PP is a VP PP. Here we must distinguish between two cases: one case is when the postposition is transparent and the second is when it is a true postposition forming a true PP. The first case was discussed earlier in this section (see the discussion of (55)). There, disjoint reference is obligatory and word order irrelevant. The second case involves such verbs as naḧme 'to hide', wąyąka 'to see', ogle 'to set', gnake 'to keep'.

In chapter 5, we argued that the PPs of verbs such as these were barriers to the rules which establish possible anaphors. We would expect here that obligatory disjoint reference would also fail to apply and that coreference between the object of the PP and any other argument, including the subject, is possible. Thus, these cases should provide us with evidence for the condition on coreference that we are investigating here.

The data for these sentences is variable, but the overall picture gives qualified support for this view. Consider the following sentences.

(70) John iyoḧlate wowapi ki naḧme.
John under book the hide
'John hid the book under him.'

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One speaker consistently rejects such clauses with a coreferential reading, in favour of ones such as the following, where the simple PP has been transformed into an adverbial relative clause.

(71) John yąke el iyoȟlate wowapi wą naȟme.
John sit at under book a hide
'John hid the book under where he was sitting.'

This strategy, of course, manages to avoid the issue. When an adverbial clause is created, the relationship between the antecedent and the ec pronominal becomes a straightforward case of interclausal coreference. With some other postpositions, the issue is avoided by the use of an adverb, rather than a PP. This speaker rejected (72b) in favour of (72a) when coreference is intended.

(72) a. John lazatakiya hąpa wą yušna.
John backwards shoe a drop
'John dropped the shoe backwards.'

b. John ilazata hąpa wą yušna.
John behind shoe a drop
'John dropped a shoe behind him.'

However, this same speaker accepted (73) below with coreference. It may be that the greater distance between the antecedent and the PP in the following example is responsible for the difference in judgments. The contrast in (73) provides further evidence that the word order in (69a) is ungrammatical.

(73) a. John mazakhą ki okǫzela kayela ki+gnake.
John gun the rule-ADV close to POS+keep
'As a rule, John keeps his gun close to him.'

b. *kayela John mazakhą ki okǫzela ki+gnake.
close to John gun the rule-ADV POS+keep
(Close to him, John as a rule keeps his gun.'

Other speakers have accepted (70) and (72b) with coreferential readings. For these speakers, changes in word order of these sentences

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so that the postpositional ec pronominal preceded the intended antecedent resulted in ungrammaticalit,, in keeping with our earlier observations.

(74) a. *ilazata John hąpa wą yušna.
behind John shoe a drop
(Behind him, John dropped a shoe.)

b. *iyoȟlate John wowapi wą naȟme.
under John book a hide
(Under him, John hid a book.)

This same contrast of grammaticality due to word order can be illustrated with non-subject antecedents.

(75) a. Mary tha+igmu ki ikiyela wąblake.
Mary POS+cat the near I-see
'I saw Mary's cat near her.'

b. tha+igmu ki Mary ikiyela wąblake.
POS+cat the Mary near I-see
'I saw her cat near Mary.'

c. Mary ikiyela tha+igmu ki wąblake.
Mary near POS+cat the I-see
'Near Mary I saw her cat.'

d. *ikiyela Mary tha+igmu ki wąblake.
near Mary POS+cat the I-see
(Near her I saw Mary's cat.)

The English data involving the PPs of this type have provided the strongest evidence in favour of a c-command condition on coreference. However, the Lakhota PP evidence presented here has precisely the opposite effect. The c-command condition fails because it wrongly predicts that coreference is possible.

6.4 A Condition for Pronominals in Lakhota

The correct generalization about pronominals in Lakhota must account for the following coreference configurations. In the schemas

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below, the grammaticality judgments concern readings with coreference between the antecedent NP and the null pronoun.

A. Interclausal Anaphora (including relative clauses and non-temporal adverbial clauses)

1. [... [$_S$ ... NP ...] ... pro ... V]

2. [... [$_S$ ... pro ...] ... NP ... V]

3. [... NP ... [$_S$ ... pro ...] ... V]

4. *[... pro ... [$_S$ ... NP ...] ... V]

B. Temporal Adverbial clause Anaphora

1. [[$_{PP}$ [$_S$ ... NP ...]] ... pro ... V]

2. [[$_{PP}$ [$_S$ ... pro ...]] ... NP ... V]

C. Inter-relative clausal Anaphora

1. [[$_{NP}$ ... NP ...] ... [$_{NP}$ ... pro ...] ... V]

2. [[$_{NP}$ ... pro ...] ... [$_{NP}$ ... NP ...] ... V]

D. NP-Domain Anaphora

1. [... [$_{NP}$ NP ...] ... pro ... V]

2. [... [$_{NP}$ pro ...] ... NP ... V]

3. [... NP ... [$_{NP}$ pro ...] ... V]

4. *[... pro ... [$_{NP}$ NP ...] ... V]

E. PP Domain Anaphora

1. [... [$_{PP}$ NP P] ... pro ... V]

2. *[... [$_{PP}$ pro P] ... NP ... V]

3. [... NP ... [$_{PP}$ pro P] ... V]

4. *[... pro ... [$_{PP}$ NP P] ... V]

The crucial contrast is between (D2) and (*E2). To account for it, we propose a maximally general condition which also claims

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that (A4), (D4) and (E4) are ungrammatical. We formulate this condition in terms of a constraint on the antecedent, parallel to Principle C of the Binding theory.[4]

(76) An antecedent NP cannot be bound by a pronominal which precedes it within its cyclic domain (ie., NP or S).

(76) correctly distinguishes between the cases where the pronominal is immediately dominated by NP (eg. (D2)) and where it is immediately dominated by PP (ie., (E2)). In the former case, possessor small pro's can precede the antecedent since the antecedent will always be outside the cyclic domain of the pronominal (NP). In the latter case the cyclic domain of the preceding pronominal is S and the antecedent will thus be inside the pronominal's domain. Hence, coreference will be ruled out by condition (76).

Lakhota provides direct evidence that the notion of "precedence" and "linear order" cannot be eliminated from Universal Grammar. It is instructive to return to Reinhart (1981) and re-consider her reasons for rejecting linear order. First, Reinhart claims that c-command is superior to the notion "precedes-and-commands" because the former defines a domain of "broader linguistic significance", ie., c-command domains are always constituents. On the other hand, the domains created by the notion "precedes-and-commands" are arbitrary. This underlies her claim that "the linear order of NPs plays no role in the sentence-level anaphora restrictions" (emphasis mine, jsw).

But the Lakhota facts show us that Reinhart has conflated two distinct parameters. Linear order is important in determining sentence-level anaphora restrictions, but it is not important for determining the domain of coreference. This fact cannot be over-

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emphasized. This result is of interest as it confirms the view that the non-hierarchical flat S-structure of non-configurational languages does have an effect on some subsystem of the grammar. If it is the case that possible coreference for definite NP anaphora is determined at actual S-structure for all languages, it is not surprising that the condition on possible coreference defined on the flat S-structure would not be hierarchical, but instead, stated in terms of precedence.

In the following section we provide further evidence for this division between the domain of coreference and the "preceeds" condition on coreference in Lakhota.

6.5 Extraposition to the Right and An Extension of the Anaphoric Domain

6.5.1 Extraposition to the Right

In this section, we discuss the coreference possibilities in a construction that we have not yet introduced. This construction involves the extraposition of a sentential clause to the right of the verb. The properties of this construction and a discussion of its S-structure is presented in chapter 7. Here, we assume that one instance of the general schema Move a relates the following two structures.

(77) $[_S \ldots [_{S'} \ldots] \ldots V]$

(78) $[[_S \ldots t_i \ldots V] [_{S_i} \ldots]]$

In the examples below, (79a) is a base generated structure. (79b) is related to it by Extraposition.

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(79) a. [Bill u kta cha] weksuye.
Bill come FUT COMP I-remember
'I remember that Bill is coming.'

b. weksuye [Bill u kta cha].
I-remember Bill come FUT COMP
'I remember that Bill is coming.'

Consider now this pair of structures with coreferential arguments in the complement clause and the matrix clause. The following configurations must be considered.

F. Extraposition Anaphoric Domains

1. $[_S \ldots NP_i \ldots [_{S'} \ldots pro_i \ldots] \ldots V]$

2. $[_S \ldots pro_i \ldots [_{S'} \ldots NP_i \ldots] \ldots V]$

3. $[_{S'} [_S \ldots NP_i \ldots t_j \ldots V] [_{S'} \ldots pro_i \ldots]]$

4. $[_{S'} [_S \ldots pro_i \ldots t_j \ldots V] [_{S'} \ldots NP^i \ldots]]$

(F1) and (F2) are straightforward cases of non-extraposed complement clauses and have already been discussed. Our condition (76) accounts for the pattern of grammaticality of coreference for coreference in these cases. But let us consider some concrete examples of the extraposed cases (F3) and (F4). (80) below contains examples of sentences with the S-structure given in (F3), where the pronominal is in the extraposed clause. (81) contains examples of sentences with the S-structure given in (F4) where the antecedent is in the extraposed clause. The extraposed clause has been bracketed and the antecedent underlined to facilitate the exposition. As we have done throughout this chapter, the grammaticality judgments are based on readings with intended coreference.

(80) a. John omakiyake [hihąni owoyužaža wą ophethų ki]
John tell-me this morning tub a buy COMP
'John told me that he bought a tub this morning.'

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b. Steven Charlotte iyųğe [takuwe wayawapi ki ų
Steven Charlotte ask why school the with

ikağį+ic'i+ye ki]
bother+REFL+make COMP

'Steven asked Charlotte why she was bothering herself with school.'

(81) a. *omakiyake [hihąni John owoyužaža wą ophethų ki]
tell-me this morning John tub a buy COMP
(He told me that John bought a tub this morning.)

b. *Steven iyųğe [takuwe Charlotte wayawapi ki ų
Steven ask why Charlotte school the with

ikağį+ic'i+ye ki]
bother+REFL+make COMP

(Steven asked her why Charlotte was bothering herself with school.)

As the examples demonstrate, coreference is impossible in the configuration in (F4). Small pro cannot precede its antecedent in this configuration.

6.5.2 An Extension of the Anaphoric Domain

One possible account of these facts would be to say that coreference was determined before extraposition took place. So, if we made the assumption that sentences with the structure of (F4) were derived from D-structure sources with the structure of (F2), we could say that their ungrammaticality was due to the ungrammaticality of their source. But such an account must be rejected.

All the previous examples not involving extraposition have had S-structures that have been the same as their D-structures. The word order of constituents in these sentences has a crucial effect on the grammaticality of intended coreference. Therefore, it is crucial for

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the account sketched above that these earlier examples, which differ only in constituent word order, are not related transformationally. (Otherwise, good S-structures could have bad D-structures and bad D-structures could have good S-structures and the account of extraposed clauses cannot be motivated.) This is not a problem for we have been assuming that different pre-verbal word orders arise from an unordered base. But it is precisely this assumption of the nature of the base which undermines the account suggested above.

We can challenge the initial assumption of such an account; namely, that sentences with the S-structure of (F4) will always have ungrammatical sources. What prevents (F4) from having the following grammatical structure as its source?

F5. [[$_{S'}$ ... NP_i ...] ... pro_i ... V]

(F5) differs from (*F2) only in the position of small pro relative to the antecedent. Assuming that both (F5) and (*F2) are possible D-structures for (F4), there would be no principled way of ensuring that coreference in (F4) was always ungrammatical. The analysis given above, then, fails.

What we need in order to account for the data is to extend the notion of cyclic domain to include the extraposed clause. If we can do this, then the ungrammaticality of sentences with the structure of (F4) will follow directly from our principle (76), repeated here.

(76) An antecedent NP must be free of a pronominal which precedes it within its cyclic domain (ie., NP or S).

In chapter 7, we consider two possibilities for the S-structure produced by Extraposition, depending on the "landing site" of the extraposed clause. The extraposed S is either moves successive

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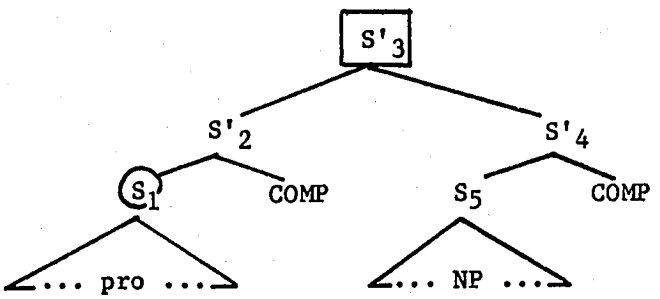
cyclically into COMP or is adjoined to the matrix clause. If the former structure is adopted, a relatively trivial extension of the domain to S' (or simply stating that NP and S' are the cyclic domains) will suffice to account for the facts. If the latter view is correct, additional assumptions must be made when we extend the domain. Consider the structure of (F4) presented in a tree diagram in (82) below. Given our present notion of cyclic domain (ie., first S or NP node dominating the relevant NP), the circled S_1 is the cyclic domain of small pro. But we need the squared S_3 to be the cyclic domain of small pro.

(82)



Note that S'_3 is simply the node created by the (Chomsky-) adjunction of the extraposed clause to our present cyclic domain. If we extend our definition of cyclic node to be not just the minimal category containing the pronominal, but also anything else Chomsky-adjoined to it, we will have achieved our goal. The extended definition is as follows.

(83) A is the cyclic domain of B if and only if
(i) A is the minimal category NP or S containing B
(ii) suppose that $C_1,\ldots C_n$ is the maximal sequence such that
(a) $C_n=A$
(b) $C_i=A^j$
(c) C_i immediately dominates C_{i+1}

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then if D dominates A, then either (I) D dominates B, or (II) $D=C_1$ and D_1 is the cyclic domain of B

Extending the definition of cyclic domain to include the extraposed clause encounters some technical problems. Somehow we must ensure that the definition in (83) applies just to the extraposed clauses and not to ordinary complement clauses. We have been assuming that complement clauses are immediately dominated by their matrix S at S-structure. If this is correct, (83) would extend the cyclic domain of pronominals in complement clauses to the matrix clause in the case of (A2), falsely predicting that coreference is ungrammatical. There are several possible ways to avoid this problem. We could assume that argument complements are dominated by NP, which is "left behind" by extraposition. The NP dominating complement clauses would block (83) from applying. Alternatively, we could claim that S' is the cyclic node and that S and S' are not of the same category type (eg. INFL vs. COMP). In this way, the extended domain would go from S'^2 to S'^3 in (82), but not from complement clause to matrix clause. In either case, we can ensure that complement clauses in argument positions do not fall under (83).

6.6 Conclusion

In this chapter, we have investigated the conditions on possible coreference for definite NPs. It was shown that the condition must be stated on the flat, actual S-structure--a result that is perhaps surprising, given that binding theory for anaphors and pronominals is defined on virtual structures. This result provides further evidence for the non-unitary nature of the binding principles and

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suggests that the coreference conditions be separated from binding theory.[5] The fact that the Lakhota condition is stated on actual structures, as it must be for configurational languages like English, suggests that there is no parametric choice between virtual structures and actual structures for the condition on coreference.

The c-command condition was shown to be false. However, a condition on coindexation between an NP and a pronominal was shown to hold in Lakhota, and was defined in terms of linear order. In formulating the condition, two distinct parameters emerged. The cyclic nodes, NP and S, defined the domains within which the condition held. However, the condition itself was defined in terms of precedence. It seems appropriate to suggest that the condition on coreference be subject to parametric variation determined by the parametric choice for phrase structure rules. Lakhota, a W* language, has a non-hierarchical condition. Configurational languages, such as English, have a hierarchical condition.

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FOOTNOTES TO CHAPTER 6

1. It is clear that with an X-bar generalization that unites NP and S' this rule can be collapsed with the other expansions of PP).

2. In claiming that adverbial clauses provide further evidence against a c-command condtion, we are assuming that the adverbial clauses are immediately dominated by the matrix S in flat S-structure. Sandra Chung (p.c.) pointed out to me an alternative analysis whereby the adverbials in (29) might be in some preposed topic position under S'' and, thus, excape the c-command condition. We reject this possibility for the following reasons. First, all sister maximal constituents (PPs or NPs), whether clausal or simple, can scramble. So we can account for adverbial clauses in initial position without recourse to a "topic" position. Second, there are no intonational pauses associated with the words orders arising from scrambling. The sentences in (29) do not a marked intonational pause. On the other hand, left-"dislocated" NPs may be topics in Lakhota, but these are always set off by a "comma" intonation.

3. Both (49) and (50) have alternatives where the lexical NP Mary is repeated as the object of the postposition.

(i) Mary atku+ku ki Mary ekta iyayewaya wachi.
Mary father+POS the Mary to I-send I-want
'I want to send Mary's father to Mary.'

(ii) Mary atku+ku ki Mary ekta iye ki waŝte.
Mary father+POS the Mary to go COMP good
'It would be good if Mary's father went to Mary.'

(i) and (ii) make the intended coreference more explicit, contrary to the view embodied in the DR rule which claims that identical lexical NPs must be disjoint in reference.

4. Since this condition truly restricts coindexing of an NP to a pronominal (see footnote 3 above), it is possible to reformulate it so that the pronominal is prevented from being coindexed to an antecedent which is not in the same governing category in certain contexts, ie.,

(i) a pronominal cannot procede its antecedent within its cyclic domain.

That the reformulation (i) is possible serves to point out the non-unitary nature of the various conditions for binding theory. Anaphors and pronominals, which enter into obligatory coreference and disjoint reference, have conditions defined on virtual structures. Optional coreference between pronominals and their antecedents has conditions defined on flat actual structures.

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5. Chung (1983b) also argues for a similar distinction in Chamorro based on a contrast between disjoint reference defined on virtual structures and coreference defined on actual structures. She views her results as evidence for the notion of government defined on these two representations. Our position is somewhat different. While Lakhota provides evidence for the need of the two types of representations, it does not provide evidence for the notion of government at actual structure. On the contrary, there is strong evidence that structural conditions on coreference make false predictions for Lakhota.

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QUESTIONS IN LAKHOTA:

LF MOVEMENT, SUBJACENCY AND THE ECP

7.0 Introduction

In this chapter we will investigate the properties of questions in Lakhota. We will establish an "interpretative" rule for questions which displays unbounded dependencies in spite of the *in situ* position of constituent question words in S-structure. We assume that this rule is an instantiation of Move a, more specifically, of Wh movement, in LF. We also assume that it leaves a trace, which should, by hypothesis, be subject to the ECP. We will show in this chapter that this seems indeed to be the case, even if the ECP effects in Lakhota are different from those that obtain in English, in that we don't find subject/object asymmetries. This will lead us to a study of the notion of proper government and its instantiation in Lakhota grammar.

Another major topic investigated in this chapter is whether Subjacency constrains LF Wh movement in Lakhota. Two well-known "Subjacency effects" will be explored in Lakhota: the Complex NP Constraint (CNPC) of Ross (1967) and the Wh-island constraint. Our conclusion will be that Subjacency does not constrain Lakhota LF Wh movement. This result will then be used to argue for a particular conception of the nature of Subjacency in Universal Grammar, namely that it is a constraint on overt movement in the syntax, but not on covert movement at LF.

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Lakhota Wh movement in LF is not, however, totally unconstrained. We will show that LF extraction is impossible out of definite referring relative clauses. We will argue that it is implausible to account for this impossibility of extraction on the basis of some S-structure property. We will conclude that it is best viewed as an LF constraint.

The interaction of the syntactic rule of Rightward Extraposition with LF Wh movement will be discussed. It will be seen that Extraposition has the effect of eliminating one of the readings available in the non-extraposed structure. Two alternative accounts of this interaction will be explored.

In section 1, we describe some basic facts about Lakhota questions. We introduce and argue for an LF rule of wh-movement. In section 2 we investigate the Subjacency effects on our LF rule. In section 3 we show that LF extraction is restricted by a "definiteness constraint". In section 4, we take up the problem of the ECP in Lakhota. In section 5 we analyze the interaction of Rightward Extraposition with the LF rule of Wh-movement.

7.1 An LF Movement Rule for Lakhota Questions

7.1.1 Simple Questions

Lakhota has lexical pronouns which can be interpreted either as constituent question words or as indefinite pronouns. Direct questions in Lakhota (whether yes/no questions or constituent questions) are marked by a sentence-final enclitic he. When declarative sentences containing indefinite pronouns are questioned, i.e., marked

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by the enclitic he, they are ambiguous between a direct yes/no question containing the indefinite pronoun and a wh-question. This is illustrated below:

(1) a. Tuwa u kte.
someone come FUT
'Someone will come.'

b. Tuwa u kta he?
someone/who come FUT Q
(i) 'Will someone come?'
(ii) 'Who will come?'

(2) a. Charlotte taku kağe.
Charlotte something make
'Charlotte made something.'

b. Charlotte taku kağa he?
Charlotte something/what make Q
(i) 'Did Charlotte make something?'
(ii) 'What did Charlotte make?'

(3) a. Tuktel wowapi ki ewagnake.
somewhere book the I-put
'I put the book somewhere.'

b. tuktel wowapi ki ewagnaka he?
somewhere/where book the I-put Q
(i) 'Did I put the book somewhere?'
(ii) 'Where did I put the book?'

If no lexical pronoun of this class is present in a direct question marked by he, only the yes/no reading is available:

(4) John nape el tuŋmuha eya wichayusli kta he?
John hand in bug some them-squeeze FUT Q
'Will John squeeze some bugs in his hand?'

Any account of questions in Lakhota must have a way to differentiate the two possible readings of examples (1b)-(3b).

As in SOV languages, the COMP node in Lakhota is generated to the right of S. We assume here that he is a realization of the

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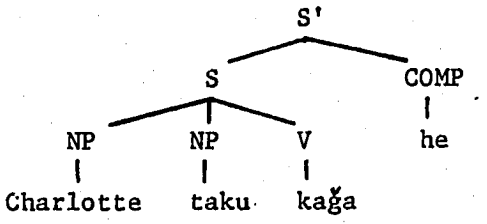
abstract +Q morpheme in the COMP position of matrix clauses. A relevant structure is exemplified in (5):

(5)



(5) is the S-structure of (2b)--in fact, of both readings of (2b). As one can see, Lakhota is a language where wh-question does not involve syntactic (overt) movement into COMP.[1] This is most clearly illustrated by example (2b), where the wh-word taku 'what' is internal to the clause. We can also show that the wh words in (1b) and (3b) are in situ (i.e., dominated by S) with the addition of an adverbial (6), and the possibility of scrambling (7):

(6) hehąni tuwa u kta he?
tonight someone/who come FUT Q
(i) 'Is someone coming tonight?'
(ii) 'Who is coming tonight?'

(7) wowapi ki tuktel ewagnaka he?
book the somewhere/where I-put Q
(i) 'Did I put those books somewhere?'
(ii) 'Where did I put those books?'

These facts are consistent with the hypothesis formulated by Bresnan (1972) as the COMP-substitution principle, which states that languages with COMP nodes generated to the right of S will not have syntactic movement into COMP.

It seems clear to us, however, that in the wh reading of (1b)-(3b), the indefinite pronoun has the status of a wh-word, and moves to COMP position in Logical Form so that it gains scope over the clause in which it is generated, binding a variable in its argument position.

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We will thus assume that the lexical pronouns discussed tuwa 'someone, who', taku 'something, what', toha 'sometime, when', etc. may be generated with a [+wh] feature. In this case, they will obligatorily move to COMP position at LF, as proposed, in case there is a c-commanding COMP specified for +Q. If such a +Q COMP does not exist, the structure will be filtered out as ungrammatical. The crucial assumption here is that at LF every wh word must be in COMP. If the lexical pronoun is generated without a [+wh] feature, then we will have a simple declarative (1a) or a yes/no question, depending on the existence or non-existence of a +Q COMP in the sentential structure. In this way, we differentiate the three possible readings of sentences in which a pronoun of the class under discussion may occur.

Let us take (2b) again as an example. Its S-structure under both readings is given in (5). The LF structure of the yes/no question is the same as its S-structure. However, in the wh question reading, wh-movement will apply at LF, deriving the following LF representation[2]:

(8) [[Charlotte t_i kağa]$_S$ [taku$_i$]]$_S$'

Simple clauses may contain more than one wh-pronoun. In these cases, LF wh movement may apply more than once in a single clause. (9) below has three readings (although the multiple wh-reading in (i) is the least preferred).

(9) tuwa taku manu he?
who/someone what/something steal Q
(i) 'Who stole what?'
(ii) 'What did someone steal?'
(iii) 'Who stole something?'

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In LF, (9), under reading (i) will have the following representation, after the double application of wh movement:

(10) [[t_i t_j manu]$_S$ [tuwa$_i$ taku$_j$]]$_S$,

To sum up, in Lakhota wh movement applies at the LF level. Since wh-words are in situ in S-structure, there is no reason to consider this rule as a syntactic one. The different readings of the sentences under discussion must however be distinguished, and related to different LF representations. This is the function of LF wh movement.

7.1.2 Questions and Negation

In this section, we discuss the interaction of constituent questions and negation in Lakhota. It will be shown how the postulation of a wh movement rule at LF accounts for scope facts arising from this interaction.

In Lakhota, indefinite pronouns under the scope of negation take a negative suffix -ni. The negative in INFL must c-command the indefinite pronoun in S-structure (and LF). In addition the negative in INFL and the negative indefinite pronoun must be in the same clause, with the exception of the well-known phenomenon of "neg-raising" predicates. Negative indefinite pronouns are ungrammatical in non-negated sentences or clauses. Examples of this are given in the(b) and (c) sentences below. The (c) examples illustrate the ungrammaticality that arises when the negation is not in the same clause as the negative indefinite pronoun[3].

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(11) a. tuweni u pi šni.
no-one come PL NEG
'Nobody came.'

b. *tuweni u pi.
no-one come PL
(No one came.)

c. *tuweni u pi ki imųğe šni.
no-one come PL COMP 1-ask NEG
(I didn't ask whether anyone came.)

(12) a. Charlotte takuni kağe šni.
Charlotte nothing make NEG
'Charlotte didn't make anything.'

b. *Charlotte takuni kağe.
Charlotte nothing make
(Charlotte made nothing.)

c. *Charlotte takuni kağe ki keye šni.
Charlotte nothing make COMP say NEG
(He didn't say that Charlotte made anything.)

(13) a. Tohąni takuni hechel wąblake šni.
never nothing like-that I-see NEG
'I've never seen anything like that.'

b. *Tohąni takuni hechel wąblake.
never nothing like-that I-see
(I've never seen anything like that.)

c. *Tohąni takuni hechel wąblake ki weksuye šni.
never nothing like-that I-saw COMP I-remember NEG
(I don't remember that I ever saw anything like it.)

When sentences containing negative indefinite pronouns are questioned, there is only a yes/no reading; negative indefinite pronouns do not function as "negative interrogative pronouns". This is illustrated below, where negation has wide scope.

(14) Tuweni u pi šni he?
no-one come PL NEG Q
(i) 'Didn't anyone come?'
(ii) *Who didn't come?

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(15) Charlotte takuni kaǧe šni he?
Charlotte nothing make NEG Q
(i) 'Didn't Charlotte make anything?'
(ii) *What didn't Charlotte make?

Of course, wh question readings in general are not incompatible with negation. We can have negative constituent questions where, crucially, the wh word has wide scope.

(16) tuwa u pi šni he?
who come PL NEG Q
'Who didn't come?'

(17) Charlotte taku kaǧe šni he?
Charlotte what make NEG Q
'What didn't Charlotte make?'

The questions to be answered are: (i) why is the yes/no reading the only one available when we have the negative indefinite pronoun? (ii) Why doesn't the interrogative pronoun in (16) and (17) take the negative suffix, since it co-occurs in the same clause with negation?

To answer the latter question first, let us assume wh movement at LF. The LF structure of the wh readings of the ungrammatical (14ii) and the grammatical (16) are given below, in (18) and (19) respectively.

(18) $*_{S'}[\ _{S}[\ [t_i$ u pi] šni$]_S$ [TUWENI$_i$]]$_{S'}$

(19) $_{S'}[\ _{S}[\ [t_i$ u pi] šni$]_S$ [TUWA$_i$]]$_{S'}$

In (18), we attempt to raise the "wh" word to COMP, in order to give the sentence a wh reading. But in doing so, the negative pronoun is no longer (minimally) c-commanded by negation. (We assume that negatives are Chomsky-adjoined to S in LF.) As we pointed out in the b and c examples of (11)-(13), this is not possible. (18) is thus ruled out by this independently motivated constraint. Given that negative indefinite pronouns must be under the scope of negation, it follows

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that they can never be raised to COMP. On the other hand, indefinite pronouns are, if [+wh], raised to COMP in our analysis. Hence, they are perfectly grammatical in negated questions.

We now also understand why a yes/no question reading is possible with an indefinite negative pronoun. In this case, there is no movement to COMP at LF and thus, negation will always c-command the pronoun. This reading is thus predicted to be possible.

This interaction between constituent questions and negation is an argument for the true ambiguity of indefinite pronouns, as opposed to the view that they are simply vague and that discourse factors determines the meaning. The lack of negative constituent questions is unexpected in this view. On the other hand, the view of questions we are proposing here can account for this distribution of readings, as we have detailed above.

7.1.3. Questions in Complement Clauses

Let us now briefly consider how LF wh movement applies in indirect question complements. Recall from our discussion of complement clauses in chapter 4 that indirect question complements require the complementizers ki or k'u. However, these complementizers are not the realization of +Q: they generally mark non-asserted complements and, in fact, they also mark -Q complements. In Lakhota, he marks direct questions, appearing only in matrix clauses. Hence, we assume that when +Q is present in COMP it is realized in matrix clauses as he and in complement clauses as ∅.

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In Lakhota, there are verbs that select only for indirect question complements, for example, iyuǧe 'to ask', pasise 'to inquire', etc. When a sentence containing a complement of such a verb has no indefinite pronouns, it is unambiguous: it can only have the reading of an embedded yes/no question.

(20) John kuš-aye ki imuǧe.
John sick-become COMP I-ask
'I asked if John became sick.'

Many verbs select for both indirect question complements (+Q) and declarative (-Q) complements: when the complement of such a verb has no indefinite pronouns, it is ambiguous between a declarative reading and an embedded yes/no question reading.

(21) John wowapi ki ophethu ki Bill slolye.
John book the buy COMP Bill know
(i) 'Bill knows that John bought the book.'
(ii) 'Bill knows whether John bought the book.'

When sentences containing complements to such verbs have indefinite pronouns they will be ambiguous in the way that direct questions containing them are, viz., the verbs which select only for an indirect question will display a yes/no embedded reading and a constituent question reading, while verbs that select for either an embedded +Q or a declarative will display a declarative reading, a yes/no embedded question reading, and a constituent question reading. This is illustrated in (22) and (23) below.

(22) toha John kuš aye k'u imuǧe.
sometime/when John sick become COMP I-ask
(i) 'I asked if John had become sick sometime.'
(ii) 'I asked when John had become sick.'

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(23) John taku ophethų ki Bill slolye.
John something/what buy COMP Bill know
(i) 'Bill knows that John bought something.'
(ii) 'Bill knows what John bought.'
(iii) 'Bill knows whether John bought something.'

Consider first (22). The complement of iyųğe is necessarily +Q. If there is no LF wh movement, the indirect yes/no reading (given in translation (i)) arises. If wh movement applies, the indirect wh question reading arises. (23) contains the verb slolye, which may be either ±Q. If COMP expands to -Q, the declarative reading given in (i) arises.[4] If COMP expands with +Q, then we have two possibilities. Either wh movement applies, giving us the indirect wh question complement reading (ii), or it doesn't, giving us the indirect yes/no complement reading (iii). As an example, we give the LF structure of (23ii):

(24) [[[John t_i ophethų]$_S$ [taku$_i$]]$_S$, Bill slolye]$_S$

7.2 Subjacency in Lakhota

7.2.1 Unbounded Dependencies On Wh Movement in Lakhota

It is important to realize that LF wh movement in Lakhota operates over an essential variable in the sense of Ross (1967), or, to put it in more neutral terms, displays unbounded dependencies. In (25), tuwa 'who', has scope only over the clause that immediately contains it. But in (26) and (27) we see that this is not the only possibility. tuwa in these examples has scope over the entire sentence, including clauses that do not immediately contain it.

(25) hel tuwa nažį hą he?
there who stand DUR Q
'Who is standing there?'

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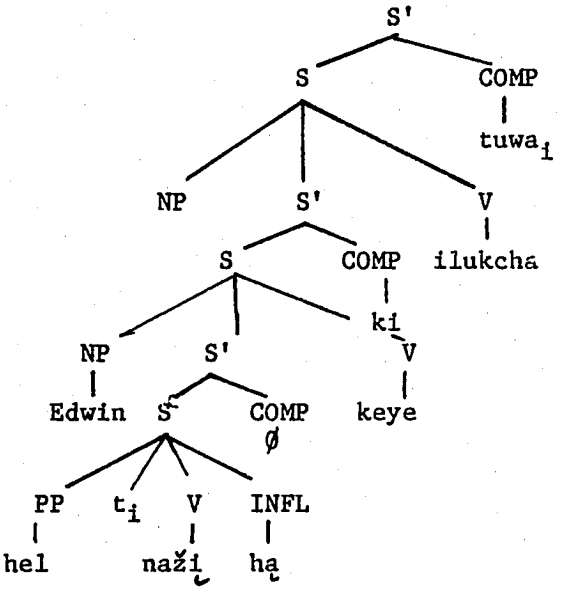
(26) Edwin [hel tuwa naži he]] keya he?
Edwin there who stand DUR say Q
'Who did Edwin say was standing there?'

(27) [[Edwin [[hel tuwa naži he]] keye] ki] ilukcha he?
Edwin there who stand DUR say COMP you-think Q
'Who do you think that Edwin said was standing there?'

In each case, wh movement raises tuwa to the matrix COMP, where it has scope over the entire sentence. (27), for example, has the following representation after LF wh movement:[5]

(28)



The fact that wh scope is not indicated at S structure gives rise to yet another set of surface ambiguities. Any verb with the appropriate semantic selectional properties may allow COMP to expand with +Q. In these cases wh movement may raise the pronoun to an intermediate COMP. In the following example, where we have okiyaka 'to tell to someone' as the main verb, allowing for +Q, there are two wh readings, one in which the wh word is in the matrix COMP, with scope over the entire sentence; and a second one, in which the wh word is in the COMP selected by okiyaka.

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(29) [hel tuwa nažį hą] ki] ilukcha] ki] Edwin oyakiyaka he?
there who stand DUR COMP you-think COMP Edwin you-tell Q
(i) 'Who did you tell Edwin that you thought was standing there?'
(ii) 'Did you tell Edwin who you thought was standing there?

7.2.2 Violations of Subjacency in Lakhota

Having shown that Lakhota has unbounded dependencies in its LF wh movement rule, we will now proceed to argue that Subjacency does not restrict its application.

Subjacency, as a principle of Universal Grammar, was originally proposed by Chomsky (1973) as a general constraint on movement rules aimed at unifying several "island constraints" discussed in the literature, mainly in the pioneering dissertation of Ross (Ross 1967). It is stated below:

(30) $\ldots X \ldots [_b \ldots [_a \ldots Y \ldots] \ldots] \ldots X \ldots$

No rule can move an element Y to X, where a and b are bounding nodes.

The set of bounding nodes is taken to include at least S, S', and NP, possibly subject to parametric variation (see Rizzi 1982, chapter 2).

The question of whether Subjacency is at work in the grammar of Lakhota is interesting, since it bears on the issue, often raised in the literature, of the proper "place" of its application. Does Subjacency constrain all types of movement (syntactic and LF movement)? Or is it restricted to the Syntax? For relevant discussion, see May (1977) and Huang (1982), who, on the basis of Chinese, reaches conclusions similar to the ones that we will propose here.

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Our analysis is based on the interaction of two "islands" with Wh movement in Lakhota: the Complex NP Constraint of Ross (1967) and the Wh-island constraint of Chomsky (1964). These will be taken up in turn.

7.2.2.1 The Complex NP Constraint

The CNPC is stated by Ross (1967, 70) as follows:

(31) No element contained in a sentence dominated by an NP with a lexical head noun may be moved out of that NP by a transformation.

The CNPC is correctly captured by the principle of Subjacency in that an element in the domain specified by the CNPC would have to cross two bounding nodes (NP and S, at least) in order to move out of that domain. The CNPC, as stated by Ross, covers two cases: extraction out of a relative clause and extraction out of a sentential complement of a noun. Below, we present two relevant examples from English.

(32) a. *Which bank did Mary encourage the man who robbed?

b. *Which bank did Mary believe the claim that the man robbed?

In Lakhota there are no sentential complements to nouns, so we will restrict our discussion to extraction out of relative clauses. Before we consider the interaction of questions and relative clauses, we will briefly describe the structure of relative clauses in Lakhota.

Relative clauses in Lakhota are typologically distinct from relative clauses in English in that they have internal heads. In more familar languages, the head is external to the modifying relative clause. The basic structure is given below. An appositive demonstrative pronoun in most cases follows the structure given in (33).

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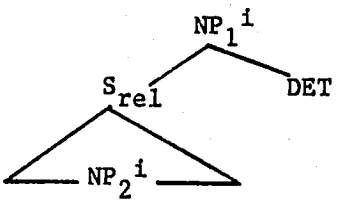
(33)



The internal NP_2 specifies the semantic class of the head noun and is contained within the modifying relative clause. The definiteness of the entire NP is determined by the determiner immediately dominated by the "mother" NP, NP^1. We ensure that the "mother" NP matches in syntactic features of person and number with the internal head (minimally needed for agreement) by coindexation of the internal head and the "mother" NP. The S_{rel} expands by the usual W* expansion of S. The only restriction on the internal head is that it must be indefinite; otherwise, any NP in the S_{rel} may be the head. For further discussion of relative clauses, see Williamson (in prep.).

Consider then the following sentences. The (a) examples contain indefinite relative clauses.[6] In the (b) sentences, there is an NP contained within the relative clause which is a wh word, and the sentence is marked with he, the +Q morpheme. The result is a well-formed constituent direct question. (For expository purposes, we have bracketed the relative clauses).

(34) a. [NP[S Vine Deloria wowapi wą owa] cha] lawa he.
Vine Deloria book a write FOC you-read DUR
'You are reading a book that Vine Deloria wrote.'

b. [NP[S tuwa wowapi wą owa] cha] lawa hą he?
who book a write FOC you-read DUR Q
'Who are you reading a book that (he) wrote?'

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(35) a. [$_{NP}$[$_{S}$ wakąyeza eya chųkaske wą kağa pi] cha]
children some-S fence a-S make PL FOC

hena wąwichayą wa?i.
those see-them I-go

'I went to see some children who made a fence.'

b. [$_{NP}$[$_{S}$ wakąyeza eya taku kağa pi] cha] hena
children some-S what make PL FOC those

wąwichayą wa?i he?
see-them I-go Q

'What did you go see some children who made (it)?'

In order to derive the LF representation of the b sentences above, the LF wh movement must move a wh word out of a complex NP, moving it at least across the two nodes NP, S. This is exactly the sort of movement that is ruled out by Subjacency.

7.2.2.2 The Wh-Island Constraint

Chomsky (1964) observed that extraction out of an embedded indirect question in English results in ungrammaticality. For that reason, this configuration is called a "Wh-island". An example is given below:

(36) *Whom does John wonder why Bill talked to?

How does Subjacency capture this island? Given the assumption that a COMP node in English cannot be doubly filled at S-structure[6], (36) is ruled out since whom would have to cross at least two S nodes and one S' node before reaching its landing site, which is the COMP node of the matrix clause. Successive cyclicity is implicit in the account.

What would violations of the wh-island constraint look like in Lakhota? In such cases, we should have an embedded question contain-

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ing two constituent question pronouns. One would have as its scope the embedded clause, creating a wh-island, and the other one would have as its scope a higher clause. Readings which reflect these scope relations are grammatical in Lakhota. Consider the following examples:

(37) tuwa takuwe cheya hą ki Marie inųǧa he?
who why cry DUR COMP Marie you-ask Q
'Who did you ask Mary why (he) was crying?'

(38) owįža tuktena tona iyopheya pi ki slolyaya he?
quilt which how much buy PL COMP you-know Q
'Which quilts do you know how much they sell (them) for?'

(39) wowapi tuktena tuktel opheyathų ki nihų oyakiyaka he?
book which where you-buy COMP your-mother you-tell Q
'Which books did you tell your mother where you bought (them)?'

We give below the LF representation of (37) after Wh movement:[7]

(40) [[[[t_i t_j cheya hą]$_S$ takuwe$_j$]$_S$' Marie inųǧa]$_S$ tuwa$_i$]$_S$'

We conclude from these examples that the "wh island constraint", just like the CNPC, does not apply to LF wh movement in Lakhota.

Italian also allows violations of the wh island constraint; in this language, sentences parallel to (37)-(39) are grammatical. Rizzi (1982, chapter 2) accounts for this by claiming that S is not a cyclic node in Italian. Thus, in the corresponding examples of Italian a wh phrase crosses a single node S' and no violation of Subjacency occurs. It could be argued that in Lakhota as well, S is not a bounding node and that, consequently, violations of the wh island constraint do not really tell us anything about the more important issue of whether Subjacency constrains LF movement in Lakhota. As a reinforcement of this line of argument, it could be pointed out that, since the structure of relative clauses in Lakhota does not

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involve an S' node (cf. the structure in (33)), no real violation of Subjacency would be at work in the cases involving the CNPC either. However, such a reasoning is unjustified in the light of examples like (41), in which extraction involves crossing at least two S' nodes, or (42), in which crossing of one NP and one S' node is involved:

(41) [[[[[[wicho?iye tuktena iya ųmaspe] ki]$_{S'}$ slolya pi
languages which speak I-learn COMP know PL

chį pi] ki]$_{S'}$ ilukcha] he]?
want PL COMP you-think Q

'Which languages do you think that they want to know whether or not I learned to speak (them)?'

(42) [[[[[[wichota wowapi wą yawa pi] cha]$_{NP}$ ob
many-people paper a read PL FOC with

woyaglaka pi] ki]$_{S'}$ yeksuya pi] he]?
you-talk PL COMP you-remember PL Q

'Which paper do you remember that you talked to many people who read (it)?'

In contrast to Italian, examples such as these are grammatical. Therefore, the conclusion that Subjacency does not constrain the LF wh movement rule of Lakhota grammar seems unavoidable.

Before concluding this section, we would like to take advantage of the presentation of structures like (37)-(39) in order to argue in favor of our view of questions as involving covert wh-movement at LF, versus an alternative account in which no movement would be involved and wh questions would depend simply on the presence of the feature [+wh] on the indefinite pronoun. The crucial fact here is that (37)-(39) are in fact ambiguous between the reading indicated in the gloss and a second reading in which there is a direct yes/no question and both wh words are raised to the lower COMP position. For

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example, this second reading for (38) is the following:

(43) Do you know which quilts they sell for how much?

Since the wh phrase owiza tuktena 'which quilts' can be associated with either COMP position, it is clear that an analysis relying only on the fact that it has a [+wh] feature in its argument position cannot account for the observed ambiguity. Facts in some respects like these were first presented in Baker (1970), where he argued for an indexing procedure in English distinct from the syntactic rule of wh movement to account for the ambiguities of multiple Wh questions.

7.2.3 Summary

In this section, we have shown that the LF wh movement rule of Lakhota is not constrained by Subjacency. This fact immediately follows if we assume that Subjacency is a constraint on syntactic movement rules, holding in the transformatioanl component, but not in LF. A similar conclusion was reached by Huang (1982) for wh movement in Chinese at LF. English also has covert LF wh movement, which is not constrained by Subjacency, as the following example shows:

(44) Who remembers where John bought which books?

In (44), there is one reading in which which books has wide scope, ie., raises to the highest COMP position at LF, violating the wh island constraint and thus Subjacency. We can thus see that English LF wh movement patterns with the LF rule of wh movement in Lakhota. We conclude that Subjacency holds only in the syntax.

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7.3 A Definiteness Constraint on LF Wh Movement

LF wh movement in Lakhota is not totally unrestrained. In this brief section, we shall document a type of definiteness constraint on wh movement and argue that no structural account is possible. We shall see that the range of constructions that fall under the "definiteness" condition is quite restricted, more so than is the case for previous definiteness conditions proposed in the literature.

In examples (34b) and (35b), which illustrated the lack of Subjacency effects with complex NPs, extraction was out of indefinite relative clauses. However, had the relative clauses in these examples been definite, we would have found that extraction was ungrammatical. The contrast is illustrated below. (34b) and (35b) are repeated in (45a) and (45b), respectively.

(45) a. $[_{NP}[_{S}$ tuwa wowapi wą owa] cha] lawa hą he?
who book a write FOC you-read DUR Q
'Who are you reading a book that (he) wrote?'

b. $[_{NP}[_{S}$ wakąyeža eya taku kağa pi] cha] hena
children some-S what make PL FOC those

wąwichayą wa?i he?
see-them I-go Q

'What did you go see some children who made (it)?'

(46) a. *$[_{NP}[_{S}$ tuwa wowapi wą owa] ki] lawa hą he?
who book a write the you-read DUR Q
(Who are you reading the book that (he) wrote?)

b. *$[_{NP}[_{S}$ wakąyeža eya taku kağa pi] ki] hena
children some-S what make PL the those

wąwichayą wa?i he?
see-them I-go Q
(What did you go see the children who made (it)?)

(47) a. *$[_{NP}[_{S}$ tuwa wowapi wą owa] k'ų] lawa hą he?
who book a write the-P you-read DUR Q

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(Who are you reading the afore-mentioned book that (he) wrote?)

b. *[$_{NP}$[$_{S}$ wakąyeža eya taku kağa pi] k'ų] hena
children some-S what make PL the-P those

wąwichayą wa?i he?
see-them I-go Q
(What did you go see the afore-mentioned children who made (it)?)

There are no structural differences between the relative clauses in (45)-(47). The definiteness or non-definiteness of the entire relative clause is determined by the choice of the determiners. Indefinite relative clauses are marked by cha, an indefinite Focus determiner (45), while definite relative clauses are marked by either ki 'the', or k'ų 'the aforementioned' (47). This definiteness restriction applies only to relative clauses. Extraction from other definite NPs, notably gerunds and NPs with possessor subjects, is grammatical. Let us consider each of these types of NPs in turn.

Gerunds in Lakhota have no overt morphology that clearly distinguishes them from complement clauses. However, they fill NP positions and, unlike complement clauses, they accept the full range of determiners. In the following examples we give three sentences that contain definite gerunds.

(48) a. [[New York ekta omawani] ki] watuka+ma+ye.
New York to I-walk the be tired+1OBJ+make
'My travelling to New York made me tired.'

b. [[makuže] ki] ų John cąnųp inakhiye.
I-sick the because of John smoke quit
'Because of my being ill, John quit smoking.'

c. [[wawachi šni] ki] ithopha pi.
I-dance NEG the be astonished at PL
'They were astonished at my not dancing.'

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Consider now the direct questions in (49). These sentences are similar to the examples in (48), except that there is a wh word in situ within the gerund NP. The grammaticality of the constituent question reading argues against any general "definite NP" constraint.

(49) a. [[tuktel omayani] ki] watuka+ni+ya he?
where you-walk the be tired+2OBJ+make Q
'Where did your travelling to make you tired?

b. [[tuwa kuže] ki] ų John cąnųp inakhiye he?
who sick the because of John smoke quit Q
'Because of whose being ill, did John quit smoking?'

c. [[tuwa wachi šni] ki] ithopha pi he?
who dance NEG the be astonished at PL Q
'Whose not dancing were they astonished at?'

Possessor arguments may also be questioned in Lakhota. Recall that the possessor is in the subject position of the NP and not under the determiner node as in English. Here again, we find that the definiteness of the NP containing a wh possessor does not affect the grammaticality of a direct question reading. This is illustrated in the examples below.

(50) a. [[tuwa tha+mila] ki] nų he?
who POS+knife the you-use Q
'Whose knife did you use?'

b. [[tuwa tha+wowapi] ki] lawa hą he?
who POS+book the you-read DUR Q
'Whose book are you reading?'

The facts illustrated in (49) and (50) argue that only definite relative clauses constrain LF wh movement. But if we look more closely at definite relative clauses, we see that further qualifications are needed. Both generic relative clauses (which may be definite) and another type of <u>non-referring</u> definite relative clause allow wh extraction. Generic NPs are definite and are ambiguous with definite

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NPs that have discourse referents. Generic relative clauses are likewise ambiguous with definite relative clauses that have discourse referents. An example is given below in (51). Important for our discussion here is the fact that when the definite relative clause has a generic interpretation, direct wh questions are possible. When the definite relative clause is a referring expression, no such reading is possible: only a yes/no question with an indefinite pronoun is allowed. This is illustrated in (52).

(51) [[wakąyeža ḣuṅ zuceca wicha+yaṅtaka pi] ki] t'a pi.
children PART snake 3OBJ+bit PL the die PL
(i) 'Some children who are bitten by snakes die.'
(ii) 'Those children who were bitten by snakes died.'

(52) [[wakąyeža ḣuṅ taku wicha+yaṅtaka pi] ki] t'a pi he?
children PART what 3OBJ+bite PL the die PL Q
(i) 'What do some children bitten by (it) die?'
(ii) 'Do children bitten by something die?'
(iii) *What did those children who were bitten by (it) die?
(iv) 'Did those children who were bitten by something die?'

A second type of definite relative clause which allows wh extraction is a non-referring expression whose meaning cannot be easily translated with an English relative clause. The possibility of this relative clause in Lakhota arises through the interaction of the non-specific indefinite determiner of the internal head noun and the definite matrix determiner. See Williamson (in prep.) for details. In (53) we illustrate this type of relative clause. In (54) we illustrate the possibility of wh extraction from this type of definite relative clause.

(53) [[Bill iyechikiyąka wąži ophethų] ki] wąblaka wachi.
Bill car a-NS buy the I-see I-want
'I want to see the car that Bill buys (if he buys it).'

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(54) [[tuwa iyechiḳiyaka wąži ophethu] ki] wąlaka yachi he?
who car a-NS buy the you-see you-want Q
'Who do you want to see the car that (he) buys (if he buys it)?'

The examples in (52) and (54) demonstrate that the restriction in Lakhota on LF wh movement is not a broad constraint covering the classic cases of definite NPs. Not only do definite gerunds and definite NPs with complement structures allow extraction of wh words, but also definite generic and non-referring definite relative clauses. Only definite referring relative clauses are "islands" in Lakhota.

There are no structural differences between definite referring relative clauses and other relative clauses. We thus conclude that the restriction discussed in this section must hold at the level of semantic representation where these differences are characterized, and that no structural property of relative clauses is responsible for the facts.

7.4 Superiority Effects in Lakhota: The Status of the ECP

7.4.1 The ECP

We will adopt here the general approach to the Empty Category Principle in Chomsky (1981, 250), stated in (55) below:[8]

(55) A properly governs B iff A governs B [and A ≠ AGR]

ECP: $[_a$ e] must be properly governed.

In the definition of government, two types of government are distinguished: government by a lexical category (A in (55) is a lexical category X^0) and antecedent government (A is (55) is coindexed with B). We thus assume, within the LGB tradition, that there are also two distinguishable configurations of proper government: lexical govern-

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ment by a lexical category and antecedent government by a coindexed category.[9] More specifically, we will be assuming the particular version of (55) proposed in Huang (1982), in which antecedent government does not have to obey adjacency necessarily and thus, is not solely restricted to subject position. This will become crucial when we consider the facts of extraction of non-arguments of the verb by the LF wh movement rule in Lakhota. A more precise account of antecedent government will be given when we consider these facts. See also Lasnik and Saito (1983) for a similar view on the ECP.

Assuming that the ECP is a principle of Universal Grammar, there are two questions that one should ask concerning its status in Lakhota grammar. The first type of question is purely empirical: are there or are there not asymmetries in wh extraction? More specifically, are there asymmetries between subject and object extraction? are there asymmetries between complement extraction and non complement extraction?[10]

The second question depends upon the answer to the previous one. Continuing to assume the universality of the ECP, at what level does it apply: S-structure or LF? What kind of tree structure configurations does it require for proper application: is a "flat" tree structure sufficient, or are we forced to posit a virtual structure with a VP? These problems will be addressed in the following sections.

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7.4.2 The ECP, S-Structure, and LF

Originally, the ECP was proposed to account for subject/object asymmetries in syntactic wh extraction in English. Consider the following example (from Chomsky 1981):

(56) *who do you wonder [$_{S'}$ how [$_{S}$ t solved the problem]]

In (56) t is the trace of who. (56), besides involving a Subjacency violation, is also ruled out by the ECP, because the trace in subject position is not properly governed. It is neither lexically governed, since AGR is not a lexical governor in English; nor is it antecedent governed, since the only coindexed element, who, is "too far away" in the structure, ie., (we will say) it is not in the local context of the trace. Consider now the slightly better (57):

(57) ?what problem do you wonder [$_{S'}$ how [$_{S}$ Bill solved t]]

In (57), t, the trace of what problem, is lexically governed by the verb solved, and there is no ECP violation. Of course, there is a Subjacency violation, accounting for the marginal status of (57), but (56), with both an ECP and a Subjacency violation, is far worse. Consider now the contrast between (58) and (59):

(58) *Who$_i$ do you wonder [$_{S'}$ what problem$_j$ [$_{S}$ t_i solved t_j]]

(59) ??What problem$_j$ do you wonder [$_{S'}$ who$_i$ [$_{S}$ t_i solved t_j]]

Again, both examples display Subjacency violations, accounting for their marginal status. But (58) is far worse than (59). This is accounted for by the fact that (58) displays an ECP violation as well: the trace of the subject, t_i, is not properly governed, just as in example (56). Note that t_j, the trace of the object, is lexically governed by the verb and, furthermore, is also antecedent governed by

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what problem since this phrase is coindexed with t_j and satisfies the definition of government--S' boundaries intervene between the two. What about (59)? In (59) there are no ECP violations, since t_j is lexically governed by the verb solved, and t_i is antecedent governed by who in the immediately adjacent COMP.

Kayne (1981) extends the ECP to account for certain asymmetries between subject and object position in Wh movement at the level of LF as well. The relevant examples are given below:

(60) a. Who thinks that Mary likes whom?

b. *Who thinks that who likes Mary?

(61) a. It is unclear who saw what.

b. *It is unclear what who saw.

(62) a. All these weeks, John suggested that they speak to no one.

b. *All these weeks, John suggested that no one speak to them.

The ungrammatical examples in (60)-(62) all have the same form at LF:

(63) $[_{COMP} \ldots [_S$ t INFL VP]]

In (63), t is a nominative trace bound by an operator, ... is non-null and does not contain a proper antecedent governor for t. Kayne's basic point consists in showing that the pattern of judgements in (60)-(62) and (56)-(59) (abstracting away from the Subjacency effects) represents a unitary phenomenon. Thus, in order to capture the generalization subsuming both types, the conclusion is that the ECP holds at LF.

Chung (1983a), in a paper on the ECP and Chamorro grammar, claims, contrary to Kayne, that the ECP applies at the level of S-

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structure, suggesting that the quantifier facts in (62) are obscure. In Chamorro, there is overt Wh movement in the syntax, but no asymmetries with respect to extraction of subjects and objects. Chung assumes that LF is a projection of thematic structure and thus has a VP-like character, although at S-structure, Chamorro has a "flat", VP-less structure. Since Chung implicitly assumes that AGR is not a possible lexical governor for the subject position at LF, she is then forced to say that the ECP holds exclusively at S-structure. At S-structure, the verb governs both the subject and the object position, since there is no VP. At LF, however, where the structure has a VP, the subject is no longer properly governed by the verb. If ECP were to hold at LF, we would expect asymmetries, contrary to fact. Thus, the ECP must hold at S-structure.

7.4.3 Lakhota, the ECP, S-structure and LF

Suppose that Chung (1983a) is right, and that the ECP, as a universal principle of grammar, holds at S-structure. There is a very clear prediction that this view makes with respect to Lakhota Wh extraction. Since Lakhota does not have overt wh movement in the syntax, we should not expect to find any ECP effects. This is so since at the point where LF Wh movement applies, the ECP will have already applied. Conversely, at the point where the ECP applies (S-structure), there are no traces, and the ECP holds vacuously. Note that this prediction is independent of the type of S-structure displayed by Lakhota (with or without a VP). It hinges solely on the absence of overt Wh movement in the syntax vs. the existence of covert

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Wh movement at LF. A proper interpretation of the facts of Lakhota concerning asymmetries in extraction is thus crucial to decide between the two opposing views of Kayne (1981) and Chung (1983a).

7.4.4 The Lakhota Facts

7.4.4.1 Absence of Subject/Object Asymmetries

Lakhota does not show any subject/object asymmetries of the type that have been associated with the ECP in the literature. The language displays no *[that-t] effects: long Wh extraction from subject position is possible across an overt complementizer. Violations of the Wh island constraint with long extraction from subject position are also possible. These facts are illustrated below. In (b), we give the LF representation of the a sentences.

(64) a. Mary tuwa wąyąke ki ilukcha he?
Mary who see COMP you-think Q
'Who do you think that Mary saw?'

b. $[[[[\text{Mary } t_i \text{ wąyąke}]_S \text{ ki } t_i]_{S'} \text{ ilukcha}]_S \text{ tuwa}_i]_{S'}$

(65) a. tuwa hel nažį he ki ilukcha he?
who there stand DUR COMP you-think Q
'Who do you think that was standing there?'

b. $[[[[t_i \text{ hel nažį he}]_S \text{ ki } t_i]_{S'} \text{ ilukcha}]_S \text{ tuwa}_i]_{S'}$

(66) a. tohą tuwa u pi ki slolyaya he?
when who come PL COMP you-know Q
'Who do you know when is coming?'

b. $[[[[t_i \ t_j \text{ u pi}]_S \text{ toh}ą_i \text{ ki}]_{S'} \text{ slolyaya}]_S \text{ tuwa}_j]_{S'}$

From consideration of these facts, we can conclude one of two things: either the ECP applies only at S-structure, as claimed by Chung (1983)--and then LF Wh extraction is simply irrelevant to the ECP; or

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the ECP still holds at LF, but the subject position is properly governed at LF in Lakhota. If this is correct, the question that immediately arises is what is responsible for this state of affairs. One might try to extend Chung's approach to proper government of the subject in Chamorro, and claim that the level of LF in Lakhota does not have a VP, thus allowing the verb to properly govern equally the subject position and the object positions. Under this view, LF would be a flat, VP-less structure, projected from the actual flat, VP-less S-structure. For the purposes of θ-theory, we could assume that there is also a "virtual", hierarchical projection of LF, where a VP node is present. But as far as the ECP is concerned, only the flat, actual LF structure would count. However, this is clearly not a very satisfactory solution in that it would force us to project the flat S-structure to LF only to handle the ECP effects.

Still exploring the idea that the ECP applies at LF, another possibility would then be to say that LF has in fact a VP node and that the subject position is in fact properly governed at LF by the INFL node (containing Mood). This would mean that in Lakhota, contrary to English, INFL is a lexical governor of the subject position for the purposes of the ECP.

The fact that in Lakhota we do find asymmetries with respect to Wh extraction, namely between complements vs. noncomplements of the verb, makes us think that the latter position is on the right track.

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7.4.4.2 Extraction of noncomplements in Lakhota

Consider the following multiple questions, where the complement clause has two wh words, one of them being either a subject or a complement subcategorized by the verb, and the other being a nonsubject noncomplement of the verb.

(67) takuwe tuwa t'a pi ki yapasi he?
why who die PL COMP you-inquire Q

(68) wowapi tuktena tohą opheyathų ki nihų ki
books which when you-buy COMP your-mother the
oyakiyaka šni he?
you-tell NEG Q

A priori, we would expect an ambiguity with both (67) and (68). In (67), for example, one possible reading should have who with scope over the entire sentence and why with narrow scope (only over the complement clause); and another possible reading should have the scope relations reversed. The same, a priori, would be expected of (68). However, the facts are quite different. In each of the cases, only one of the readings is possible, namely the one in which the noncomplement in the embedded clause (why, when, respectively) has narrow scope. These grammatical and ungrammatical readings of (67) and (68) are indicated below.

(69) i. Who did you inquire why (he) died?
ii. *Why did you inquire who died?

(70) i. Which books did you tell your mother when you bought (them)?
ii. *When did you tell your mother which books you bought?

In the reading (ii) of (69) and (70), why and when should be understood as modifying die and buy respectively, and not inquire and tell.

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It seems thus that LF Wh extraction of a non complement out of a wh island results in ungrammaticality in Lakhota. Note that Subjacency cannot be invoked to account for these facts, since the number of bounding nodes that either one of the wh words has to cross in order to "arrive" to the higher COMP is exactly the same. Furthermore, we have already concluded that Subjacency, being operative in the syntax, does not affect LF Wh movement in Lakhota.

Huang (1982), observing that similar facts hold in Chinese, argues that this type of complement/noncomplement asymmetry is in fact an ECP effect. His reasoning goes as follows. Assuming that only subcategorized elements are governed by V, noncomplements, which, by definition, are not subcategorized by V, will not be lexically governed. From this it follows that, if they are wh extracted, the only way they can "survive" the ECP is through antecedent government. In this respect, noncomplements and subjects in a language like English behave in the same way, since subjects in English are also not lexically governed (recall that in English INFL does not qualify as a lexical governor). Now, recall that antecedent government requires a coindexed category in a sufficiently "local" context. Suppose that one of the conditions that this "locality" requirement obeys is that no S' node may intervene between the governor and the trace (that the trace is governed). On the other hand, structural adjacency is not required for antecedent government, so that a properly indexed element in COMP position may antecedent govern other positions besides the immediately adjacent subject position. Suppose also now that noncomplements are outside of the VP and attach to S, this being one way to

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capture the fact that they are not lexically governed. Then, the LF representation of the grammatical and ungrammatical reading of, for example, (67), will be the following:

(71) $[[[[t_i\ t_j\ [t'a\ pi]_{VP}\ INFL]_S\ takuwe_i\ ki]_S,\ yapasi]_S\ tuwa_j]_S,$

(72)*$[[[[t_i\ t_j\ [t'a\ pi]_{VP}\ INFL]_S\ tuwa_j\ ki]_S,\ yapasi]_S\ takuwe_i]_S,$

In (71) the wh word takuwe 'why' antecedent governs its trace, t_i, and INFL lexically governs the subject trace, t_j. In (72), however, the trace t_i is neither lexically governed nor antecedent governed, since the coindexed wh word takuwe is not present in a sufficiently local context.[11]

7.4.5 Concluding Remarks

If we tentatively adopt the analysis presented above, then some of the questions that we posed in the beginning of this section can begin to receive an answer. First, the ECP, as a principle of Universal Grammar, applies at the LF level.[12] Second, in Lakhota it applies to a configurational tree where a VP node is present and complements can be distinguished from noncomplements. Third, the fact that there are no subject/object asymmetries but nevertheless there are complement/noncomplement asymmetries leads us to postulate that INFL (with Mood) is a lexical governor for the subject in Lakhota.

7.5 Extraposition and Wh Movement

7.5.1 Introductory Remarks

We briefly introduced the rule of Rightward Extraposition in our discussion of pronominals and coreference. There we saw that

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pronouns cannot be coreferential with antecedents contained in the extraposed clause. In this section, we shall see that Rightward Extraposition also interacts with LF wh movement, in such a way as to eliminate certain otherwise possible wh question readings. There are, however, two possible analyses of S' Extraposition that are available to us, differing on the "landing site" of the moved constituent and, consequently, on the derived S-structure following the application of the rule. Since neither of the analyses seems to be incompatible with the facts in this section, we will present them both and not choose between them.

In the remainder of this section, we will proceed as follows. In 7.5.2 we will introduce the facts making as few assumptions about the rule of S' Extraposition as possible, namely that the rule moves an S' to the right. In 7.5.3 we will present the two analyses of Extraposition and propose plausible constraints that in each case account for the fact that Extraposition bleeds LF Wh movement to the matrix clause.

7.5.2 The Interaction of Extraposition and Wh movement

The syntactic rule of S'-extraposition moves a complement clause and its complementizer to the right. It relates pairs of sentences like the following, in which the (a) sentences have normal SOV word order and the (b) sentences contain extraposed S's. Note that the complement and the matrix clause can be either $\pm$Q. We give examples of all four possible combinations.

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(73) a. [[Bill u kta] cha] weksuye.
Bill come FUT COMP I-remember
'I remember that Bill will come.'

b. weksuye [[Bill u kta] cha].
I-remember Bill come FUT COMP

(74) a. Bill [[tuwa u kte]] keya he?
Bill who come FUT COMP say Q
'Who did Bill say would come?'

b. Bill keya he [[tuwa u kte]]
Bill say Q who come FUT COMP

(75) a. [[wowapi tuktena opheyathų] k'ų] imųğe.
books which you-buy COMP I-ask
'I asked which books you had bought.'

b. imųğe [[wowapi tuktena opheyathų] k'ų].
I-ask books which you-buy COMP

(76) a. [[wowapi tuktena opheyathų] ki] owichayakiyaka he?
books which you-buy COMP you-tell-them Q
(i) 'Which books did you tell them that you bought?'
(ii) 'Did you tell them which books that you bought?'

b. owichayakiyaka he [[wowapi tuktena opheyathų] ki]
you-tell-them Q books which you-buy COMP

In (73) the complement clause and the matrix clause are -Q. In (74) the complement clause is -Q (in this particular reading) and the matrix verb is +Q. In (75) the complement is +Q and the matrix is -Q. And finally, in (76) both the complement and the matrix are +Q.

LF wh movement interacts in a surprising way with a subset of the cases where extraposition has applied. Normally, in the non-extraposed variants, if the matrix COMP is +Q and the complement clause contains a wh word, then there is a direct constituent question reading where the wh word is raised into the matrix COMP (cf. (74) and (76i)). However, in the extraposed variants, this reading is lost and only direct yes/no questions are possible. This means that a sentence such as (74b) has no constituent question reading at all and (76b) has

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a only direct yes/no reading with an indirect constituent question complement. (There is no indefinite pronoun reading since tuktena has no indefinite pronoun sense.) The translations for (74b) and (76b) are given in (77) and (78), respectively.

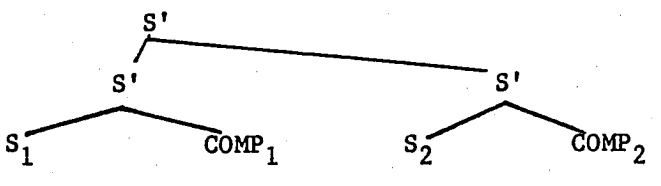
(77) 'Did Bill say that someone was coming?'

(78) 'Did you tell them which books you bought?'

7.5.3 Two Analyses of Extraposition

One possible analysis of Extraposition in Lakhota treats the extraposed clause as moving to the right of the matrix S' and being adjoined to it.[13] The configuration created would have the following tree form:

(79)



One might suggest that the condition of Proper Binding will rule out the ungrammatical readings in the following way. Suppose that S_2 in (79) contains a wh word. If it moves to $COMP_2$, it would leave a trace that is c-commanded by it. However, if this wh word moves to the matrix $COMP_1$ (whether succcessive-cyclically or not), the c-command requirement on traces would be broken. In either case, an ungrammatical configuration would arise. We expect then that a direct constituent question with a wh word originating in the extraposed clause will be ungrammatical, which is exactly what we find. On the

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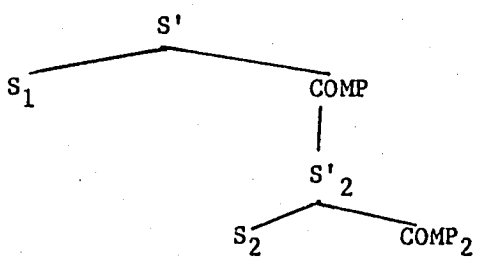
other hand, nothing bars a direct yes/no question, since in this case no movement to COMP is involved.

In order for this analysis to work, the definition of c-command must be formulated to prevent the domain from including the Chomsky-adjoined extraposed clause. This is precisely the opposite view from previous definitions of c-command and government, and therefore not very convincing. Recall that for the coreference facts discussed in Chapter 5, we needed to domain to extend to include the extraposed S.

A second possible analysis of S' Extraposition in Lakhota treats the extraposed clause as moving into COMP position. Although peculiar from an "English" point of view, this formulation would accommodate certain properties of the rule like, for example, its apparent successive cyclicity.[14] The configuration created would have the following tree form:

(80)



S'_2 has moved into $COMP_1$. Suppose now that S_2 contains a wh phrase. If this wh phrase undergoes Wh movement (either directly or successive-cyclically), there is no higher COMP position for it to move into. The following facts from English might be related to the proposed restriction. Consider the following sentence:

(81) I have believed (for some time) that the FBI monitors private correspondence.

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Extraction of a wh phrase in the position of private correspondence results in a grammatical sentence:

(82) What kind of correspondence do you believe that the FBI monitors?

It is also possible to topicalize the complement clause in (81):

(83) That the FBI monitors private correspondence, I have believed (for some time).

Now, Wh extraction from the topicalized clause in (83) results in ungrammaticality:

(84) *What kind of correspondence that the FBI monitors, (have) you believed for some time?

In some sense, the topicalized clause in English and the extraposed complement in Lakhota are "frozen" and no further movement out of them is possible. We suggest that this is due to the fact that there is no higher COMP with which the Wh may be associated.

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FOOTNOTES TO CHAPTER 7

1. It also does not involve movement to an "internal" position, although for some speakers there is a mild preference for question words to appear leftmost.

2. We assume that the wh word substitutes for the +Q morpheme in COMP.

3. The scope relation is not one of government, since possessors and objects of postpositions may be negative indefinite pronouns:

(i) tuweni tha+mila ki mų šni.
who+NEG POS+knife the I-use NEG
'I didn't use anyone's knife.'

(ii) tuweni ikhiyela John nažį šni.
who+NEG near John stand NEG
'John didn't stand near anyone.'

It is possible that the proper characterization involves some notion of subjacency. Since we argue that Subjacency does not hold at LF, we would support this view only if it could be shown that negative scope is determined at S-structure. We have not investigated these data, but feel this may be a plausible approach.

4. For the rest of this chapter we shall ignore the -Q readings associated with verbs like slolye 'to know', kiksuye 'to remember'.

5. We leave open the question of whether or not the wh pronoun moves in a successive cyclic fashion, leaving wh-traces in the intermediate COMP positions. If successive cyclicity arises from the need to avoid violations of Subjacency, then LF wh movement in Lakhota does not have to operate in a successive cyclic fashion, since Subjacency is not at work, as we will show later. Note however that nothing in the theory prevents LF wh-movement from applying in such a way. For further ramifications of this problem, see Lasnik and Saito (1983).

6. Note that this cannot be true for English at LF, given the fact that we can have multiple wh questions, as in (i):

(i) Who said that Bill ate what?

In (i), what is moved to the matrix COMP at LF, which is then doubly filled.

7. Again, we will disregard the possibility of traces in the intermediate COMP position. We have also omitted the intermediate complementizer in our LF representation. This does not correspond to any

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theoretical claim. As far as he is concerned, recall that our proposal is that the wh word subsitutes for it at LF.

8. See Kayne (1981, 1983), Chung (1983), for a different approach to the ECP.

9. See Stowell (1981) for a way of reducing antecedent government to lexical government.

10. Here, by "complement" we mean "complement of the verb". By "noncomplements", we mean NPs not subcategorized by the verb, like subjects or adverbial PPs of various sorts.

11. In fact, this might not be true if, as we propose below, wowapi tuktena 'which books' is contained inside the VP node at LF, but not toha, 'when', which is immediately dominated by S. wowapi tuktena has to cross one more maximal projection (VP) in its way to the higher COMP than toha. This makes it even more implausible to offer Subjacency as an account of the observed assymetry, since, if anything, the predictions would be the reverse of what the facts are.

12. Note that, with this approach, we have to ensure that INFL does not lexically govern noncomplements. One would like to relate this fact to the special relation existing between the subject and INFL. Another problem that may arise is the following. If LF Wh movement is successive cyclic, a trace will be present in the intermediate COMP position. We will then have to prevent this trace from antecedent governing in case the COMP position is already filled by a wh word. See Lasnik and Saito (1983) for further details.

13. With this statement we do not mean that the ECP might not hold also at the level of S-structure.

14. We assume here, following Chomsky (1981), that when a phrase a is adjoined to B, the configuration created always has the form $[_{B}a\ B]$ or $[_{B}B\ a]$ depending on whether adjunction is to the left or to the right. This is what is often referred to in the literature as "Chomsky-adjunction".

15. Rightward S' in Lakhota is not upward bounded as it is in English. Assuming that it obeys Subjacency, it must be successive cyclic. This is a natural analysis to propose, since the COMP position in Lakhota is generated on the right side of the structure. See Kaufman (1979) for a case of rightward movement in Navajo of spatial enclitics which is also not upward-bounded.

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REFERENCES

Anderson, G.C.(1980) "Early Dakota Migration and Intertribal War: A Revision," Western Historical Quarterly (Jan. 80),17-36.

Anderson, S. (1982) "Types of Dependency in Anaphors: Icelandic (and other Reflexives," to appear in Journal of Linguistic Research.

Aronoff, M. (1976) Word Formation in Generative Grammar, MIT Press, Cambridge, Mass.

Baker, C.L. (1970) "Notes on the Description of English Questions: the Role of an Abstract Question Morpheme," Foundations of Language 6.2.

Baltin, M. (1978) Toward a Theory of Movement Rules, Doctoral Dissertation, MIT, Cambridge, Massachusetts.

Boas, Franz and E. Deloria (1941) Dakota Grammar, Memoirs of the National Academy of Sciences, Vol.XXIII, U.S. Government Printing Office, Washington.

Bresnan, J. (1972) Theory of Complementation in English Syntax, Doctoral Dissertation, MIT, Cambridge, Massachusetts.

Brown, D. (1971) Bury my Heart at Wounded Knee: An Indian History of the American West, Holt,Rinehart and Winston, New York.

Buechel, E. (1939) A Grammar of Lakhota, Rosebud Educational Society, Rosebud, South Dakota.

Buechel, E. (1970) A Dictionary of the Teton Dakota Sioux Language, ed. by P.Manhart, Red Cloud Indian School, Inc., Pine Ridge, South Dakota.

Burzio, L. (1981) Intransitive Verbs and Italian Auxiliaries, Doctoral Dissertation, MIT, Cambridge, Massachusetts.

Burzio, L. (1983) "Conditions on Representation and Romance Syntax," Linguistic Inquiry 14, 193-222.

Carter, R.T. (1974) Teton Dakota Phonology, Doctoral Dissertation, University of New Mexico.

Chafe, Wallace L. (1972) "Siouan, Iroquoian and Caddoan," in T. Sebeok, ed., Current Trends in Linguistics, Vol.10, 1164-1209, The Hague: Mouton.

Chambers, J. (1968) "Siouan-Iroquoian Linguistics: A Review of Research and a Selected Bibliography," mimeo. University of Toronto.

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Chambers, J. (1873) "A Reanalysis of Lakhota Relative Clauses" mimeo. University of Toronto.

Chambers, J. and P. Shaw (1980) "Systematic Obfuscation of Morphology in Dakota," Linguistic Inquiry 11, 325-336.

Chomsky, N. (1964) Current Issues in Linguistic Theory, Mouton, The Hague.

Chomsky, N. (1967) Aspects of the Theory of Syntax, MIT Press, Cambridge, Mass.

Chomsky, N. (1970) "Remarks on Nominalizations," in Readings in English Transformational Grammar ed. by R. Jacobs and P. Rosenbaum (1970), Ginn and Co. Waltham, Mass. Reprinted in Studies on Semantics in Generative Grammar by N. Chomsky (1972) Mouton, The Hague.

Chomsky, N. (1973) "Conditions on Transformations," in A Festschrift for Morris Halle, ed. A. Anderson and P. Kiparsky, pp.232-286, Holt, Rinehart and Winston, New York.

Chomsky, N. (1977) "On Wh-Movement" in Culicover, Wasow and Akmajian, eds.

Chomsky, N. (1980) "On Binding," Linguistic Inquiry 11.1.

Chomsky, N. (1981) Lectures on Government and Binding, Foris, Dordrecht.

Chomsky, N. (1982) Some Concepts and Consequences of the Theory of Government and Binding, Linguistic Inquiry Monograph 6, MIT Press.

Chomsky, N.and M. Halle (1968) Sound Pattern of English, Harper & Row.

Chung, S. (1983a) "The ECP and Government in Chamorro" Natural Language and Linguistic Theory 1.2.

Chung, S. (1983b) "Binding and Coexisting S-structures in Chamorro" in Proceedings of the West Coast Conference on Formal Linguistics Vol. 2 ed. by M. Barlow, D. Flickinger and M. Wescoat, Stanford Linguistics Association.

Clark, R.A. (1976) ed. The Killing of Crazy Horse: Three Eyewitness Views. commentary by C. Friswold, Arthur C. Clark Co. Glendale, Ca.

Culicover, P., Wasow, T and A. Akmajian (eds.) (1977) Formal Syntax, Academic Press.

Davies, W. (1981) Choctaw Clause Structure, unpublished Ph.D. dissertation, University of California, San Diego.

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Deloria, E. (1932) Dakota Texts Publications of the American Ethnological Society, Vol. XIV, G.E. Stechert & Co. New York.

Deloria, V. Jr. (1971) ed. Of Utmost Faith San Fransisco: Straight Arrow Books, reprint edition, 1972, Bantam Books, New York.

Deloria, V. Jr. (1973) God is Red, Grosset & Dunlap, New York.

Deloria, V. Sr. (1971) "The Standing Rock Reservation: A Personal Reminiscence," South Dakota Review 9, 169-195.

Demaille, R.J. (1978) "George Bushotter, the First Lakota Ethnographer: Teton Sioux, 1864-1892." in American Indian Intellectuals, ed. M. Liberty West Publishing Co. St. Paul.

Drummond, V. (1976) "Relative Clauses in Sioux Valley Santee and Carry-the-Kettle Assiniboine," M.A. thesis, University of Toronto.

Dubinsky, S. and C. Rosen (1983) "A Bibliography on Relational Grammar through April 1983 with Selected Titles on Lexical Functional Grammar," Indiana University Linguistics Club, Bloomington, Ind.

Eastman, C.A. (1904) "First Impressions of Civilization." Harper's Monthly Magazine 108, 587-594.

Evans, G. (1980) "Pronouns," Linguistic Inquiry 11.2

Grimshaw, J. (1979) "Complement Selection and the Lexicon," Linguistic Inquiry 10.2.

Gruber, J. (1972) "Functions of the Lexicon in Formal Descriptive Grammars," Indiana University Linguistics Club, Bloomington.

Hale, K. (1979) "On the position of Walbiri in a typology in the base" Indiana University Linguistics Club.

Hale, K. (1983) "Warlpiri and the Grammar of Non-Configurational Languages" Natural Language and Linguistic Theory 1, 5-47.

Higginbotham, J. (1980) "Pronouns and Bound Variables," Linguistic Inquiry 11.4.

Huang, C.-T.J. (1982) Logical Relations in Chinese and the Theory of Grammar, unpublished Ph.D. dissertation, MIT.

Jackendoff, R. (1972) Semantic Interpretation in Generative Grammar, MIT Press, Cambridge, Mass.

Jackendoff, R. (1977) X Syntax: A Study of Phrase Structure, Linguistic Inquiry Monographs, MIT Press

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Jaeggli, O. (1980) On Some Phonologically Null Elements in Syntax, unpublished Ph.D. dissertation, MIT.

Kaufman, E. (1979) The Syntax and Semantics of Questions in Navajo, Garland Publishing Co.

Kayne, R. (1981) "ECP Extensions," Linguistic Inquiry 12, 93-133.

Kayne, R. (1983) "On Connectedness," linguistic Inquiry 14, 223-286.

Langacker, R. (1969) "On Pronominalization and the Chain of Command" in Modern Studies in English ed. by D. Reibel and S. Schane, Englewood Cliffs: Prentice Hall.

Lasnik, H. (1976) "Remarks on Coreference," Linguistic Analysis 2, 1-22.

Lasnik, H. and M. Saito (1983) "On the Nature of Proper Government" ms. University of Connecticut and MIT.

Manzini, M.-R. (1980) "On Control", mimeographed, MIT.

May, R. (1977) The Grammar of Quantification, unpublished dissertation, MIT.

Neihardt, J. (1932) Black Elks Speaks, William Morrow and Co. New York.

Perlmutter, D. (1968) Deep and Surface Structure Constraints in Syntax, dissertation MIT, Cambridge.

Perlmutter, D. (1978) "Impersonal Passives and the Unaccusative Hypothesis." in Proceedings of the Fourth Annual Meeting of the Berkeley Linguistic Society.

Perlmutter, D. (ed.) (1982) Studies in Relational Grammar 1, University of Chicago Press.

Perlmutter, D. (1983) "Personal vs. Impersonal Constructions" Natural Language and Linguistic Theory 1, 141-200.

Perlmutter, D. and C. Rosen (eds) (to appear) Studies in Relational Grammar 2, Univerisity of Chicago Press.

Prucha, F. (1977) A Bibliographic Guide to the History of Indian White Relations in the United States, University of Chicago Press.

Prucha, F. (1982) Indian-White Relations in the United States: A Bibliography of Works Published 1975-1980. University of Nebraska Press.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Raposo, E. P. (1981) A Construcao Uniao de Oracoes na Grammatica do Portugues, dissertacao de doutoramento, Universidade de Lisboa, Portugal.

Reinhart, T. (1979) "Syntactic Domains for Semantic Rules," in F. Guenthner and S. Schimt, eds., Formal Semantics and Pragmatics for Natural Languages.

Reinhart, T. (1980) "Coreference and Bound Anaphora: A Restatement of the Anaphora Questions". ms. Tel Aviv University.

Reinhart, T. (1981) "Definite NP Anaphora and C-Command Domains," Linguistic Inquiry 12, 605-636.

Robinson, D. (1908) The Sioux Indians--A History, Torch Press,Cedar Rapids.

Rizzi, L. (1982) Issues in Italian Syntax, Foris, Dordrecht.

Rood, D. (1977) "An Assessment of Siouan Linguistics," in The Siouan-Caddoan Newsletter 1 ed. by R. Hollow, Bismark. Mary College Indian Studies Program.

Rood, D. (1979) "Siouan" in The Languages of Native America: Historical and Comparative Assessment ed. by L. Campbell and M. Mithun, University of Texas Press, Austin and London.

Rood, D. and A. Taylor (1976) Beginning Lakhota, Vol 1 and 2., Preliminary Edition, University of Colorado, Lakhota Project.

Rosen, C. (1981) The Relational Structure of Reflexive Clauses: Evidence from Italian, dissertation Harvard University.

Rosen, C. (to appear) "The Interface between Grammatical Relations and Semantic Roles," in D. Perlmutter and C. Rosen, eds. (to appear).

Rosenbaum, P. (1967) The Grammar of English Predicate Complement Constructions, Cambridge, Mass.

Ross, J. (1967) Constraints on Variables in Syntax, MIT dissertation, reproduced by the Indiana University Linguistics Club (1968), Bloomington.

Selkirk, E. (1977) "Some Remarks on Noun Phrase Structure," in P. Culicover, T. Wasow, and A. Akmajian, eds.

Shaw, P. (1976) Dakota Phonology and Morphology, dissertation, University of Toronto, revised version published by Garland Press (1980).

Standing Bear, L. (1928) My People, the Sioux, ed. by E. Brininstool, Houghton Mifflin Co. Boston.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Stemberger, J. (1981) "Morphological Haplology," Language 57, 591-817.

Stowell, T. (1981) The Origins of Phrase Structure, unpublished Ph.D. dissertation, MIT.

Taraldsen, T. (1978) "On the NIC, vacous application and the that-trace filter," mimeo. MIT, and Indiana University Linguistics Club, 1980.

Van Valin, R. (1977) Aspects of Lakhota Syntax, unpublished dissertation, University of California, Berkeley.

Van Valin, R. (1980) "Lexical Constraints on Dakota Clause Structure" in Grammar inside and outside the clause ed. by J. Nichols and A. Woodbury (to appear).

Wasow, T. (1977) "Transformations and the lexicon" in Culicover, Wasow and Akmajian, eds.

Williams, E. (1983) "Against Small Clauses," Linguistic Inquiry 14, 287-308.

Williamson, J. (1979) "Patient Marking in Lakhota and the Unaccusative Hypothesis," CLS 15.

Williamson, J. (1980) "Morphological Disambiguation by Rule Application: A Case in Lakhota" in LNLJ Vol. 7.

Williamson, J. (1981) "Inalienable Possession in Lakhota," unpublished paper, UCSD; presented at CLA, Montreal 1980.

Williamson, J. (in preparation) "The Syntax and Semantics of Internal Head Relative Clauses in Lakhota."

Zubizarreta, M.-L. and J.-R. Vergnaud (1981) "On Virtual Categories," ms. MIT.

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