Mixed Categories

Nominalizations in Quechua

Claire Lefebvre and Pieter Muysken

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SPELLING AND GLOSSES

Our spelling system is the one commonly accepted now in Peru, and established by legal decree. For Cuzco it is as in Cusihamán (1976:296). The only exception is that we have used *i* and *u* everywhere, rather than sometimes *e* and *o* for the high vowels, mostly in Spanish borrowings. For the consonant system we use the following array of characters:

simple	p	t	ch	k	q	
aspirated	ph	th	chh	kh	qh	
glottalized	p'	t'	ch'	k'	q'	
		s	sh			h
	m	n	ñ			
		l	ll			
		r				
	w		y			

For Spanish names we use the Quechua pronunciation:

Xwan, Mariya, Xusi, Pidru, etc.

Our examples are represented in the following format:

mikhu – y – ta
eat *NOM AC*
 to eat AC

The following abbreviations were used in the glosses:

Nominal affixes

-Ø	NO	nominative
-Ø	CA	zero objective
-ta	AC	accusative
-pi	LO	locative
-man	to	(dative and ablative)
-manta	from	(ablative)
-qpa	GE	genitive

-kama	until	
-wan	WI	instrumental/coordination
-paq	for	benefactive
-rayku	cause	because of
-kuna	PL	nominal plural
-cha	DIM	diminutive
-lla	DEL	delimitative ('just')
-y	1	first person
-yki	2	second person
-n	3	third person
-nchis	4	fourth person (first person inclusive)

Verbal affixes

-q	AG	agentive nominalizer
-sqa	NOM	(resultative) nominalizer
-na	NOM	(potential) nominalizer
-y	NOM	(infinitive) nominalizer
-rqa/-ra	PA	past tense
-sqa	SD	sudden discovery tense
-saq	1FU	first person future
-qa	3FU	third person future
-sun	4FU	fourth person future
-ni	1	first person
-nki	2	second person
-n	3	third person
-nchis	4	fourth person
-wa	1ob	first person object
-su	2ob	second person object
-yki	2ob1su	second person object/first person subject
-y	IM	imperative
-chis	2pl	second person plural
-ku	PL	non-second person plural
-sha	PR	progressive aspect
-spa	SUB	adverbial subordination (same subject)
-qti	SUB	adverbial subordination (different subject)
-man	POT	potential mood
-chi	CAU	causative
-naya	DESI	desiderative
-na-ku	REC	reciprocal
-ku	RE	reflexive
-ri	INC	inchoative
-mu	CIS	cislocative
-pu	BEN	benefactive
-ru	FORCE	forcefulness

Independent affixes

-chu	NEG	negation
-chu	INT	yes/no question marker
-mi/-n	AF	affirmative
-si/-s	HS	hearsay
-cha	DU	dubitative

(These three markers are also glossed as VAL whenever it is not relevant to the argument precisely which one is used)

-qa	TO	topic marker
-pis	EMP	emphatic
-taq	EMP	emphatic
-puni	EMP	emphatic
-ni	EUPH	euphonic element (obligatory between two consonants at a morpheme boundary)

PREFACE

Our book on nominalizations in Quechua summarizes the work we have carried out on this language over the last ten years. We are happy to offer it as a contribution to linguistic theory.

For their interest, friendship and patience, we thank the numerous Quechua speakers who gave us access to their language, making it possible for us to reach an understanding of it which led us to writing this book. More specifically we would like to thank our Cuzco informants who contributed directly in the establishment of the data base on which our analyses are built: Angelica and Justo Leon Baca, Evaristo Vasquez, Felix Mamani, José Rodriguez, Lita Cancino Chacón, Mercedes Ordoñez Calderón, Carlos Quispe Centeno.

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We would also like to thank Huguette Maisonneuve and Elly Borghesi for their help in typing the manuscript and for their patience in the face of many revisions. The same holds *a fortiori* for Wanda and Jean-Pierre Kent, who did much to make the book into what it is now. We cannot thank them enough. Simon van de Kerke gave the book a final run-through. Emily Rando did much to improve the style and catch a number of mistakes in the manuscript. For their dedication and interest, we want to thank the anonymous readers who gave us most useful comments on an earlier version of the manuscript. Finally, Frank Heny, for his most appreciated help in giving our project of writing a book on Quechua its actual shape.

The analysis presented in this book is based on a large body of original data collected by both authors.

- a. a corpus of 20 hours of spoken Cuzco Quechua collected and transcribed by Lefebvre in 1972-73;

- b. data collected from Cuzco Quechua informants by Lefebvre in 1979-80;
- c. data from fieldwork in 1981 by both authors;
- d. data collected by Muysken for various varieties of Quechua (mostly Ecuadorian) in 1974-76.

Published material on Cuzco Quechua and other dialects was also consulted.

Quechua is a wide-spread language, spoken by approximately eight million people from the Andean area including Ecuador, Peru, Bolivia and the north of Argentina. The variety of dialects it has developed since 800 A.D. – dialects which may be quite different from one area to another – makes Quechua a language family rather than a single language.

In this book, we concentrate on the Quechua of Cuzco, Peru and unless otherwise specified the data presented correspond to Quechua as it is spoken in the Cuzco area. The complexity of Quechua nominalizations and the large amount of variation found among Quechua dialects, together with our major concern for a discussion in depth of theoretical issues, forced us to this choice. The extensive description of the data that we provide in this book could serve as a basis for future comparative studies. We have been very careful in presenting the full range of data on nominalizations in such a way that a reanalysis of these data within another theoretical framework would be possible.

Work on Cuzco Quechua dates back to Anonymous (1586) and Holguín (1607). The latter is a towering achievement, a brilliant product of late-Renaissance Spanish linguistics. We do not refer to these works in the text, since the language appears to have undergone a number of changes since then. Middendorf (1855; 1972) presents a very thorough and extensive study of the Quechua spoken outside of Cuzco. We refer to it at several points in the text, as well as to Cusihamán (1976), the first study of Cuzco Quechua done by a native speaker. Cusihamán died tragically in 1982.

Throughout our research we were confronted with the immense problem that all non-Quechua linguists are faced with in the Andes – our lack of native command of the language. This had as a consequence not just that there were elements and constructions that we might not be aware of, but also that those aspects of the language that we did know about had been selected by the grammatical tradition, by our research interests and by our theoretical orientations. Of course native speakers do the same thing: they use theoretical constructs to guide the search for the structures of their language. One might think, however, that their intuitions *in toto* function as a break on this necessarily selective process.

Why then do non-Quechua linguists still work on the language? In the 1960's and 1970's a (much too) small number of native Quechua linguists received more or less sophisticated training in various North American and European universities. These universities often underestimated the language and culture gap facing the Quechua linguists, however. In addition, the Quechua linguists were often faced with fairly heavy loads of teaching Quechua and Spanish, so that their own research was delayed for years. After their return to the Andes, it turned out

that their problems had just begun. First, there was little support within an impoverished economy for the research of Quechua scholars, most of whom had no local prestige or family connections in the academic or political power structure. Second, the aims of pure research on Quechua, from a generative or other theoretical point of view, are often given much less priority than work with more immediate societal applications, such as bilingual education research. In addition, structural approaches to language are sometimes perceived as sterile and without the social meaning that could make ethnographic or sociolinguistic work seem more worthwhile.

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INTRODUCTION

In this book we develop a theory of syntactic categories with mixed properties through a detailed analysis of nominalizations in Quechua, an Amerindian language from the Andean region in South America. The importance and the complexity of the construction in Quechua, as well as the wide range of phenomena that Quechua nominalizations involve, offer a valuable source of data for developing a theory of mixed categories.

In studying Quechua nominalizations we have been struck by the fact that while in some ways they have the same pattern as simple noun phrases, in other ways they are like full sentences with verbs. The purpose of our book is to propose a theory of mixed categories which will account for the complex properties of nominalizations, which are half way between noun phrases and clauses. In describing these nominalizations, we have taken from current linguistic theory a framework and a set of assumptions that allows us to focus on this blending of nominal and verbal properties and to account for it in the most efficient way. In doing so, we will see to what extent current versions of the theory of Government and Binding can account for the abstract syntax of Quechua and what modifications and extensions of this theory are necessary.

Research topics discussed in this book central to current work within the Government and Binding framework include: syntactic categories and their projections, the relationship between morphology and syntax, Case, movement, complementation versus relativization, the status of nominalizations in a typology of clauses, and the theory of parameters.

1. TOWARDS A THEORY OF MIXED CATEGORIES

1.1. *Syntactic Categories and Their Projections*

Central to the study of nominalizations is the definition of their syntactic category and its projection. This topic has received considerable attention in previous studies on nominalizations. For the most part the literature on nominalizations of the last twenty years within the framework of generative grammar carries on a debate on whether nominalizations and gerunds are NPs or Ss (e.g. Lees 1960, Chomsky 1970, Emonds 1976, Gee 1977, Horn 1975, Jackendoff 1977, Koster and May 1981, Rosenbaum 1967, Stowell 1981, Thompson 1973, Wasow and Roeper 1972). A second problem discussed in the literature is how to relate a nominalized verbal head to its maximal projection (Aoun 1981a, Chomsky 1970, Jackendoff 1977, Reuland 1983).

On the other syntactic properties of nominalizations little is found in the

literature; we find a few articles on the subject of the nominalized verb (e.g. Stowell 1981, Thompson 1973, Wasow and Roeper 1972); Ross' (1972) constraint on double *-ing*; the analysis of Reuland (1983) on the nature of *-ing* as it is related to the nature of INFL in nominalized clauses; Williams' (1975) and Stowell's (1982) discussion of the issue of COMP in gerunds and a few articles on the interpretation of nominalized clauses (e.g. Hellan 1980, Higginbotham 1983). Most of the syntactic issues concerning nominalizations were left largely unexplored, in terms of concrete analyses, due to the unresolved overall problem of the categoriality of nominalizations.

There are two studies which are dedicated to a systematic analysis of nominalizations in Quechua: Costa (1972) and Snow (1973). Both studies were carried out in the framework of Generative Semantics, but are primarily descriptive in nature. They are organized by nominalizing suffix, rather than thematically, and present data that correspond in many ways to the data presented here.

We will argue, on the basis of their properties, that Quechua nominalized verbs constitute a true mixed category, defined by the feature combination [+N, +V]. Consider sentence (1), which contains a nominalized clause occurring in the complement position of the matrix verb, and therefore before the main verb, given that Quechua is an SOV language.

- (1) [Xwancha -q -hamu -sqa -n -ta] yacha -ni
 Juan GE come NOM 3 AC know 1
 I know that Juan came.

In (1) the verb heading the complement clause is nominalized with the suffix *-sqa-*. This suffix is responsible for the nominal properties of the verb observed in (1): first, the nominalized verb bears a Case marker – accusative *-ta* –, a property of [+N] elements. Second, the subject of the nominalized verb is marked for genitive Case – *-q* in (1) –, which is also the Case assigned to specifiers of nouns in Quechua. The nominalizing suffix *-sqa-* in (1) encodes past tense; only verbs can bear a Tense marker. In addition, the complement has an obligatory subject. On the basis of observations such as these we will argue that nominalized verbs are best defined as [+N, +V] in Quechua.

In (1) the nominalized verb heads a N''' projection, which can be seen from the Case on the specifier. We will show that nominalized verbs can also head projections with the internal structure of sentences, which we will argue to be V''' projections. We will assume a restricted version of X' theory in which every major category has a three-level X''' structure. These structures are left-branching and to a large extent they parallel each other. We bring out the particularly close resemblance between N''' and V''' structures exhibited by the Quechua data. In order to relate the heads defined as [+N, +V] to their projections, either N''' or V''' , we formulate a specific extension of the X' convention in terms of categorial neutralization that accounts for the categorial features of nominalized verbs. Another question is the role of INFL in the definition of categories. In much

recent literature, INFL is identified with the auxiliary system, and assumed to function as the lexical head of S. We will argue that in Quechua INFL can occur in noun phrases, and show that this leads to a parallelism between NP and S.

1.2. *Morphology and Syntax*

A second crucial issue concerning nominalizations is the intimate and intricate relation between Quechua morphology and syntax. In sentence (1) the nominalizing suffix *-sqa-*, as well as other nominalizing suffixes of Quechua, also encodes Tense, a property of inflectional affixes. Affixes such as these challenge the view that derivation and inflection should be accounted for in different components of the grammar, as has been advocated by Chomsky (1970).

We adopt a strong version of the lexicalist hypothesis, which implies that inflectional affixes are added to a stem in the lexicon rather than resulting from a syntactic operation. We develop a number of criteria by which true affixes can be distinguished from clitics. Formal properties of the lexical entry are defined. We then develop a theory concerning the relation between morphology and syntax, and concerning the head and percolation in the projection of the head. By percolation we mean the transfer of features between syntactic nodes that stand in a domination relationship in a tree. Abstract positions in the projection of lexical heads will be interpreted in part on the basis of the features of the morphology of the head through the process of morphological control.

1.3. *Case*

Quechua relies heavily on morphological Case to mark grammatical relations. Case is omnipresent in Quechua nominalizations. For example, the distribution of Case on the specifier and on the object of the verb in nominalized clauses, reveals the categorial status of the projection that nominalized verbs head – either N''' or V''' . In chapter 4, Case is shown to be a property of all maximal projections in Quechua, of V''' as well as of N''' , which again suggests a parallelism between NP and S. This explains why in (1) the clausal complement, headed by a nominalized verb, is assigned accusative Case. The fact that the accusative Case assigned to the clausal complement is realized as a Case affix on the nominalized verb will be shown to follow from the Case theory we propose in chapter 4. The theory of Case presented in Chomsky (1981) is revised in order to account for the Quechua data: the Case assignment rules are parametrized in such a way that the nominalized verb can be both a Case bearer and a Case assigner.

1.4. *Movement*

Our assumption that nominal and verbal projections are structurally similar in Quechua raises the question as to whether extractions out of N''' and V''' structures should be parallel. To what extent are nominalizations opaque or open

domains with respect to extractions? Sentence (2) illustrates a typical case of extraction out of a nominalized clause:

- (2) Mariya Xwancha -q -ta -n_i muna -n [e_i hamu -na -n -ta].
Maria Juan GE AC AF want 3 come NOM 3 AC
 Maria wants Juan to come.

Similar data were discussed and analyzed from a slightly different perspective in Cole and Hermon (1981). In (2) the subject of the embedded nominalized clause has been extracted out of its clause and at surface structure is found in the domain of the matrix verb. As can be seen in (2), the moved element bears two Case markers – genitive and accusative. How do we account for the fact that the extracted elements are doubly Case marked?

In analyzing these facts we will assume the locality principle of X''' boundedness, the theory of movement proposed in Chomsky (1977) and (1981), and the Binding theory proposed in Chomsky (1981), involving both A and $\bar{A}$ Binding. In chapter 5 we propose a rule Move CASE applying to movement out of both NPs and Ss. This rule, paired with a rule of Case assignment from the matrix clause into the domain of the complementizer of the lower clause, is shown to account for double Case marking on extracted elements. This analysis departs substantially from that proposed by Cole and Hermon (1981) to account for extraction out of nominalized clauses in Imbabura Quechua. In chapter 5 arguments are brought forward showing that the Case Filter applies at the level of Logical Form rather than in the phonological component. Finally, we study the relation between the assignment of Case and that of semantic roles by the lexical head. We will refer to these semantic roles as θ -roles.

1.5. *Complementation versus Relativization*

One of the features of Quechua syntax that has intrigued grammarians from the very beginning is the curious cluster of properties of relative clauses, which, like complement clauses, may be formed through nominalization. How can relative clauses in Quechua be distinguished from complement clauses, given the formal similarity of the two? The Quechua nominalized clause in (3) can be interpreted either as relative or as a complement clause:

- (3) [Qaynunchaw wasi ruwa -sqa -yki-ta] riku -ni.
yesterday house make NOM 2 AC see 1
 I see the house that you built yesterday. RELATIVE CLAUSE
 I see that you built a house yesterday. COMPLEMENT CLAUSE

In chapter 6, we show that while relative clauses – in particular headless relative clauses – resemble complement clauses, they are quite distinct from them. We reject the analysis of relative clause formation involving a rule of raising operating in the syntax. In the case of headless relative clauses, a raising rule operating at

the level of Logical Form is motivated through the analysis of the constraint on the positions headless relative clauses may fill at S-structure. In this way it follows that at the level of Logical Form, where all relative clauses are interpreted through a predication rule, there are no headless relative clauses. The contrast observed between relativization of subjects and relativization of non-subjects is shown to follow from the Binding theory. As for free relatives an account is given of the absence of matching effects in Quechua. Matching effects occur when the relativized element in a free relative clause has to have the same case as the relativized element in the main clause, for the free relative to be well-formed.

Quechua relative clauses formed through nominalization exhibit a phenomenon that we will refer to as Case Floating. In (4) the accusative **-ta** Case on the nominalized verb corresponds to the Case assigned to **warma** 'girl', and not to that of the relativized constituent in the matrix clause:

- (4) [Warma riku -sqa -y -ta], hamu -nqa.
girl see NOM I AC come 3FU
 The girl I saw will come.

Case Floating constitutes a feature of relative clauses in many Quechua dialects. Weber's (1978) thesis on Quechua nominalizations presents data from Huanuco Quechua similar to those analyzed in this book. His work remains primarily descriptive, however, as no real analysis is provided for the phenomena involved. In chapter 6, we will propose an analysis of Case Floating phenomena in terms of Case chains, a special instance of Move CASE.

1.6. *Nominalizations as Propositions*

In chapter 7, we explore the implications for semantics of the categorial neutralization between nouns and verbs found in Quechua nominalizations. These implications involve the notion of propositionality as it is related to Tense and Validation, which in Quechua is related to Tense. Validation is a system, characteristic of Quechua and many other languages, of marking the point of view of the speaker on the information conveyed in a sentence. Crucial to this discussion is the structure of the auxiliary system (AUX), and its various realizations in the different types of clauses found in Quechua. Differences observed between non-nominalized clauses and nominalized clauses in the realization of AUX are shown to follow from the unequal richness of AUX and COMP, and from the interpretation of parts of AUX in Logical Form. We introduce the notion of Relative Tense (contrasted with the Main Tense of main clauses), which can adequately characterize the temporal distinctions found in nominalizations. We suggest an extension of the Binding theory to Tense interpretation. Finally we study the restructuring of verbal complexes in terms of the absence of INFL in the lower complement.

We use the term AUX for all elements on the level of S with sentential scope and

meanings related to Tense, Modality, etc. The term INFL is used to refer to the features of Tense and Agreement manifested in Quechua in the verb morphology. The term AUXILIARY refers to verbal elements with auxiliary status. Only INFL has a precise formal status within the theory adhered to here; AUX and AUXILIARY are descriptive terms.

1.7. *Modularity and Category Theory*

Among the most important recent developments in linguistic theory is the emergence of the concept of linguistic parameter. Universal Grammar is assumed to contain a number of options, the choice of which leads to different languages types. Characteristic features of individual languages are not specified by themselves in Universal Grammar, but cluster on a more abstract level in specific parameter settings. The dominant conceptual model used so far in parametric theory is list fixing: the options of Universal Grammar have the character of a list from which certain items are chosen. In the concluding chapter of our book, we challenge this view in proposing that parametric variation results from differences in the way grammatical modules interact. The modules involved are those of category theory.

Basic to the current conception of grammatical categories is the following pair of assumptions:

- (5) – Nouns project NPs and NPs are interpreted as referential expressions.
- Verbs project clauses and clauses are interpreted as propositions.

These assumptions are quite general and have a long history in grammatical tradition. In the Port Royal grammar, for instance, nouns are viewed as referring to entities, and verbs as referring to actions.

What we explore in this book is a set of constructions headed by elements that are nominal and verbal at the same time: syntactic nominalizations. With respect to these constructions, the pair of simple equations mentioned above do not hold and a more complex type of mapping from syntactic structure onto semantic interpretation is needed. We want to argue that this more complex mapping calls for a modularization of the theory of syntactic categories. We adopt a system of modules because it allows us to separate the similarities of nominalizations to S's and simple NP's from their differences. At least five modules interact to produce together the actual categories found in particular languages. These modules are:

(A) The theory of projection (Chomsky 1970, Jackendoff 1977, Stowell 1981), which essentially reduces to:

$$\begin{array}{c} [\alpha F]^i \\ | \\ [\alpha F]^{i-1} \end{array}$$

This theory, often referred to as *X-bar* theory, accounts for the insight that natural language constituents are endocentric: their core has the same features as the constituent as a whole.

(B) The theory of lexical categories, which states (Chomsky 1974, Jackendoff 1977):

$$X = \begin{bmatrix} \alpha \text{ nominal} \\ \beta \text{ verbal} \end{bmatrix}$$

This rule produces the following four outputs, in Chomsky's view:

$$\begin{array}{ll} [+N, -V] & \text{nouns} \\ \vdots & \end{array}$$

Nouns and verbs are maximally opposed to each other, and adjectives and pre- or postpositions share characteristics of both verbs and nouns. In the last chapter of this book we take a slightly different perspective: verbs and nouns are maximally opposed to each other, pre- or postpositions have no specific lexical characteristics, and the feature combination $[+N, +V]$ corresponds to the lexical heads of syntactic nominalizations: nominalized verbs.

(C) The theory of predication (Williams 1980), which defines the following relation holding between a subject and a predicate:

$$NP_i \quad X_i$$

(D) The theory of propositionality (Reichenbach 1947, Woisetschläger 1977), which defines the equation:

$$(10) \text{ Proposition} = \text{Tense Operator (Propositional Content)}$$

For a clause to be interpreted as a proposition it needs a tense operator.

(E) The theory of referentiality which states that a constituent may be interpreted as an argument in Logical Form if and only if it is marked for Case. This can be formally expressed as

$$(11) X \text{ is an argument at LF iff } X = [+ \text{case}]$$

For an element to have Case means that it has a referential index and argument status.

We take these modules to be essentially separate, together yielding concrete structures such as the schema for an English clause:

Here projection theory produces the relation N/NP and V/VP . In recent work it is argued that it also produces the relation $INFL/S$ and $COMP/S'$. Below we will argue that in Quechua clauses are categorially headed by the verb, rather than by $INFL$. The theory of lexical categories produces the contrast between N and V . The theory of predication gives us the string... $NP... VP...$, and the theory of propositionality the presence of $COMP$ and $INFL$, assuming that the complementizer and the auxiliary system together function as Tense operators. The theory of referentiality makes it necessary for the subject NP to have a Case assigner.

Modularization has the advantage that it solves some puzzles of the classical treatment of categories, such as the obligatoriness of the subject (derivable from predication theory clauses). Its second advantage is that it provides an elegant way to account for parametric variation in languages, with respect to their category systems.

We will argue in favor of the module interaction approach to category theory using the parameters of Quechua proposed throughout this book, showing that they are not unrelated to each other, but rather, that they reduce to two clusters of properties interacting with each other. The first cluster of properties builds around Case which defines referentiality, and the second cluster of properties builds around $INFL$, which defines propositionality. The result of this conspiracy is that the Case cluster makes clauses more like nouns and the $INFL$ cluster makes nouns more like clauses. This result makes it possible for mixed categories like nominalizations to emerge.

We are led to a view in which categories can differ on certain structural points, but resemble each other in their interpretation, and vice versa. In three chapters, on categorial systems, on morphology, and on Case, we explore the differences between the different categories of Quechua. In three further chapters we stress parallels in interpretation: opacity and extraction, relative clause formation, and

propositionality. In discussing the Quechua category system, we keep the problem in mind throughout of the learnability of mixed and trans-categorical constructions. How can the complex projections of the Quechua categorial system be inferred from the linear data?

If we adopt the modular view of category structure presented here, the following question arises: how can the child determine which of the many possible interactions between the modules is relevant for Quechua? Nominalizations in Quechua, a language with a rich morphology, are thus a clear example of the challenge which the study of Amerindian languages holds for a research program which seeks to find the parameters along which natural languages can vary and which claims that these parameters are sufficiently restrictive, for all natural languages, for each language to be learnable on the basis of few and imperfect data. In this book we take up this challenge.

2. OVERVIEW OF THE STRUCTURE OF QUECHUA

Phonologically, Quechua is not very complex. Most syllables are of the form (C)V(C), and in most cases the underlying morphological structure is transparent in the phonological form. There are only three underlying vowels: /u/, /i/, and /a/. The consonant system contains a series of simple, aspirated and glottalized stops. In (13) we give a systematic representation of the consonant system, in the orthography that we are using:

(13)		bilabial	dental	palatal	velar	uvular	glottal
	stops – simple	p	t	ch	k	q	
	aspirated	ph	th	chh	kh	qh	
	glottalized	p'	t'	ch'	k'	q'	
	fricatives		s	sh	x		h
	nasals	m	n	ñ			
	flap		ɸ				
	laterals		l	ll			
	semi-vowels	w		y			

(Here we ignore /b/, /d/, and /g/, which occur in loan words.)

Primary word stress is on the penultimate syllable. We have not marked it, since exceptions occur mostly in exclamations, etc., which are not treated in this book.

The only productive process of word formation in Quechua is suffixation. Suffixes mark a wide variety of features and concepts. Consider a sentence such as:

- (14) Qan -ri, ima -rayku -n mana saluda -wa -rqa -nki -chu.
 you EMP what cause AF not greet 1ob PA 2 NEG
 You, why didn't you greet me?

(19) -y	infinitive
-sqa-	"past"
-na-	"future"

In addition there is an agentive marker **-q** not directly related to the tense system. The tense expressed by the nominalizing suffixes is dependent on or relative to the tense expressed by the main verb. The same holds for the affixes marking adverbial subordination. This is why we label them [– Main Tense].

There are two paradigms of 'subject' person marking in Quechua, listed in (20). We distinguish them by the feature [± Main Tense] since one set of markers is selected when the head is a Main Tense verb, and another set when the head is a noun or a [– Main Tense] verb:

(20)	+ Main Tense	– Main Tense
1	-ni	-y
2	-nki	-yki
3	-n	-n
4 (= 1pl incl.)	-nchis	-nchis

Thus the Main Tense person paradigm occurs only on verbs bearing a Main Tense marker such as **-rqa-** in (21):

- (21) Hamu -rqa -ni.
come PA I
 I came.

The [– Main Tense] person paradigm occurs on nouns, nominalized verbs, and on the heads of adverbial clauses. This is illustrated in (22), (23), and (24):

- (22) wawa -y
child I
 my child

- (23) hamu -sqa -y -ta
come NOM I AC
 ... that I came (AC)

- (24) hamu -qti -y -qa
come SUB I TO
 if I come...

Note that the feature [± Main Tense] suggested here as essential in distinguishing the two person paradigms is more adequate than the feature [± nominal] extensively used in the Quechua literature. This is the case because [– Main

Tense] person markers are found not only on nominal elements as in (22) and (23), but also on adverbial subordinate clauses such as (24), which have no nominal properties.

The other classes of affixes will be introduced in the book whenever they come up in the discussion. For a thorough analysis of Quechua morphology, see chapter 3; for a detailed analysis of the distinction [$\pm$ Main Tense] and related phenomena, see chapter 7.

Quechua has two principal lexical categories: verbs and nouns (adjectives being formally a type of noun and postpositions playing a marginal role). As for minor lexical items, Quechua has only a few: negators such as **mana** and **ama** (indicative and subjunctive negation, respectively), a series of lexical complementizers all formed with **chay** 'that', sentence particles such as **ña** 'already', and a number of independent elements, which are syntactically separate but cliticize onto the element to their left.

Quechua is a left-branching SOV language with a COMP in final position. In main clauses constituent order is free, while in subordinate clauses the verb comes at the end.

One way of characterizing Quechua clauses is with respect to whether they are nominalized. The non-nominalized clauses are either S'' or S' . As S'' they can contain a topic which appears to the right or to the left of S' , as in base rule (25). An example is given in (26):

(25) $S'' \rightarrow (\text{TOP}) S' (\text{TOP})$

(26) a. Siñorita -qa, mana -s ashka -ta -chu tuma -n.
miss TO not HS much AC NEG drink 3

The Miss, she does not drink much.

b. Mana -s ashka -ta -chu tuma -n, siñorita -qa.
not HS much AC NEG drink 3 miss TO

She does not drink much, the Miss.

S' is rewritten as in (27):

(27) $S' \rightarrow S \text{ COMP}$

The Wh-element is fronted to the beginning of S (not a COMP position) as in (28):

(28) Pi -kuna -n chay -ta t'uqachi -n -ku.
who PL AF that AC sing 3 PL
Who (pl.) sing that?

In non-nominalized subordinate clauses COMP is lexicalized by a **chay** element (**chay** + α Case or **chay-qa**), which gets a falling intonational contour and is follow-

ed by a pause. In such sentences, the verb is marked for Main Tense. Sentence (29) is an example of a complement clause formed in this way.

- (29) Warmi hamu -sha -n chay-ta, riku -ni.
woman come PR 3 that AC see I
 I see that the woman is coming.

In (29) the subordinate clause appears in its basic sentence-initial position (cf. base rule (30)). A sentence-final position is also possible for such clauses:

- (30) $S \rightarrow (S') (\text{Adv}) NP VP INFL (S')$

The sentence-initial/-final position is also the position for adverbial clauses (temporal or conditional).

- (31) Rima -qti -n -ku, mana vali -n -man -chu.
speak SUB 3 PL not worth 3 POT NEG
 If they spoke, it would not be good.

As shown in (30), S has a position for an initial adverb; it contains a NP, a VP and an INFL. The INFL node is expanded as in (32).

- (32) $INFL \rightarrow (\pm T), (AGR)$

The INFL node is never lexically filled.

Nominalized clauses occur in embedded positions, e.g. as complement clauses, indirect questions, and relative clauses. This is shown in (33), (34), and (35), respectively.

- (33) *Complements*

Pidru hamu -sqa -n -ta yacha -ni.
Pedro come NOM 3 AC know I
 I know that Pedro came.

- (34) *Indirect questions*

Pi hamu -na -n -ta mana yacha -ni -chu.
who come NOM 3 AC not know I NEG
 I do not know who will come.

- (35) *Relative clauses*

Warmi hamu -q -ta riku -ni.
woman come AG AC see I
 I see the woman who is coming.

Nominalized clauses have the following general characteristics:

- instead of being marked for Main Tense, the verb is marked as [+N] by means of one of the nominalizing suffixes **-q**, **-na**, **-sqa**, or **-y**. In addition to nominalizing the verb, these affixes specify the tense of the clause with respect to that of the matrix clause.
 - the nominalized verb is marked for Case (in the examples above, accusative **-ta**).
 - the COMP position is never lexically filled.
- An example of a noun phrase is given in (36):

- (36) Pidru -q ancha hatun wasi -n -man
 Pedro GE very big house 3 to
 to Pedro's very big house

Here nominal modifiers precede the head noun, and the adjectival modifier *ancha* precedes the adjective. We notice then that Quechua, with SOV, A-N, NP-P order, is a typical head final language. Note again that nouns, like **wasi-n** in (23), are marked for person just as verbs are.

As was mentioned previously, Quechua has a rich Case morphology. Within verb phrases we find a variety of Cases, such as **-ta** 'objective' – as in (33)-(35) –, and **-man** 'directional' – as in (36). We also find oblique Cases, such as **-rayku** 'cause', in addition to postpositions, that mark non-grammatical relations such as spatial and temporal ones.

SYNTACTIC CATEGORIES AND THEIR PROJECTIONS

Central to the study of nominalizations is the definition of their syntactic category. Are nominalizations nouns, verbs, both, or neither? What is the relationship, in terms of syntactic category, between the projections of nominalized verbs and that of nouns and main verbs in Quechua? What cross-categorial generalizations can be made in Quechua, with respect to subjects and to AGR (agreement)? How is the 'mixed' character of nominalizations to be expressed in the grammar?

We will go about answering these questions in several steps. In section 1. we will list some of the features that nominalized and main clauses have in common, and a number of differences between them. We will then give a general outline of the syntactic distribution of nominalized clauses. Section 2. constitutes a discussion of the categories of Quechua and of the extent to which they can be described in terms of the X' theory. This will allow us to situate nominalized verbs and clauses within the overall picture of Quechua categories, and to discuss the cross-categorial generalizations to be made with respect to AUX, AGR, VP, and the notion of subject. Basically, we argue that nominalized verbs are [+N, +V] and can be the head of both N''' and V''' projections. We will conclude that all major projections can have an INFL node and a type of COMP node.

In section 3. we review a number of earlier proposals that have attempted to account for transcategorial (mixed) constructions, particularly gerunds, and we explain our own analysis of nominalizations, which involves a slight extension of the X' system, involving categorial neutralization. The central idea is that projections can be categorially less specific than their lexical head. Thus a [+N, +V] element (the nominalized verb) can project either a [+N, -V] nominal structure or a [-N, +V] verbal structure.

1. NOMINALIZED CLAUSES VERSUS MAIN CLAUSES

1.1. *Features in Common*

In many ways, nominalized clauses are exactly like main clauses.

(A) In both types of clauses, the verb can take the same arguments. If these are oblique, they are marked exactly the same way. An example is **Pidru-man** in (1a) and (1b):

- (1) a. Manuil -pa Pidru -man libru qu -sqa -n -ta yacha -ni.
 Manuel GE Pedro to book give NOM 3 AC know I
 I know that Manuel has given the book to Pedro.

- b. Manuil Pidru -man libru -ta qu -n.
Manuel Pedro to book AC give 3
 Manuel gives Pedro the book.

(B) In nominalized clauses, as in main clauses, the person of the subject can be marked on the verb; in (2) both instances of the verb **hamu-** bear first person markers:

- (2) a. Hamu -sqa -y -ta yacha -n.
come NOM 1 AC know 3
 He knows that I have come.
- b. Hamu -rqa -ni.
come PA 1
 I came.

(C) In both types of clauses first and second person objects can be marked on the verb; in (3a), the first person object marker occurs on the nominalized verb, and in (3b) on the Main Tense verb:

- (3) a. Xwan tata -y -pa maqa -wa -sqa -n -ta uyari -n.
Juan father 1 GE beat 1ob NOM 3 AC hear 3
 Juan heard that my father had beaten me.
- b. Tata -y maqa -wa -rqa -n.
father 1 beat 1ob PA 3
 My father beat me.

(D) Nominalized clauses, as well as main clauses, can include adverbs of time and manner:

- (4) a. Paqarin usqay Lima -man ri -na -yki -ta yacha -n.
tomorrow fast Lima to go NOM 2 AC know 3
 He knows that you are to go to Lima fast tomorrow.
- b. Paqarin usqay -ta Lima -man ri -saq.
tomorrow fast AC Lima to go 1FU
 I will go to Lima fast tomorrow.

(E) Both types of clauses can be negated:

- (5) a. Mana hamu -na -n -ta yacha -ni.
not come NOM 3 AC know 1
 I know that he is not to come.

- b. Mana hamu -nqa -chu.
not come 3FU NEG
 He will not come.

(F) A final common feature of main clauses and nominalized clauses that we will mention is Wh-movement to clause-initial position. An example is (6), where *imata* 'what AC' is fronted:

- (6) a. Xwan -mi willa -wa -ra -n ima -ta Pidru-q apa -mu -sqa -n -ta.
Juan AF tell 1ob PA 3 what AC Pedro GE take CIS NOM 3 AC
 Juan told me what Pedro had brought.
- b. Ima -ta -n Pidru apa -mu -ra -n.
what AC 3 Pedro take CIS PA 3
 What did Pedro bring?

In (A) through (F) we have seen a number of parallels between nominalized and main clauses. Except for subject marking (which is absent in infinitives), these features are common to all nominalized clauses. It is clear that nominalized clauses have many of the semantic characteristics, and at least some of the structural characteristics of main clauses. We now turn to some of the differences between these clause types.

1.2. Differences between Main Clauses and Nominalized Clauses

The most important differences between nominalized and main clauses are:

(A) Subjects in main clauses are always nominative (expressed as $\emptyset$ as in (7); subjects in nominalized clauses can be either nominative as in (8a) or genitive as in (8b) (depending on the type of clause involved):

(7)	Xwan - $\emptyset$ hamu -n.
<i>Juan NO come 3</i>
Juan comes.	MAIN CLAUSE
(8) a.	Xwan - $\emptyset$ hamu -na -n -ta yacha -ni.
<i>Juan NO come NOM 3 AC know 1</i>
I know that Juan is to come.	NOMINALIZED
CLAUSE
b.	Xwan -pa hamu -na -n -ta yacha -ni.
<i>Juan GE come NOM 3 AC know 1</i>
I know that Juan is to come.	

(B) Objects in main clauses are always marked with the *-ta* accusative Case, as in (9). In nominalized clauses objects can be marked either with *-ta* or with

Ø objective Case (again, depending on the structure involved), as in (10a) and (10b), respectively.

- (9) a. Xwan papa -ta mikhu -n. MAIN CLAUSE
 Juan potato AC eat 3
 Juan eats potatoes.

- b. *Xwan papa -Ø mikhu -n.
 Juan potato CA eat 3

- (10) a. Xwan papa -ta mikhu -sqa -n -ta yacha -ni. NOMINALIZED
CLAUSE
 Juan potato AC eat NOM 3 AC know 1
 I know that Juan eats potatoes.

- b. Papa -Ø mikhu -y -ta muna -n.
 potato CA eat NOM AC want 3
 He wants to eat potatoes.

(C) Tense marking in main clauses is from the 'Main Tense' paradigm, given in (11):

- (11) -Ø- present, unmarked
 -rqa- simple past
 -sqa- sudden discovery
 various future

In main clauses all kinds of aspectual and modal distinctions are allowed. It should be noted again that Main Tense is not limited, strictly speaking, to main clauses, but can occur in complements and adjuncts with a lexical complementizer (mostly **chay** 'that') as well.

In nominalized clauses we find a more limited range of modal and aspectual markers, and the Main Tense paradigm is replaced by the paradigm of nominalization markers, [- Main Tense], consisting of:

- (12) -na- finite, unrealized
 -sqa- finite, realized
 -y- non-finite
 -q- agentive

These nominalizing affixes determine the character of the clauses they are affixed to, as we will see shortly.

(D) Person marking of the subject in main clauses is linked to the Main Tense paradigm, and in nominalized clauses it is selected from the [- Main Tense]

paradigm. The relevant forms are the following:

(13)¹	Main Tense	Non-Main Tense
1	ni	y
2	nki	yki
3	n	n
4 (= 1 pl incl)	nchis	nchis

The forms are only different in the first and second persons. Examples are given in (14).

(14) a. Hamu-ni.

come 1

I come.

b. Hamu-sqa -y -ta yacha -n.

come NOM 1 AC know 3

He knows that I have come.

(E) Quechua validation markers (expressing the perspective of the speaker, and perhaps focus in some cases) are limited to verbal projections in the Main Tense paradigm and therefore they do not occur in nominalized clauses. In (15) we present the principal validation markers. Sentence (16a) illustrates an occurrence of the affirmative validator **-mi** in a verbal projection of a [+ Main Tense] head. Sentence (16b) illustrates the fact that validators cannot occur in nominalized clauses which are [– Main Tense].

(15)	-mi	affirmative
	-si	hearsay
	-cha	dubitative
	-chu	yes/no question

(16) a. Xwan-mi hamu -n.

Juan AF come 3

Juan comes (for sure).

MAIN CLAUSE

b. *Xwan-mi hamu -sqa -n -ta yacha -ni.

Juan AF come NOM 3 AC know 1

NOMINALIZED
CLAUSE

(F) Like validation markers, the Quechua negative clitic **-chu** is limited to Main Tense contexts, as illustrated in (17a), and cannot occur in [– Main Tense] nominalized clauses, as shown by the ungrammaticality of (17b):

- (17) a. Xwan mana hamu -nqa -chu.
 Juan not come 3FU NEG
 Juan will not come.
- b. *Xwan mana hamu -na -n -ta -chu yacha -ni.
 Juan not come NOM 3 AC NEG know 1
 I know that Juan is not to come.

The absence of **-chu** can be accounted for along the same lines as the absence of validation markers in [– Main Tense] contexts, a matter extensively discussed in chapter 7.

(G) Case marking is possible on nominalized verbs, as well as on nouns and adjectives, but never on non-nominalized verbs:

- (18) a. *hamu -nki -ta MAIN VERB
 come 2 AC
- b. ...hamu -na -yki -ta NOMINALIZED VERB
 come NOM 2 AC
 ... that you are to come (finite complement)
- c. hamu -y -ta NOMINALIZED VERB
 come NOM AC (infinitive complement)
 to come

The contrast between (18a) and (18b, c) is due to the fact that the Case affixes, of which **-ta** is one, can only be attached to elements of the type [+N]. This yields the important result that nominalized verbs are morphologically of the type [+N], as opposed to verbs in main clauses.

(H) In main clauses (as in (19)), the object can occur both to the right and to the left of the verb.

- (19) a. Xwan papa -ta mikhu -n.
 Juan potato AC eat 3
 Juan eats potatoes.
- b. Xwan mikhu -n papa -ta.
 Juan eat 3 potato AC
 Juan eats potatoes.

In (19b) the object has been moved to the right of the verb to an adjunct position through Scrambling, a process discussed in chapter 4.

The equivalent of (19b) is ungrammatical in nominalized clauses, in which the head always has to be clause-final, as shown in (20):

- (20) a. Xwan papa -ta mikhu -sqa -n -ta -yacha -ni.

Juan potato AC eat NOM 3 AC know I

I know that Juan eats potatoes.

- b. *Xwan mikhu -sqa -n -ta papa -ta yacha -ni.

Juan eat NOM 3 AC potato AC know I

This lack of parallelism between main and nominalized clauses will be accounted for in detail in chapter 3.

1.3. The Syntactic Distribution of Nominalized Clauses

Having presented the main similarities and differences between nominalized clauses and main clauses, we briefly sketch the positions in the sentence where nominalized clauses can appear. They include the subject position, the complement position of the verb, the complement position of the copula, the relative clause position, and the position of non-subcategorized adverbial clauses.

In SUBJECT position we find *-y-* infinitives, and *-na-* and *-sqa-* finite clauses (cf. (12) above) when their subject is marked genitive:

- (21) Papa -Ø alla -y kunan -mi ka -sha -n.

potato CA dig NOM now AF be PR 3

The potato-digging is now.

- (22) Xwan -pa hamu -sqa -n -qa manchari -chi -wa -n -mi.

Juan GE come NOM 3 TO afraid CAU 1ob 3 AF

That John has come frightens me.

It is difficult, of course, to determine whether these clauses occupy the subject position or just a pre-sentential topic position. It is not necessary, however, to make a pause between the subject and the rest of the clause in (21) and (22).

In VERBAL COMPLEMENT position we find:

(A) Infinitival clauses as the sole complement of verbs such as *qallari-y* 'begin', as in (23), and *yacha-y* 'know':

- (23) Mikhu -y -ta qallari -ni.

eat NOM AC begin I

I begin eating.

(B) Infinitival clauses as the sister of a direct object complement with verbs such as **yacha-chi-y** 'teach', as in (24) and **yanapa-y** 'help':

- (24) Alla -y -ta yanapa -wa -ra -n.
 dig NOM AC help 1ob PA 3
 He helped me dig.

(C) Finite **-na-** and **-sqa-** clauses as complements of verbs such as **yacha-y** 'know' and **muna-y** 'want', as in (25):

- (25) Hamu -na -n -ta -muna -ni.
 come NOM 3 AC want 1
 I want him to come.

(D) Agentive **-q** clauses as sole complements of movement verbs such as **ri-y** 'go' and **hamu-y** 'come', as in (26), to form purposives:

- (26) Mikhu -q hamu -ni.
 eat AG come 1
 I come to eat.

(E) **-q** clauses can also be the sister of a direct object NP with perception verbs and with the verb **saqi-y** 'allow':

- (27) Pay -ta puri -q -ta uyari -ni.
 he AC walk AG AC hear 1
 I hear him walk.

The COPULA can take a nominalized clause as its complement. With **-sqa-** it forms passive-like statives, with **-na-** obligation clauses, and with **-q** past habituals:

- (28) Suwa -sqa -n ka -ni.
 rob NOM 3 be 1
 I have been robbed (by him).
- (29) Suwa -na -n ka -ni.
 rob NOM 3 be 1
 I am to be robbed (by him).
- (30) Suwa -q ka -ni.
 rob AG be 1
 I used to rob.

Embedded within NPs we find RELATIVE CLAUSES through nominalization. **-q** clauses are used to relativize subjects, **-sqa-** and **-na-** clauses non-subjects. Thus we have, parallel to (28)-(30), relative clauses such as (31)-(33):

- (31) suwa -sqa -n runa...
rob NOM 3 man
 the man that was robbed (by him)...

- (32) suwa -na -n runa...
rob NOM 3 man
 the man to be robbed (by him)...

- (33) suwa -q runa...
rob AG man
 The man that robs...

Finally we find nominalized clauses as ADVERBIAL COMPLEMENTS, modified by different postpositions and Case markers and filling a sentence-initial or -final position adjoined to S:

- (34) Qaynunchaw Pidru wiqchu -ku -sqa -n -rayku
yesterday Pedro slip RE NOM 3 cause
 nana -chi -ku -sha -n.
hurt CAU RE PR 3
 Because Pedro slipped yesterday he feels pain.

- (35) Chay papa -kuna -qa mana -n allin -chu mikhu -na -paq.
that potato PL TO not AF good NEG eat NOM for
 Those potatoes are not good to eat.

All nominalized clauses may occur in topic position.

This concludes our brief summary of the different positions nominalized clauses can occupy in the sentence. Schematically, their distribution is presented in Table I.

2. NOMINALIZATIONS AND THE SYNTACTIC CATEGORIES OF QUECHUA

In this section we situate nominalized verbs with respect to the other major lexical categories existing in Quechua (section 2.1.). We then discuss the projections from these categories, within the framework of *X'* syntax, in section 2.2. We will argue that nominalized verbs are of the category [+N, +V] and can be the head of either *N'''* or *V'''* projections. This should not come as a surprise given the parallels between the N and the V projections in Quechua which are also manifest

TABLE I: THE SYNTACTIC DISTRIBUTION OF THE FOUR TYPES OF NOMINALIZATIONS

CLAUSAL						
	SUBJECT	V COMPLE- MENT	COP COMPLEMENT	RELATIVE	ADVERBIAL	TOPIC
-q	-	perception verbs movement verbs	past habitual	subject	-	+
-sqa-	±	factive	stative/passive	non-subject realized	adverbial complement	+
-na-	±	non-factive desiderative	obligational	non-subject unrealized	adverbial complement	+
-y-	+	infinitive	-	-	-	+

in ordinary noun phrases and clauses; the parallels discussed in section 2.3. include the agreement system, the position of the subject, and the internal structure of clauses and noun phrases in terms of containing a VP and an N'.

2.1. *Nominalized Verbs and the Major Categories of Quechua*

In most languages it is possible to distinguish a class of function words and a class of content words, the latter being of categories N (nouns), V (verbs), A (adjectives and true adverbs), and P (pre- and postpositions). These word classes can be distinguished, in many cases, both distributionally and morphologically. In addition, semantic criteria may be used to determine to what category a given word belongs, and which categories are used in a given language.

Thus English 'black' is categorized as an adjective because:

- it can occur pre-nominally as an attributive, and after the copula as a predicative expression;
- it can form the base for the rule of *-en* affixation, which in English forms verbs out of adjectives: 'blacken';
- it can be interpreted as specifying some characteristics of a certain referential expression.

As is extensively discussed in Steele et al. (1981), many problems are involved in establishing the categorial status of a given element. These problems are also evident when we look at the categories of Quechua, particularly adjectives.

From the morphological point of view, we can establish three classes of major lexical items in Quechua:

- nominals, which include nouns, adjectives, quantifiers, numerals, Wh-elements, pronouns, etc. These words fall into one class on the basis of being able to be marked by Case affixes such as *-ta* 'accusative';

- b. verbs, which can be marked with Main Tense, adverbial subordinators, or nominalizers;
 c. postpositions, which occur without Case marking (being in some sense inherently marked locative or oblique).

Examples are given in (36), (37) and (38), respectively:

(36)	wawa -ta
<i>child AC</i>
child	NOUN
(37)	Hamu -ra -n.
<i>come PA 3</i>
He came.	VERB
(38)	wasi ukhu
<i>house inside</i>
inside the house	POSTPOSITION

This classification, though simple at first sight, poses some problems. Most important are the two questions of whether or not the class of nominals is homogeneously defined, and of where nominalized verbs fit into this picture. We will discuss these questions in turn.

As a prelude to answering these questions, consider Chomsky's (1974) classification of the major categories as in (39):

(39)	Nouns	N	[+ N, - V]
	Verbs	V	[- N, + V]
	Adjectives	A	[+ N, + V]
	Prepositions	P	[- N, - V]

Crucial to this classification is that nouns and verbs are maximally distinct, adjectives a mixed category, and prepositions categorially undefined.

Can adjectives be categorially distinguished from nouns? Are all nominals [+ N, - V] in Quechua, or are some nominals [+ N, - V], i.e. nouns, and some [+ N, + V], i.e. adjectives? Note that the existence of a separate category of adjectives is compatible with the earlier observation that all nominals can be marked for Case. We would then just have to say that Case marking is possible with all [+ N], i.e. both [+ N, - V] and [+ N, + V] bases.

What would be evidence for a separate category of adjective? It is possible to find some derivational affixes, such as augmentatives, that attach only to nouns, and not to adjectives. This might constitute an argument for a separate category of adjective were it not for the fact that these affixes are highly unproductive.

Distributionally, it might make sense to postulate a separate category of adjective, due to the Case Filter (cf. Chomsky (1981) and the references cited

there). The latter states roughly that:

- (40) *lexical NP, unless it is marked for Case

We will see in chapter 4 that adjective phrases may be marked for Case, but they need not be, not being subject to (40). There are at least some contexts in which adjective phrases (APs) are not marked for Case: pre-nominally and sometimes pre-verbally. In (41) a few examples of pre-nominal APs are given:

- (41) a. Chay allin papa gusta -wa -n -mi.
 that good potato please 1ob 3 AF
 I like those good potatoes.
- b. Anchay sumaq wasi -yki -ta riku -sha -n.
 very beautiful house 2 AC see PR 3
 He sees your very beautiful house.

Pre-verbal APs, i.e. manner adverb phrases, are generally marked accusative, as in (42a), but they need carry no Case marking when affixed with delimitative *-lla*, as in (42b):

- (42) a. Allin -ta llank'a -nki.
 good AC work 2
 You work well.
- b. Allin -lla taki -nki.
 good DEL sing 2
 You sing well.
- c. *Allin taki -nki.
 good sing 2
- d. Allin -lla -ta taki -nki.
 good DEL AC sing 2
 You sing well.

Noun phrases, being subject to the Case Filter, must generally be Case marked, and hence the apparent equivalents of (41) and (42b) are ungrammatical:

- (43) a. *Xwan papa
 Juan potato
 Juan's potato
- b. *Wasi -yki riku -sha -n.
 house 2 see PR 3
 He sees your house.

Notice, however, that the true equivalent of the pre-nominal adjectival modifiers of (41) would be pre-nominal nominal modifiers. The relevant cases are relative clauses which are structurally N'''s, such as (44):

- (44) [runa -q qulqi -Ø qu -sqa -n] warmi -man
man AG money CA give NOM 3 woman to
 to the woman to whom the man gave the money

Here the relative clause precedes the head but does not have any overt Case, in spite of its being an NP. This suggests that only those NPs that are arguments are obligatorily marked for Case, and that the contrast between (42b) and (43b) is due to the argumenthood of the expression *wasi-yki* in (43b). In chapter 4 we will return in much more detail to the relation between Case and argumenthood, and also account for the fact that pre-nominal adjectives need no Case.

Noun phrases are referential, while adjectives are not. Consider in this respect the contrast between (45a) and (45b):

- (45) Allin -ta riku -ni.
good AC see I
 a. I see well.
 b. I see the good one.

We will assume that in (45a) *allin-ta* is an AP directly dominated by VP, and is interpreted as a non-referential manner adverb, while in (45b) *allin-ta* is an AP directly dominated by an NP headed by a zero pronominal element, and is interpreted as attributive of that pronominal.

In section 2.3. we will discuss the difference between AP and NP in their ability to dominate an AGR (Agreement) node. Again, this difference is linked to the semantic differences between noun phrases and adjective phrases.

In the chapter on Case we will see that there are compelling reasons not to assume that Quechua adjectives have the features [+N, +V]. It will be argued that elements bearing the feature [+V] are Case assigners in Quechua. Since adjectives do not assign Case, it would be problematic to assume that they are [+V], and therefore we will assume that they constitute a subclass of the nominals, being [+N, -V]. This involves stressing the syntactic similarities between adjectives and nouns, and putting aside the semantic differences.

If we take postpositions to be defined by the features [-N, -V], we have established three major lexical categories for Quechua:

Nominals	+ N, - V
Verbs	- N, + V
Postpositions	- N, - V

Since adjectives are defined by the same features as nouns, there is no lexical item

so far realizing the feature combination $[+N, +V]$. (For the sake of ease of exposition, we will keep referring to adjective phrases as A, however. This has no theoretical implications.) We want to suggest that nominalized verbs heading nominalized clauses are defined by the features $[+N, +V]$, on the following basis: first, like all nominals they bear a Case marker and are subject to the Case Filter; second, as $[+V]$ elements they assign Case to their object. These two properties are illustrated in (46), where the object **platanu** is assigned accusative **-ta** Case by the nominalized verb **mikhu-** 'eat'. **mikhu-** is being marked for Case **-ta** as well because it heads a phrase which is the sentential direct object of the verb **yacha-** 'know':

- (46) Platanu -ta mikhu -sqa -yki -ta yacha-ni.
 banana AC eat NOM 2 AC know I
 I know that he has eaten a banana.

Having established the four major lexical categories of Quechua we now discuss the structure of the projections that they head.

2.2. Projections from Major Categories and X' Syntax

To what extent do projections from the major categories conform to the X' formalism? Nominalized verbs will be shown to be the head of both N''' and V''' projections, and to exhibit properties of both projection types.

Theories of X' structure, versions of which have been developed since Chomsky (1970), have stressed two points: (a) Constituents are headed by a lexical element of the same category as the constituents themselves. Noun phrases are headed by nouns, prepositional phrases by prepositions, etc. (b) There is a structural parallel between constituents of different categories. Both verbs and nouns can have complements, etc. (See Muysken (1983a) for a comparative survey of the specific claims implicit in the different versions of X' theory.) Generally, a rule format as in (47a) is adopted to state the relevant generalizations:

- (47) a. $X^n \rightarrow \dots X^{n-1} \dots$, where X represents the categorial specification in terms of the features $(\pm N, \pm V)$, and n a positive integer indicating the level of projection of the node.

We assume that Quechua has the major constituents given in (47b), which share the general structure given in (47c), which is simply an instantiation of the rule format in (47a):

- (47) b. $S' = V'''$
 $NP = N'''$
 $AP = A'''$
 $PP = P'''$

c.

In clauses, the COMP position dominated by X''' is realized as a Case position, as argued in Lefebvre (1980). The AGR position corresponds to the agreement features as in Chomsky (1981) and will be discussed in detail in section 2.3. The question of Tense and INFL will be addressed in chapter 7 on propositionality. The Specifier position is filled by clause and NP 'subjects'. Complements dominated by X' include direct and indirect objects, manner adverbs, all sorts of oblique complements, etc. In (47a) and (47b) the claim is implicit that Quechua has a syntactic VP, which is not the maximal projection of V, and that there is a considerable parallel between the constituent-types S' and NP. Section 2.3 is meant to provide arguments for this claim. Here we will only illustrate (47b) with examples of each of the major constituents.

An example of a complex S' is given in (48):

Here the COMP of the embedded question is **chay-ta**, in clause-final position. The questioned indirect object is Wh- fronted to the beginning of the clause. We tentatively assume that Wh-movement in Quechua involves adjunction to S and postpone further discussion of this point to chapter 6.

The subject (here lexically filled) generally precedes the V' or VP, and the objects precede the verb. The AGR node is lexically unrealized and manifests itself in the verbal morphology.

In (49) we give an example of a complex noun phrase:

(49)

Kay Pidru -q iskay rinri -yuq payla -n.
this Pedro GE two ear with bronze 3

This (bronze) pot of Pedro's with two handles.

Here we will assume (although it is not crucial to any of the arguments presented later) that there is a DET position on the N''' level. The specifier is occupied by a genitive possessor NP, which precedes the N'. The NP complement precedes the head noun, which agrees with the possessor in person. The form **-yuq** in (49) is a nominal affix meaning 'possessing a...'.

The structures of AP and PP are generally less complex:

(50)

Ancha mikhu -y -paq allin.
very eat NOM for good
 Very good to eat.

The degree specifier precedes the A', and the oblique NP complement precedes the head adjective. Finally, we find PPs as in (51):

(51)

Again, the specifier precedes the P', and the complement precedes the head postposition.

Tree diagrams (48)-(51) have illustrated to what extent the structure of the major constituents in Quechua conforms to the general configuration given in (47c). The latter is successful in predicting the order of specifiers and complements (if one is willing to generalize over subject and non-subject specifiers), but

(52)

constitutes an idealization in that it attributes more structure to APs and PPs than these types of constituents actually have.

Nominalized clauses have the internal structure of either a N''' or a V''' . This is shown in (52) and (53).

In (52) the internal structure of the embedded nominalized clauses parallels that of (48). We find Wh-fronting, the subject of the embedded nominalized verb is in the nominative Case, and the object is in the **-ta** accusative Case. The sole differences between (48) and (52) are that in (52) the verb is nominalized with the nominalizer **-sqa-** instead of bearing the Main Tense marker **-rqa-** and that the verb itself as well as the object is marked for **-ta** Case.

In (53), however, the embedded complement clause looks much more like an ordinary NP, and we will analyze it as having the internal structure of a N''' comparable to (49):

Here the subject of the nominalized clause is in the genitive Case, like the specifier of N in (49). The object bears no **-ta** accusative marker, and the Wh-element has remained *in situ*. For the rest, (53) is similar to both (48) and (52).

Sentences (52) and (53) show that nominalized complement clauses (and as will be seen later on, other nominalized clauses as well) may exhibit the internal structure of either N''' or V''' . We can conclude that a nominalized verb which is $[+N, +V]$ may be the head of either a N''' or a V''' projection. The question that such an analysis raises immediately is how this can be accounted for within the framework of X' theory. A solution to this problem is proposed below, but before we turn to it, we will further explore the similarities between N and V projections in Quechua.

2.3. *Parallels between N and V Projections in Quechua*

In Emonds (1976) and much recent work, the lack of parallels between NP and S' have been stressed, and a number of ways have been listed in which they may differ. We will emphasize their parallels instead, focussing on INFL, the subject, and the status of VP.

A potential lack of parallelism between NP and S' is the occurrence of AUX in S' but not in NP. In our discussion of AUX in chapter 7 we will argue that there are no lexical auxiliaries in Quechua. What about INFL, the category that in much recent work (e.g. Chomsky 1981) is equated with the AUX node (e.g. Steele et al. (1981)? We will argue that an equivalent of INFL seen in terms of the features of agreement, is present in both NP and S'.

A second lack of parallelism stressed in the literature has to do with subjects, in clauses and in noun phrases. We will try to argue for Quechua that in fact subjects are quite similar in nominal and verbal projections, differing only in their superficial Case marking.

Finally, the issue of configurationality is brought to bear on the issue of similarity between nominal and verbal projections. In many languages, clauses seem to be non-configurational, while noun phrases seem to have a well-defined internal structure. We will argue that in Quechua there is evidence for a syntactic VP, as well as evidence for a separate N' constituent.

2.3.1. *AGR*

There is good evidence for a node AGR, both in NP and in S'. In chapter 4 we will argue that AGR is instrumental in assigning subjective (i.e. nominative and genitive) Case in S' and NP. Consider:

- (54) a. Xwan llank'a -n.

Juan work 3

Juan works.

- b. Xwan -pa wasi -n

Juan GE house 3

Juan's house

- a.' *Xwan llank'a-

Juan work

- b.' *Xwan -pa wasi

Juan GE house

- (55) a. Llank'a -nchis.

work 4

We (incl.) work.

- b. wasi -nchis
 house 4
 Our (incl.) house

Whether a nominal or pronominal subject is mentioned or not (in (54) it is, in (55) it is not), the features $[\pm I]$ ($\pm$ first person), $[\pm II]$ ($\pm$ second person) of the AGR node mark the subject or possessor phrase. We assume that in (55a, b) the subject and possessor NPs are small pro's, phonetically unrealized pronominal elements with all the person and number features of lexical pronouns (Chomsky, 1982). Given a configuration roughly as in (56a), the agreement rule is as in (56b), again roughly.

(56) a.

Let us note here that in addition to being a property of both nominal and verbal projections, AGR may be found in the A, P, and Q (= quantifier) projections. The phrase in (57) is an example of AGR in an A projection.

- (57) allin-ni -nchis
 good EUPH 4

- a. the good ones of us
 b. better than us / good in comparison to us

In (57a) we have an adjective contained in a headless noun phrase with an AGR node, but we can argue that in (57b) the AP itself contains an AGR node. There can be no NP dominating (57b) since the phrase is not a referring expression. This interpretation is induced automatically if we postulate that NPs must contain an AGR node. More investigation, particularly of adjectives with a more developed thematic structure, is clearly needed.

Phrase (58) is an example of AGR in a quantifier phrase:

- (58) tawa -nchis
 four 4
 the four of us (incl.)

Finally, (59) shows the occurrence of AGR in a PP:

- (59) wasi -q ukhu -n -pi
 house GE inside 3 LO
 inside the house (lit., in its inside of the house)

2.3.2. *Subjects in N''' and V''' Projections*

Ever since the work of Lees (1960) there has been a search within generative grammar to account for both the similarities and the differences between the subject of a clause and the subject of a noun phrase (respectively [NP, S] and [NP, NP] in Chomsky's terminology; cf. Chomsky, 1965). Lees tried to derive (60b) from (60a) via a transformation, but this led to a number of empirical and theoretical problems:

- (60) a. John promised a book to Mary.
 b. John's promise of a book to Mary.

Chomsky's critique of Lees (Chomsky 1970) was the start of a more insightful approach to the problem. This approach is now known as the lexicalist hypothesis. His analysis is based on two assumptions:

- (A) the relation between the verb *promised* and the noun *promise* cannot be expressed by a transformation, but it should be accounted for in the lexicon;
 (B) the clause in (60a) and the noun phrase in (60b) share some important characteristics, which can be explained by the adoption of X' theory.

Chomsky (1970) suggests that the relation of *book* to *promise* in (60a) and (60b) is identical: both are objects, defined as [NP, X'] (where X is V in (60a) and N in (60b)). With respect to subjects, it is much less clear how the parallels between the two *John's* in (60a) and (60b) are to be seen. Chomsky does claim that they are equivalent (e.g. both can be the target of passive, as in *The city was destroyed*, and *The city's destruction*), but the node S in (60a), with respect to which *John* has the relation [NP, S], is not a projection of the verb (i.e. is not V''), while the NP in (60b), with respect to which *John's* has the relation [NP, NP] is a projection of the head noun (i.e. is N''). Thus the subject of a noun figures inside the maximal projection of the head N, while the subject of a clause remains outside the maximal projection of the head V. Hence Chomsky's position was somewhat ambiguous, and that ambiguity has characterized the issue ever since.

Jackendoff (1977) has stressed the similarities between clauses and noun

phrases, claiming that S is a projection of the verb, and that the subject in both nominal and verbal projections can be defined uniformly as [NP, X^m]. Jackendoff's point of view is represented as well in Van Riemsdijk (1978) and Koster (1979), and with respect to the idea that S is part of the verbal projection, in Farmer (1984) and Marantz (1984).

The alternative point of view is expressed in Emonds (1976) and Hornstein (1977b) and has recently been argued for by Stowell (1981) and Aoun & Sportiche (1983), as well as in much related work. It is based on the assumption that the VP node is a maximal projection, parallel to NP, AP, and PP. On the precise nature of the node S, opinions differ. Some claim it is part of the projection of INFL or AUX, a view inspired by work of Ken Hale and Susan Steele on the universality of AUX. Others assume that S essentially falls outside of the X' system. The precise implementation of the idea that S is unlike NP in not being a projection from a lexical head is not crucial here. But since we are arguing that in Quechua clauses and noun phrases are extremely similar in structure, and that [NP,NP] and [NP,S] have a number of things in common, including the way Case is assigned to them, we will have to study carefully the arguments given for the fundamental distinction between nominal and clausal subjects. Wherever possible, we will link this discussion to the facts of Quechua nominalizations.

What then are the differences between nominal and clausal subjects, and to what extent do clausal subjects differ from other arguments?

2.3.2.1. *Obligatoriness*

Subjects of clauses are obligatory, and subjects of NPs are not (Chomsky, 1981; Stowell, 1981):

- (61) a. attempts to cross the bridge (failed)
 b. *attempted to cross the bridge

A similar contrast is found between Quechua nouns and verbs. Compare (62):

- (62) a. Puri-ni.
 walk 1
 I walk.
 b. *puri-
 walk
 c. mama -y
 mother 1
 my mother
 d. mama
 mother
 mother

Thus the distinction in obligatoriness carries over from English to Quechua for ordinary verbs and ordinary nouns. There are two classes of nominal expressions in Quechua which do have obligatory subjects: quantifiers, and nominalized verbs. For quantifiers, consider examples such as **waki-** 'some', in (63):

- (63) a. Waki -nchis hamu -sunchis.

some 4 come 4FU

Some of us will come.

- a.' *waki hamu- sun

some come 1PL,IM

- c. Waki -n -ta riku -rqa -ni.

some 3 AC see PA 1

I saw some (of them).

- b.' *waki -ta riku -rqa -ni.

some AC see PA 1

One could argue that person marking and an AGR node are obligatory with quantifiers such as **waki-** for semantic reasons: one could argue e.g. that there needs to be an entity over which the quantifier has scope. Note however that **waki-** occurs attributively and predicatively as well, as in (64) and (65), and that in both cases person marking is obligatory:

- (64) a. Waki -n runa hamu -n -ku.

some 3 man come 3 PL

Some of the men come.

- b. *waki- runa hamu -n -ku.

some man come 3 PL

- (65) a. Runa -ta waki -n -ta riku -sha -ni.

man AC some 3 AC see PR 1

I see some of the men.

- b. *runa -ta waki -ta riku -sha -ni.

man AC some AC see PR 1

Thus the obligatoriness of subjects with quantifying noun phrases will have to be stated at a fairly abstract level of LF. There is no reason not to think of it as due to factors outside the realm of *X'* syntax, since internally the structure of quantifiers is exactly like that of noun phrases. Although some descriptions consider the 3rd person marker a meaningless linking suffix in quantifiers, it is clearly a person marker. This conclusion is supported by its distribution, which is identical

to that of the other person markers:

- (66) a. waki -lla -nchis
 some DEL 4
 only some of us
- b. waki -lla -n runa
 some DEL 3 man
 only some of the men

The other class of nouns which have obligatory subjects is that of nominalized verbs: they either have a lexical or 'small *pro*' subject governed by the subject agreement inflection on the head, or they have a PRO subject.

Returning now to the general issue of the obligatoriness of the subject, we would like to make a final point: the issue of obligatoriness of clausal subjects is somewhat independent of the issue of whether S is part of the verbal projection in *X'* syntax, as Bouchard (1983) points out. Suppose AUX or INFL, and not V, were the head of S. Then there would be no way in *X'* theory either to deduce the obligatoriness of subjects in clauses, given the generally held assumption that only the head of a projection is obligatory, specifiers and complements being optional. If the reason for the obligatoriness of subjects in clauses has to do with well-formedness conditions in LF or Predicational Structure (Williams 1980), this requirement can be stated either for a model in which V is the head of S or for one in which INFL is the head of S.

For these reasons (the obligatoriness of subjects in certain *types* of nominal structures in Quechua, and the very general observations above) the obligatoriness issue is not relevant to the discussion of the categorial differences between [NP, NP] and [NP, S].

2.3.2.2. *The Distribution of PRO*

If PRO may not be governed, as can be deduced from Binding Theory (Chomsky 1981), assuming that VP is a maximal projection and assuming that the domain of government is the maximal projection provides a neat way of explaining why PRO cannot occur in the nominal subject position in English and similar languages (Aoun & Sportiche 1983), while it can occur in the subject position of (some) clauses. The subject of a clause will be outside of VP, and hence ungoverned by the verb, but inside of a noun phrase all elements, including the subject position, are governed by the head noun. Consider the contrast between (67) and (68):

- (67) a. [_S PRO to leave] would be silly now.
 b. For anybody to leave would be silly now.
- (68) a. *[_{NP} PRO books] are silly.
 b. Anybody's books are silly.

Aoun & Sportiche (1983, p. 214) propose the following definition for government:

- (69) x governs y iff. for all A , where A is a maximal projection, A dominates both x and y where x must be a lexical head of some kind.

In (68a), *books* can govern PRO, since N' is not a maximal projection, while in (67a) *leave* cannot govern PRO, since VP is a maximal projection. This explains the ungrammaticality of (68a). The contrast between (67) and (68) reduces then to a difference in projection type between the sisters of PRO in both constructions. In Quechua we cannot have PRO in ordinary noun phrases either:

- (70) * $[_{NP}$ PRO *papa*] *allin -mi*.
 potato good AF
 Potatoes, belonging to anybody, are good.

We do find PRO in infinitival clauses, however:

- (71) * $[_{NP}$ PRO [$_X$ *papa mikhu -y*]] *allin -mi*.
 potato eat NOM good AF
 To eat potatoes is good.

Now if Aoun & Sportiche's theory of government were correct for Quechua, PRO would be allowed in (71) because its sister, X , is a VP. Notice, however, that the object of the verb in (71) may not be marked accusative, for independent reasons:

- (72) * $[_{NP}$ PRO [$_X$ *papa -ta mikhu -y*]] *allin -mi*.
 potato AC eat NOM good AF

As we will argue in chapter 4 on Case marking, *-ta* accusative Case shows up in VPs, and *-Ø* objective Case in N' -like constituents. Therefore X in (71) is an N' , which is an intermediate projection in NP, not a maximal projection.

Hence in Quechua, PRO is not simply licenced by the maximal character of its sister. In our view, PRO can occur when there is an INFL node, but no AGR marking, which is the case in tenseless clauses and in some stative nominalizations. PRO, then, cannot occur in (70) because there is no INFL node in ordinary noun phrases at all.

Note incidentally that we claim that X is not a VP in (71). We do not want to argue that PRO cannot occur as a sister to VP in Quechua. Consider (73):

- (73) [pro_i [PRO e_i *suwa -sqá*]] *ka -ni*.
 rob NOM be I
 I have been robbed (by someone).

In (73) we have a passive-like stative (cf. Lefebvre & Muysken 1982b), and there is no control relation. We want to claim that it is the absence of AGR in the INFL node, rather than the categorial status of the predicate and its components, that determines whether PRO can occur in subject position or not. The major difference between nominal and verbal projections is then that projections from a verbal head have to have an INFL node, which in some cases licences a PRO.

2.3.2.3. *Extraction of Subjects out of NP and S*

NP is an absolute barrier to government, and S is not (not being a maximal projection), Stowell (1981) argues. Therefore movement is possible out of the [NP, S] position in English (without violating the Empty Category Principle), but not out of the [NP, NP] position. Compare (74) with (75):

(74) which boy_i [_S do you expect [_S [_i] to win the race]]

(75) *whose_i [_S do you resent [_{NP} [_i] winning the race]]

Given that the contrast between (74) and (75) cannot be due to subjacency, it must be due to the ECP, and hence the S boundary must be unlike the NP boundary with respect to government.

Notice, first of all, that the Aoun & Sportiche account predicts that the [NP, NP] position in (75) is properly governed, since it is governed by the head noun *winning*. Only an analysis which accords special status to the [NP, NP] position will be able to account for the ungrammaticality of (75) through the ECP. Second, the Quechua structural equivalent of (75) is grammatical, presumably because the NP node contains an INFL position which can serve to properly govern [NP, NP]:

(76) pi -qpa -ta; yacha -nki [_{NP} [_i] [_N papa mikhu -sqa -n -ta]].
 who GE AC know 2 potato eat NOM 3 AC
 Who do you know has eaten potatoes?

Actually, it was noted in Lefebvre & Muysken (1982b) that extraction out of the [NP, NP] position is preferred to extraction out of the [NP, S] position in Cuzco Quechua. Hence the difference observed in the literature between the subject of $N\emptyset^p$ and the subject of a clause is not borne out in the Quechua data.

2.3.2.4. *Subcategorization*

Zubizarreta (1982a), following Chomsky (1965), notes that there is a lack in parallelism in clauses between subjects and objects with respect to subcategorization. The category of the complement (S', NP, PP) is subcategorized for by the verb, while the category of the subject (i.e. NP) is determined by a phrase structure rule separate from the lexical characteristics of the verb. As we have mentioned earlier in this chapter, the subject of a clause in Quechua is an NP as

well, even when it is a nominalized clause. The same is true in noun phrases, however: the specifier position, when it is filled lexically, is always filled by an NP. Of course it is necessary to consider elements such as *yesterday* NPs, but this is justified on independent grounds as well.

- (77) yesterday's destruction of the city

While in English it may be possible to explain this requirement through reference to the Case Filter: subjects have to be NPs to be Case marked and hence to be visible to the rules of the Logical Form, but in Quechua, at least in our analysis, no such simple explanation is available, since constituents of all categories can be Case marked (cf. chapter 4). We return to this problem in the final chapter.

2.3.2.5. *Small pro*

In languages such as Spanish, subject pronouns can be phonetically unrealized since the INFL node (through AGR) properly governs the *pro* position. There cannot be a *pro* in noun phrases, however:

- (78) anda
He walks.

- (79) *[pro] libro
His book.

As has become clear above in section 2.3.1, small *pro* can and does occur in Quechua noun phrases, whenever there is an AGR position to govern it. Hence the contrast found in Spanish is not universal, and the possibility of occurrence of *pro* does not distinguish between clausal and nominal subjects in Quechua.

2.3.2.6. *Idioms*

A common assumption in the literature is that clausal subjects have a special status because VP is a maximal projection. Aoun & Sportiche (1983) claim to have found independent confirmation in idioms for the assumption that VP is a maximal projection, and hence that the internal structure of NP (containing no other maximal projection) is essentially different from that of S. They claim that VPs can be idiomatic, while their nominalized equivalents are not:

- (80) a. John [_{VP} kicked the bucket].
b. *John's [_{N'} kick against/of the bucket] (in the idiomatic sense)

They explain the contrast in (80) by assuming that only maximal projections can have an idiomatic interpretation: VP in (80a) is a maximal projection, N' in (80b) is not. Note, however, that idiomatic readings always suffer from lexical operations, and that there *are* N' idioms:

- (81) Mary's [_{N'} roll in the hay]

Typically, the VP counterpart of (81) is not idiomatic:

- (82) Mary [_{VP} rolled in the hay].

Since VP is not unique in being able to be interpreted idiomatically, this cannot be an argument for a special status of clausal subjects. Idiomaticity, in our conception, is something characteristic of constituents in general, rather than of maximal projections necessarily. This leads automatically to the next question: θ -role assignment.

2.3.2.7. *The Assignment of Thematic Roles*

Two issues need to be addressed here: which thematic or θ -roles can be assigned to the subject position, and how are they assigned? In the theory of Aoun & Sportich (1983) and Williams (1981b, 1982), [NP, S] gets a thematic role assigned to it by the VP, and [NP, NP] gets a thematic role directly from the head noun. To be sure, this conception has a lot to support it. First of all, Chomsky (1981) notes the contrast between (83a) and (83b):

- (83) a. John broke his leg.
b. John's breaking of his leg.

In the first example both an agentive and an experiencer role can be assigned to the subject, while in (83b) only an agentive role is assigned. This is due to the fact that the verb phrase in (83a) can have both a literal and a semi-idiomatic reading. In (83b) only the literal reading survives. This is characteristic of idiomatic readings, and not related to the categorial status of the constituents involved.

Just as in principle any constituent can be idiomatic, we claim that any constituent can assign a θ -role compositionally. Notice the contrasts below:

- (84) a. John's [photo at his wedding]
b. John's [photo of Bill]

- (85) a. Mary's [book]
b. Mary's [recent book]

Here the N' can assign to the subject either a very general role, as in (84a) and (85a), or an Agent role, as in the (b) cases. There is a general constraint, across a number of languages, that, within nominals, the Theme must be realized interior to the Agent, if both are realized structurally (cf. Muysken forthcoming; Milner 1982; Van Haften *et al.* 1985). This constraint can only be formulated if θ -role assignment takes place cyclically, each constituent θ -marking its sisters compositionally.

While there is no principled difference, then, between N' and VP in the way they assign a thematic role to the subject, there is a difference with respect to the thematic roles which can be assigned to subjects. Consider (86) and (87):

- (86) a. the enemy destroyed the city
 b. *the city destroys
- (87) a. the enemy's destruction of the city
 b. the city's destruction

Williams (1980, 1981b) explains this contrast by claiming that the [NP, NP] position in (87) is an internal one, available for free θ -role assignment by the head, while the [NP, S] position is external, and is assigned one specific θ -role designated as the external one.

In our account, the principled difference in θ -role assignment between (86) and (87) is due to INFL. One of the arguments of a head (in fact, the most prominent one) is linked to the agreement node, through the inflection for person on the head. Hence we expect the θ -role of the subject of a nominalized clause to be the same, independent of whether the clause has a nominal or a verbal character (cf. also our discussion of this point in chapter 3). This is the case:

- (88) a. Xwan -pa maqa -sqa -n
 Juan GE beat NOM 3
 that John hit... (*that John was hit...)
- b. Xwan maqa -sqa -n
 Juan beat NOM 3
 that John hit... (*that John was hit...)
- c. Xwan maqa-n
 Juan beat 3
 John hits... (*John is hit...)

This concludes our discussion of the alleged differences between [NP, S] and [NP, NP] and of the implication of any such differences for X' theory. We can conclude that any differences are due to the presence of INFL in S, but not in NP, in English and related languages. Since in Quechua both NP and S have INFL, the two categories are remarkably similar, and subjects in the two categories are essentially distinguished only through Case marking.

The question arises then why INFL is obligatory in clauses, and optional in noun phrases? Since verbal projections are typically used to form propositions, and well-formed propositions require a Tense operator at LF, clauses (and particularly main clauses) require an auxiliary node of some kind. Since well-formed propositions consist of a subject and a predicate, there needs to be an

agreement marker, indicating the relation between the subject and the predicate. Hence the obligatoriness of agreement in clauses. In noun phrases, these two things may be required, but are not demanded by the well-formedness conditions of LF. Thus in our account, the requirements imposed by the use to which particular X' projections are put are separated, in a modular fashion, from the X' system itself. We would reject as non-modular an account which makes the obligatoriness of INFL follow from the fact that INFL is the head of S, and the obligatoriness of the subject from the stipulation of a particular base rule.

2.3.3. *Is there a Syntactic VP?*

We now turn to the question of whether there is a syntactic VP in Quechua. This question relates to our general claim that the projections of N and V in Quechua are remarkably similar.

Word order in Quechua main clauses is remarkably free. Thus all six orders in (89) are allowed:

- (89) a. Mariya t'anta -ta mikhu -n.
 Maria bread AC eat 3
 Mary eats bread.
- b. Mariya mikhu -n t'anta -ta.
 Maria eat 3 bread AC
- c. T'anta -ta mikhu -n Mariya.
 bread AC eat 3 Maria
- d. T'anta -ta Mariya mikhu -n.
 bread AC Maria eat 3
- e. Mikhu -n Mariya t'anta -ta.
 eat 3 Maria bread AC
- f. Mikhu -n t'anta -ta Mariya.
 eat 3 bread AC Maria

There are reasons for assuming that in fact (89a) is the unmarked order, in some sense more basic than the others, but the fact remains that in Quechua discourse we find a wide variety of surface orders. Quechua utterances often contain enclitic particles, indicating emphasis, validation (a notion to which we will return in chapter 7), contrast, topic, focus, questioning, etc. We will not deal with these special markers here, but rather try to account for the unmarked order of constituents.

The apparent word order freedom of Quechua might be taken, together with a number of other considerations mentioned in Hale (1982), as evidence for the hypothesis that Quechua is NON-CONFIGURATIONAL. In non-configurational languages it is not possible to define the grammatical relations of e.g. subject and object on the basis of the syntactic structures of the language. This is impossible because non-configurational languages are assumed to have no syntactic VP. Hale lists the following diagnostic properties of non-configurational languages, while allowing for the fact that none of them may be criterial:

- (90) a. 'free word order'
 b. the use of discontinuous expressions
 c. free or frequent pronoun drop
 d. lack of NP-movement transformations
 e. lack of pleonastic NPs
 f. use of a rich Case system
 g. complex verb words or verb-cum-AUX systems

We briefly discuss these features one by one for Quechua, treating them separately. To be fair to Hale's original analysis, we should point out that in slightly later work Hale (1983) sketched a theory accounting for the first five of these features by a single principle.

(A) In (89) above some of the freedom of word order in Quechua was illustrated.

(B) Muysken (1982) discusses discontinuous expressions which result from the floating of quantifiers, adjectives, and PP modifiers. In Lefebvre & Muysken (1982b) it is argued that the floating in these expressions is an instance of a more general rule of moving Case marked constituents out of their projections, at the same time co-Case marking them with their projection. This rule of Move CASE is argued to include the processes of Raising to a position in the matrix VP, unbounded Wh-movement, and of Raising to Subject (cf. chapter 5).

(C) In Quechua, pronouns only appear when used emphatically or contrastively. Hence a sentence such as (91) is perfectly grammatical:

- (91) Riku-n.
 see 3
 He sees it.

Whatever the proper analysis of this phenomenon, Quechua does conform to Hale's specification (90c).

(D) The presence or absence of NP movement transformations is not a simple diagnostic feature. As mentioned under (B), we have argued previously that a large set of apparent NP movement transformations, namely the Raising cases, is in fact not a case of NP-movement, but of a Wh-like rule Move Case (cf. chapter 5). There is, however, a middle verb construction in Quechua that can be analyzed

as an instantiation of NP-movement, as illustrated in (92).

- (92) Wasi_i kay -mantae_i riku -ku -n.
 house this from see RE 3
 The house is seen from here.

This type of movement, if it is an NP movement rule, is always local in scope.

(E) In Quechua there are no pleonastic NPs, as can be seen in (93):

- (93) a. e_i para -qti -ne_j chiri -sha -n.
 rain SUB 3 cold PR 3
 When it rains it is cold.

- b. e_i riku -ku -n.
 see RE 3
 It seems like it.

(F) As will be obvious throughout this volume, the prime mechanism in Quechua for marking grammatical relations is Case. Word order and postpositions play a minor role.

(G) It has perhaps already become clear that Quechua has a very rich verb morphology, involving many affixes that have a syntactic function. Affixes are used to mark the things listed in (94):

- (94) a. tense and nominalization type
 b. person of the subject argument
 c. person of the object argument for first, second, and fourth persons
 d. causative, desiderative
 e. reflexive, reciprocal, benefactive
 f. aspect and mood
 g. proximate and obviative subordination

Thus Quechua conforms substantially to all the criteria mentioned by Hale (1982). However, it is not clear to what extent Quechua is non-configurational or whether it has a syntactic VP. Below, we will present some arguments supporting the claim that there is a VP node in Quechua. The presence of the VP node makes the nominal and the verbal projections more comparable.

The facts of word order in unmarked declarative main clauses are perfectly compatible with the existence of hierarchical depth in the verbal projection. An example such as (95a) could have a schematic tree representation such as (95b):

- (95) a. Xwancha iskay sulis -pi Mariya -mant'anta -ta bindi- n.
 Juan two soles LO Maria to bread AC sell 3
 Juan sells the bread to Maria for two soles.

What arguments are there for a structure such as (95b)? We will discuss arguments from the distribution of negation markers, from Case assignment, from subject and object agreement, from the interpretation of perception clauses, and from the facts of Case marking of adverbs. For the sake of ease of presentation, we ignore the question here of whether there is a separate V'' level dominating the dative object.

2.3.3.1. *VP can be Negated as a Separate Constituent*

In Quechua constituents can be negated by placing **mana** 'not' in front of the constituent and by encliticizing **-chu** to its last word. Examples such as the ones in (96) must be embedded in a verbal projection.

- (96) a. *mana ancha allin -chu* AP
 not very good NEG
 not very good
- b. *mana misa qipa -chu* PP
 not Mass back NEG
 not after Mass
- c. *mana chay iskay warmi -chu* NP
 not that two woman NEG
 not those two women

We will return to the distribution of **-chu** in chapter 7 in much more detail; here it is sufficient to note that the enclitic particle **-chu** is always directly dependent from a verbal projection node, as in (98). Note the contrast between (96c) and (97), where the negation is inside the NP.

- (97) a. *chay mana allin warmi*
 that not good woman
 that bad woman
- b. **chay mana allin -chu warmi*
 that not good NEG woman

A preliminary way to represent the requirement that the negation element must occur in the domain of the verb is by making it a daughter of the nodes projected from the verb, as in (98):

- (98) $V^{\text{projection}}$ (= V', V'', VP, S, S')
- |
- ... -chu...

Note now that the verb and its objects can be negated together:

- (99) a. Nuqa mana Qusqu -man ri -ni -chu.
 I not Cuzco to go 1 NEG
 I don't go to Cuzco.
- b. Qan mana wasi -ta riku -nki -chu.
 you not house AC see 2 NEG
 You don't see the house.

This would be explainable if they formed a constituent at the level at which negative interpretation applies. Note that it is not possible to negate indirect and direct object together, for instance, without negating the verb as well:

- (100) a. Mana qan -man qulqi -ta qu -sqa-yki -chu.
 not you to money AC give 1FU-2ob NEG
 I won't give you the money.
- b. *Mana qan -man qulqi -ta -chu qu -sqa-yki.
 not you to money AC NEG give 1FU-2ob

We will assume that (100b) is ungrammatical because the elements between **mana** and **-chu** do not form a separate constituent. Thus the Quechua negation facts provide an argument for a VP constituent.

2.3.3.2. VP Constitutes a Domain for Case Assignment

In chapter 4 we will present an analysis of Quechua Case assignment which is stated in terms of a structural asymmetry between subjects and objects. This asymmetry is defined as a difference in governing categories (V for objects, AGR for subjects). We argue that Case assignment is not simply statable in terms of the three grammatical functions Subject, Direct Object, and Indirect Object, so that the type of analysis Chomsky (1981) proposed for Japanese in terms of a rule 'Assume Grammatical Function' is inadequate. Evidence comes a. from the behaviour of dative and oblique constituents in Raising constructions (cf. chapter 5) where it is argued that dative and oblique constituents are marked objective (plus something else), b. from Double Object constructions (where objective

alternates with dative on the Animate Object, precluding the identification of objective Case with the grammatical function Object, and c. from Case marked adverbs, to which we will turn below. For the purpose of Case assignment, the subject must be accorded a special status.

2.3.3.3. *Agreement*

There is a clear asymmetry in Quechua between the morphology which marks agreement with a nominative or genitive subject, and that which marks agreement with an object. Subject agreement is described in chapter 4 in terms of the assignment of subjective Case to the NP which is the immediate sister of AGR. Object agreement is described in detail in Van de Kerke (forthcoming). It is defined not in terms of grammatical function, but either in terms of the non-subject or internal thematic roles of Theme, Source, and Goal, or in terms of subcategorization frames. Thus both the person bought from and the person bought, both the person given to, and the person given, can be expressed via object marking on the verb. The fundamental subject/non-subject asymmetry governing person marking can be best defined in terms of a distinction between the domain of V (= VP) and the domain of AGR (the S level), rather than in terms of grammatical function.

We find the same distinction in a number of other domains in Quechua, such as relative clause formation (where the morphology marking that the subject is relativized differs from that for non-subjects; cf. chapter 6), reflexive and reciprocal morphology (which govern different kinds of objects, not just one class of NPs that can be labelled Object), and stative-like passives.

The subset of non-subject arguments involved in these processes may differ somewhat from process to process and from speaker to speaker; what is crucial is that none of them involve a homogeneous class definable as Object. This makes a treatment in terms of Chomsky's (1981) rule Assume GF (Assume Grammatical Function) difficult.

2.3.3.4. *The Complements of Perception Verbs*

The complements of perception verbs, and perhaps Small Clause phenomena in general (cf. chapter 7), provide another argument for the adoption of a VP. The overt subject and the predicate of the complement of a perception verb do not form a constituent separate from other elements in the matrix VP. Arguments that they do not include the liberty of movement of the overt subject of the complement of the perception clause with respect to its predicate, as in (101):

- (101) Pay-ta e_i riku-ni [PRO puri-sha-q -ta]_i.
 he AC see I walk PR AG AC
 I see him walking.

How do we know which of the matrix noun phrases, the understood subject of 'see' or *pay-ta* 'him', is the subject of the verb 'walk'? Assume that the first

c-commanding NP is interpreted as the subject (cf. Williams, 1980). The first c-commanding NP is the lowest NP which forms a constituent with the complement of the perception verb. In (101) the direct object controls the subject position of the complement of the perception verb. An analysis of control in terms of the first c-commanding NP forces us to assume that at the level where the control relation holds, there is a syntactic VP, containing **pay-ta** and **puri-sha-q-ta** (in addition to **riku-ni**) which makes it possible to block control by the matrix subject.

2.3.3.5. *The Case Marking of Adverbs*

A final argument for assuming a VP derives from the contrast between the optionality of accusative **-ta** on temporal expressions when they appear outside the verb phrase and its obligatoriness when they occur in the immediate domain of the verb. Consider (102):

- (102) a. Paqarin Xwancha Lima -man ri -nqa.
 tomorrow Juan Lima to go 3FU
 Tomorrow Juan will go to Lima.
- b. Paqarin -ta Xwancha Lima -man ri -nqa.
 tomorrow AC Juan Lima to go 3FU
- c. Xwancha paqarin -ta Lima -man ri -nqa.
 Juan tomorrow AC Lima to go 3FU
- d. ?? Xwancha paqarin Lima -man ri -nqa.
 Juan tomorrow Lima to ri 3FU

In (102a, b) **-ta** is optional, while in (102c, d) **-ta** is obligatory. Whatever the reason for the contrast between (102a) and (102d), it must be accounted for through reference to a VP-internal and a VP-external domain. Hence it provides an argument for a syntactic VP at the level of Case checking or assignment.

We have discussed a number of arguments against the assumption that the structure of Quechua clauses is essentially flat, i.e. that the major elements are all on the same level and that Quechua is non-configurational. The existence of a VP node corresponding to an N' node supports our argument that the verbal and nominal projections are parallel.

Of the properties listed in (90), then, Quechua does have the subset in (103), but does not have (104):

- (103) a. free word order
 b. the use of discontinuous expressions
 c. a rich Case system
 d. *pro*-drop
 e. rich verbal morphology

- (104) a. absence of NP-movement
 b. absence of pleonastic NPs

cf. however (33)

We have argued in Lefebvre & Muysken (1982b) that properties (103a-c) cluster together, and are the result of specifications on two parameters: the availability of A positions in a projection, and the possibility of co-Case marking at the moment of extraction out of a constituent. This will be taken up again in chapter 4 on Case marking. Similarly, properties (103d-e) cluster together, as we will argue in chapter 7, since a rich verbal morphology allows for a complex INFL node with rich internal structure. This, in turn, makes it possible for *pro*-drop to occur. We conclude that there is good evidence for a syntactic VP in Quechua and that its presence creates the same kind of hierarchical structure within S that is present within NP. The apparent non-configurational characteristics of Quechua are the result, in our analysis, of the rich Case system and verbal morphology of the language. These do not preclude the presence of a VP node.

In section 2 of this chapter we have argued that many of the differences between the projections of N and V discussed in the literature do not hold for Quechua: both have an AGR node (as is the case in Turkish, cf. Kornfilt 1983 and in other languages), the subjects of both projections differ only with respect to Case marking, and the fact that there is a syntactic VP renders the projections more similar.

3. TRANSCATEGORIAL CONSTRUCTIONS

So far, we have tried to establish that nominalized verbs are of the category [+N, +V], and can be the head of either a N''' or a V''' projection. This poses immediate problems for the theory of grammar, particularly for X' theory: how can a head differ in category from its projection, and how can one type of head have two types of projections? These problems, which we will term problems of transcategorial constructions, are the subject of this section.

We will start by reviewing the analyses of transcategorial constructions proposed in the literature (section 3.1). We then present our own analysis (section 3.2) and explore its implications for Quechua nominalizations and other transcategorial constructions in the language. We end the section with a discussion of lexicalization of transcategorial constructions in Quechua (3.3).

3.1. Review of Analyses Proposed for Transcategorial Constructions

3.1.1. Classical Generative Treatments of the English Gerund

In Chomsky (1970) a first attempt was made to analyze nominalizations in English within a non-transformational or lexicalist framework, an attempt which led to the X' theory. While derived nominals (*criticism*, *arrival*, *revolution*, *settlement*) are seen as true nouns (projecting ordinary NPs, which bear some structur-

al resemblance to clauses according to X' theory), gerundive nominals (*John's criticizing the book*) are analyzed as essentially sentential, with a structure as in (105):

- (105) [_S NP *nom* (Aspect) VP]

This type of structure is then subject an operation such as Affix Hopping, which attaches *nom -ing* either to the aspectual verb *have* or, when *have* is not present, to the main verb.

The obvious strong point of this analysis is that it makes the subject-predicate relation that holds between the possessive NP and the *V-ing* phrase entirely parallel to that existing between an ordinary subject and the VP. A drawback is that (a) the presence of genitive marking on the subject and (b) the external behavior of the gerundive nominal as an NP are not explained.

In later work by Emonds (1976) and Jackendoff (1977) this drawback does receive attention. In Emonds' work the problem is to some extent obviated through an analysis of gerundive nominals as NPs in deep structure, containing an empty head noun and a clausal complement. This structure, then, is subject to an operation such as (106):

- (106) [_{NP}Δ [_S NP – TENSE – VP]] ⇒ 2 – Ø – Ø – 4
 1 2 3 4

The resulting structure is still a noun phrase, and its subject is assigned genitive Case in the ordinary way. The formative *-ing* is then added to the head of the VP when it is uniquely contained in S, the result of the operation in (106). An example would be (107):

- (107)

The status of [N, NP] is a problem for X' theory. If N is the head of NP, it does not receive genitive Case (as Emonds (1976) remarks; cf. **the man's that I saw*). If it is not the head, however, gerundive nominals are headless. (We are ignoring a number of other problems which arise with respect to (106)-(107), and to Jackendoff's analysis below as well, in the light of GB theory.)

Jackendoff (1977) proposes a headless or exocentric analysis for English gerunds, through his deverbalizing rules. He remarks:

The point is clear. Gerunds have the constituent structure of sentences up to the X'' level and that of NPs above that (1977, p. 223).

To account for this disparity, Jackendoff proposes a rule like (108), which generates structures such as (109):

(108) $N''' \rightarrow N'' - ing - V''$

The analysis that we will propose is not unlike Jackendoff's. The major conceptual difference lies in the view of X'' structure. In the case of V'' or VP, what Jackendoff sees as the properties of a constituent – namely the possibility of Dative and Particle Shift, the occurrence of adverbs rather than adjectives, and the possibility of aspect and negation – we see as resulting from the interaction of properties of the head with those of its projection. Thus VP properties in our view are mostly properties characteristic of projections from $\sim + V$ heads, even if these projections are not of the category $\sim + V$ themselves (we will show in section 3.2 how this is possible.) Other types of phenomena, such as genitive Case in English, are seen as determined by the categorial structure of the projecting nodes. This more modular conception of X' theory will permit us to account for transcategorical phenomena in a theoretically more satisfying fashion.

3.1.2. *The NP Dominating S Analysis*

In many descriptions of Quechua nominalizations (e.g. Landerman & Frantz 1972; Snow 1973) these structures are claimed to have two features: (a) both an

NP and an S node (or possibly S' node) are involved; and (b) the S node is a daughter of the NP node, as in (110):

We will give a number of arguments which militate against this type of analysis for Quechua. Some of these are theoretical, some empirical.

The first problem with (110) is that it does not conform to the X' format. Those that defend analyses like (110) will reply that it is precisely their transcategorial status that is unique about nominalizations, and that something like (110) is needed to account for this status. However, (110) violates the X' format in a number of ways:

(a) it implies a complete categorial reversal, i.e. $[+N, -V]$ (= NP) dominates $[-N, +V]$ (= S);

(b) it violates the generalization that a category of level X^n may only dominate a category of level X^{n-1} , since $N^{\max}$ (where 'max' refers to the maximality of the projection level) dominates $V^{\max}$ or $\text{INFL}^{\max}$;

(c) the categorial reversal is not local in the sense that it occurs at n levels away from the lexical category heading or 'anchoring' the constituents.

We will suggest a way to deal with transcategoriality which constitutes a much less radical departure from the X' format than (110) does, and which does not suffer from the empirical defects of (110) that we will list below.

The second problem with (110) is that nominalizations have several noun phrase-like internal characteristics which cannot be explained by (110), such as the possibility of having genitive subjects. Versions of (110) predict rather that internally, the nominalization is parallel to a clause in every respect.

Third, the structure given in (110) predicts that nominalizations can occur in all NP positions. Note however, that in Quechua the only nominalizations that can occur in subject position are those that have genitive subjects themselves, i.e. which are NP-like internally, or those that are infinitives. This observation is impossible to explain in terms of a theory that incorporates (110).

Fourth, an analysis in terms of (110) creates problems for locality principles such as subadjacency. Consider (111):

- (111) Ima -ta muna -nki apa -mu -na -y -ta.
 what AC want 2 take CIS NOM 1 AC
 What do you want me to bring?

Here the Wh-phrase **ima-ta** 'what AC' is moved out of the complement clause to the front of the main clause. If (110) were the correct structure, this movement constitutes a violation of subadjacency, no matter whether it is S or S' that is a bounding node for Quechua. In (112a) there is a subadjacency violation if one takes

S' to be the bounding node, and in (112b) when S is the bounding node:

- (112) a. [Ima -ta_i [muna -nki [_{NP} [_S t_i [pro t_i apa -mu -na -y -ta]]]]].
 what AC want 2 take CIS NOM 1 AC
- b. [Ima -ta_i [_S muna -nki [_{NP} [t_i [_S pro t_i apa -mu -na -y -ta]]]]]
 what AC want 2 take CIS NOM 1 AC

We should attempt to produce an analysis of nominalizations which does not suffer from this inadequacy. Cole (1982) argues in a squib that the grammaticality of (112) constitutes an argument for a return to the definition of subjacency in Chomsky (1973), where only nodes dominating lexical material count as bounding nodes for subjacency. This definition has given rise to considerable theoretical problems in later developments of the theory, however. In fact, it allows analyses involving series of NP and S nodes (e.g. alternating), none of which would count for subjacency. Headless relatives, for example, would also have the structure in (112), in all relevant respects, and hence should allow extraction operations. They do not allow Raising, however. (In (113) the final *e* refers to the empty antecedent.)

- (113) *Pi -man_i yacha -nki [_{NP} [_S e_i qu -na -n -ta] e].
 who to know 2 give NOM 3 AC
 To whom do you know the thing that he will give?

For further discussion of problems with Cole's proposal see Lefebvre and Muysken (1982b).

A final problem with analyses in terms of (110) is parallel to the one just given, having to do with restructuring rather than with movement. A relevant example is given in (114):

- (114) [_{NP} [_S PRO e_i maqa- y -ta]] muna- wa_i -n.
 beat NOM AC want 1ob 3
 He wants to beat me.

Here the 1st person object is marked on the matrix verb rather than on the infinitival verb that governs the empty object position. There are a number of arguments showing that there has been restructuring of the two verbs so that they form a single predicate at the relevant level of representation. Work on verb raising in Dutch and German (e.g. Reuland 1981) has shown that it is subject to subjacency. In that case, an analysis which postulates two bounding nodes between the two verbs that participate in the restructuring process will necessarily be inadequate.

We have shown that an analysis of nominalizations in Quechua involving the structure in (110) has several problems. In section 5 we will present an analysis

which does not suffer from these defects. Before we turn to that analysis, however, we will mention several proposals which go in the same direction as our own.

3.1.3. *Recent Work on Transcategoriality*

While most work on transcategorial constructions has been directed towards English gerunds, several other languages have been studied in some detail with respect to this type of construction. We will mention here Hale & Platero's work on Navaho (1985), Aoun's work on Arabic participles (1981a) and Van Riemsdijk's study of German adjectival constructions (1983).

Hale & Platero (1985) attempt to analyze nominalizations in Navaho using a system of external (i.e. 'upward looking') features combined with internal (i.e. 'downward looking') features. Hence something which acts like an S internally but like an NP externally may be assumed to have a feature representation as in (115):

Such a system has obvious advantages: it presents a possibility for capturing something of the dual character of nominalizations, and would nicely fit the Quechua data. It has two major drawbacks, however. From a theoretical point of view it is difficult to interpret this type of feature system, which represents a major departure from our standard conception of features. In addition, it would predict that there are far more types of mixed categories than are actually found. From an empirical point of view it is inadequate in that it illustrates some of the mixed features of nominalizations, but not all of them. As such, it shares the disadvantages of the system outlined above where NP simply dominates S. In particular, the system does not account for the *internal* NP-like characteristics (e.g. in Case marking) that nominalizations sometimes possess.

Still, the idea implicit in Hale & Platero's work has helped shape our own conception of categoriality to some extent, as will be clear when we examine the notion of category shift. In some sense category shift can be seen as an extension of the notion implicit in Hale & Platero: simply make the dotted line in (115) vertical:

A major source of inspiration for our view of Quechua nominalizations was Aoun's work on Arabic participles (1981a). Aoun argues that participles are of the category $[+N, +V]$ in some varieties of Arabic, with both nominal and verbal characteristics. As will be stressed in chapter 4, we adopt Aoun's idea that the nominal and verbal features are essentially independent from each other: all $[+V]$ elements share essential features, and when an element is specified positively for both N and V, it will have some of the properties of N and some of the properties of V. We will argue below for the maximality assumption made by Aoun: somehow pure nominals $[+N, -V]$ and pure verbals $[-N, +V]$ are unmarked, the intermediate categories being marked. Aoun (1981a) formally expresses this assumption using the marking conventions set up by Chomsky & Halle (1968). The neutralization procedure that we will adopt has the same effect of reducing markedness. Aoun's system, on the other hand, does not provide for category switch as we define it.

Work by Van Riemsdijk (1983) on German adjectives and participial phrases uses category shift as well. Van Riemsdijk introduces a convention by which participial phrases (which he assumes to be $[-N, +V]$) and adjectival phrases (which he assumes to be $[+N, +V]$) can be inserted into the same pre-nominal position by virtue of the fact that both are non-distinct from the maximal projection, AP, in that both are $[+V]$. The structures are represented in (117a) for the adjective phrase, and in (117b) for the participial phrase:

$$(117) \text{ a. } \begin{array}{c} \left[\begin{array}{c} +N \\ +V \end{array} \right]^{\max} \\ \downarrow \\ \left[\begin{array}{c} +N \\ +V \end{array} \right] \end{array}$$

$$\text{ b. } \begin{array}{c} \left[\begin{array}{c} +N \\ +V \end{array} \right]^{\max} \\ \downarrow \\ \left[\begin{array}{c} -N \\ +V \end{array} \right] \end{array}$$

In both cases the $[+V]$ character is crucial. It will be clear in the following discussion how close this proposal is to our own idea of a category switch or category neutralization.

3.2. *Our Analysis*

We will claim that nominalizations are projections of either the category N''' or the category V''' from a lexical head which is both noun and verb, i.e. $[+N, +V]$. Very important is Case assignment, which we will describe briefly in section 3.2.1. In 3.2.2 we present an extension of the X' system to handle the Quechua data. In 3.2.3 we explore the precise consequences of this extension for the analysis of nominalizations, and in 3.2.4 we study the implications of this extension for the analysis of Quechua postpositional clauses. In 3.2.5 we will argue that our analysis is both empirically and theoretically more attractive than previous accounts.

3.2.1. *Categoriality and Case*

Central to our analysis of what is the syntactic structure and function of nominalizations in Quechua is the assignment of Case. There is an apparent contradiction in Quechua that results from (118a-b) (we will argue in chapter 4 that (118a-b) are needed in Quechua):

- (118) a. All governed constituents are marked for Case, including governed S' (i.e. V^{'''}, with the features [-N, +V]) and governed PP (i.e. P^{'''}, with the features [-N, -V]);
 b. All maximal projections are marked for Case, but only [+N] lexical heads can receive morphological Case marking.

In the light of (118b), the question arises of how V^{'''} can be marked for Case. It could be marked either through a lexical [+N] Case carrying complementizer (119a), or through being headed by a nominalized verb (119b) (cf. Lefebvre 1980):

- (119) a. Hamu -nqa chay -ta yacha -ni.
 come 3FU that AC know 1
 I know that he will come.
 b. Hamu -na -n -ta yacha -ni.
 come NOM 3 AC know 1
 I know that he is to come.

We now turn to the discussion of the rule format which makes it possible for V^{'''}s to have a [+N] head.

3.2.2. *A Minimally Revised X' System*

We propose that in languages such as Quechua there is a special extension of the X' system, which has the property of changing the value of one of the features defining the category of a projection. It takes the following form:

$$(120) \begin{bmatrix} \alpha & F_a \\ & -F_b \end{bmatrix}^1 \rightarrow \dots \begin{bmatrix} \alpha & F_a \\ \beta & F_b \end{bmatrix} \dots$$

In (120) F_a and F_b stand for either of the features $\pm N$ and $\pm V$, the superscripted 1 stands for 'one level projection' and α and β are variables ranging over + and -.

Thus at the lowest level of the projection, the node immediately above the lexical head, the categorial specification can be negative for one feature of the head which is either negative or positive. The rest of the projection will then be of the same category as the node immediately dominating the head. An example of (120) would be:

3.2.3. Results for Nominalized Clauses

The extension of the X' system presented in the previous section has strong implications for possible trees in Quechua. All configurations in (122) become possible:

Besides the canonical configurations for A' , N' , V' , and P' , presented in (122a-d), the revised version of the X' rule predicts the configurations (122e-h).

In (122e) a nominal projection dominates a $[+N, +V]$ lexical head. In (122f) a verbal projection dominates a $[+N, +V]$ lexical head. In (122g) and (122h) a postpositional projection dominates a verb and a noun head, respectively. These we discuss below, focussing here on (122e-f).

The line we pursue here is that nominalized verbs are both nominal and verbal, i.e. belong to the category $[+N, +V]$. Given (122e) and (122f), then, a nominalized verb can be the head of either a nominal or a verbal projection, of either a noun phrase or a clause. In chapter 3 we will argue that the effect of the addition of the nominalization suffix to the verb is that the whole lexical head receives the features $[+N, +V]$. It is crucial that the same morphological form can participate in two projections, since it shares features with both of them.

What predictions does this analysis make for the parallels and differences between nominalizations and main clauses noted in section 2? We will summarize these here for ease of reference:

(123) *Parallels*

- a. Same realization of the thematic structure
- b. Person marking of subject
- c. Person marking of object
- d. Time and manner adverbs
- e. Negation
- f. Wh-movement

Differences

- g. Case marking subject
- h. Case marking object
- i. Main Tense *tense* marking
- j. Main Tense person marking
- k. Validation markers
- l. Negative clitic
- m. Case marking on head of projection
- n. Freedom of word order

The assumption that nominalizations can be both of the category NP and of the category S', coupled with the assumption of the structural parallelism between NP and S' argued for in section 2, explains the parallels between nominalizations and clauses observed above. A few remarks are in order. We will have to assume that (d) – the distribution of time and manner adverbs – is a strictly semantic question, and that these adverbs can occur in NPs when the semantics of the head of the NP allows it. If we assume for (f) that Wh-movement in Quechua is simply adjunction to a projection, there should be no problem in accounting for this parallel.

In the same way, our analysis accounts for the differences which can occur between nominalized clauses and main clauses. The analysis of Case assignment in chapter 4 will be an attempt to explain the precise distribution of nominative, genitive, - *ta* accusative and Ø objective cases in terms of the more NP-like or S'-like environment in which these Cases are assigned.

We have stated in section 1 that the differences between main and nominalized clauses with respect to type of tense marking, type of subject marking, validation markers, and the negative clitic should be explained by the fact that nominalized clauses lack Main Tense. In chapter 7 we will discuss in detail what Main Tense is, and what function it has for the interpretation of Quechua clauses.

Difference (m), stating that main verbs cannot be marked for Case, while nominalized verbs can, has been explained in our analysis by the fact that only nominalized verbs bear the feature [+N] needed for morphological Case marking. The restrictions on word order in nominalized clauses, when contrasted with main clauses, will be explained in chapter 3.

3.2.4. *Results for Postpositional Phrases*

The rule of category switch proposed in 3.2.2 is relevant not only for nominalizations in Quechua but also for postpositional phrases. In this section we show that these phrases support our general analysis of transcategorial constructions.

In the preceding section the various expansions were listed which are made possible by the revised X' system that we have proposed. We will repeat here the expansions for postpositional phrases:

The node P' can dominate either a verb, a true postposition, or a noun, according to our predictions. These predictions are borne out by the complex facts of Quechua postpositional phrases.

In Cuzco Quechua we find no true verbs acting as postpositions, but in Ecuadorian Quechua we find the postposition **yalli** 'more than', analyzed in detail in chapter 6 of Muysken (1977). **Yalli** can be both a verb, as in (125a), and a postposition, as in (125b):

- (125) a. Kan -da yalli -ni xwirsa -bi.
 you AC exceed 1 strength LO
 I exceed you in strength.

- b. Kan -da yalli xwirti ka -ni.
 you AC exceed strong be 1
 I am stronger than you.

We assume the form **yalli** in (125b) to be [+V], rather than a postposition. It assigns accusative Case to its complement – a feature that, as we will argue in chapter 4, is limited to [+V] elements. It has, however, a lot of postpositional characteristics: the phrase of which it is the head is unlike other V''' projections in that it is not inflected for person, tense, or subordination, and it is like other postpositional phrases in that it can be moved to the right of the verb.

True postpositions in Quechua occur without Case marking (being in some sense inherently marked locative or oblique) and assign $\emptyset$ Case to their complements. Examples are given in (126):

- (126) a. Wawki -y ranti hamu -ni.
 brother 1 exchange come 2
 I come instead of my brother.

- b. Wasi ukhu tiya -ni.
house inside live 1
 I live in (or inside of) the house.

Only for some speakers do **ranti** and **ukhu** have these characteristics. Many speakers prefer the counterparts to (126) in (127), in which the heads of the postpositional phrases have the nominal characteristic of being Case marked when governed:

- (127) a. Wawki -y ranti -y -ta hamu -ni.
brother 1 exchange NOM AC come 1
 I come instead of my brother.

- b. Wasi ukhu -pi tiya -ni.
house inside LO live 1
 I live in the house.

For the sake of clarity we will schematically present the structures of (125), (126), and (127) as (128a), (128b), and (128c), respectively:

How do we know that (128c) is not a complex noun phrase of the type 'in the inside of the house'? The answer is that such noun phrases do exist in Quechua, but that in that case the complement is marked genitive and the nominal head is marked with a person agreement suffix:

- (129) a. Wawki -y -pa ranti -y -ni -n -ta hamu -ni.
brother 1 GE exchange NOM EUPH 3 AC come 1
 I come in my brother's stead.
- b. Wasi -q ukhu -n -pi tiya -ni.
house GE inside 3 LO live 1
 I live in the inside of the house.

The contrast between (129) and (127) provides us with sufficient arguments to claim that the postpositional phrases with nominal heads in (127) are not in themselves projections of the type N'' : they lack the agreement node. While **wawki** and **wasi** occur in the specifier position and receive Case through agree-

ment in (129), *wawki* and *wasi* in (126) and (127) occur in the complement position and receive Case directly from the postposition. All three types of postpositional heads predicted by our extension of the X' theory can thus be found in Quechua.

3.2.5. *Local Transcategoriality*

We have tried to show that the slightly revised X' rule that allows the head to be positively specified for one feature for which its immediate projection is negatively specified has interesting consequences both for the analysis of nominalized clauses and for the apparently unrelated domain of postpositional phrases. Earlier attempts to account for transcategoriality have a number of drawbacks, and in addition leave the link between nominalization and complex postpositions unexplained. Although no systematic research has been done in this area, extensive nominalizations seem to co-occur with complex postpositional phrases in many languages (e.g. Turkish, Kornfilt 1983; Navaho, Hale and Plate-ro, 1985). In this way our extension of the X' system can claim to be descriptively adequate.

On the level of explanatory adequacy our extension of the X' formalism is to be preferred over an analysis in which NP dominates S' for four reasons: (1) Our mechanism allows for only one feature to be switched rather than two at the same time; (2) Our mechanism is local in that the switch-point is the immediate projection of the head rather than some remote projection; (3) Our mechanism conforms to the general X' formalism in that the head of the projection where category switch occurs is of a lower level than the category itself; (4) The way our mechanism is formulated makes it possible to analyze it as categorial neutralization.

This latter point is rather complex. It depends on the assumption that the categorial features $[+N]$ and $[+V]$ imply categorial markedness such that:

- (130) $+N$ = marked for N $-N$ = unmarked for N
 $+V$ = marked for V $-V$ = unmarked for V

In this way P which is $[-N, -V]$ is the categorially least-marked category, and A which is $[+N, +V]$ is the most marked category. This implies, for instance, that in a language with a separate category of adjectives there may well be specific morphological rules for the category A, but that languages with a separate category of pre- or postposition will tend not to have pre- or postpositional morphology, under the assumption that category-specific morphology is what makes the identification of categories possible for the language-learning child. Note that our extension of the X' formalism predicts that the projection of a lexical category can be more neutral, i.e. less marked, than the lexical item itself. The projection of a noun could be without specifically nominal characteristics, as in postpositional phrases headed by nouns in many languages. This is precisely what one would like to say for Quechua, given the differences between the

categories together with the similarities between their projections. In the following chapters we will continue to explore the basic idea of transcategoriality that we have argued for here.

It should be pointed out at this point that it may not be possible to maintain the locality condition on switch sites in its strongest form: the distribution of Case markers, discussed in chapter 4, forces us to accept in some cases a switch point higher in the tree than between the head and its minimal projection. Hence we may have to extend the already marked extension of the X' formalism in another, marked way. A first approximation of this extension would be:

$$(131) \quad \begin{bmatrix} + F_a \\ - F_b \end{bmatrix}^i \rightarrow \dots \begin{bmatrix} + F_a \\ \alpha F_b \end{bmatrix}^{i-1} \dots$$

In (131) an evaluation metric rates the grammar highest for the lowest value of i .

Such an extension would allow us to maintain the notion of locality with respect to switchpoints, while accommodating the recalcitrant facts presented in chapter 4.

3.3. *Lexicalization of Transcategorial Constructions*

In Quechua, the suffixes involved in the nominalizations of clauses are also found to play a role in derivational morphology. In this section we propose an explanation for this fact, suggesting that nominalizations of verbs may become lexicalized through a process of reanalysis in which the marked feature of inflectional nominalizations is lost, namely the category switch between the head and its projection.

All nominalizers, **-sqa**, **-na**, **-q**, **-y**, play a role in derivational as well as in inflectional morphology. Examples are given in (132) through (135):

- (132) a. yarqa -y
 be hungry NOM
 hunger

- b. unqu -y
 fall ill NOM
 illness

- (133) a. puklla -na
 play NOM
 toy

- b. mikhu-na
eat NOM
 food
- (134) a. unqu -sqa
fall ill NOM
 ill
- b. upya -sqa
drink NOM
 drunk
- (135) a. suwa -q
steal AG
 thief
- b. yacha-q
know AG
 wise man, shaman

Although there are many exceptions, the general semantics of the four derivational processes is:

- (136) a. -y abstract action noun
 b. -na- instrument, potential realization noun
 c. -sqa- resultative adjective
 d. -q agent noun

These meanings correspond vaguely to the interpretation of the inflectional nominalizations, which is, as we have seen, roughly:

- (137) a. -y infinitive
 b. -na- unrealized action
 c. -sqa- realized action
 d. -q agentive

The correspondence is only very approximate, however: not all syntactic uses of **-q** are truly agentive, **-y** is sometimes only formally an infinitive (e.g. in restructuring contexts), sometimes **-na** is an infinitive, etc. Therefore it is impossible, semantically, to collapse the inflectional and derivational use of nominalizations, even when the latter would be semantically transparent.

There are other differences as well. Person marking on the derived nominal expressions refers to the possessor, most commonly, not to the agent or experiencer. Hence (138):

- (138) a. *yarqa* -y -ni -y
be hungry NOM EUPH 1
 my hunger ($\neq$ my being hungry)
- b. *puklla* -na -y
play NOM 1
 my toy ($\neq$ my (future) playing)
- c. *unqu* -sqa -yki
fall ill NOM 2
 your ill one ($\neq$ your being ill)
- d. *suwa* -q -ni -y
rob AG EUPH 1
 my thief ($\neq$ the one who robbed me)

Some of the translations are correct as well, but refer to the inflectional nominalizers rather than the derivational ones.

A third difference relates to the impossibility of PRO in lexicalized nominalizations. PRO in the next set of examples leads to the inflectional reading only:

- (139) a. PRO *yarqa* -y
be hungry NOM
 to be hungry ($\neq$ someone's hunger)
- b. PRO *puklla* -na
play NOM
 ... to play ($\neq$ someone's toy)
- c. PRO *unqu* -sqa
fall ill NOM
 someone having fallen ill / having fallen ill (predicative) / ($\neq$ someone's ill one)
- d. PRO *suwa* -q
rob AG
 someone who robs ($\neq$ someone's thief)

A fourth difference has to do with plural marking. In inflectional nominalizations, we ordinarily find **-ku** marking the plural subject, while in derivational nominalizations we find the nominal plural marker **-kuna**:

- (140) a. *puklla* -na -n -ku
play NOM 3 PL
 their going to play...

- b. puklla -na -n -kuna
play NOM 3 PL
 his toys

- (141) a. suwa -q -ku.
rob AG PL
 they used to rob

- b. suwa -q -kuna
rob AG PL
 thieves

A final and crucial difference has to do with the possibility of a direct object: inflectional nominalizations can have them, and lexicalized ones cannot:

- (142) a. papa -yki suwa -q
potato 2 rob AG
 someone who robs your potatoes ($\neq$ the thief of your potatoes)

- b. papa -yki mikhu -na
potato 2 eat NOM
 to eat your potatoes ($\neq$ food (consisting) of your potatoes)

It is marginally possible to have single nouns as the object of lexicalized agentive phrases, as in (143):

- (143) papa suwa -q
potato rob AG
 potato thief

We will assume, however, that these have the status of nominal compounds rather than that of noun complement expressions.

All these differences can be explained if we assume that in the process of lexicalization of nominalized expressions there is a syntactic reinterpretation that takes place as well, which has the following form:

The change has the following consequences:

a. Since the lexical category of the head changes from nominalized verb [+N, +V] to noun [+N, -V], we can expect semantic changes to occur as well; the affixes involved in the nominalization process are redefined.

b. With the semantic change we find loss of argument structure: the principal interpretation for the subject of a noun phrase is possessor or another vaguely defined relation, not agent, etc.

c. We assume PRO to occur in a domain where there is no [+Tns] governor. Hence the loss of the [$\pm$ Tns] node renders PRO impossible. It is not simply the absence of [+AGR] that renders PRO possible, because then ordinary nouns could have PRO as well: what is needed is an INFL domain without a [+AGR] node.

d. The change of plural marker is the result of the categorial change of the head from [+V] to [-V].

e. The loss of the [+V] feature, finally, leads to the loss of Case assigning possibilities for the head as well. Pure nouns, being [-V], cannot assign objective Case, while nominalized verbs, being $\sim$ +V], can, as we will argue in chapter 4.

Thus the categorial reanalysis sketched in (144) accounts for the difference between 'inflectional' and 'derivational' nominalizations. We argue that in the process the marked feature of inflectional nominalizations is lost, namely the category switch between the head and its projection. In lexicalized nominalizations, the category features of the head are identical to those of the projection.

4. SUMMARY

In this chapter we presented an over-all description of nominalizations in Quechua. In our view nominalized verbs in Quechua are [+N, +V]. They can be the head of either a noun phrase or a clause. This is possible because a slightly enriched version of *X'* theory consisting of a category switch rule (120) that results in the loss of a positive feature specification in the projection was proposed for Quechua nominalizations. Finally it was shown that noun phrases and clauses are alike in many essential ways, differing mainly in the Case marking of their complements.

CHAPTER 3

MORPHOLOGY AND SYNTAX

In our discussion of the categorial status of nominalizations in the previous chapter, we did not postulate a transformation to relate nominalized verbs to ordinary verbs, or nominalized clauses to ordinary clauses. In this chapter we will show that nominalized clauses, in which the head and its affixes determine the type of structure in which the head can occur, are best derived under the strong lexicalist hypothesis. The salient features of this hypothesis are:

A. Words are inserted into phrase structure positions. There is no formal difference between derivational and inflectional morphology. Word formation takes place in the lexicon. The lexicon is defined in terms of rule types that are different from those of the syntax.

B. The relation between elements or features of words and the structure that words appear in is not a transformational one. We will argue that features of words are related to syntactic structures through morphological control and percolation. These two mechanisms are formally distinct and are both needed.

C. In the ordinary case, the notion *word* as defined by the lexicon corresponds to the phonological word. We will argue that in Quechua, person, number, tense, and Case markers are true affixes, attached in the word formation component. Exceptions involve (phrase structure generated) clitics attached to the lexical word in the phonological component.

Even if one agrees upon these three points, there is still a wide range of possible analyses available. These may be related to the following diagram:

The diagram in (1) suggests three types of questions:

- What are the properties of lexical entries? We take lexical entries to be the representations common to the syntactic and the lexical components.
- What principles guide the formation or constitution of the entry?
- What principles determine the relation between the entry and the elements or features in its projection?

Quite obviously, the answers to (b) and (c) depend on the answer to question (a). To make the discussion more concrete, consider a word such as:

- (2) *maqa -sqa -n -ku -ta*
 beat NOM 3 PL AC
 that they have beaten

If we insert (2) into the configuration in (1), we get something like (3):

The lexical entry in (3) is related to its projection in two ways: (a) it governs (θ -marks and Case marks) its complements; (b) a number of its affixes specify the feature content of INFL and COMP. The latter is accomplished through MORPHOLOGICAL CONTROL. An analysis in terms of RULE R (Chomsky 1981) is not adequate, we show. We account for the relation between Case morphology on the head and Case features on the maximal projection through a theory of syntactic PERCOLATION.

Before commencing a discussion of these issues, we give a description of the morphology of nominalizations. Quechua morphology distinguishes clearly between an N system and a V system. If Quechua nominalized verbs are both [+N] and [+V], how does their morphological marking project upward in the word tree? We will adopt the head analysis of Williams (1981a) and related work, in which categorial features can percolate up in a word tree, but we will show that the percolation mechanism cannot handle more complex cases of semantic composition.

1. QUECHUA NOMINALIZATIONS AND THEIR MORPHOLOGY

In this section we will present an explicit account of the morphology of Quechua nominalizations, and contrast it with that of nouns and verbs.

1.1. *Nominal Morphology*

Quechua nouns can have a complex internal structure, involving a string of affixes:

- (4) wasi -cha -yki -kuna -pura -lla -man
 house DIM 2 PL among DEL to
 just to among your little houses

The general schema for nouns of this type is:

- (5) ROOT – derivational – person – kuna – pura – lla – Case
 diminutives y 1 plural ‘among’ delim- ta
 augmentatives yki 2 itative man
 ... n 3 wan
 nchis 4 ...

It is possible to have several derivational affixes in a row (although the range of nominal derivational affixes is not so great). In exceptional cases it is possible to have two person markers in the same word:

- (6) waki -n -ni -nchis -pura
 some 3 EUPH 4 among
 among some of us

Finally, there can be several Case markers in a row, as in:

- (7) Xwan -pa -man -wan
 Juan GE to with
 and also to near John's

(-Wan is a Case marker even when used as a coordinator. Its normal meaning is instrumental or comitative).

The ordering of these elements is not achieved through a slot-like or stipulative approach, but results from the interaction between the structure of the word and that of its projections.

1.2. Verbal Morphology

The verbal morphology is if anything more complex than the nominal morphology, involving a host of derivational affixes, which play a role in the lexicon and in the syntax:

- (8) a. Riku -wa -rqa -n -ku.
 see 1ob PA 3 PL
 They saw me.
- b. maqa -na-ku -qti -n -ku
 beat REC SUB 3 PL
 if they hit each other...
- c. Llank'a -chi -wa -n -man.
 work CAU 1ob 3 POT
 He might make me work.

The general order of morphemes in the verb is as in (9):

- (9) ROOT – derivational – person – tense – person – plural – potential

In one word there can be a sequence of derivational affixes, but only one affix from each of the other categories. The object markers **-wa-** and **-su-** combine with the subject markers in sometimes complicated ways to indicate the subject and the object of the verb. In the slot labelled tense we find a wide variety of affixes that are mutually exclusive and that all have some connection with temporal reference. These affixes, which include the main tense markers, the nominalizations, and the adverbial subordination or switch reference markers, all occur between the object and the subject markers. In the theory presented here, they specify the content of INFL (except for AGR), and are linked to the EXTERNAL ARGUMENT, such as defined in Williams (1981b). The next set of markers indicate the person of the external argument. The plural markers can refer to either the subject or the object, in a way described in detail by Lefebvre and Dubuisson (1978). The potential marker **-man** may correspond to the Case marker **-man** of the nominal system. They are phonetically identical and both occur in final position.

1.3. *The Morphology of Nominalizations*

Having outlined the main features of nominal and verbal morphology in Quechua,

we can now ask what morphological characteristics nominalizations have. We will begin by presenting some examples which have a nominalization morpheme and other affixes (the nominalizations are in brackets):

- (10) a. Riqsi -nki- ña -chu [tiya -ku -na -yki] wasi -ta?
know 2 already Q live RENOM 2 house AC
 Do you know already the house that you will live in?
- b. T'anta [qu -wa -sqa -yki] mana allin hina -chu ka -sqa.
bread give 1ob NOM 2 not goodlike NEG be SD
 The bread you gave me turned out not so good.
- c. [Mikhu -naya -wa -y -ta] qallari -n.
eat DESI 1ob NOM AC begin 3
 I begin to get hungry (lit. It begins to give me hunger).
- d. Ñawpaq [chaya -mu -q -man -mi] qulqi -ta qu -saq.
first arrive CIS AG to AF moneyAC give 1FU
 I will give the money to whoever arrives first.

In principle, the full range of verbal derivational affixes can occur inside nominalized verbs, with the exception of certain aspect markers. The object markers also occur freely on nominalized verbs, as in (10b) and (10c). The subject person markers are taken from the [– Main Tense] paradigm.

The situation with the plural markers is slightly more complex. In the ordinary case we have person plural markers (- **chis** or -**ku**):

- (11) a. llank'a -sqa -y -ku -ta.
work NOM 1 PL AC
 that we worked (AC)
- b. llank'a -q -ku.
work AG PL
 They used to work.

The interpretation of (11a) is straightforward. In (11b) we have a past habitual construction with the copula absent (since it is 3rd person present tense) and the person marking of the copula appearing directly on the agentive complement. In (12), however, we find an agentive with the noun plural -**kuna**:

- (12) llank'a -q -kuna
work AG PL
 the workers

Here **-kuna**, the nominal plural, refers to the empty head of a free relative. Consider now in contrast the paradigms in (13) and (14), which again have a free relative, but also have a possible combination of noun and person plural:

- (13) suwa -q -ni -y
steal AG EUPH 1
 the person who stole from me

suwa - q - ni - yki	'... from you'
suwa - q - ni - n	'... from her/him'
suwa - q - ni - nchis	'... from us (incl)'
suwa - q - ni - y- ku	'... from us (excl)'
suwa - q - ni - yki - chis	'... from you (pl)'
suwa - q - ni - n - ku	'... from them'

In (13) we find that the person marking which ordinarily specifies the subject of the verb is used instead to refer to the object, the subject being specified with the agentive marker. The object can be pluralized using the plural markers **-ku** [- 2nd person] or **-chis** [+ 2nd person]. In (13) **-ni** is a euphonic element.

- (14) a. suwa -q -ni -n -kuna
steal AG EUPH 3 PL
 the persons who stole from him

- b. *suwa -q -ni -y -ku -kuna
steal AG EUPH 1 PL PL

- c. *suwa -q -ni -n -ku -kuna
steal AG EUPH 3 PL PL

- d. suwa -q -ni -yki -chis -kuna
steal AG EUPH 2 2pl PL
 the persons who stole from you (pl.)

In (14) it is shown that the nominal plural marker **-kuna** can be combined with these forms only if there is no plural marker **-ku** present, (14a), or if the plural marker is **-chis** (14d). The fact that **-ku** and **-kuna** cannot be combined supports the idea that they may be related affixes.

To summarize the discussion of the morphology of nominalized verbs, we offer the following general schema:

- (15) VERB - DEVIATION - $\left\{ \begin{array}{c} \text{wa} \\ \text{su} \end{array} \right\}$ - $\left\{ \begin{array}{c} \text{q} \\ \text{y} \\ \text{na} \\ \text{sqa} \end{array} \right\}$ - (ni) - $\left\{ \begin{array}{c} \text{y} \\ \text{yki} \\ \text{n} \\ \text{nchis} \end{array} \right\}$ - chis - $\left\{ \begin{array}{c} \text{ku} \\ \text{kuna} \end{array} \right\}$ - CASE

How does this relate to the morphology of nouns and verbs? In Table II we try to show the morphologically ambiguous character of nominalizations: internally they behave like verbs and have derivational verbal morphology. As soon as there is a nominalizing morpheme, however, (*-na*, *-sqa*, *-y*, *-q*) they enter into the realm of nominal morphology, and externally they are like nouns. This is achieved through the addition of a [+N] affix.

Having described the dual nature of the morphology of nominalizations, we can now turn to a discussion of the status of the morphemes described. Are they affixes generated by word formation rules, or are they cliticized onto the verb? In (16) the verb form is one single lexical entry; it represents the affix option:

In (17) the morphemes each fill a syntactic node. This schema represents the clitic option:

Below we argue for the word formation option, (16).

2. AFFIXES VERSUS CLITICS

One way of arguing for the lexicalist hypothesis with respect to forms such as (18) (repeated from section 1) is to argue that its constituting elements show the characteristics of affixes, rather than those of clitics. Affixes are added to a base by word formation rules, while clitics are generated by phrase structure rules.

- (18) *maqa -sqa -n -ku -ta*
 beat NOM 3 PL AC
 that they hit

In this section, we discuss the status of the different particles encountered in (18), beginning with Case marker *-ta* (section 2.1.) and then the other elements (section 2.2.).

2.1. *The Status and Expression of Case*

Case in Quechua is indicated by a class of markers which can be attached to nominals:

- (19) a. *-ta* 'accusative', used for 'direct object', 'via', 'towards', 'during':

Hatun wasi -ta -n riku -ni.
big house AC AF see 1
 I see a big house.

- b. *-man* 'dative' or 'directional':

Kay wasi -man -mi ri -n.
this house to AF go 3
 She/he goes to this house.

- c. *-wan* 'instrumental', 'comitative', 'coordinative':

Nuqa -q wawki -y -wan -mi wasi -man ri -ni.
I GE brother 1 with AF house to go 1
 I go home with my brother.

There may be 10 or 12 of these markers, depending on the dialect of Quechua involved. They include:

- (20)
<i>-ta</i>	'objective'
<i>-man</i>	'dative'
<i>-wan</i>	'instrumental'
<i>-pi</i>	'locative'
<i>-manta</i>	'from, because of, ablative'
<i>-paq</i>	'benefactive'
<i>-o</i>	'nominative'
<i>-rayku</i>	'because of'
<i>-kama</i>	'until'
<i>-nta</i>	'through'
<i>-qpa/-pa/-q</i>	'genitive'

In addition, there are a number of detached or semi-detached postpositions, such as *hina* 'as, like', *ranti-y* 'instead of', *ukhu-pi* 'inside of'. With respect to all these markers, we need to ask two questions:

A. What are their *morphological* and *lexical* characteristics? Are they separate words, clitics, or affixes generated by word formation rules? Are they realizations of abstract features?

B. What are their *syntactic* characteristics? Are they of the category P (postposition), or Case?

These questions need to be kept separate, although they are not unrelated.

A lexicalist theory such as that of Jackendoff (1977) or van Riemsdijk (1978), in which P is a lexical category of the same type as N, A, or V, rules out the possibility that P could be an abstract feature, a suppletive feature, or an affix generated by word formation rules. It can be a word and also possibly have the phonological characteristics of a clitic (cf. Selkirk 1972).

CASE, on the other hand, is a non-lexical or morpho-syntactic category. If we accept the arguments in den Besten (1978), *vir* 'objective' in Afrikaans does not have the categorial status P but rather CASE; at the same time, it is clearly a word, not a clitic. Similar arguments can be adduced for Spanish *a* 'objective animate' (Jaeggli, 1981). In addition to being a word, CASE can be realized as a clitic, an affix, an abstract feature, or a suppletive feature.

The variability resulting from the independence of morphological and syntactic status of CASE and P is demonstrated in (21):

(21)	CASE	P
word	Spanish a Afrikaans vir	<i>to, from, with, etc.</i>
clitic	English 's	?
affix	Latin -m Dutch -s	—
abstract	<i>John</i> (nom.) <i>John</i> (obj.)	—
suppletive	<i>he/him/his</i>	—

We adopt the following definitions for the various elements discussed:

Word: A phonologically independent element generated by the phrase structure rules.

Clitic: A phonologically dependent element generated by the phrase structure rules.

Affix: A phonologically specified element generated by word formation rules.

We will first present a number of syntactic arguments for an analysis of some of the core markers in (20) (**-ta** 'objective', **-man** 'dative', **-manta** 'ablative') as instances of CASE, not P, and then go on to present a number of morphological arguments that these markers are affixes, not clitics. Then we will present some consequences of this for the analysis of Case in Quechua.

2.1.1. CASE, not P

There are several studies which attempt to provide criteria for distinguishing CASE from P, including van Riemsdijk (1978), Kahr (1976), and Kilby (1981). These studies are useful only in part, however, since the syntactic and morphological arguments are not kept separate.

The following arguments help to distinguish CASE from P in Quechua:

i) The first argument involves conjunction. P can be conjoined, as all major lexical categories can be, while CASE – part of a constituent – cannot. Quechua markers cannot be conjoined:

- (22) a. *wawki -y -paq -pis (-) wan -pis
 brother 1 for CONJ with CONJ
 for and with my brother
- b. wawki -y -pis pani -y -pis
 brother 1 CONJ sister 1 CONJ
 my brother and sister

It is hard to construct plausible examples with **-ta** and **-man**, but conjunction involving these elements is equally ungrammatical. The fact that in English some prefixes (*pre- and post-game commentary*) can be conjoined does not invalidate the argument. The fact that Quechua Case markers cannot be conjoined is what is relevant.

ii) A second argument for the non-P status of Quechua Case markers involves object marking. In Quechua, 1st, 2nd, and 4th person objects can be marked on the verb. Normally the corresponding pronoun is either absent or marked for topic:

- (23) a. Riku -wa -n.
 see 1ob 3
 He sees me.
- b. Nuqa -ta -qa riku -wa -n.
 I ACTO see 1ob 3
 Me, he sees.

This type of marking is not limited to **-ta** objects, however. Other types of objects can agree as well with the verb:

- (24) a. Nuqa -man -qa qu -wa -n.
 I to TO give lob 3
 He gives to me.
- b. ?Nuqa -manta -qa parla -wa -n.
 I about TO talk lob 3
 He talks about me.

With postpositions, however, agreement is blocked:

- (25) a. *Nuqa -kama -qa puri -wa -n.
 I until TO walk lob 3
 He walks until me.
- b. *Nuqa -rayku -qa rura -wa -n.
 I cause TO do lob 3
 He does it because of me.

The object marker governs the NP (cf. Borer, 1982). On this basis we can explain the contrast between (24) and (25) by arguing that government by the morphology of the verb cannot enter into the domain of a P, and that **-kama** 'until' and **-rayku** 'because of' in (25) are postpositions rather than Case markers. Unfortunately, (26a) is ungrammatical as well, even though locative **-pi** is an instance of CASE:

- (26) a. *Nuqa -pi -qa iñi -wa -n.
 I LO TO believe lob 3
 He believes in me.
- b. Nuqa -pi iñi -n.
 I LO believe 3
 He believes in me.

If we can find a way of explaining the ungrammaticality of (26a) independently of the CASE/P distinction, the distinction between (24) and (25) shows that Case markers are not postpositions.

iii) A third, quite simple, argument derives from the absence of **-ta** in local contexts. In most varieties of Quechua (but not Cuzco Quechua), objective **-ta** can be optionally absent in main clauses when the object immediately precedes the verb. Lexical elements never show this optionality (and hence **-ta** cannot be an instance of P), but Case markers do.

iv) A related argument has to do with the nominative/genitive and the **-ta/Ø**

alternations in nominalized structures. These alternations will be shown to be due to the feature specifications [$\pm$ N] of the context in which the marker occurs. Such alternations do not occur with respect to prepositions or postpositions, which are always lexically selected. They are characteristic of Case systems, however. In English the tensedness of the auxiliary regulates the assignment of nominative Case; in split-ergative languages the presence of ergative Case on the subject depends on the tense/aspect specification of the clause (Chomsky 1981, Comrie 1978).

v) The fifth argument involves agreement phenomena. The lexical category P cannot function as an agreement marker, while the morpho-syntactic category CASE can. NP-internal Case agreement phenomena are well-known in many languages. This type of agreement does not exist in Quechua. There is external agreement, however, between two associated constituents. An example is:

- (27) Hamu -nqa chay -ta, chay -ta yacha -ni.
 come 3FU that AC that AC know 1
 That he will come, that I know.

Here the first **chay-ta**, a complementizer, agrees in Case with the second **chay-ta**, a demonstrative pronoun and object of the verb. Similar arguments can be constructed for **-man** 'dative', etc. The fact that **-ta** and **-man** can function as agreement markers suggests that they are CASE, not P.

vi) The final argument that we will give involves restructuring of verbal complements. This restructuring involves S' infinitival complements marked with objective **-ta** for verbs of wanting, etc. At some level of representation the infinitival complement domain is incorporated, as far as government is concerned, into the domain of the matrix verb, and the two verbs form one unit, no longer separated by an S' boundary. Example (28) shows the relevant string:

- (28) e_i maqa- y -ta muna -wa_i -n.
 beat NOM AC want 1ob 3
 He wants to beat me.

Consider the role of **-ta** here. If **-ta** were a postposition, this restructuring would be impossible or highly unlikely to take place, since in other languages prepositions (e.g. Dutch **om**, which occurs in a type of *for... to* complement) block restructuring (Evers, 1975).

We have presented several arguments that **-ta** and some other markers show the properties of Case markers rather than of postpositions. In the following section we will present morphological arguments that the same class of markers must be affixes, not clitics or words.

2.1.2. *Affix, not Clitic*

There are a number of arguments that show that the Quechua Case markers, with

the exception of genitive Case, are affixes, not clitics. Arguments for this include the process of vowel deletion, the order of Case markers with respect to other affixes, and Aronoff's (1976) Major Category Restriction and Unitary Base Hypothesis.

We will begin by discussing the genitive. Its shape alternates between **-q** after vowels and **-pa** after consonants:

- (29) a. wasi -q punku -n -q / V-
 house GE door 3
 the door of the house
- b. wasi -n -pa punku -n -pa / C-
 house 3 GE door 3
 the door of his house

A similar alternation is found with the validational suffixes, as in (30):

- (30) a. wasi -n / wasi -n -mi
 house AF house 3 AF
 the / his house indeed
- b. wasi -s / wasi -n -si
 house HS house 3 HS
 the / his house, they say

Both in (29) and in (30) the vowel is absent when the marker appears in the context of a vowel. The validation markers **-mi** and **-si** are base-generated elements, cliticized to the first element on their left. The alternations in (30) are the consequence of a tendency in Quechua to preserve the stress pattern of the word onto which the validation markers are cliticized.

In the same way we could argue that the genitive Case marker is a clitic and follows the phonological pattern of the validation markers. Two considerations seem to speak against this, however. First, the alternation in (30) can be formulated as a simple vowel-deletion process, while the **-mi/-n** contrast in (30a) is accounted for by the neutralization of nasals in syllable-final position – a regular process in Quechua. The alternation in (29), however, between **-pa** and **-q** is not phonologically regular in the same way as (30). There is no phonological explanation for the change from **-p** to **-q** after vowel deletion. Hence it seems more plausible to assume two morphological variants of the genitive marker, affixed under different morphological conditions. Such conditioning is characteristic of affixes, but not of clitics, where alternations are always conditioned by regular phonetically-based processes.

Second, with the mono-syllabic base **pi** 'who', the irregular form of the genitive **-qpa** occurs, creating a bi-syllabic word, highly preferred in Quechua:

Here only the full form occurs, even though the phonological context is parallel to the one in (29) and (30). If the other Case markers were clitics, they would undergo the same deletion process.

ii) A second argument setting the genitive apart from the other Case markers derives from the relative ordering of the Case markers and the delimitative affix **-lla** 'just, little'. Case markers must occur in the last position of the word they are attached to, since they control the Case of the projection of which that word forms part, as was argued in chapter 2. In fact, the following distribution is found:

(35) a.	*-man-lla	-lla-man	'to'
	*-ta-lla	-lla-ta	'objective'
	*-pi-lla	-lla-pi	'locative'
	*-manta-lla	-lla-manta	'from'
	*-wan-lla	-lla-wan	'with'
	*-paq-lla	-lla-paq	'for'
b.	-kama-lla	*-lla-kama	'until'
	-pura-lla	*-lla-pura	'among'
	-hina-lla	*-lla-hina	'as, like'
	-rayku-lla	*-lla-rayku	'because of'
	ladu-lla-pi	*-lla-ladu-pi	'to the side of'
c.	-pa/-q-lla	*-lla-pa/-q	'genitive'

As expected, **-man** and **-ta**, like the other Case affixes, follow **-lla**, while markers such as **-rayku** and **-kama** and words such as **ladu** precede **-lla**. This difference is explained if the elements in (35b) are not affixes, but rather separately generated elements – either CASE clitics or postpositions. In (35c) we see that genitive Case patterns with the postpositions, not with the other Case markers.

Thus the contrast between the genitive and the objective and locative in (34) is due to the fact that the genitive is a clitic, like the validation markers, while the objective and locative Case markers are affixes. This result agrees with that of the discussion of the distribution of **-lla** with respect to the Case markers in (35).

iii) A third set of criteria for distinguishing affixes from clitics may be drawn from Aronoff (1976). There it is proposed that affixation processes are constrained by the MAJOR CATEGORY RESTRICTION and by the UNITARY BASE HYPOTHESIS. Clitics are not morphologically constrained by the category of the base they attached to in the same way. We will discuss the two notions in turn. According to the Major Category Restriction only elements belonging to the major categories may participate in affixation. Consider in this respect the contrast between (36b) which contains a temporal adverb marked for accusative Case **-ta**, and (36c), which contains the negative 'adverbial' **mana**:

- (36) a. *mana hamu -n -chu.*
 not come 3 NEG
 He/she does not come.

b. paqarin -ta hamu -nqa.

tomorrow AC come 3FU

He will come tomorrow.

c. *mana -ta hamu -n -chu.

not AC come 3 NEG

The ungrammaticality of (36c) can be explained if we assume that minor elements cannot bear affixes such as Case markers, even though other non-arguments can, as (36b) shows. Minor elements such as **mana** can carry validation markers, which are not affixes but clitics:

(37) mana -chu hamu -nki.

not Q come 2

Aren't you coming?

The contrast between (36c) and (37) shows that Case markers such as **-ta** behave like affixes rather than like clitics.

The same result can be derived from the Unitary Base Hypothesis. According to the latter, the input to a word formation rule needs to be specifiable in terms of a simple feature set, consisting of either a single feature or at most two features. It is not possible, for instance, that a word formation or affixation rule has both verbs and nouns, as its input, since verbs are [- N, + V] and nouns [+ N, - V]. Quechua Case marking falls under the Unitary Base Hypothesis: the Case marker must attach to a [+ N] category, i.e. to nouns, adjectives, or nominalized verbs, and cannot attach to verbs:

(38) a. wasi -ta

house AC

b. allin -ta

good AC

the good one, well

c. hamu -sqa -n -ta

come NOM 3 AC

that he came AC

d. *hamu -n -ta

come 3 AC

that he comes AC

The restriction to [+ N] elements is characteristic of a specific class of affixes in Quechua (including Case markers, diminutives, distributives, and other deri-

vational affixes of the nominal paradigm), but not of clitics (validation markers and other 'independent' suffixes):

(39) a. wasi -n -mi
house 3 AF

b. allin -mi
good AF

c. hamu -n -mi
come 3 AF

However we find that the genitive marker, which we have assumed to be a clitic, can only be attached to [+N] elements, not to verbs:

(40) a. wasi -n -pa
house 3 GE

b. *hamu -n -pa
come 3 GE

Our claim that the genitive marker is not an affix, but a clitic (and hence insensitive to the morphological environment in which it occurs) can only be sustained if there are independent, syntactic, ways of accounting for the ungrammaticality of examples such as (40b). Particularly, we must assume that [-N] elements can never occur in the position to which genitive is assigned, i.e. in the domain of AGR. This appears to be correct, as we will argue later. Genitive is assigned to nominal specifiers, roughly, and this is not a position in which clauses can occur. If this reasoning is correct, we can still use the Unitary Base Hypothesis to argue that the other Quechua Case markers are affixes. Note that the argument just used to account for the ungrammaticality of (40b) cannot account for the ungrammaticality of (38d), since objective Case can be assigned in contexts where [-N] elements occur (i.e. VP contexts).

iv) A final argument for the affix status of Case markers in Quechua can be derived from adverb formation. Compare (41) and (42):

(41) allin -manta
good from
slowly

(42) a. Allin -lla taki -nki.
good DEL sing 2
You sing well.

b. Allin -ta taki -nki.
good AC sing 2
You sing well.

In (41) the adverb meaning 'slowly' is derived from the adjective **allin** 'good' with an ablative, while **allin** with accusative makes 'well' (cf. (42b)). We do not expect clitics to participate in such lexicalized combinations, but affixes often do (cf. Halle 1973). If we compare (42a) and (42b) we see that **-ta** functions as a derivational marker almost equivalent to **-lla** 'delimitative'. We find that **-ta**, **-man**, **-wan**, and **-manta** participate in such lexicalized combinations, but not **-qpa**.

In this section we have argued that the Quechua Case markers can be divided into two groups. The genitive behaves like a clitic, and parallels the validation markers in this respect. The other Cases behave like affixes. We summarize the discussion of the status and expression of Case with a classification of various Case indicators into four categories:

TABLE III CASES AND POSTPOSITIONS

	conjunction	object marking	optionality of -ta	syntactically conditioned alternation	external agreement	restructuring	allomorphy	distribution of -lla	major category restriction	unitary base hypothesis	lexicalization
<i>Case affixes</i>											
-ta	C	C	C	C	C	C	af	af	af	af	af
-man	C	C			C			af	af	af	af
-manta	C	C						af	af	af	af
-wan	C							af	af	af	af
-pi	C						af	af	af	af	
...											
<i>Case clitics</i>											
-qpa				C			cl	cl			
...											
<i>Postpositional clitics</i>											
-kama		P						cl			
-rayku		P						cl			
<i>Postpositions</i>											
ladu	P	P									
ukhu	P	P									

C = Case; *P* = postposition; *cl* = clitic; *af* = affix

- a. Case affixes, resulting from word formation processes involving the head;
- b. Case clitics, generated by phrase structure rules as part of the expansion of the head phrase, and attached to the head;
- c. Postpositional clitics, head of a PP, and attached to the head of their complement;
- d. Free postpositions.

These four categories are systematically compared in Table III, where the different arguments brought forward so far are applied to the four classes of elements involved.

We have had little to say about postpositions and postpositional clitics here, since they are not central to our argument, but they merit much more detailed investigation. We want to conclude this discussion with a very general remark about the status of the argumentation about affixes and clitics. What we have argued for is that there are two classes of elements in Quechua morphology, which we have termed affixes and clitics. This terminology suggests that there is a universally characterizable category of affix and a category of clitic, and in fact our argumentation has tried to relate the two categories of Quechua morphology to these universally characterizable categories. If it turns out that the universal distinction between affix and clitic is untenable, we will have to think of different terms, such as 'class-bound morphology' and 'class-free morphology', but the basic distinction between two types of morphology will remain.

2.2. *The Status of the Other Inflectional Morphemes*

Having established that the Case markers (with the exception of genitive Case) are to be treated as affixes, rather than clitics, we now turn to other elements traditionally labelled inflectional. They include:

- (43) a. **-ku** verbal plural
- kuna nominal plural
- b. **-chis** 2nd person plural
- c. the person markers
- d. the nominalization markers
- e. the object markers

There is ample evidence for considering the morphemes in (43) to be affixes.

2.2.1. *Person and Number are Internal to Case*

Zwicky (1976) remarks that a morpheme "in construction with" (i.e. preceding) an affix must be either a base (i.e. a lexical root) or an affix itself – it cannot be a clitic. This clearly holds for all the morphemes in (43), since they all occur between the root and the Case affix.

2.2.2. *Person and Number Obey the Major Category Restriction*

None of the elements in (43) above can attach to particles or function words.

2.2.3. *Allomorphy and Irregularity*

If the elements in (43) were to be independent elements cliticized onto the verb, we would expect their phonological behavior to be fairly regular. In fact we find a number of combinations of affixes which are irregular. In (44) the expected form is on the left, the actual form on the right:

- (44) a. *-saq -yki sqa-yki / -sa-yki
 1FU 1-2
- b. *-nki -(chis) -man waq-(chis)
 2 2pl POT

This type of irregularity is characteristic of paradigms of combinations of inflectional affixes, but rare with clitics. Additional cases will be mentioned below.

2.2.4. *Gaps in the Quechua Verb Paradigm*

Halle (1973) argues for the strong lexicalist hypothesis on the basis of gaps in the Russian verb paradigm, particularly missing 1st person forms. Gaps indicate the irregularity that we tend to associate with the lexical component rather than with the syntactic component. This argument can be used to show that the Quechua verb paradigm, which contains a number of gaps, is lexically rather than syntactically patterned. In Quechua we find gaps such as the ones in (45), contrasted with the forms in (46):

- (45) a. *-sqa -yki
 SD 1-2
- b. *-sqa -yki
 NOM 1-2
- (46) a. -sqa -yki (= (44a))
 1FU 1-2
- b. -sqa -yki
 NOM 2

The obvious answer to the problem of why the forms in (45) do not exist is that they would be ambiguous with respect to the forms in (46), but that is not entirely satisfying. Why did an irregular form such as (46a) emerge, then, if it would compete directly with the forms in (45), pushing them out of existence. Why two-way ambiguity, and not four-way ambiguity? There are many cases of ambiguous verb forms in Quechua.

2.2.5. *Idiosyncratic Ordering Restrictions*

The Quechua verbal paradigm is full of idiosyncratic ordering restrictions, characteristic of lexical rather than syntactic processes. These restrictions constitute another argument for treating the morphological elements involved as affixes. We will illustrate this with the elements referring to object – tense – subject. Often the order of the object marker and the tense marker is unpredictable. Consider first the forms in (47), involving the marker for 1st person object, *-wa-*, and a variety of tense suffixes:

- (47) a. *wa -ra -nki* *ra -wa -nki*
 lob PA 2 *PA lob 2*
- b. *wa -sqa -nki* *?sqa -wa -nki*
 lob SD 2 *SD lob 2*
- c. *wa -spa -yki* **spa -wa -yki*
 lob SUB 2 *SUB lob 2*
- d. *wa -qti -yki* **qti -wa -yki*
 lob SUB 2 *SUB lob 2*
- e. *wa -sqa -yki* **sqa- wa -yki*
 lob NOM 2 *NOM lob 2*
- f. *wa -na -yki* **na -wa -yki*
 lob NOM 2 *NOM lob 2*
- g. *wa -y* **y -wa*
 lob NOM *NOM lob*

All of the tense forms can follow the *-wa-* marker, and one or two can precede it. Even though the *-su-* marker is considered to be the 2nd person equivalent of *-wa-*, its ordering possibilities are not the same. Consider (48):

- (48) a. **su -ra -nki* *ra -su-nki*
 2ob PA 3-2 *PA 3-2*
- b. **su -sqa -nki* *sqa -su -nki*
 2ob SD 3-2 *SD 2ob 3-2*
- c. *?su -spa -yki* *spa -su -yki*
 2ob SUB 3-2 *SUB 2ob 3-2*
- d. *su -qti -yki* **qti -su -yki*
 2ob SUB 3-2 *SUB 2ob 3-2*

e. ?su -sqa -yki sqa -su -yki
 2ob NOM 3-2 NOM 2ob 3-2

f. su -na -yki na -su -yki
 2ob NOM 3-2 NOM 2ob 3-2

-Wa- can follow the tense markers only in a few cases. **-Su-** can follow them much more frequently, depending on the tense marker, subordinator, or nominalizer involved.

We may explain the fact that **-su-** occurs after the tense marker by recalling that its interpretation is very idiosyncratic and depends on the interpretation of the subject markers **-nki/ -yki**: together they mark '3rd person subject – 2nd person object'. In some sense **-su-nki** behaves as a single morphological unit and is less easily separated by another affix.

The hypothesis that **-su-nki** is a morphological unit receives support from the fact that sometimes **-nki** occurs after **-su-** instead of **-yki**, even in [– Main Tense] contexts, where we generally get **-yki**. Both (49a) and (49b) are possible:

(49) a. spa -su -yki
 SUB 2ob 3-2

b. spa -su -nki
 SUB 3-2

The possibility of **-su-nki** in (49b), even though **-spa** is [– Main Tense], can only be explained through the development of a new complex suffix out of two originally separate elements.

2.2.6. Interpretation

We would expect clitics to have a very straight-forward semantic interpretation, while affixes, which are part of the word, often have specific or idiosyncratic meanings. Using this line of reasoning, a final argument for the affix status of the person markers derives from their interaction with agentive markers:

(50) riku -q -ni -yki
 see AG EUPH 2
 the one who sees you

In this form the person marker **-yki** refers to the object rather than to the subject, since the subject is already specified by the agentive marker **-q**. Thus the interpretation of the person markers can take place only through reference to the other elements in the word. This type of semantic interaction is characteristic of word formation rather than of cliticization. In the latter case, each element has a separate, independent interpretation.

We have argued in 2.2.1. – 2.2.6. that inflectional items in Quechua behave morphologically as affixes, not as clitics. This supports the strong lexicalist analysis of Quechua nominalizations. Our analysis is a contribution to the debate on the autonomy of morphology as one separate module in the grammar. We take issue with Anderson (1982), who advocates a principled distinction between derivation and inflection. We must ask whether the functional differences between Quechua affixes – some play a role in the syntax, some only contribute to lexical meaning – correspond to formal differences. If there is such a correspondence, a theory that makes a principled distinction between derivation and inflection has a point. If there is none, then the undoubted functional differences between affixes must be accounted for in a way separate from the word formation rules proper.

'Inflectional' affixes are formally identical to 'derivational' affixes in a number of ways:

- (A) Both classes obey the same morpheme structure constraints;
- (B) All affixes trigger stress-shift;
- (C) All affixes are involved in the same type of cyclic interpretation, as was argued in Muysken (1981a, 1981b);
- (D) Both types of affixes can trigger vowel lowering and vowel shortening processes, affecting interior affixes. This property has to be lexically specified for individual affixes (Cerrón- Palomino 1976, Parker 1976, Adelaar 1977);
- (E) Finally, we cannot say that Quechua inflection is 'outside of' derivation. In Quechua nominal morphology, it is true that in general inflectional affixes are exterior to derivational ones, but **-lla-** 'delimitative' is exterior to the person markers, and so is **-kuna-** 'plural'. It might be claimed that both affixes are inflectional as well, but it can be argued that **-kuna-** does not participate in any syntactic rule. (Plural marking being optional and dependent on contextual and semantic considerations outside the realm of syntax, as shown in Lefebvre (1982), and delimitative marking plays no role in syntax).

In verbal morphology a similar confusion reigns. In the Quechua of central Peru, for example, the 1st person object marker **-ma-** occurs in the same position in the word as **-mu-** ('cislocative', i.e. movement in the direction of the speaker), but the latter is not involved in syntactic rules while the former is. Reciprocal and reflexive morphology occurs interior to much 'derivational' morphology. In general, it is better to speak of a *tendency* for inflectional markers to occur external to derivational markers than of an actual pattern. Quechua morphology does not lend itself to a clear division between inflection and derivation.

We now turn to the elaboration of a theory of the lexical entry and its constitution which will be consistent with the conclusions arrived at in this section.

3. THE LEXICAL ENTRY AND ITS CONSTITUTION

In this section we argue for a theory of the lexical entry that includes the following elements:

- (51) a. All word trees in Quechua are binary branching, and constituted through the addition, one by one, of the affixes to a base. All rules of affixation are optional. (Obligatory effects are due to independent principles of the syntax, to which we return below.) There is a set of rules which maps the word (complex or not) onto a lexical representation, affix cycle by affix cycle.
- b. The arguments of a lexical head are represented as a list. One of the arguments may be externalized, i.e. put in a more prominent position than the others, through association with an INFL node.

We will discuss these claims separately, even though they are closely related. A word such as (52) will have a tree representation as in (53):

- (52) *maqá-wa-sqa-n-ku-ta*
 beat 1ob NOM 3 PL AC
 that they beat me

(53)

The interpretive rules will constitute an entry in roughly the following way:

(54)	<i>maqá-</i>	HIT (x, y)
	<i>maqá-wa-</i>	HIT (x,...1ob...)
	<i>maqá-wa-sqa-</i>	HIT (x,...1ob...) + REAL
	<i>maqá-wa-sqa-n-</i>	3 (HIT,...1ob...) + REAL
	<i>maqá-wa-sqa-n-ku</i>	3 PL (HIT,...1...) + REAL
	<i>maqá-wa-sqa-n-ku-ta</i>	3 PL (HIT,...1...) + REAL
		[+ ACCUSATIVE]
		+ N, + V

Here we did not present the categorial features for each step, since they are already present in the tree. In tree (53) the feature [+ REAL] refers to the feature that distinguishes the nominalizer *-sqa-* [+ realized] from other nominalizers such as *-na-* [- realized].

In a theory such as Williams (1981a), each suffix necessarily modifies the features of the base to which it is attached (through Head Percolation), even if this only means specifying them in the same way again. In our view it is not necessary to have percolation conventions. For example, a [+ N] affix would change a [- N] base to [+ N].

A representation like (54) obviates the need for assuming that every affix must have categorial features associated with it; features such as person are needed but do not contribute to the categorial specification of the entry. It is possible for affixes to be sensitive to a specific morphological base (e.g. [+ V]) without modifying the feature composition of the base.

To see where differences may arise between a theory of percolation and a theory of cyclical composition, consider the treatment of percolation in Selkirk (1982). Selkirk discusses Head Percolation, which can be stated as in (55a), and is illustrated in (55b):

- (55) a. If a constituent *X* is the 'head' of a constituent *Y*, *X* and *Y* are associated with an identical set of features (syntactic and diacritic).

b.

In (55b) *-s* is the head of the word, and its plural feature percolates to the inflected noun as a whole.

This definition breaks down, according to Selkirk (1982), because of the existence of structures such as (56a), exemplified in (56b), an example from Spanish:

- (56) a. $X + af$ $+ af$
 $[+ F_1]$ $[+ F_2]$

This type of word will end up with both [+ F_1] and [+ F_2]. It could have either one of two structures – (57a) or (57b):

(57) a.

b.

Case (57a) constitutes a problem for (55) because it would not be possible for both affixes to be the head of X' at the same time. Case (57b) is a problem because only the higher affix transmits its features to the X' constituent, the left branch being excluded from transmitting features. To cover cases such as (56), Selkirk proposes the mechanism in (58):

- (58) a. If a head has a feature specification $[\alpha F_i]$, $\alpha \neq u$, its mother node must be specified $[\alpha F_i]$ and vice versa;
 b. If a non-head has the feature specification $[\beta F_i]$, and the head has the feature specification $[u F_i]$, then the mother node must have the feature specification $[\beta F_i]$.

This way of looking at percolation has the same effect as the cyclic construction of lexical representations upon each affix cycle. Something like principle (58) was applied in the structure exemplified in (54): whenever an affix contained a feature different from its base, the feature of the affix was assumed to prevail.

The difference between an account in terms of percolation and the account presented in (54) is really that in a percolation account only lexical entries which have the form of an unordered list of features can be formed compositionally, for the simple reason that only features (and indexes) can percolate. To the extent that they do not look like lists of features, a mechanism such as that in (54) would be needed. The question then centers around the nature of lexical representations, quite independently of their constitution. To what extent are entries different from lists of features?

In the classical generative theory of the lexical entry, as expressed in Jackendoff (1975), we find the following components (again using the example above):

(59)	phonological representation
syntactic features
subcategorization features
semantic representation
selectional features | maqa - wa - sqa - n - ku - ta
[+ N, + V]
+ [NP ₂ —]
NP ₁ HITS NP ₂
NP ₁ , NP ₂ physical entities
(possibly, NP ₁ animate) |
|------|--|--|

More recently, the notion of lexical entry has been extended in a number of ways. In the strong lexicalist tradition a more precise account was given of the morpho-syntactic features associated with a particular lexical entry. Hence, we can add to the list in (59) the following elements:

(60)	Case features
person
number | + objective Case
3rd person
plural |
|------|-----------------------------------|--|

With the development of Case theory and θ -theory, a number of proposals have been made regarding the Case and θ -assigning properties of lexical elements. Specifically, each NP element in the subcategorization frame is assumed to have a specific Case associated with it, and an entry is assumed to have a θ grid associated with it. Thus we can extend the entry in (60) to include:

(61)	Case subcategorization

Thematic grid | NP
[+ objective]
Agent, Theme |
|------|---|-------------------------------------|

Williams (1981b) has developed a theory of argument externalization, which involves specifying one of the elements in the grid as more prominent than or external to the other ones, e.g. through bracketing, as in (62) (Williams uses underlining rather than bracketing):

- (62) (Agent (Theme))

In this way the entry encodes a semi-syntactic subject/non- subject asymmetry with respect to θ -roles, departing from the traditional notion that the entry is no more than a list of features. Perhaps such complexities were already inherent in (59), since the relation between subcategorization features, semantic representation, and selectional features with numerical indices on the NPs goes beyond the formalism of a list of features.

In Bresnan's work (e.g. 1982) the lexical entry is assumed to have a fully developed internal syntactic structure, which involves a specification of syntactic relations and the associated thematic roles, as in (63):

(63)	HIT	Subject	Object
		Arg 1 (agent)	Arg 2 (theme)

In this type of proposal the syntactic structure into which an element may be inserted is part of the lexical representation itself.

Here we will attempt to simplify the entry somewhat, assuming with Chomsky (1981) that the main effects of subcategorization and selection can be deduced from the theories of Case and Theta. Only marked phenomena such as specific preposition selection by verbs and adjectives remain as matters of subcategorization.

In addition, we take up the notion, developed in the previous chapter, that the subject argument is the argument of INFL or AGR. Assume that uninflected lexical items such as verbs have an associated argument structure as in (64a), while the inflected equivalent has an argument structure as in (64b), in which the presence of INFL allows for the externalization of the agent.

- (64) a. HIT

 (Agent, Theme)
- b. HIT + INFL

 Theme Agent

Whenever a lexical item is inflected, one of its arguments is linked to the INFL position. This is the equivalent of the externalization procedure in Williams (1981b). Notice that it makes INFL crucial to predication: only through the association of one of the arguments of a head with INFL can we have a thematic subject. It is crucial then that nominalizers be linked to INFL in Quechua. How this is accomplished we will see in chapter 7.

What kind of evidence is there for the conception of argument structure in (64)? We will begin by presenting some data about object marking. There is a variety of possible θ -roles that can be linked to the object marker.

- (65) a. Riku -wa -n. THEME (when realized as a lexical NP
 see 1ob 3 we have -*ta* 'objective')
 He sees me.
- b. Qu -wa -n. GOAL (when realized as a lexical NP
 give 1ob 3 we have -*man* 'dative')
 He gives me.

- c. Suwa -wa -n. SOURCE (when realized as a lexical NP)
 rob lob 3 we have **-manta** 'ablative')
 He robs me.
- d. Parla -wa -n. THEME (when realized as a lexical NP)
 talk lob 3 we have **-manta** 'ablative')
 He talks about me.

This possibility suggests that the principal distinction in Quechua is between the external argument (which can never be marked for object) and the internal arguments. This is in accordance with the account of θ -role assignment given in chapter 2.

A second type of evidence comes from the interaction of agentive and person marking. Consider the fact that (66a) and (66b) are equivalent:

- (66) a. *suwa -wa -q*
 rob lob AG
 the one who robs me
- b. *suwa -q -ni -y*
 rob AGEUPH 1
 the one who robs me

The person marking in (66b), which ordinarily refers to the subject, refers to the internal argument here, since the agentive affix already specifies the external argument. This shows then that there is no principled specification of the external argument in the θ -grid of an uninflected verb form. Hence we suggest that generally the θ -grid of a verb is represented as in (67):

- (67) external /...

$\theta_1, \dots, \theta_n$

In this view, the distinction between the external argument and the non-external ones is separate from the θ -specific thematic roles in the argument grid of a verb. The thematic roles play no role with respect to the syntactic environment. It is not clear that they should be part of the lexical entry, although they help define the semantic roles that are associated with the arguments of the lexical head.

More conclusive evidence for our conception of the external argument as the argument of INFL can only be provided on the basis of aspects of Quechua morphology that go much beyond nominalizations, such as causatives (cf. Muysken 1981b, forthcoming).

In (69) the arrow marked *a* refers to percolation and the arrow marked *b* to morphological control. We will begin our analysis with the relation of morphological control, which we find in the relationship between the head and INFL.

4.1. *Morphological Control, the Head, and INFL*

How are properties of clauses such as finiteness and tensedness determined by the morphology of the verb? We assume this to be through the morphological control of features of INFL by features of the entry of the lexical head, as in (70):

In Quechua INFL is an abstract position, the features of which are determined by the verbal morphology. In Chomsky (1981, 1982) a number of proposals are made relating INFL, which is outside of the VP, and the verbal morphology. Returning to the original affix hopping proposal, Chomsky suggests that in deep structure INFL is a separate constituent, and that there is a local, morphological rule, referred to as RULE R, that lowers INFL into the VP and adjoins it to the first verbal element in that constituent. Where rule R takes place is a matter of discussion. Chomsky (1981) assumes this to be a parametrized option: in *pro*-drop languages, the INFL lowering rule was assumed to take place in the syntax, so that at S-structure the subject NP could be identified as an ungoverned PRO, and in non-*pro* drop languages, it was assumed to take place in the phonological component. In both language types, we find the agreement marking manifested on the verb in the phonetic output. In later work rule R is assumed to apply always in the phonology.

Given the lexicalist position adopted in this book, we will take the opposite tack: all elements of INFL are generated as part of the head in the lexicon, and there is a local relation of morphological control that holds between the head and INFL. Some of the properties of the relation of morphological control are the following:

- (71) a. Morphological control can be characterized as feature copying from *A* to *B* in a domain *X*:

$$\dots [X \dots A \dots B \dots] \dots \Rightarrow \dots [X \dots A \dots B] \dots$$

$[\alpha F_i] \qquad \qquad \qquad [\alpha F_i]$

- b. *A* governs *B*, and hence *X* is the maximal projection of *A*.

The definition in (71) leads to the following paradox: INFL is both a governor (of the subject) and it is governed by the morphology of the verb. This is only an apparent problem, however. On the one hand, INFL is only a governor, creating a separate external domain, inasmuch as it acquires features of tense and agreement, and it acquires these features through morphological control. Thus we could say that the separate government domain is constituted through morphological control. On the other hand, we have suggested above that the sister constituent to INFL is the government domain for the non-external element in the entry, and of course it is precisely the external elements in the entry, those linked to INFL, i.e. inflection on the head, that participate in morphological control of INFL.

Several additional properties of morphological control need to be stressed. In the first place, it is not particular affixes that exert morphological control, but rather features of the entry. We have to claim this because there is not always a one-to-one correspondence between features and affixes. Relevant cases are (72) and (73):

- (72) Maqa -wa-nchis.
 beat 3su-4ob
 He beats us (incl.).

Here the 3rd person subject, mapped from the head onto AGR, does not correspond directly to either of the two person markers on the verb, but only to a more abstract representation in terms of external/internal arguments.

- (73) maqa -q -ni -y
 beat AG EUPH 1
 the one that beats me ('my hitter')

Here -y '1st person' does not map onto AGR. We will argue in chapter 6 that here the AGR is marked as an A-anaphor by the agentive marker. Above we have seen that the apparent subject marker in fact refers to the internal argument.

Second, the elements or features involved in morphological control are Tense, Person, and Number. The plural markers involved in morphological control are -ku (- 2 plural AGR) and -chis (+ 2 plural AGR). The nominal plural marker -kuna is never involved in morphological control, but instead in percolation, as will be argued below.

Third, morphological control is not obligatory by itself, i.e. there are constructions in which there is no INFL corresponding to inflection. The particular cases we have in mind are agentive -q and infinitival -y in verb restructuring contexts. We will argue in chapter 7 that verb restructuring takes place when there is no INFL node in the verb projection. Since restructured verbs do carry inflection, this suggests an asymmetry between INFL and inflection.

This asymmetry could be construed as an argument against rule R. If the

presence of inflection (e.g. of infinitive *-r* on Italian restructuring verbs) were due to the lowering of INFL into the VP in the phonological component, we would have to assume that there is an INFL present in restructuring complements, which is a problematic assumption for all present analyses of restructuring (cf. chapter 7).

To give just one simple example of this, consider the restructured verbal complex in (74):

(74) a. Maqa -q ka -ni.

beat AG be I

I used to beat.

In neither the unrestructured tree, (74b), nor the restructured one, (74c), there is an INFL node present. Nonetheless, the complement verb, **maqa-q**, is marked with an inflectional element. Of course, morphological control will in most cases be *de facto* obligatory, due to the Case Filter (requiring nominative Case on the subject, which is assigned by AGR). At the same time, its actual operation is not obligatory.

A second reason for preferring morphological control over rule R is the fact that the former is more limited in its effects. If we were to adopt a rule R analysis, the nominalizing element would be generated as part of INFL in the syntax, and then be lowered onto the verb causing its feature composition to become [+N, +V] in the phonology. Rule R – affix hopping – can therefore affect the categorial status of the head, while morphological control cannot. This restrictiveness is an advantage in a domain in which few if any theoretical limits have been imposed on the processes involved. Lowering of INFL in the phonology – Rule R – would lead to problems since the syntactic features of nominalized verbs have crucial syntactic repercussions. They determine the type of Case marking of the subject and the complement, and they allow the nominalized clause as a whole to carry Case.

4.2. *Percolation*

Another way in which a lexical head determines its syntactic environment is through percolation. We will illustrate the general notion of percolation through the features of Case and plural.

4.2.1. *Case*

Case features are assigned to maximal projections, and are morphologically realized on some element in the projection. There must be some link, then, between the $X^{\max}$ and the Case carrying element in (75):

(75)

What is this link? Consider the examples in (76):

- (76) Xwan -ta
 Juan AC
 Juan (AC)

- (77) hatun wasi -ta
 big house AC
 a big house (AC)

We see that in (76) and in (77) the head noun receives the Case marking. We claim that this is due not to its being the head, however, but to its being in the right-most position.

- (78) Pay wasi -ta ruwa -sqa -n -ta yacha -ni.
 he house AC make NOM 3 AC know I
 I know that he built a house.

- (79) Hamu -nqa chay -ta yacha -ni.
 come 3FU that AC know I
 I know that he will come.

In (78) and (79) there are two examples of Case marked clauses, and here the Case is expressed on the rightmost element again: in (78) on the nominalized verb and in (79) on the lexical complementizer, **chay-ta**, 'that (AC)'.

- (80) Wasi hunt'a -**ta** riku -ni.
 house full AC see I
 I see a full house.

While almost all adjectives in Quechua occur in prenominal position, and will therefore never be marked for Case, there is one adjective **hunt'a** 'full' which occurs post-nominally. In (80) it is this adjective, and not the head noun, which is marked for the Case of the NP. An alternative would be to claim that in (80), **wasi hunt'a** is a nominal compound, comparable to English 'a handful'. This is incorrect, however, since the element of which **hunt'a** is predicated can be a full noun phrase with specifiers and adjectives.

The data in (81), (82), and (83) also strongly support the conclusion that it is simply the rightmost lexical element in the NP that must receive Case.

- (81) [_{NP} [_{AP} allin -**ta**] pro] riku -ni.
 good AC see I
 I see the good one.
- (82) [_{NP} [_{S'} runa hamu -q -**ta**] e] riqsi -ni.
 man come AG AC know I
 I know the man who is coming.
- (83) [_{NP} [_{NP} pay -pa -**ta**] pro] riku -ni.
 he GE AC see I
 I see his (one).

In (81) we have a situation parallel to (80): since the noun is absent, the adjective carries the Case. Example (82) is a headless relative. In this case the head, which normally occupies the rightmost position, is part of the relative clause itself, and the clause is marked for the case of the whole NP. In (83) the prenominal possessive phrase, itself marked genitive Case, also carries accusative Case marking, corresponding to the Case of the whole NP.

Now these examples would be quite transparent if accusative -**ta** were simply a clitic, slapped on to whatever lexical material appears in the NP. In section 2.1 of this chapter, however, a number of arguments were given that -**ta** is a real affix, generated by the word formation rules of the lexicon. Thus, a different analysis is called for. The solution presented in Muysken (1981c) was in terms of morphological control, where the Case morphology of a head could control the features of an abstract Case position. In fact, morphological control was assumed to be an instance of max-government: no maximal projection node may intervene

between the lexical head and the abstract position controlled by the morphology of the head. A second requirement is string-adjacency, which guarantees local identification of the abstract position.

There were a number of problems with the theory of morphological control with respect to Case marking. First of all, in examples such as (81) the Case is morphologically realized on the adjective, but has to be interpreted as marking the noun phrase. Thus the morphological control would have to cross the AP boundary, contrary to the max-government requirement mentioned above.

A second problem is that in order to make morphological control work, Case had to be an abstract position and could not be thought of as a feature on the head. This creates a principled division between Case feature percolation languages and abstract CASE position languages – a division which is not necessary under the proposal we will make in chapter 4. There we will argue for an abstract COMP position to which Case is assigned, in order to account for a number of facts about the distribution of Case in Quechua. This abstract COMP position is not incompatible with case percolation, since given the type of rightward percolation found in Quechua, any rightmost COMP will automatically be Case-marked as well.

A third problem with the morphological control analysis is that it works reasonably well for languages such as Quechua, where the Case carrying element is the rightmost one, but it has nothing to say about a language where Case is realized on the leftmost element of the projection, while the language itself is COMP-final (cf. Muysken 1983b, for discussion of Amharic, which is such a language).

For these reasons, we adopt a percolation analysis for Quechua Case. The Quechua percolation system is defined in terms of whether the left or right branch in a tree is followed, not necessarily in terms of the head projection. Consider once again the tree for (81), where there is an empty noun:

(84)

In this and all the other examples (76)-(83), the morphological Case marking simply appears on the rightmost lexical [+N] element in the noun phrase. This can be an element directly dominated by the noun phrase or an element that is part of some other maximal projection dominated by the noun phrase. In (84) the dotted line marks the percolation path. This path involves then simply the sequence of nodes connecting the maximal projection with an element dominated by it, an element that must be both [+N] and in rightmost position, but need not be the head of the projection from the point of view of X' theory. The [+N] elements in Quechua are nouns, adjectives, adverbs, question words, and pronouns.

It is the rightward nature of Quechua Case percolation that accounts for the rigid verb-final character of Quechua nominalizations, as shown in (85):

- (85) a. *Qaynunchaw hamu -sqa -n -ta yacha -ni.*
yesterday come NOM 3 AC know I
 I know that she/he came yesterday.
- b. **Hamu -sqa -n -ta qaynunchaw yacha -ni.*
come NOM 3 AC yesterday know I

The ungrammaticality of (85b) is due to the fact that the Case carrying element – the nominalized verb **hamu-sqa-n-ta** – is not the rightmost element in the complement clause, as is stipulated by the Quechua percolation system. The time adverb **qaynunchaw** cannot be made to function as the Case carrier since its Case would be interpreted as assigned by the complement verb.

4.2.2. *Plural*

With the nominal plural marker **-kuna** we find a configuration which is rather similar to that of Case. Consider (86):

- (86) a. *wasi -kuna*
house PL
 houses
- b. *allin -kuna*
good PL
 good ones
- c. *hamu -q -kuna*
come AG PL
 those who come

Again, we find that the element that carries the plural marker is not necessarily the head of the noun phrase, but simply the rightmost lexical nominal element

in the noun phrase. In both (86b) and (86c) there is an understood empty noun to the right of the lexical element carrying the plural marker. The general configuration is as in (87):

(87)

(where *X* may be the head of the NP or another element in the NP)

The same formalism can be used to define the plural percolation tree as the Case percolation tree, so that we predict that the Case carrier for a given projection and the plural carrier are identical. This is indeed the case.

A final bit of evidence about the nature of percolation comes from the double plural filter discovered by Lefebvre and Dubuisson (1978). In Quechua verbs, only one of the arguments can be pluralized, as is clear from forms such as (88):

- (88) *Maqa-wa -nki -chis -ku.
 beat 1ob 2 2pl PL
 You (pl.) beat us.

We argued in section 1.3 that this restriction cannot be due simply to the morphological cooccurrence of **-chis** and **-ku**, since there are cases where they can appear together. It must be something like the following restriction:

- (89) * $\left[\begin{array}{l} + \text{plural} \\ + \text{plural} \end{array} \right]$

Given this filter, we can now return to the curious facts previously discussed regarding double Plural marking. Consider (90):

- (90) maqa-q -ni -yki -chis -kuna
 beat AG EUPH 2 2pl PL
 those who beat you (pl.)

Somehow, **-kuna** does not 'count' for the double plural filter, since it percolates to the node of the noun phrase dominating the relative clause. The representation of (90) will then be something like:

(91)

When percolated to the dominating NP, the plural feature associated with **-kuna** is invisible to the filter on double plural features in verbs, which holds at the level of Logical Form.

5. SUMMARY

In this chapter we defended a strong lexicalist position, arguing that the elements marking tense, person, number, and Case on the Quechua nominalized verb are affixes and not clitics. Our discussion of the constitution of the lexical entry led us to a principled distinction between the internal and the external (INFL) domain within the entry. Finally, we suggested two ways in which properties of a lexical head are copied onto elements in their projections: through morphological control of the INFL position by the morphology of the head, and through percolation of Case and plural features.

CASE

Quechua nominal and verbal projections are very much alike in their general structure, and nominalized verbs can have either a more verbal or a more nominal projection, as shown in chapter 2. Within nominalized clauses the difference between the more nominal and the more verbal projections is seen principally in the type of Case assignment. The fact that Quechua nominalized verbs are all defined as $[+N, +V]$ raises the central issue of what features are involved in Case assignment in Quechua.

In Chomsky (1981) and related literature, two assumptions were made:

- a. $[+N]$ receives Case
- b. $\left\{ \begin{array}{l} [-N] \\ \text{INFL} \end{array} \right\}$ assign Case

In this chapter we will argue that these assumptions do not hold universally, which shows that the features of Case assignment are parametrizable. For Quechua, they must be defined as follows:

- a. X''' receives Case
- b. $\left\{ \begin{array}{l} [+V] \\ \text{AGR} \end{array} \right\}$ assign Case

In the standard account, Case assignment takes place under government, and this holds for Quechua. We distinguish two types of government, however: direct government, which accounts for Case assignment by the head, and indirect government, which accounts for Case assignment by AGR.

A third aspect of Case theory is the Case Filter, which stipulates roughly that each nominal element with a phonetic matrix must have Case, and thus is one of the factors determining where lexical noun phrases can occur (Chomsky, 1981). We will argue that the Case Filter is needed in Quechua, but that we must redefine it in terms of the well-formedness of the percolation path in the projection, as defined in chapter 3.

We will begin by arguing that in Quechua all X''' categories can be marked for Case, i.e. Case is a property of all maximal projections: not only NPs but also S' , AP and PP can receive Case. We then go on to discuss lexical and structural Case assignment, focussing on the parallels between N''' and V''' projections. In both, $[+V]$ assigns objective and AGR assigns subjective Case. Superficial differences

are due to the fact that Case is spelled out morphologically in different ways in $[-N]$ and $[+N]$ contexts. There must be a difference, therefore, between Case assignment and Case spell-out. Once the properties of Case assignment are established, we discuss a number of consequences of our analysis.

1. CASE AS A $X''' \gg$ PHENOMENON

We will begin this chapter by arguing that Case in Quechua is assigned not just to nominal projections but rather to any maximal projection. Hence it is basic to the Quechua X' system, and it is another instance of the considerable parallelism that exists between the various categories in that language. We argued in chapter 2 that Case occurs in all projections. This is the reason for the extensive use of nominalization found in the Quechua complementation system.

How is Case to be represented as a property of all maximal projections? In the discussion on the difference between affixes and clitics in chapter 3 we argued that **-ta**, **-man**, etc. are Case affixes on the head, and that **-qpa** is a Case clitic. Roughly, then, they have the following structure:

(1)

In both representations, the Case marker has scope over the whole N''' . In (1a) the Case feature percolates up to the maximal projection node, from which position it has scope over the whole NP. In (1b) the CASE position c-commands all the material in the NP, and thus again has scope over the whole NP. Thus the morphological difference between the genitive Case and the other Cases does not have syntactic consequences. For the sake of exposition, we will represent Case in both (1a) and (1b) as if it were a syntactic position, as in (2):

(2) $N''' \rightarrow N'' \text{ CASE}$

In this section we will argue that (2) can be generalized to (3):

(3) $X''' \rightarrow X'' \text{ CASE}$

Since there is no need to argue for the case of $X = N$ in (3), we will immediately turn to the cases of $X = A$, $X = V$, and $X = P$, in that order.

Adjectives in Quechua can be marked for Case in three contexts:

A. When, exceptionally, they occur to the right of the noun they modify rather than to its left, they carry the Case marker for the whole N''' , as in (4):

- (4) Wasi hunt'a -ta riku-ni.
house full AC see I
 I see a full house.

Here objective **-ta** appears on the adjective only morphologically. This is made possible by the fact that adjectives have the morphological feature [+N]). Syntactically it marks the NP, and therefore (4) cannot be used to argue for the generalized rule in (3).

B. A second context in which a Case-marked adjective can occur is in an N''' with an empty head. Here again the adjective carries the Case of the whole N''' , as in (5):

- (5) Allin -ta -n qu -y.
good AC AF give IM
 Give me the good one.

Presumably (5) has the structure (6):

Since the A''' does not appear in a Case marked position, the Case indicated by the Case marker it contains can percolate up to the dominating constituent, as explained in chapter 3. So (5) and (6) do not constitute evidence for the generalized rule (3) for the expansion of X''' .

C. There is a third class of contexts which does provide evidence for (3), however: A''' constituents can be marked for Case when they function as manner adverbs, as in (7):

- (7) a. Allin -ta rura -sqa -nki.
good AC do SD 2
 You have done well.

b.

Here the Case suffix **-ta** determines the Case of the A''' . While there are some manner adverbs which are formed differently (with a Case marker such as **-man**, **-wan**, or **-manta**, or with the delimitative marker **-lla**), the large majority of adverbially used A''' s are marked with **-ta** obligatorily in main verb contexts (and optionally in nominalizations – a matter to which we will return in the next section).

We now turn to V''' constituents:

$$(8) \quad V''' (= S') \rightarrow .. V'' (= S) .. \text{CASE} ..$$

Here we run into problems immediately. In chapter 2 we showed that $[-N]$ elements cannot be marked for Case *morphologically*. Yet here we are arguing that all X''' constituents can be marked for Case. This includes $[-N] X'''$ constituents, such as V''' . In tensed main clauses Case cannot be realized morphologically on the verb, of course. Only nominalized verbs can be marked for Case *and* function as the head of V''' . This recalls Stowell's claim that S' can be Case-marked if it is headed at S-structure by a nominal element, as in the case where there is a nominal Wh- phrase in COMP (1981). In (9a) and (9b) the nominalized verbs are marked with accusative **-ta** Case and they are the head of a finite complement clause:

- (9) a. [Xwan hamu -sqa -n -ta] yacha -ni.
 Juan come NOM 3 AC know I
 I know that Juan has come.

- b. [Xwan hamu -na -n -ta] yacha -ni.
 Juan come NOM 3 AC know I
 I know that Juan is to come.

In (10) the nominalized verb marked with **-ta** is the head of an infinitival complement:

- (10) [mikhu- y -ta] muna -ni.
 eat NOM AC want I
 I want to eat.

In (11) the nominalized agentive verb marked with **-ta** is the head of a perception clause:

- (11) [Xwan -ta puri -q -ta] riku -ni.
 Juan AC walk AG AC see I
 I see Juan walking.

Whatever the differences between the four nominalizers in (9)–(11), they have in common, we assume, that they give the verb the feature [+N] in addition to its feature [+V]. The new feature set allows nominal morphology (including Case markers), to be affixed to the verb. Our marked X' expansion rule presented in chapter 2 ($[-F_1, \beta F_2]' \rightarrow \dots [\alpha F_1, \beta F_2] \dots$) produces a head bearing the features [+N, +V] within the V''' projection.

Our analysis predicts that the only clauses that are nominalized and clauses with a lexically filled CASE position can occur in the domain of a Case marking matrix V , since only in these types of clauses can the Case marking assigned by the matrix verb be realized in the V''' constituent. This is in fact the case, as is argued in Lefebvre (1980) and subsequent work. Thus, the analysis of the sentences in (9)–(11) supports generalization (3) of Case assignment to all X''' constituents.

Finally, we argue that P''' in Quechua contains a CASE position; postpositions are virtually always marked for Case. Most Quechua postpositions are either locational, in which case they are marked with **-pi** 'locative', **-man** 'to', or **-manta** 'from', or they are temporal or abstract, in which case they are most often marked with **-ta** 'objective'. Examples of locational postpositions are given in (12):

- (12) a. wasi ukhu -pi
 house inside LO
 inside the house
 b. wasi qipa -manta
 house back from
 from behind the house

In (13) the temporal and abstract uses of postpositions are illustrated:

- (13) a. *misa qipa -ta hamu -saq.*
Mass back AC come 1FU
 I'll come after Mass.
- b. *wawki -y ranti -y -ta hamu -ni.*
brother 1 exchange INF AC come 1
 I've come instead of my brother.

The postposition adds specific lexical content to the general relation between the P''' and the rest of the clause – a relation which is expressed through the Case that the P''' is marked for. A $[-N, -V]$ category, P''' , can have a head with nominal characteristics so that it can carry Case because of the same marked extension of the phrase structure rules that allows nominalized verbs inside of V''' constituents.

We have shown that all four types of major constituents, N''' , A''' , V''' , and P''' , can occur in positions in which Case is assigned to them.

2. TYPES OF CASE ASSIGNMENT

Now we would like to pass from discussion of what elements can *receive* Case to a discussion of how Case is *assigned*, and how the assignment is governed. Three types of Case assignment are necessary to account for Case in Quechua: inherent, lexical, and structural. INHERENT CASE corresponds to the Case assigned to non-subcategorized or adverbial arguments, such as locative, instrumental, and purposive.

LEXICAL CASE corresponds to the Case of subcategorized NPs (e.g. dative and perhaps others), selected by the verb. We can distinguish a number of classes of verbs with respect to the types of Cases that can occur on their complements:

- a. Intransitives, with no Case-marked argument;
- b. Simple transitives, taking objective Case on their argument:

<i>riku - y</i>	'see'
<i>mikhu - y</i>	'eat'
- c. Bi-transitives, taking one objective, and one dative Case:

<i>qu - y</i>	'give'
<i>qawa - chi - y</i>	'cause to look'
<i>qara - y</i>	'serve'
<i>hunt'a - chi - y</i>	'fill'
<i>haywa - y</i>	'pass, tend'
<i>manu - y</i>	'lend'
- d. Bi-transitives, taking one objective, and an objective or a dative Case:

<i>yacha - chi - y</i>	'cause to know, teach'
<i>ni - y</i>	'say, tell'

e. Bi-transitives, taking two objective Cases:

yanapa – y	‘help’
llank’a – ysi – y	‘help working’
ayni – ka – mu – y	‘exchange services’

f. Bi-transitives, taking one objective, and one ablative Case:

maña – ku – y	‘ask’
mañu – ku – y	‘borrow’
ranti – y	‘buy’

g. Bi-transitives, taking one objective, and an objective or an ablative Case:

suwa – y	‘rob’
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Subcategorization will account for the distribution of Case with oblique objects in (14) (a goal complement) and (15) (a source complement):

(14) Pidru Mariya -man rima -rqa -n.

Pedro Maria to speak PA 3

Pedro spoke to Maria.

(15) Pidru Mariya -manta mañu -ku-rqa -n.

Pedro Maria from borrow PA 3

Pedro borrowed from Maria.

With Chomsky (1981) we assume that inherent and lexical Case assignment take place at D-structure as part of lexical insertion. Lexical Case will be assigned to the elements in the subcategorization frame of the verb inserted. Inherent and lexical Cases have the same distribution in [+ Main Tense] and in [– Main Tense] clauses. Thus we find oblique Cases (dative - **man**, ablative - **manta** ‘from’, locative - **pi**, instrumental - **wan**, etc.) in nominalized clauses as freely as in main clauses.

STRUCTURAL CASE is assigned under government. It includes assignment of subjective Case by AGR and of objective Case by [+ V].

3. STRUCTURAL CASE ASSIGNMENT

Structural Case in Quechua is determined by the categorial status of the construction involved. We describe what form structural Case takes in both nominalized and non-nominalized clauses in 3.1. We then propose an analysis of these facts in 3.2. Since our analysis differs substantially from other proposals, we will discuss several issues related to the conditions under which structural Case assignment takes place: the adjacency condition, the Case resistance principle, government, and Case assignment as Case checking.

3.1. Subjective and Objective Case

With respect to subjective and objective Case marking, Quechua main clauses pattern together with adverbial clauses and contrast with nominalized clauses. We analyze the main clause and the nominalized clause patterns in turn.

3.1.1. Main and Adverbial Clauses

In Main Tense clauses, whether they are main or subordinate clauses, the subject is in the nominative Case ($\emptyset$ Case) and the direct object is marked with accusative Case **-ta**. Examples of the Case distribution in main and subordinate clauses with a Main Tense verb are found in (16) and (17) respectively.

- (16) Pidru - $\emptyset$ papa -ta mikhu -sha -n.
Pedro CA potato AC eat PR 3
 Pedro is eating potatoes.
- (17) [Pidru - $\emptyset$ papa -ta mikhu -sha -n chay -ta] yacha -ni.
Pedro CA potato AC eat PR 3 that AC know 1
 I know that Pedro eats potatoes.

The ungrammaticality of sentence (18) shows that the accusative marker **-ta** is obligatory in the context of a Main Tense verb.

- (18) *Pidru - $\emptyset$ papa - $\emptyset$ -n mikhu -sha -n
Pedro CA potato CA AF eat PR 3

In Quechua, the Case marker **-ta** is found not only on direct objects but also on any constituent appearing in a verbal domain that is not inherently Case marked or that appears with an oblique lexical Case. In (19) the time adverb **paqarin** 'tomorrow', and the manner adverb **allin** 'well' are both marked with accusative Case **-ta**.

- (19) Paqarin -ta allin -ta chay -ta ruwa -nki.
tomorrow AC good AC that AC do 2
 Tomorrow you will do that well.

In adverbial clauses, the distribution of Case is identical to that in Main Tense clauses; the subject is obligatorily in the zero Case and the direct object is obligatorily marked with accusative **-ta** Case. These facts are exemplified in (20) and (21):

- (20) Wawa -kuna runasimi -ta rima -qti -n -ku,
child PL Quechua AC speak SUB 3 PL

mana vali -n -man -chu.

not worth 3 POT NEG

If the children spoke Quechua it would not be good.

- (21) Wawa -kuna -Ø runasimi -ta rima -spa -n -ku, allin ka -sha -n -ku.
child PL CA Quechua AC speak SUB 3 PL good be PR 3 P
 When the children speak Quechua they are/feel well.

The distribution of structural Case in non-nominalized clauses is straightforward: -Ø on the subject and -ta on the object. We will take these two Cases as indicating that Case assignment has taken place in a purely verbal context. In nominalized clauses there is much variation. This variation we will discuss in the next section.

3.1.2. Nominalized Clauses

Three combinations of Case marking on subject-object pairs are found in nominalized clauses:

(22)	subject	object
	-q (genitive)	Ø (objective)
	Ø (nominative)	-ta (accusative)
	Ø (nominative)	Ø (objective)

The fourth logically possible combination, as in (23), is not grammatical:

- (23) * -q (genitive) -ta (accusative)

Our analysis will account for this.

Since the three pairs in (22) do not freely occur in all nominalized constructions, they have to be specified separately. Sentences (24) – (26) illustrate the possible distribution of Case for subject and object NPs in sentences nominalized with -sqa-.

- (24) RELATIVE CLAUSE: -q, -Ø
 Xwancha -q runa -Ø riku -sqa -nwasi -ta rura -n
Juan GE man CA see NOM 3 house AC build 3
 The man that Juan saw builds a house.

- (25) RELATIVE CLAUSE: -Ø, -ta
 Runa -Ø qulqi -ta qu -sqa -n warmi -man chay -ta ni -rqa -ni.
man CA money AC give NOM 3 woman to that AC say PA 1
 I have said that to the woman to whom the man gave the money.

- (26) a. $\sqrt{\text{COMPLEMENT CLAUSE: -q, -}\emptyset}$
 Kay warmi -q qusa -n- $\emptyset$ maqa-sqa -n-ta yacha-ra -nki-chu.
this woman GE husband 3 CA beat NOM 3 AC know PA 2 Q
 Did you know that this woman beat her husband?
- b. COMPLEMENT CLAUSE: - $\emptyset$. - $\emptyset$
 Kay warmi - $\emptyset$ qusa -n- $\emptyset$ maqa-sqa -n-ta yacha-ra -nki-chu.
this woman CA husband 3 CA beat NOM 3 AC know PA 2 Q
- c. COMPLEMENT CLAUSE: - $\emptyset$,-ta
 Kay warmi - $\emptyset$ qusa -n-ta maqa
this woman CA husband 3 AC beat
 -sqa -n-ta yacha-ra -nki-chu.
NOM 3 AC know PA 2 Q

Note that subjects with - $\emptyset$ Case are found mostly, although not exclusively, with intransitive verbs. The combination - $\emptyset$ -ta, although possible, is marginal both in relative clauses, (25), and in complement clauses, (26c).

In clauses nominalized with -na-, the distribution is as in (27) – (31):

- (27) RELATIVE CLAUSE: -q~ -pa, - $\emptyset$
 Qan-pa runa - $\emptyset$ riku-na -yki-man rima -sha-ni
you GE man CA see NOM 2 to speak PR 1
 I speak to the man that you will see.
- (28) COMPLEMENT CLAUSE: -q, - $\emptyset$
 Mariya-q platanu - $\emptyset$ ranti -mu-na -ta yacha-ni
Maria GE banana CA exchange CIS NOM AC know 1
 I know that Maria will buy bananas.

(Here we have glossed **ranti-** as 'exchange', its literal meaning, while nowadays it often means 'buy'. We will continue to do this throughout.)

- (29) COMPLEMENT CLAUSE: - $\emptyset$,-ta
 Mariya - $\emptyset$ platanu-ta ranti -mu-na -ta yacha-ni.
Maria CA banana AC exchange CIS NOM AC know 1
 I know that Maria will buy bananas.
- (30) OBLIGATIONAL CLAUSE: -q~ -pa,- $\emptyset$
 Qan-pa ima - $\emptyset$ -pas ruwa-na -yki ka -sha-n
you GE what CA IND do NOM 2 be PR 3
 You have to do something.

- (31) OBLIGATIONAL CLAUSES: - , -ta
 ruwa -sha -na -yki ima -lla -ta -pas.
do PR NOM 2 what DEL AC IND
 You have to do something.

The combination -Ø- ta, as in (29), in complement clauses, and the occurrence of -ta in obligational clauses, as in (31), is marginal. It is impossible in relative clauses.

In clauses nominalized with -y- (the infinitive nominalizer) the object is in the -Ø Case, as illustrated in (32). Only in restructured contexts is it possible to find the object of such an infinitival verb to be marked with -ta Case, as shown in (33):

- (32) INFINITIVAL CLAUSE: PRO, -Ø
 Papa -Ø mikhu- y allin -mi
potato CA eat NOM good AF
 Eating potatoes is good.
- (33) RESTRUCTURED INFINITIVAL CLAUSE: PRO, -ta
 Papa -ta mikhu- y -ta muna -ni.
potato AC eat NOM AC want I
 I want to eat potatoes.

Finally, sentences (34)-(40) show the distribution of Case in nominalized clauses containing the agentive nominalizing suffix -q. In this type of clause, the subject position can only be filled in the case of headless relatives, (34). The subject is bound by the agentive suffix -q on the verb and cannot appear in the genitive Case. The impossibility of genitive Case on the subject of -q nominalizations is due to the fact that -q relative clauses are V''' exclusively, a matter which is discussed in chapter 6:

- (34) RELATIVE CLAUSE: -Ø, -Ø
 runa -Ø_i Mariya -Ø riku -q_i
man CA Maria CA see AG
 the man that sees/saw Maria

Objects marked with -ta are possible, as in (35), but rather marginal in these constructions. Example (35) is taken from Middendorf (1972, p.340), with his orthography:

- (35) RELATIVE CLAUSE: - , -ta
 uña -n -kuna -ta amacha -q puma -ka.
cub 3 PL AC protect AG puma TO
 the puma who protects his little ones.

If the clause is a perception clause (36), a complement of a verb of movement (37), or a past habitual clause (38), the subject is always empty. Note here that even though these *-q* clauses are semantically similar to agentive nominals, they are syntactically distinct from them.

- (36) PERCEPTION CLAUSE: *- , -Ø*
 Xwancha -ta [e ima -Ø -pas ni -q -ta] riku -ni
Juan AC what CA IND say AG AC see I
 I see Juan say something.
- (37) COMPLEMENT OF MOVEMENT VERB: [e], -Ø
 [e ima -Ø ruwa -q -mi] Pidru ri -n
what CA do AG AF Pedro go 3
 Pedro goes to do what?
- (38) PAST HABITUAL CLAUSE: [e], -Ø
 [e papa -Ø mikhu -q] ka -ra -ni
potato CA eat AG be PA I
 I used to eat potatoe.

Objects of verbs inflected for *-q* may be found with *-ta* Case in past habitual clauses and perception clauses providing that they occur in restructured contexts as in (39) or raised as in (40).

- (39) RESTRUCTURED VERB: [e], -ta
 Papa -ta mikhu -q ka -ra -ni.
potato AC eat AG be PA I
 I used to eat potatoes.
- (40) VERB WITH RAISED SUBJECT: [e], -ta
 Xwancha -ta_i [e_i ima -ta -pas ni -q -ta] riku -ni.
Juan AC what AC IND say AG AC see I
 I see Juan say something.

The distribution of Case in nominalized clauses is summarized in Table IV, which gives the possible combinations of Case marking found on pairs of subjects and objects for all types of nominalized verbs. The combinations that are not found on the chart are ungrammatical.

The distribution of Case marking raises the following theoretical questions:
 A. Given that in nominalized clauses subjects receive either genitive or *-Ø* nominative Case, what is the relation between nominative and genitive Case assignment?

B. How do we account for the fact that out of the four possible pairs of subject-object Case marking, the combination * *-q - ta* is impossible while all the others

TABLE IV.: DISTRIBUTION OF CASE MARKING IN SUBJECT/OBJECT PAIRS OF NOMINALIZED CLAUSES. *The marginal patterns are given in parentheses.*

Nominalizer	Type of clause	Case of subject	Case of object	Number of example sentence
-sqa-	relative clause	-q	Ø	24
		(Ø	-ta)	25
	complement clause	-q	Ø	26a
		Ø	Ø	26b
-na-	relative clause	(Ø	-ta)	26c
		-q	Ø	27
	complement clause	-q	Ø	28
		(Ø	-ta)	29
-y-	obligational clause	-q	Ø	30
		(Ø	-ta)	31
	infinitival clause	PRO	Ø	32
		(PRO	-ta)	33
-q	relative clause	Ø	Ø	34
		(Ø	-ta)	35
	perception clause	[e]	Ø	36
		[e]	Ø	37
	complement of movement verb	([e]	-ta)	39
		[e]	Ø	38
	past habitual clause	([e]	-ta]	40

are possible? What Case assignment rule system excludes this theoretically possible co- occurrence of Case markings?

C. If the objects of embedded nominalized verbs appear in surface structure without the direct object accusative Case marker **-ta**, does our analysis still allow us to say that these objects have Case?

D. Assuming **-Ø** Case on the subject to be nominative Case, what Case will correspond to **-Ø** on object NPs?

E. By what mechanism do NPs in the environment of nominalized verbs get assigned Case? Are nominalized verbs Case assigners?

3.2. Analysis

What we need is a system of rules for structural Case assignment that will account for the distribution of Case in Quechua in both main clauses and nominalized clauses.

3.2.1. *The Rules of Structural Case Assignment*

The structural Case assignment system elaborated here relies essentially on, and follows from, the extension of the X' system proposed in chapter 2, particularly the rule that a head can be specified positively for a feature while its projection is specified negatively for the same feature. It involves the following elements:

A. The feature [+V], rather than the generally assumed [-N] feature, is the relevant one for structural Case assignment by the head to its complement, since it is this feature that is common to all verbs, whether they are main verbs, heads of adverbial clauses or nominalized verbs. Hence, nominalized verbs are Case assigners for their objects. This is due to the fact that they are [+V] as well as [+N]. If the assumption that [+N] is not a Case assigner is correct, our proposal is in line with Aoun's (1981a) suggestion that in case of conflicting properties, the configuration [+N, +V] can have the properties of either nouns *or* verbs where these properties conflict in addition to the non-conflicting properties of both nouns and verbs.

B. AGR, not Tense, is the Case assigner for the subject in Quechua, since we find Case assignment to the subject in projections lacking Tense (e.g. in NPs).

C. Government defines the relation for structural Case assignment in Quechua as well as in English.

D. The feature composition of the domain of Case assignment determines the way in which the Case feature is spelled out.

Rules of Case assignment based on these assumptions are formulated in (41) and (42):

(41) a. [+V] assigns objective Case to the X''' that it governs.

b. Objective Case appears as -ta / [-N —]'
as Ø / [+N —]'

(42) a. AGR assigns subjective Case to the NP that it governs.

b. Subjective Case is realized as Ø / [-N —]"
as -q / [+N —]"

Rule (41) accounts for the facts described in section 3.1, showing that a verb assigns Case to any element in its domain. It will apply in both main clauses and in subordinate nominalized clauses in such a way that adverbs as well as NPs will bear the -ta marker in main clauses and the -Ø marker in embedded nominalized clauses.

Application of (41) and (42) to the tree structures produced by our X' expansion rule, $[-\alpha F_1, \beta F_2]' \rightarrow \dots [\alpha F_1, \beta F_2] \dots$, yields the following Case marking configurations:

(43) *Noun phrases at the maximal level*

Here

$$\begin{aligned} N &= [+N, -V] \\ V &= [-N, +V] \\ NV &= [+N, +V] \end{aligned}$$

In noun phrases we always have a genitive subject given (42b), and an object is possible when the head is $[+V]$, as in (43a) and (43b). When present, the object is marked with $-\emptyset$ Case.

(44) *Clauses at the maximal level*

The trees in (44) show that in clauses all three combinations in (45) occur:

- (45)
-q	Ø
Ø	Ø
Ø	-ta

The three Case marking combinations generated by our rules constitute the possible combinations of Case marking in nominalized clauses as summarized in Table IV of section 3.1. In fact the Case assignment rules proposed in this section produce all the possible Case marking combinations and none of the impossible ones. The combination **-q -ta**, which is never observed, is not produced by our rules. This is explained by the fact that the [+N] domain required for assignment of **-q** to the subject and the [-N] domain required for assignment of **-ta** to the object are never found in the same tree configuration due to the formulation of our X' expansion rule, which allows projections to be less specified than their head (from + to -), but not the inverse. The contrast is schematically presented in (46):

- (46)
- a.

b. *

The Case-assignment rules suggested above also make the correct predictions for Case assignment in non-nominalized clauses. Non-nominalized clauses have the internal configuration of (47):

- (47)
-

The feature composition at all levels is $[-N, +V]$, and if we apply rules (41) and (42) of Subjective and Objective Case assignment the subject receives $-\emptyset$ and the object receives $-ta$. This is the case in subordinate adverbial clauses as well as in main clauses.

3.2.2. *A Case Feature System*

In our system there is a link between nominative and genitive subjects in that both are assigned Case by AGR. The difference in Case marking is only due to the feature composition of the domain of application of the rule, that is $[+N]$. Similarly, there is a link between accusative $-ta$ and $-\emptyset$ objective Case, which are both assigned by $[+V]$. The difference in realization of the objective Case, $-ta$ or $-\emptyset$, is due to the feature composition of the domain of application of the Case assignment rule to the object, $[\pm N]$. Where our analysis differs from previous ones is that we separate Case assignment from Case spell-out.

Our analysis of NP as containing an INFL or at least an AGR node is in line with the analysis of Chung (1983), Kornfilt (1983) and Szabolcsi (1983). In our analysis this AGR node plays a role in Case assignment in the NP, establishing a parallel between clauses and noun phrases in this respect: in both, the 'subject' is assigned Case by AGR. In both cases, as well, objective Case is assigned by $[+V]$ to the NP that it governs; a parallelism is established between objects of tensed verbs and objects of nominalized verbs, discriminating, by the same token, the two instantiations of the $-\emptyset$ Case, to which we return below.

The similarity between nominative and genitive on the one hand and between $-\emptyset$ and $-ta$ on the other hand may be represented through the Case system in (48):

$$(48) \quad \left\{ \begin{array}{l} \text{nominative } \emptyset \\ \text{genitive } -q \end{array} \right\} \text{ assigned by AGR}$$

$$\left\{ \begin{array}{l} \text{objective } -ta \\ \text{objective } \emptyset \end{array} \right\} \text{ assigned by } +V$$

We can extend this system to oblique Cases that are subcategorized for by the verb and claim that they are $[assigned\ by\ +V]$ as well. We return later to the implications of having such a Case feature system for Quechua, but first we try to justify the assumption of different $-\emptyset$ Cases in Quechua.

3.2.3. *The $-\emptyset$ Case*

As stated by our rules of Case spell-out, $-\emptyset$ is the realization of objective Case in the context $[+N]$, and the realization of subjective Case in the context $[-N]$. In our analysis there is no relationship between the $-\emptyset$ Case on the subject and the $-\emptyset$ Case on the object. It could be hypothesized, however, that there exists a relationship between the two which could be formulated in terms of $-\emptyset$ being an 'elsewhere' Case, (perhaps similar to $-ga$ in Japanese, cf. Saito (1982)). Elsewhere Cases are markers that appear whenever no specific Case assignment rule has applied.

The following sets of facts constitute arguments in favor of our claim that $-\emptyset$

Case on the subject is nominative and $-\emptyset$ Case on the object is objective. First, the object of an infinitival nominalized verb is always in the $-\emptyset$ Case, as in (49).

- (49) [PRO Papa $-\emptyset$ mikhu- y] allin -mi.
 potato CA eat NOM good AF
 Eating potato is good.

Now if the $-\emptyset$ Case on **papa** were an elsewhere Case, why could the subject in (50) not receive an elsewhere Case as well and be lexicalized? Infinitive verbs do not assign nominative Case, as can be deduced from the ungrammaticality of (50), although they do assign $-\emptyset$ Case.

- (50) *Xwan $-\emptyset$ papa $-\emptyset$ mikhu- y...
 Juan CA potato CA eat NOM

Thus $-\emptyset$ Case on subject NPs and $-\emptyset$ Case on object NPs have to be treated differently.

Second, consider the following relative clause:

- (51) [T'anta ruwa -sqa -yki -ta] allin -mi.
 bread make NOM 2 AC good AF
 The bread you made is good.

In the above sentence, the **-ta** Case on the nominalized verb must be interpreted as being associated with **t'anta**, since the nominalized clause is in subject position and therefore its head cannot be interpreted as a direct object. Therefore **t'anta** must be accusative, being the direct object of the verb **ruway**. If **t'anta** were analyzed as having received an elsewhere Case, accusative **-ta** Case on the verb could not be associated with it. Association of **t'anta** and the **-ta** Case marker on the nominalized verb is nonetheless the only possible interpretation in the above context (see chapter 6 on relative clauses and Case floating phenomena in these constructions).

A third set of facts has to do with object marking in the verb. Consider the verb **maqa-wa-n** 'he beats me'. The suffix **-wa-**, 1st person, refers to the object of the transitive verb. The Case of the subject, encoded here by the 3rd person suffix **-n**, is assigned by AGR, while **-wa-** is the realization of Case assigned by an element bearing the feature [+V]. In fact, in Quechua the suffix **-wa-** absorbs the Case and the θ -role of the object. It is not possible for an object pronoun to occur in surface structure next to a verb containing an object marker because the pronoun would not be marked for Case. Thus (52a) is not grammatical:

- (52) a. *Nuqa -ta maqa -wa -n.
 I AC beat 1ob 3
 He beats me.

The same analysis must hold for occurrences of *-wa-* in nominalized verbs. In this case, too, *-wa-* must be the realization of Case assigned by a [+V] element – an analysis which is incompatible with the idea that objects of nominalized verbs receive an elsewhere Case. Hence the ungrammaticality of (52b):

- (52) b. *Nuqa maqa -wa -sqa -n -ta yacha -nki.
 I beat 1ob NOM 3 AC know 2
 You know that he beat me.

These three sets of facts suggest that the *-Ø* Case on the subject and the *-Ø* Case on the object NPs cannot be related through an analysis in which they would be instances of an elsewhere Case; they each have to receive a separate interpretation.

3.2.4. *Nominalized Verbs as Case Assigners*

We have assumed so far that nominalized verbs are Case assigners by virtue of having the feature [+V]. Arguments in favor of this claim were brought forward only indirectly. Because of the fact that objects of nominalized verbs receive θ -roles from the nominalized verb and because of the Case Filter, objects of nominalized verbs must receive Case. They do indeed receive one, realized as either *-ta* or *-Ø*, and the most readily available Case assigner for it appeared to be the nominalized verb itself. The literature on Case has been almost unanimous in claiming that Case assigners must be of the category [–N] (disregarding INFL for the moment), including verbs and prepositions, and leaving out nouns and adjectives as well as derived nominals (Stowell, 1981) and passive participles (Rouveret and Vergnaud, 1980). Our analysis of nominalized verbs as Case assigners is strongly supported by the data presented above on object marking in the verb. Since it is desirable to have a unified analysis of Case assignment to objects by a [+V] element in both main and embedded clauses, including clauses whose verbs are nominalized, these verbs must be considered to be Case assigners for their objects. This fact constitutes a strong argument against an analysis where Quechua nominalizers would deprive the verb to which they are attached through Case absorption (Chomsky 1981) from having Case assigning properties under government. (Such an analysis would have been similar to the one commonly proposed for English passives.) The relevant property for assigners of objective Case in Quechua is [+V] and not [–N].

Given all these considerations, we can derive the distribution of Case in Quechua nominalizations from some fairly simple assumptions. (In the last chapter of this book we will return to a problem having to do with the distribution of Case in subject clauses.)

Having provided an analysis of the rules of structural Case assignment in Quechua, we now turn to a discussion of the more specific conditions proposed in the literature under which structural Case assignment takes place.

3.3. *Conditions on Structural Case Assignment*

Since our analysis differs substantially from other proposals in the recent literature, we will take up this discussion on the basis of the theoretical issues raised on the literature on the conditions for Case assignment.

3.3.1. *The Adjacency Condition*

In section 3.2.3. we argued that the $-\emptyset$ Case in Quechua is either nominative or objective, depending on the context in which it is assigned. Another possible interpretation, along the lines of Stowell (1981), of $-\emptyset$ Case on the object of nominalized verbs would be to say that $-\emptyset$ is analyzable as absence of morphological Case on the object noun. The noun would be assigned abstract objective Case by the verb under adjacency.

The Adjacency Condition on Case assignment has been suggested as an unmarked option for Case theory (Chomsky 1981, p. 94; and Stowell, 1981). It excludes sentences such as (53) and (54) (cf. Chomsky, 1981, p. 142 fn. 50):

- (53) * John wants very much Bill to win.
 (54) * John believes sincerely Bill to be a fool.

In (53) and (54) *Bill* is separated from the Case assigning verb. The Adjacency Condition says that in such cases abstract Case cannot be assigned. Hence both sentences are ungrammatical.

Stowell (1981, p. 115 ff.) rejects potential counterexamples to the claim that structural Case assignment is constrained by adjacency, and suggests that adjacency applies to Case marking of objects by a governing verb. Saito (1983) and Torrego (1983) propose that adjacency is a necessary condition for assignment of abstract but not of morphological Case.

We do not adopt this analysis for Quechua $-\emptyset$ objective Case. In nominalized clauses, it is possible to find a direct object not adjacent to the verb even though it does not bear a $-ta$ Case. In (55) the direct object is separated from the verb by *pi-wan* 'who-with' and in (56) it is separated from the verb by the subject of the embedded clause (cf. Saito (1983) for similar data from Japanese).

- (55) Muna-nki [Mariyacha -q platanu- $\emptyset$
 want 2 Maria GE banana CA
 pi -wan ranti -y -mu -na -n -ta].
 who with exchange INF CIS NOM 3 AC
 You want that Maria will buy bananas with whom.
- (56) Pi -qpa -ta -n muna-nki [llank'a -q -masi -n - $\emptyset$
 who GE AC AF want 2 work AG mate 3 CA

Xwancha -q riku -na -n -ta].

Juan GE see NOM 3 AC

Of whom do you want Juan to see the co-worker?

Are these data a counterexample to the Adjacency Condition or is there another explanation accounting for their grammaticality? Assuming adjacency to be relevant at S-structure (following Chomsky (1981, p. 94)) it could be argued that in the above examples Adjacency was met at S-structure and that scrambling or stylistic rules have applied at a post-S-structure level, producing the grammatical sentences (55) and (56). However, in light of our analysis of scrambling as Move CASE (cf. chapter 5), a rule which operates between D-structure and S-structure, this proposal will have to be rejected. Moreover, absence of morphological Case on a direct object is permitted in main clauses in some dialects of Quechua (e.g. Imbabura and Tarma) provided that the direct object is adjacent to the main verb (Cole, 1981; Adelaar, 1977). In these dialects, something like Saito's analysis in terms of abstract Case and adjacency would be correct, we assume. This is not the case in Cuzco Quechua, however. In (55) and (56) -Ø objective Case is the result of the [+N] domain of assignment, not of adjacency, unless, of course, we assume that scrambling is an entirely different process in the different Quechua varieties, applying in the syntax in Imbabura and Tarma Quechua and in the phonology in Cuzco Quechua. But if the latter were the case, why do we not find instances of -Ø objects in main clauses?

3.3.2. *The Case Resistance Principle*

Let us examine the consequences of our analysis for the Case Resistance Principle (CRP) suggested by Stowell (1981). The CRP stipulates that "Case may not be assigned to a category bearing a Case assigning feature" (p. 148). In the analysis we propose, nominalized verbs are both Case assigners by virtue of being [+V] and Case carriers by virtue of being [+N]. This is incompatible with the CRP.

Moreover, the CRP predicts that Case cannot be assigned to a category bearing the feature [+AGR] since this is a Case assigning feature in Quechua. Subordinate clauses containing a verb marked for [+AGR], a Case assigner, may nonetheless be marked for (nominative) Case by the matrix [+AGR], as seen in (57):

- (57) [Warimi -q hamu -na -n] allin -mi ka -nqa
 woman GE come NOM 3 good AF be 3FU
 That the woman is to come will be good.

These two facts suggest that in both cases – Case-marked nominalized verbs and Case marked lexical complementizers – the features of the lexical items involved operate independently from each other. In the case of nominalized verbs, the [+N] feature gives them the property of being a Case bearer, while the [+V] feature gives them the property of being a Case assigner.

As for the Case marked lexical complementizers, their [+N] feature makes them Case carriers while their [+T] feature relates them to a Main Tense verb in the embedded clause. Even though it is in contradiction with the Case Resistance Principle, this result is compatible with Aoun's (1981a) suggestion that when the properties of different features of a given lexical item are in conflict, a choice will be made between these features.

3.3.3. *Government and Case Assignment*

In our analysis, structural Case assignment takes place under government. The notion government as we use it in this book is slightly different from recent definitions proposed in the literature, particularly Aoun & Sportiche (1983).

Aoun & Sportiche have proposed a definition of government that departs from the traditional ones (e.g. Freidin and Lasnik, 1981; Rouveret & Vergnaud, 1980, and Chomsky, 1979, 1980, 1981) in two major ways: their definition allows for governors that are maximal projections in addition to being lexical heads, and government domains are maximal projections rather than immediate c-command domains. Their definition is as follows:

- (58) x governs y iff $\forall \varphi$, φ a maximal projection,
 φ dominates $x \Leftrightarrow \varphi$ dominates y .

Hence an intervening maximal projection blocks government.

Together with this definition they suggest the following maximal projections:

- (59) $A'' = AP$
 $N'' = NP$
 $P'' = PP$
 $INFL'' = S'$
 $V'' = VP$

It is easy to see that the definitions of government in (58) and of the maximal categories in (60), (which we adopted in chapter 2) together are incompatible with our analysis:

- (60) $S' = V'''$
 $NP = N'''$

V could assign objective Case to the subject as well as to the object, since both would be governed in the same way by the head. In order to prevent this, the notion of Government that we adopt for our analysis includes government by heads, such as V, as well as government through non-heads such as INFL (which is not a head in Quechua), where V and INFL both define separate domains of Government (see Reuland (1983) for a similar approach).

Our analysis hence includes two types of government:

A. direct government, where the governor is a head. The domain of government includes its complements. This accounts for assignment of objective Case by a verb to its object;

B. indirect government of the subject in which the governor is not the head but INFL, associated with the head through morphological control, as discussed in chapter 3).

We have to assume that indirect government of the subject does not create an opaque domain, since it does not block government by the verb of other elements which are daughters of S. This is exemplified by sentence (61), in which an adverb occurring in a pre-subject position is marked with accusative Case **-ta**.

- (61) Dumingu -ta Xwancha -Ø ri -nqa.
 sunday AC Juan CA go 3FU
 Sunday Juan will go.

In this sentence, the adverb has received its accusative Case from the verb across the domain of government defined by INFL for the subject, even where INFL is the closest governor.

3.3.4. Case Assignment as Case Checking

We now turn to a discussion of the status of the rule that accounts for the right distribution of Case in the grammar. Chomsky (1981) suggested that Case may be an inherent feature of items drawn from the lexicon, and that Case assignment may be interpreted as Case checking.

The Quechua data discussed in this chapter provide an argument in favor of Case assignment as Case checking. The argument is based on the fact that the objective Case marker **-ta** may be found not only on direct objects but on any constituent which appears in the domain of a verb. In the following sentence, the time adverb **paqarin** 'tomorrow' and the manner adverb **allin** 'well' are marked with accusative Case **-ta**.

- (62) Paqarin -ta allin -ta chay -ta ruwa -nki.
 tomorrow AC good AC that AC do 2
 Tomorrow you will do this well.

It has been shown in the literature on Case that Case assignment obeys the principle of Reciprocity: a Case assigner assigns only one Case to a Case assignee which, in turn, receives only one Case (see in particular Vergnaud (1982)). Unless we want to challenge this principle and defend a theory allowing a Case assigner to assign Case several times to various assignees, the data of (62) suggest that **-ta** assignment in Quechua is best interpreted as Case checking.

4. CASE MARKING IN PREPOSITIONAL PHRASES, ADJECTIVAL PHRASES, AND NOUN PHRASES

In the last section we discussed Case marking in the projection of the verb. We will now turn to a brief discussion of Case marking in the other projections, returning later to the more general question of the Case assignment rule system and to the Case Filter.

In PPs, one could argue, $-\emptyset$ Case is assigned under direct government by P:

- (63) a. wasi $-\emptyset$ ukhu -pi.

house CA inside LO

inside the house

- b. misa $-\emptyset$ ñawpaq -ta.

Mass CA first AC

before Mass

There are no instances known to us in Cuzco Quechua where a postposition-like element itself assigns a non-zero Case. Both postpositions exemplified in (63) are nominal in character. In fact, the head of the postpositional phrase in Cuzco Quechua is invariably a noun, i.e. an element of the type [+N, -V]. This noun-like element is dominated by a projection node of the type [-N, -V], as discussed in chapter 2. This type of discrepancy is allowed, we argued in chapter 2, by the general categorial neutralization rule of the Quechua X' component. We might account for Case assignment within PPs by a rule of type (64):

- (64) P assigns oblique $-\emptyset$ Case

Another possible analysis would be to say that NPs in postpositional phrases bear no morphological $-\emptyset$ Case but that they are assigned abstract Case in their immediate government domain by the postposition. This locality would explain the impossibility of postposition stranding in Cuzco Quechua:

- (65) *Wasi_i Xwancha [e_i ukhu -pi] kawsa -n.

house Juan inside LO live 3

Juan lives inside of the house.

The alternative hypothesis is supported by contrasting data from Ecuadorian Quechua. In this language the verbal postposition **yalli**, used in comparative formation, assigns accusative $-\text{ta}$ Case to its object:

- (66) Huzi Manil -da yalli yacha -n.

José Manuel AC more know 3

José knows more than Manuel.

As a consequence of the Case assigning properties of **yalli** postposition stranding is possible with scrambling, as shown in (67):

- (67) Huzi [_i yalli] yacha -n Manil -da_i.
José more know 3 Manuel AC
 José knows more than Manuel.

The fact that there is no postposition stranding in Cuzco Quechua follows from the fact that abstract Case is assigned. That Case has been assigned is shown by the contrast in (68), which indicates that the complement of a postposition has to be [+N].

- (68) a. puri -sqa -n hina.
walk NOM 3 like
 the way he walks
- b. *puri -n hina.
walk 3 like
 the way he walks

In (68a) the complement of **hina** is a nominalized verb, [+N], while in the ungrammatical (68b) it is a tensed verb, [-N]. We can explain the requirement that the complement of **hina** has to be postpositional by stating that the postposition assigns Case obligatorily. We saw before that tensed clauses are not suitable carriers of Case unless they are followed by a **chay** 'that' complementizer.

Whatever the analysis, the abstract Case or the oblique - Ø Case assigned by a postposition has to be distinguished from the -Ø objective Case spelled out in the context of a [+N] nominalization. We return to the problem of distinguishing different types of -Ø Case below.

Adjectives select complements marked with **-paq** 'for', **-manta** 'from', and **wan** 'with':

- (69) a. unquy -manta qillu
disease from yellow
 yellow with disease
- b. nuqa -paq allin
I for good
 good for me
- c. wayra -wan ch'aki
wind with dry
 dry with wind

It is not clear whether these complement types are lexically selected and need to be represented in the entry for each adjective, or whether they are instead inherently Case marked, their distribution following from very general semantic notions. In support of the latter possibility we should mention that in (69a) **-manta** can be replaced by **-wan**. We will not consider the Case-assigning properties of adjectives here in further detail. Note however that the impossibility of having a **-ta** or **-Ø** Case-marked object in adjectival phrases forces us, as was indicated in chapter 2, to assume that adjectives are [– V] in Quechua. That adjectives are [– V] in Quechua recalls Jackendoff's (1977) feature system, in which A and V do not form a natural class.

- (70) a. *mama -y(-ta) llakisqa
 mother 1 AC sad
 sad about my mother
- b. *santu -yki(-ta) kusi -lla
 Santo 2 AC happy DEL
 happy about your Saint's day

Finally, in Noun Phrases complements appear only with difficulty. We have found nominal complements with **-manta** '(made) from' and **-yuq** 'with':

- (71) a. rumi -manta punku
 stone from door
 a door made from stone
- b. tawa rinri -yuq manka
 four ear with pot
 a pot with four ears (handles)

Again, we consider these Cases instances of inherent Case rather than of Case assignment by the head. We have found no instances of assignment of **-Ø** or **-ta** Case by nouns. This is in marked contrast, of course, with the very regular assignment of **-Ø** Case in Postpositional Phrases.

Sections 2., 3., and 4. were dedicated to different types of Case assignment in various syntactic environments. We now turn to a second major component of Case theory: the Case Filter.

5. THE CASE FILTER

Case theory relies essentially on the Case Filter, which stipulates roughly that each nominal element having a phonetic matrix must have Case. The Case Filter is needed in Quechua to exclude the following ungrammatical sentences:

- (72) *Xwan mikhu- y allin -mi
 Juan eat NOM good AF
 John to eat is good.

In (72) there cannot be a subject NP in the infinitival complement clause because there is no AGR node to assign it Case.

- (73) *Xwan suwa -q mana allin -chu.
 Juan rob AG not good NEG
 The robber of John is not good.

In (73) the noun **suwa-q** 'robber' is [- V] and cannot assign objective Case to **Xwan**.

- (74) *Xwan allin
 Juan good
 good for John

Here the adjective cannot assign Case to its complement, since in our analysis the adjective is [- V].

In recent work within the government and binding framework much discussion (Chomsky and Lasnik, 1977; Chomsky, 1980, 1981; Rouveret and Vergnaud, 1980) was dedicated to the format of the Case Filter: (1) Is it defined in terms of N or of NP, of a head or of a maximal projection? (2) In what component of the grammar does it apply – in the phonological component, at S-Structure or at the level of Logical Form? (3) What is the exact formulation of the Case Filter?

In this section we discuss the Quechua data with respect to these questions and defend the following version of the Case Filter:

- (75) * $[\alpha]$ where:
 a. α is an *XP*, contains a phonetic matrix and has argument status, i.e. receives a thematic role, unless there is a well formed Case percolation path within the *XP*.
 b. α is a variable, unless it is coindexed with a phrase that contains a well-formed Case percolation path.

The early formulation of the Case Filter (e.g. Chomsky and Lasnik, 1977; Chomsky, 1980) was in terms of the nominal head as in (76):

- (76) *N where N has no Case (Chomsky, 1980).

In Rouveret and Vergnaud (1980, p. 102) the Case Filter is replaced by a Filter specifying the contexts licensing the grammatical occurrences of NPs in surface structure.

- (77) *NP, unless
- NP is governed by Tense
 - NP is governed by [– WH] or [+ WH]
 - NP is governed by [– N]

Chomsky (1981, p. 49) restates the formulation of the Case Filter as in (78) with the assumption that Case is assigned to NPs by virtue of the configurations in which they occur, and percolates to their heads.

- (78) *NP if NP has phonetic content and has no Case.

The Quechua data provide us with good arguments in favor of the Case Filter applying to the major projection rather than to the nominal head. We argued earlier that even though only [+ N] elements are Case carriers in Quechua, Case is a property of the maximal projection. Case markers have scope over the whole N^{'''}. Syntactically it is the right-most lexical element of an NP, not necessarily the noun, that carries the Case, provided that this element has the feature [+ N]:

- (79) Wasi hunt'a -ta riku -ni.
 house full AC see I
 I see the full house.

In (79) it is the adjective **hunt'a** that carries the Case of the whole NP. The noun **wasi** is unmarked for Case. Similarly, in (80a) it is the adjective that carries the Case of the NP, the head being empty. That (80a) cannot be analyzed as the result of Case agreement with a null head noun is confirmed by the ungrammaticality of (80b) and the grammaticality of (80c):

- (80) a. [_{NP} Allin -ta -n e] qu -y.
 good AC AF give IM
 Give me the good one.
- b. *Allin -ta t'anta -ta -n qu -y.
 good AC bread AC AF give IM
 Give me the good bread.
- c. Allin t'anta -ta -n qu -y.
 good bread AC AF give IM
 Give me the good bread.

In (81) it is the Specifier of the NP that carries the Case of the NP, the head being empty as well:

- (81) [_{NP} Pay -pa -ta e] riku -ni.
 he GE AC see I
 I see his / I see the one of him.

In the literature generally only noun phrases have been cited as participating in the Case Filter. Quechua data suggest that the filter has to be extended to the other lexical categories as well. The Case Filter must be defined in terms of *XP* in order to account for the correct distribution of Case in Quechua. In chapter 3 we showed that morphologically, Case is a property of [+N] elements. In addition to nouns, the class of words defined by the feature [+N] includes adjectives, adverbs, postpositions, and (as argued in chapter 2) nominalized verbs and lexical complementizers. All these lexical elements can receive Case because they bear the feature [+N], and hence they ought to fall under the Case Filter. The Case Filter in Quechua must be defined for all values of *X*.

Although there are proposals in the literature (e.g. Fabb 1984) that universally categories can only be visible in Logical Form if they are Case-marked, we do not wish to claim here that Case is a feature of *XP* in all languages. First of all, even in languages with morphological Case we find that often clauses are not marked for Case. Second, in languages such as Dutch, one could plausibly claim that the unequal distribution of NPs (pre-verbal) and S's (post-verbal) falls out from the fact that S's cannot bear Case.

The specification of *XP* as having argument status is necessary in the formulation of the filter in order to exclude non-arguments appearing without Case from being filtered out by the Case Filter. Non-arguments include adverbial phrases, some purposive clauses and phrases occurring in TOPIC position. The latter case is exemplified in (82). The relative clause in TOPIC position bears Case only optionally.

- (82) Hamu -q warma -(ta) -qa, Santiyagu riku -n.
 come AGgirl AC TO Santiago see 3
 Santiago sees the girl that is coming.

Optionality of Case marking here follows from the fact that topics appear to be somehow immune from the θ -criterion which stipulates that all arguments must have a θ -role. This suggestion is widespread in the recent literature. It is supported for Quechua by data reported on by Lefebvre and Dubuisson (1978) showing that co-occurrence of an object marker on the verb and a coindexed lexical pronoun in the same clause is only possible if the pronoun is in topic position, the object marker on the verb absorbing Case and θ -role.

The notion 'well-formed Case percolation path' was defined in chapter 3 in terms of the relation between Case morphology and the Case features on the maximal projection. The condition of well-formedness of Case percolation paths was defined there as follows (after Muysken, 1983b):

- (83) No node in the percolation path for feature [α F] can be governed for feature [α F].

It follows from that definition that (84) is grammatical while (85) is not.

- (84) [Xwan -pa -ta [e]] riku -ni.
 Juan GE AC see 1
 I see the one of Juan.

- (85) *[Xwan -pa [e]] allin -mi.
 Juan GE good AF
 The one of Juan is good.

Indeed in (84) the Case feature composition of the maximal projection is [assigned by V] which, added to the feature composition of the specifier, [assigned by AGR], yields the double feature composition corresponding to the *-ta* objective Case and to the *-pa* genitive Case respectively. In (85) however the feature composition of the maximal projection of the subject NP and that of the specifier both contain the feature [assigned by AGR]. Now the path linking the specifier (carrying nominative) with its maximal projection contains a node governed for the same feature (through NP-internal genitive assignment), which is blocked by (83).

Similar contrasts to the one between (84) and (85) have been accounted for by the Empty Category Principle for various European languages. We will not explore this option here because of the *pro*-drop facts of Quechua. The Quechua AGR system makes it possible for the subject to be phonetically unrealized, presumably by properly governing the subject position. If this is the correct analysis, extraction out of subject NPs should be possible. The fact that Quechua is left-branching would suggest that there should be no subject-object asymmetries, following the reformulation of the Empty Category Principle in terms of Connectedness (Kayne, 1983).

In this chapter, four types of noun phrases have been discussed which bear *-Ø* Case on the surface. This would appear to pose a considerable difficulty for the language learner, first in determining whether the noun phrases are marked for Case at all, and second, in discovering their grammatical function. Our analysis can be maintained to the extent that these four types of *-Ø* Case are locally identifiable, as in (86):

- (86) a. nominative is identifiable because it occurs in the context of [_{I - N}] — AGR]
 b. objective is identifiable since it occurs in the context of [_{I + N}] — [+ V]]
 c. oblique or abstract *-Ø* is identifiable because it occurs in the context [— P]
 d. adjuncts, elements without a thematic role, have no Case.

cf. Aoun's
visibility
requirement

Quechua Case marking expresses categorial distinctions within projections. The distribution of morphological Case in Quechua makes it possible for the language learner to distinguish between nominal and verbal projections in spite

of the fact that in other ways N''' and V''' nominalizations are very similar. Similarities include the fact that AGR assigns subjective Case and the nominalized verb assigns objective Case in both projection types.

In the previous section the $-\emptyset$ Case in postpositional phrases, (86c), was contrasted with the $-\emptyset$ objective of (86b). The former was shown to be inseparable from its assigner, but not the latter. The difference is only apparent, however, on a more abstract level. Note that separating P from its complement almost always involves moving the complement out of the PP, while with $[+V]$ elements the movement can be VP-internal.

The Quechua data on Case constitute an important contribution to the discussion as to whether the Case filter applies in Phonological Form or in Logical Form. We postpone this discussion until chapters 5 and 6, where it will be argued that the Case Filter applies at Logical Form.

6. SUMMARY

Case lies at the core of the Quechua grammatical system. Its properties, as we have shown in this chapter however, are different from those of Case in Indo-European languages. All maximal projections can be Case-marked, even if morphologically Case can be carried only by $[+N]$ elements. Case assigners in Quechua are $[+V]$ and [AGR], rather than $[-N]$ and [Tense], as is widely assumed for English. In this way nominalized verbs can both assign Case, due to their being $[+V]$, and be marked for Case, since they are $[+N]$.

MOVE CASE

Our claim that nominal and verbal structures in Quechua are similar raises the question as to whether extraction out of these constituents should proceed in the same way. In this chapter we propose a rule *Move Case* that applies alike to simple noun phrases and to clauses, including nominalized clauses. The general application of this rule is due to the fact that the ability to bear Case in Quechua is a feature of all maximal projections, as we argued in chapter 4.

In the Government and Binding framework, different types of movement of constituents are analyzed as instances of the very general rule of *Move α* , – ‘move anything anywhere’. While the values of α are particular to individual languages, the restrictions on movement are due to the interaction of general principles of Universal Grammar. The fact that in Quechua the value of α can be any Case-marked constituent has important consequences for the grammar. Movement out of a projection, we argue, can be seen as a special case of co-indexing the moved element with that projection. In Quechua co-indexation is manifested as co-Case marking. We propose that co-Case marking is a parameter of UG. This parameter interacts with another property of the grammar, $\bar{A}$ -availability – the possibility of free $\bar{A}$ -adjunction of moved constituents – also introduced in this chapter. Together they account for the non-configurational properties of Quechua.

1. EXTRACTION FACTS IN QUECHUA

Phenomena that have been described in the literature as Subject to Object Raising, Quantifier Float, Wh-movement, Adjective Float, and Extraposition share a number of properties, properties that fall out from their unified analysis that we will present here in terms of *Move CASE*.

Consider first phenomena superficially resembling Subject to Object Raising, and which we will refer to as Raising for ease of exposition. In Quechua we find NPs in S-structure in the domain of a matrix verb, functioning syntactically like matrix objects while still receiving a thematic role within the embedded clause.

- (1) Mariya Xwancha -q -ta -n_i muna -n
 Maria Juan GE AC AF want 3
 [_N e_i platanu ranti -mu -na -n -ta]
 banana exchange CIS NOM 3 AC
 Maria wants Juan to buy bananas.

In the above sentence, the subject of the embedded verb occurs before the matrix verb, and is marked for accusative Case as if it were the object of the main verb.

In addition it carries the affirmative validator, which would be impossible if it were part of the embedded clause. Not only does it receive a thematic role in the lower clause as the agent of *ranti* 'buy', it also carries a Case marking (genitive) assigned within that clause.

Extraction is possible not only out of N''' nominalizations, as in (1), but also out of V''' nominalizations such as (2):

- (2) Mariya Xwancha -ta -n_i muna -n
Maria Juan AC 3 want 3
 [_{V'''} e_i platanu -ta ranti -mu -na -n -ta].
banana AC exchange CIS NOM 3 AC
 Maria wants Juan to buy bananas.

A second set of facts involves unbounded Wh-movement. Again, as with raising, genitive Wh-subjects are marked accusative when they are moved to a higher clause:

- (3) Pi -qpa -ta -n_i muna -nki [e_i platanuranti -mu -na -n -ta].
who GE AC AF want 2 banana exchange CIS NOM 3 AC
 Who do you want to buy bananas.

Example (3) parallels (1) exactly, the sole difference being that in (3), a Wh-phrase is fronted. In (1)-(3), movement is leftward, while with extraposition and floating – the next two phenomena to be illustrated – movement is rightward.

Sentence (4) contains an extraposed element, also doubly marked for Case: -*yuq* corresponds to its function within its immediate constituent, and accusative -*ta* Case corresponds to the Case of the constituent out of which it is extracted.

- (4) [e_i Runa -ta] riqsi -ni kallpa -yuq -ta_i.
man AC know 1 strength with AC
 I know a man with strength.

In sentence (5), a quantifier has been moved out of its noun phrase into a position in the verb phrase. It has the same Case marking – accusative -*ta* – as the noun phrase out of which it is floated. This marking does not occur when the quantifier is inside of its NP.

- (5) [e_i Runa -kuna -ta] llipi -n -ta_i riku-rqa -nki -chu.
man PL AC all 3 AC see PA 2 Q
 Did you see all the men?

Finally, an adjective can be floated out of its NP, in which case it bears the Case of that NP, as illustrated in (6):

- I know a big man.

- A. The moved element bears the Case of the constituent it is moved out of;
- B. The moved element is found in the domain of the matrix verb at S-structure;
- C. The moved element does not receive a thematic role from the main verb;
- D. The constituents out of which elements are moved are either noun phrases or nominalized clauses;
- E. If the base position of the moved element is a Case-marked position the element carries the Case assigned to that position as well as (the preceding) Case assigned in A. above.

We will present a unified analysis of these phenomena in terms of movement of Case-marked elements to non-argument positions, on the basis of a detailed analysis of raising phenomena. These have been described within the EST (Extended Standard Theory) framework by Cole and Hermon (1981) as cases of Subject to Object Raising achieved by an NP movement rule. In addition to leaving many problems unresolved, their analysis is incompatible with the central principles of the Government and Binding Theory (for further discussion of Cole and Hermon's analysis, see Lefebvre and Muysken, 1982b).

After having looked at the Raising facts in detail, we will return to the other constructions illustrated in (1)-(6), considering them within the framework of the discussion of non-configurationality.

We begin by looking at the properties of the raised elements in (1) and (2) in more detail.

2.1.1. The NPs are Moved Outside of Their Clause

There are three indications that the moved NPs end up outside of their original clause. First, the position of the NP is external. In (7a) the object of the embedded verb, **platanu** occurs in its basic position immediately before the embedded verb, while in (7b) **platanu** occurs outside of its clause in the domain of and immediately before the main verb.

- Maria wants Juan to buy bananas.

- b. Mariyacha platanu -ta_i muna -n [Xwancha-q e_i ranti -na -n -ta].
* $\emptyset$

Maria banana AC want 3 Juan GE exchange NOM 3 AC

CA

Maria wants Juan to buy bananas.

Second, the noun phrase receives exceptional Case. Here, two types are to be distinguished. Consider first the object of the embedded verb in a non-raised position as in (7a) and in a raised position as in (7b). In (7a) where the object of the embedded verb occurs in an embedded clause, with a genitive subject, it cannot bear accusative Case -ta, while in (7b) where the object of the embedded verb is in the domain of the main verb, it *has* to bear accusative Case. Let us now consider the *subject* of an embedded verb in a non-raised position (8a), and in a raised position (8b).

- (8) a. Mariyacha muna -n [Xwancha -q platanu ranti -na -n -ta].

Maria want 3 Juan GE banana exchange NOM 3 AC

Maria wants Juan to buy bananas.

- b. Mariyacha Xwancha -q -ta_i muna -n [e_i platanu

Maria Juan GE AC want 3 banana

ranti -na -n -ta].

exchange NOM 3 AC

Maria wants Juan to buy bananas.

In (8a), **Xwancha-q**, the subject of the embedded verb, occurs in the genitive Case. In (8b), **Xwancha-q-ta**, which is still interpreted as the subject of the embedded verb, is also marked for accusative Case -ta as if it were also the direct object of the main verb. The distribution of $\emptyset$ /-ta in (7) and the double Case marking in (8b) cannot receive an explanation unless movement is postulated.

Third, there is a validator on the NP. Compare (9a) and (9b).

- (9) a. Mariyacha platanu -ta -n_i muna -n [Xwancha

Maria banana AC AF want 3 Juan

-q e_i ranti -na -n -ta].

GE exchange NOM 3 AC

Maria wants Juan to buy bananas.

- b. *Mariyacha muna -n [Xwancha -q platanu -n ranti

Maria want 3 Juan GE banana AF exchange

-na -n -ta].

NOM 3 AC

In (9a) the affirmative validator **-n** may occur on **platanu**, as **platanu** is outside of the embedded clause and in the domain of the main verb; it cannot occur on the object of the embedded verb when it remains inside of its clause as shown by the ungrammaticality of (9b). Therefore the presence of the validator on **platanu** in (9a) is a strong argument for Raising.

In the above examples, we have assumed that the raised NP corresponds to an empty position in the embedded clause. We now turn to the justification for this assumption.

2.1.2. *Raising Leaves a Trace*

Several proposals have been made in the literature in order to account for elements occurring in S-structure outside of the clause in which they receive a θ -role, the major ones being the following:

A. The Merger/Projection proposal, allowing for the scrambling of constituents without the postulation of traces (Hale, 1979; Nash, 1980; Van Riemsdijk, 1982).

B. The Movement/Coindexation proposal (in particular Chomsky, 1977; 1981). The Quechua data discussed here support the idea that there is a trace in the position from which the elements appear to have been moved, and consequently, support the Movement/Coindexation proposal. We will give two arguments for a trace.

As we have seen in (8b), the scrambled NP can be marked for Case twice. When the subject of an embedded clause has been moved out of its clause, it carries two Case markers: the first one is assigned by the embedded verb and the second one is assigned by the main verb. Thus, in (10) the subject of the embedded verb, **Xwancha** is marked both for genitive Case as the subject of the embedded verb, and for accusative Case, because it occurs in the domain of the main verb.

- (10) Mariyacha Xwancha -q -ta, muna -n [_i platanuranti -na -n -ta].
 Maria Juan GE AC want 3 banana exchange NOM 3 AC
 Maria wants Juan to buy bananas.

Since genitive Case is assigned structurally inside the embedded nominalized clause, we need to postulate a position to which genitive Case is assigned, coindexed with the extracted element. A second argument in favor of a Movement/Coindexation analysis has to do with person marking in the embedded clause as a result of agreement between the nominalized verb and its subject. In the embedded clause of sentence (10) the nominalized verb **rantinanta** bears a 3rd person marker **-n-** resulting from a structural agreement rule between INFL and its subject.

The agreement rule is local and structurally rather than thematically defined. It is not clear how it would operate if there were no empty position in the embedded clause corresponding to the raised NP.

2.1.3. *Elements that can be Raised*

In Cuzco Quechua, Raising of an NP may occur out of any position in an embedded clause. Examples (7b) and (8b) of section 2.1 showed a raised object and a raised subject, respectively.

The following examples show other possibilities. In (11) the locative is raised:

- (11) Mariyacha merkadu -pi_i muna -n
Maria market LO want 3
 [Xosecha -q e_i platanu ranti -na -n -ta].
José GE banana exchange NOM 3 AC
 Maria wants José to buy bananas in the market.

In (12) the NP marked for benefactive Case is raised:

- (12) Mariyacha Pidru -paq_i muna -n [Xosecha -q e_i platanu merkadu -pi.
Maria Pedro for want 3 José GE banana market LO
ranti -na -n -ta].
exchange NOM 3 AC
 Maria wants José to buy banana for Pedro in the market.

More than one element may be raised out of an embedded clause, as shown in (13):

- (13) Mariyacha Xosecha -q -ta_i platanu -ta_j merkadu -pi_k muna -n
Maria José GE AC banana AC market LO want 3
 [e_i e_j e_k ranti -na -n -ta].
exchange NOM 3 AC
 Maria wants José to buy bananas in the market.

Another characteristic of Raising in Cuzco Quechua is that it can involve any type of potentially Case-marked element – adverbs and quantifiers as well as nouns. Any element bearing the feature [+N] is a candidate for Raising. In (14) the adverb **paqarin** ‘tomorrow’ is raised, and in this case appears to the right of the clause it is extracted out of:

- (14) Mariyacha [e_i Lima ri -na -yki -ta] muna -n paqarin -ta_i.
Maria Lima go NOM 2 AC want 3 tomorrow AC
 Maria wants you to go to Lima tomorrow.

In (15) it is the wh-quantifier **hayk’a** ‘how many’, that is raised and fronted, a process to which we will turn shortly:

- (15) hayk'a -ta Mariyacha muna -n Xosecha -q platanu
how many AC Maria want 3 José GE banana
 ranti -na -n -ta.
exchange NOM 3 AC
 How many bananas does Maria want José to buy?

2.1.4. Syntactic Conditions on Raising

Raising occurs optionally out of nominalized embedded clauses formed with **-sqa-** 'action realized' or **-na-** 'action not realized', as exemplified in (11)-(15). The nominalized embedded clauses out of which Raising may occur can either have the internal structure of an N''' (with a subject occurring in the genitive Case) or the internal structure of a V''' (with a subject occurring in the nominative Case).

Raising cannot occur, however, out of subordinate clauses that are not embedded. In Quechua there is the possibility of having S' as the daughter of S, shown in a base rule of the type illustrated in (16):

- (16) $S \rightarrow (S') \dots NP \dots V' \dots (S')$

The S' positions above are the positions for temporal and conditional adverbial clauses and for subordinate clauses containing a lexical complementizer and a verb inflected for Main Tense (Lefebvre, 1980). All these clauses are islands in not allowing Raising and other types of movement.

It is also not possible to raise elements out of an embedded clause in the domain of a matrix verb which already has an object in addition to its sentential complement. This is illustrated by the ungrammaticality of sentence (17b) where in the domain of the main verb there is a raised element in addition to the object of the main verb, **Pidruman**. Example (17a), with no Raising, is grammatical.

- (17) a. Mariyacha-n Pidru -man willa -n [Xosecha-qpa platanu
Maria AF Pedro to tell 3 José GE banana
 ranti -na -n -ta].
exchange NOM 3 AC
 Maria tells Pedro that José will buy bananas.
- b. *Mariyacha -n Pidru -man Xosecha -qpa -ta_i willa -n
Maria AF Pedro to José GE AC tell 3
 [e_i platanu ranti -na -n -ta]
banana exchange NOM 3 AC

Let us now turn to the definition of the class of Raising verbs. It appears from our data that Raising in Quechua is not a lexical property of some transitive verbs, as it is in English. In fact, Raising may occur with any verb which is a Case

assigner, e.g. **rikuy** 'see', **munay** 'want', **yachay** 'know', **willay** 'tell', **watupakuy** 'whisper', **qhaway** 'look', **uyay** 'hear', **tapuy** 'ask', **yuyay** 'remember', etc. Verbs of movement, e.g. **riy** 'go', **hamuy** 'come' are not Raising verbs because they are not Case assigners. In Cuzco Quechua as well as in Imbabura Quechua (as mentioned but not explained in Cole and Hermon (1981)), the verb **niy** 'say' is not a Raising verb, even though it does assign Case. Below we will explain why the verb **niy** does not allow Raising and why the presence of a matrix object blocks it, as shown in (17b).

In summary, in Cuzco Quechua, Raising may occur out of any position from an embedded subordinate clause. Any number of Case-marked elements may be raised within the same sentence with the restriction for some speakers that they do not include both the subject and the object at the same time. Raising may occur with any verb which is a Case assigner providing that it is a verb taking embedded complements, and that it does not have an object of its own.

2.2. Analysis of Raising Phenomena

We now turn to a syntactic account of the Raising phenomena described above, arguing that Raising in Quechua is an instance of the more general rule of Move CASE.

2.2.1. Case Assignment to Raised NPs

The distribution of Case on raised NPs is as follows. When the Case assigned in the subordinate clause to the raised element is nominative, it bears only matrix (accusative) Case; when it is genitive, it is marked for genitive and accusative; when it is accusative, it is marked for only one accusative; when it is oblique, it is only marked for oblique Case. These facts are summarized in (18).

(18)	embedded	raised	
nominative	-Ø	-ta	nominative + objective
genitive	-q(pa)	-q(pa)-ta	genitive + objective
objective	-ta/-Ø	-ta	objective
oblique	obl.	obl.	oblique

Assuming the Case assignment rules and the Case feature system proposed in chapter 4 (section 3.2.1), the combinations in (18) are explained. When an element is raised bearing genitive - **qpa**, with the features [+ ass. AGR (assigned by AGR), - ass. V] (assigned by V), it receives the feature [+ ass. V] and bears -**qpa-ta** with the feature combination [+ ass. AGR., + ass. V]. The accusative or objective Case is -Ø or -**ta**, with the feature specification [- ass. AGR, + ass. V]. When an accusative element is raised it is marked for -**ta**, remaining [- ass. AGR, + ass. V]. The fact that -Ø is replaced by -**ta** is due to the fact that the matrix spell-out domain is [- N]. The oblique Cases are [- ass. AGR, + ass. V] and retain the

same features after Raising, since [+ ass. V] would only be specified redundantly again. Raising thus involves an additional specification for the Case features of the higher assignment domain.

In the Government and Binding framework (see in particular Chomsky (1981)), Case is assigned in deep structure if inherent (e.g. oblique), or in surface structure if structural (e.g. nominative, accusative, genitive). The data presented here, especially those on double Case marking, force us to revise the locus of Case assignment. If structural Case were to be assigned at the level of surface structure, it would not be possible to account for double Case marking in Quechua. Our data speak in favor of a general rule of Case assignment, unspecified as to where it applies:

- (19) Assign Case whenever the structural description is met.

On independent grounds Freidin and Babby (in prep.) also show the necessity for such a formulation of the rule of Case assignment.

Where is the second Case (accusative) assigned to the raised NP? There are two hypothetical possibilities. One possible analysis is to locate Case reassignment in the landing site at the level of S-structure. A more principled solution – the one we argue for in this chapter – is that Case is assigned to the raised element at the moment it passes through a COMP-like CASE position of the source constituent. Before arguing for Case reassignment in COMP (2.4.3), we propose a COMP-like CASE position on the X''' level.

2.2.2. A COMP-like CASE Position

There are several independent arguments in favor of a COMP-like CASE position as a daughter of X''' , in a base rule of type (20):

- (20) $X''' \rightarrow \dots X'' \dots [\text{CASE}]$

One argument for such a position is drawn from complex data on Quechua relative clauses analyzed in detail in chapter 6. Consider a sentence such as (21):

- (21) [V''' Riku -sqa -y warma -ta] hamu -nqa.
 see NOM 1 girl AC come 3FU
 The girl I saw will come.

In this sentence, the head of the relative clause **warma** is not in its embedded position, which would be to the left of the embedded verb rather than to its right. Then in what position is **warma**? It cannot be said to be in the subject position of the matrix clause because, if it were, the accusative **-ta** that it bears would be illicit. The **-ta** Case on **warma** has to be related to the embedded verb. We propose that **warma-ta** fills a position on the S' level in the relative clause. This position, we argue, is the CASE position on the S' level.

A second argument is that Quechua has a number of Case-marked lexical complementizers occurring at the S' level. Sentence (22) is an example.

- (22) Mariyacha muna -n [Xosecha platanu -ta ranti -nqa chay -ta].
Maria want 3 José banana AC exchange 3FUthat AC
 Maria desires that José buys bananas.

The complementizer **chay-ta** in (22) receives its Case **-ta** from the matrix verb; it can be said to function like the lexical carrier of that Case.

These facts constitute arguments in favour of a CASE position on the S' level. It functions as an escape hatch for Raising in the same way as the Wh-COMP position does for unbounded Wh-movement in other languages. The islandhood of the embedded clause in (22), noted above, is due to the non-subordinated position of this type of complement clause.

2.2.3. Raising and Case Assignment into COMP

Case assignment into COMP has been suggested in the literature in order to account for specific problems of Case assignment (e.g. Kayne, 1980; Chomsky, 1981; Groos and van Riemsdijk, 1981). The Quechua data present further evidence for Case assignment into COMP. We argue that Case is assigned to the raised NP at the X''' level when it passes through the COMP-like CASE position.

In arguing for this analysis we have to rely on data drawn from Floating out of NPs, mentioned in section 1, which present the same characteristics as Raising phenomena. It is not possible to argue the same point with data derived from Raising out of clauses, because clauses are marked with **-ta**.

Consider (23), in which the Wh-element is floated out of a dative constituent.

- (23) a. Pi -qpa -man -mi, qulqi -ta [e, ususi -n -man] qu -ni.
who GE to AF money AC daughter 3 to give I
 I gave the money to whose daughter?
- b. *Pi -qpa -ta,
who GE AC

Assuming the Case assignment rules suggested earlier to be correct, dative Case, expressed with **-man**, is assigned not structurally, but rather lexically as a property of the verb 'give'. If Case were assigned structurally to the moved element in its landing site, we would expect the floated element to be assigned objective Case, which is not the correct result (cf. (23b)).

How can we insure that the raised and floated elements will appear with the same Case as their source constituent? We have several alternatives. One is to assume that dative can be assigned several times, as long as the elements involved have the same θ -role with respect to the verb. This would give us the right result

if the condition could be met, but floated and raised elements do *not* have the same θ -role with respect to the matrix verb as their source constituents. A raised element simply never has a θ -role with respect to the matrix verb. Floated possessor phrases, as *part* of a constituent with a matrix θ -role, do not by themselves have such a role.

If we say, however, that Case is assigned to the raised or floated element the moment it passes through the CASE position on the X''' level of the source constituent, the correct results obtain for the distribution of Case. Since dative is assigned to the whole X , the raised or floated constituent will receive dative as well. Assignment of Case to an element as it passes through the COMP of the constituent out of which it is extracted is a specific case of the more general phenomenon of co-indexation. We will label it co-Case marking.

2.2.4. *Raising as Move CASE*

We have suggested that raised elements receive their Case while passing through a COMP-like CASE position on the X''' level. In this section, we discuss the consequences of the rule by means of which Raising is effected. First, what type of category corresponding to the raised NP remains in the embedded clause? Second, what is the landing site for raised elements: do raised NPs pile up in COMP, where they receive Case from the matrix verb, or do they land in the matrix clause itself after passing through the COMP-like CASE position functioning as an escape hatch?

The facts of Raising in Quechua are best accounted for by a rule of the type Move α :

- (24) Move α , where α = CASE

According to this rule, any Case-marked element of the embedded clause can be raised into the domain of the main verb, through the COMP-like CASE position on X''' . The raised element is assigned Case by the main verb governing the COMP. As the COMP-like CASE position is not a θ -position, our rule of Move α conforms to the configuration defined in Chomsky (1981):

- (25) ' α locally binds β and is not a θ -position' (Chomsky, 1981, p. 59).

The CASE feature in the formulation of our rule is of the same type as the Wh-feature in Chomsky's formulation of Move α : 'Move α can move α to COMP only if it contains the feature (+WH)' (1981, p. 118):

- (26) Move α , where α = Wh

Thus our rule (24) is formally comparable to (26). Rule (24) makes the right predictions for Quechua. First, it insures that only elements marked for Case, i.e.

[+N] elements, are allowed to raise, which is in fact the case. Second, the Move α convention accounts for the fact that embedded verbs, even though they are nominalized and bear the feature [+N], will never be raised. Only maximal projections can be raised, since Case is a feature of maximal projections. Heads by themselves, such as nominalized verbs, cannot be raised.

Let us now examine the characteristics of the gap that remains after Raising. Is that gap a trace of NP or a variable? Chomsky distinguishes between traces of NP and variables mainly on the basis of the type of binding involved. Variables are $\bar{A}$ -bound by an operator in COMP, while traces of NP are A- or argument-bound. This major distinction between variables, as opposed to traces of NP, clusters with other distinguishing properties. Variables are Case marked because they occur in positions to which Case is assigned, while NP traces are not Case-marked.

The empty category created by Raising in Quechua is a variable: it is $\bar{A}$ -bound, i.e. bound by an operator in COMP, and occurs in a Case-marked position (e.g. in subject position, which is assigned genitive Case).

From the fact that the gap created by Raising is a variable rather than a trace of NP, we can derive the optionality of the rule Move CASE. If Raising does not apply, the NP stays in a Case marked position. If Raising were a rule like NP movement, however, it would be obligatory (e.g. like Passive and Raising to Subject in English), due to the fact that the deep structure position of the moved NP cannot be assigned Case.

Consider now the landing site of the raised elements. Government and Binding theory stipulates that movement must take place from a θ -marked position at D-structure to a non- θ -position. With respect to the question of whether at S-structure the ultimate landing site for raised elements is CASE or some position in the matrix clause, we have shown so far that raised NPs are assigned accusative Case by the matrix verb.

Raised elements do not remain in COMP but end up in the matrix clause. Consider again a sentence such as (27):

- (27) Mariyacha Xwancha -q -ta -n_i muna -n
 Maria Juan GE ACAF want 3
 [_{N'''} e_i platanu ranti -na -n -ta].
 banana exchange NOM 3 AC
 Maria wants Juan to buy bananas.

In (27) the raised NP **Xwancha-q-ta** is separated from its own clause by the main verb **muna-n** and therefore cannot be said to be in the COMP-like CASE position of its own N''' at S-structure. The ultimate landing site for raised NPs at S-structure is a position within the matrix clause. This position, however, is not a θ -position. This conclusion is supported by the fact that object marking on the higher verb is impossible:

- (28) *Pidru yacha -wa -n [_i platanu ranti -sqa -y -ta].
Pedro know 1ob 3 banana exchange NOM 1 AC
 Pedro knows me to have bought bananas.

Sentence (28) is ungrammatical because **yacha** 'know' is marked for 1st person object **-wa-**, which is not its thematic object, while **yacha-** can only be marked for thematic objects. If the raised elements move to a non- θ - position, the ungrammaticality of (28) is correctly predicted. Quechua allows for adjunct non-argument positions in the verbal projection and these positions constitute the landing site for Raised elements.

Under this analysis the Projection Principle and the θ - criterion are not violated, and the raised NPs bear only one θ -role – the one assigned to them by the embedded verb.

If Raising is best accounted for by a rule Move α , where α = CASE, it is to be expected that the facts of Raising in Quechua will conform to the diagnosis of Wh-movement found in Chomsky (1977). This expectation is verified: the Quechua facts meet most of the diagnostic characteristics of Wh-movement.

A. It leaves a gap.

B. It creates apparent violations of subadjacency, the propositional island and specified subject conditions.

C. Chomsky argues that in English Wh-movement does observe the COMPLEX NOUN PHRASE CONSTRAINT (CNPC), since it obeys subadjacency and involves movement from COMP to COMP. Since NPs themselves possess a COMP-like CASE position in Quechua, Move CASE need not observe the Complex Noun Phrase Constraint. Raising is possible out of noun phrase-like complement clauses, but not out of relative clauses in NP configurations. This is the case even though, as surface strings, the two NPs may be nearly identical on the surface. Consider the contrast in grammaticality between (29) and (30):

- (29) a. Yacha -ni [_{N^{COMP}} runa -q ri -na -n -ta].
know 1 man GE go NOM 3 AC
 I know that the man will go.

- b. Runa -q -ta_i yacha -ni [_{N^{COMP}} e_i ri -na -n -ta].
man GE AC know 1 go NOM 3 AC

- (30) a. Riqsi -ni [_{N^{COMP}} [_S runa ri -sha -q -ta]].
know 1 man go PR AG AC
 I know the man who is going.

- b. *Runa -ta_i riqsi -ni [_{N^{COMP}} [_S e_i ri -sha -q -ta]].
man AC know 1 go PR AG AC

This contrast is not due to a violation of the CNPC in (30b) but rather to the impossibility of the matrix verb of assigning Case to a raised NP in the COMP of an S' contained within an NP. COMP is only an escape-hatch for Move CASE when it is Case- marked.

Let us return to Chomsky's diagnostic criteria. There is an apparent violation of the Wh-Island Constraint in Quechua, since Raising out of a clause containing a Wh-element yields grammatical results, as in (31):

- (31) Pi -qpa -ta -n_i platanu -ta_j Pidru-paq_k muna -nki
 who GE AC AF banana AC Pedro for want 2
 [e_i e_j e_k ranti -na -n -ta].
 exchange NOM n AC
 Who do you want to buy bananas for Pedro?

Since the raised elements do not move through a Wh-position, but rather through a CASE position, apparent violations of the Wh-Island Constraint are to be expected, and they do not constitute a counterexample to the compatibility of the Quechua raising phenomena with the diagnostic features of Wh-movement. In chapter 2 we suggested that Wh-movement in Quechua is not movement to COMP. Of course, when there is a clause-final lexical complementizer present, raising is impossible.

Finally, Raising is successive cyclic. Sentence (32) is an example:

- (32) Pi -qpa -ta -n_i muna -nki [[e_i llank'aqmasi-n] hamu -na -n -ta].
 who GE AC AF want 2 co-worker 3 come NOM 3 AC
 You want that the co-worker of whom will come.

In (32) the quantifier **pi-qpa** 'who' – marked for genitive Case within its NP – is first floated out of its NP through the COMP-like CASE position on N'', where it receives nominative Case (-Ø). Then it is raised out of its clause through the COMP-like CASE position on S', where it receives accusative Case. In (32) Move CASE has applied twice.

A possible alternative analysis for Raising would be to analyze it as an instance of Case agreement rather than of Move α, for Case agreement exists in Quechua as well. In Lefebvre (1980) a Case agreement rule is formulated which links the Case marked complementizer of a subordinate clause adjoined to an S to a Case-marked coreferential pronoun filling an argument position within the matrix S. The Case agreement rule is formulated as in (33):

- (33) Case Agreement:
 Given a structure as in
 [s' [s...] Case]... NP + Case..., for S' to be interpreted as predicating
 over NP, it needs to be non-distinct from it in Case.

This rule accounts for the facts of Case agreement in a sentence such as (34), where there is a pronoun in the matrix clause with the same Case as the subordinate clause:

- (34) [s_i [s_j Warmi hamu -sha -n] chay -ta], chay-ta riku -ni.
 woman come PR 3 that AC that AC see I
 I see the woman that is coming.

Even though Case agreement and Raising both involve co-Case marking, there is a difference between them which lies in the fact that Case agreement involves no variable, while Raising leaves a gap, interpreted as a variable, in the complement clause.

2.3. Case Theory and θ -Theory

In arguing that NP without Case cannot receive a θ -role Chomsky proposed to make Case theory follow from the θ -criterion in toto. Quechua exhibits several instances of a lack of parallelism between Case assignment and θ -role assignment. If these instances exist as a marginal phenomenon in English (e.g. in the Passive construction, in the Raising to Subject construction and in exceptional Case marking (Chomsky, 1981)), in Quechua, Case and θ -role assignment appear to operate independently from each other. What are the points where Case and θ -assignment do not parallel each other and how can we reconcile the two subtheories of Case and Theta? In this section we discuss the instances where Case and θ -theory are not parallel in detail and propose a unified account of the data.

2.3.1. Case Assignment without θ -Role Assignment by the Verb

A first lack of parallelism Case assignment and θ -role assignment in Quechua is found where a Case is assigned without a θ -role being assigned. An example of this was already pointed out in chapter 4:

- (35) Paqarin -ta allin -ta chay -ta ruwa -nki.
 tomorrow AC good AC that AC do 2
 Tomorrow you will do this well.

As any element in the domain of VP receives the Case feature [+ assigned by V], -ta marks a variety of relations between the predicate and constituents in its domain such as objects, manner adverbs, goal constituents, and time nominals. This disproves Stowell's statement that "a verb should only be permitted to assign Case to a complement to which it also assigns a θ -role" (1981, p. 195).

The Case suffix **-wan** occurring in (36) seems to link constituents in a similar way.

- (36) Xwan -ta Pidru -ta -wan riku -sha -ni.
Juan AC Pedro AC with see PR 1
 I see Juan and Pedro.

Traditionally, **-wan** in (36) has been argued to be a conjunction marker, but there are good reasons to analyze it as an instance of Case marking: it is limited to nominal expressions, is homophonous with the instrumental/comitative, and it shows the other morphological characteristics of Case markers discussed in chapter 3. As such it has a function parallel to **-ta**. While **-ta** serves to mark a variety of relations between the verb and constituents in its domain, **-wan** links a constituent to other constituents, which are not necessarily verbal. It can indicate circumstance, conjunction, accompaniment, instrument.

Both **-ta** and **-wan** are instances of the Case/ θ - asymmetry in Quechua: not just thematic relations can be Case marked but more general relations within the clause as well. Case thus appears to be a general mechanism for indicating relations between constituents.

2.3.2. Double Case Marking and the Uniqueness Criterion

In Quechua, constituents can be doubly marked for Case. The relevant possible combinations are listed in (37):

- (37) a. ... – Case – **wan**
 b. ... – **qpa** – Case

Examples of (37a) and (37b) are (38a) and (38b) respectively, and in (38c) they are combined:

- (38) a. Xwan -ta Pidru -ta -wan riku -sha -ni.
Juan AC Pedro AC with see PR 1
 I see Juan and Pedro.
- b. Xwan -pa -ta riku -sha -ni.
Juan GE AC see PR 1
 I see Juan's.
- c. Xwan -pa -ta -wan riku -sha -ni.
Juan GE AC with see PR 1
 And I see also Juan's.

An interesting lack of parallelism between Case and θ - marking is provided by combination (37b). It corresponds to two syntactic structures: the one given in (38b), and the result of Raising in (39):

- (39) Xwan -pa -ta_i yacha -ni [e_i hamu -sqa -n -ta].
Juan GE AC know 1 come NOM 3 AC
 I know that Juan has come.

Suppose now that Raising *X-pa-ta* in (39) has a structure as in (40), while dummy noun *X-pa-ta* in (38b) has a structure as in (41):

In (41) the doubly Case-marked phrase occurs in the specifier position of an empty noun, and controls the abstract Case position of the noun phrase. The abstract AGR position in (41) assigns genitive to the specifier of the dummy noun.

In fact the AGR position makes the dummy interpretation of 'the thing of', 'the place of', etc. possible. Its absence would make the NP non-referential. The difference in structure gives the right semantic interpretation for (40) and (41), reflected in the glosses of (39) and (38b) respectively.

A second difference between (40) and (41) follows as well: in (40) the genitive is assigned to N' when it is in the non-raised position of the element to be raised, i.e. in the subject position of the nominalized complement clause. Since in (40) there is no AGR present, and genitive can only be assigned by AGR, the genitive cannot be assigned in the NP itself but must come from elsewhere.

The difference in θ -marking follows naturally. Suppose that in (41) the referential element in the matrix N''', i.e. AGR, is the element that receives a θ -role from the matrix verb. Then the specifier receives a θ -role through being the possessor of 'the thing', 'the place', etc. In (40), in contrast, no θ -role is assigned to the N''' at S-structure.

2.3.3. Case is a Feature of Maximal Projections; θ -Roles are a Feature of Heads

A third aspect of the asymmetry between θ -role and Case assignment is that θ -roles percolate down to lexical heads, since selectional restrictions are deter-

mined by the heads, while Case is a property of maximal projections and percolates rightward in the tree (cf. chapter 3) onto the morphological Case carrier.

There thus appear to be several points Case and θ -role assignment do not parallel each other: (1) verbs assign accusative Case to [+N] elements that are in their domain without necessarily assigning them a θ -role; (2) while NPs may bear more than one Case, they are always assigned only one θ -role; (3) θ -role is a property of heads, Case is a property of maximal projections.

2.3.4. Case Marking as θ -Connectedness

From the asymmetries observed, it could be concluded that Case and θ -theory should be kept separate. This is not, however, the conclusion that we draw. The position we would like to advocate here is that θ -marking presupposes Case marking. We will say that Case marking allows for θ -connectedness, the establishing of semantic links between predicates and arguments. If it is true that Case marking is a necessary condition for θ -connectedness – and hence for co-Case marking with raising – we predict that verbs which do not assign θ -roles will not be raising verbs.

This prediction is borne out by the Quechua data. Raising verbs are both Case assigners and θ -assigners, e.g. *yachay* 'know', *willay* 'tell'. Verbs which do not assign θ -roles are not raising verbs. Verbs of movement, e.g. *riy* 'go', *hamuy* 'come', do not assign Case and therefore do not assign θ -roles to their complements. A verb like *niy* 'say' does not assign a θ -role to its quotative complement, although it may assign Case to it. In Lefebvre and Muysken (1982b) we explained the observation that *niy* is not a raising verb by pointing out that for many speakers it is not an embedding verb either. Further investigation revealed that there *are* speakers for whom *niy* is an embedding verb, but even for them, *niy* is not a raising verb. This fact shows that if θ -connectedness presupposes Case marking, the reverse is not true. For a verb to be a raising verb, it has to assign both Case and a θ -role to its object.

The explanation of the ungrammaticality of raising with *niy* in terms of θ -connectedness could also explain the fact, noted above in (17b), that Raising is impossible when the matrix verb has an object (often in the dative) in addition to the complement clause out of which constituents are raised. Suppose we say that raising can only take place when the verb directly θ -marks its complement, and that for each verb there is at most one such direct θ -role available. Then it is impossible to raise out of a complement that receives an indirect θ -role or no θ -role.

3. WH-MOVEMENT AS MOVE CASE

Is Wh-movement, involved in questions, distinct from Raising, or do both fall under Move CASE? Here we argue for the latter possibility. The relevant facts are as follows. Consider first the principal Wh-words, listed in (42):

- (42)
pi	'who'
ima	'what'
may	'where'
imayna	'how'
hayk'aq	'when'
hayk'a	'how much/how many'
mayqin	'which'

In Quechua, Wh-words function exactly like nouns. They are found in the same positions as nouns, and they take morphological Case. Wh-words may be found in their basic position in the sentence, as shown in (43). The most favoured position for Wh- words, however, is sentence initial, as in (44).

- (43) Mariyacha pi -ta -n riku -ra -n.
Maria who AC AF see PA 3
 Maria saw who.
- (44) Pi -ta -n Mariyacha riku -ra -n.
who AC AF Maria see PA 3
 Who did Maria see?

There is no stranding of Case markers (nor of postpositions) in Quechua. The Wh-word is always Case-marked, whatever its position might be. In Wh-clauses it is the Wh-word which bears the validation suffix if there is one in the clause (as shown in (43) and (44)), and no other element may bear it. The reason for this is that Wh-words are the elements focused upon in a sentence and the validation markers encode focus, among other things.

In embedded questions, the Wh-word may be fronted to the beginning of its own clause:

- (45) a. Muna -nki [pi -qpa platanu ranti -na -n -ta].
want 2 who GE banana exchange NOM 3 AC
 Who do you want to buy bananas?
- b. Muna -nki [ima -Ø Xwan -pa ranti -na -n -ta].
want 2 what CA Juan GE exchange NOM 3 AC
 What do you want Juan to buy?

It can also be found in the initial position of the matrix clause, in which case it shares the characteristics of raised nouns, such as being doubly marked for Case:

- (46) Pi -qpa -ta -n_i muna -nki [e_i platanuranti -na -n -ta].
who GE AC AF want 2 banana exchange NOM 3 AC
 Who do you want to buy bananas?

Assuming that the Wh-word acquires its second Case marker in the same way as raised elements do – that is, while passing through the COMP-like CASE position on S' – the question arises whether unbounded Wh-movement is distinct from Raising in any way. A systematic comparison between the two phenomena reveals an almost exact parallelism:

A. Unbounded Wh-movement, like Raising, is possible only with verbs that assign Case and a θ -role. Thus, unbounded Wh-movement is not possible with verbs of movement, as shown in (47):

- (47) a. Xwancha ri -n [pi riku -q].
 Juan go 3 who see AG
 Who does Juan go to see?
- b. *Pi -n Xwancha ri -n riku -q.
 who 3 Juan go 3 see AG
- c. *Pidru -ta -n Xwancha ri -n riku -q.
 Pedro AC AF Juan go 3 see AG
 Juan goes to see Peter.

In (47a) we have a Wh-element *in situ*, but the fronted equivalent in (47b) is ungrammatical, as is Raising in (47c).

B. Unbounded Wh-movement, like Raising, is possible only out of embedded sentential complements containing a nominalized verb, not out of sentences containing a tensed verb and a lexical complementizer. This is shown in (48):

- (48) a. *Pi -n/ Pi -ta -n muna -nki platanu-ta ranti -nqa chay -ta.
 who AF who AC AF want 2 banana AC exchange 3FU that AC
 Who do you want that shall buy bananas?
- b. *Ima -ta -n muna -nki Mariya ranti -nqa chay -ta.
 what AC AF want 2 Maria exchange 3FU that AC
 What do you want that Maria shall buy?

Unbounded Wh-movement out of adverbial clauses is also excluded because these clauses are not dependents of the verb, and hence do not get a θ -role.

C. In passive-like stative clauses, unbounded Wh-movement and Raising are impossible for agent-phrases moving to a non- θ -position in the higher VP:

- (49) a. *Pi -qpa_i nuqa [e_i maqa -sqa -n] ka -ni.
 who GE I beat NOM 3 be I
 By whom have I been beaten?

- b. *Xwancha -q_i nuqa [e_i maqa -sqa -n] ka -ni.

Juan GE I beat NOM 3 be 1

By Juan I have been beaten.

The sentences in (49) are ungrammatical because the verb **ka** 'be' does not assign a θ -role to the predicative complement.

D. Unbounded Wh-movement and Raising are both possible out of perception clauses, as shown in (50a) and (50b), respectively:

- (50) a. Ima -ta -n riku -nki Pidru -ta suwa -q -ta.

what AC AF see 2 Pedro ACrob AG AC

What do you see Pedro steal?

- b. Tata -y -ta -n riku -ni Pidru -ta maqa -q -ta.

father 1 AC AF see 1 Pedro ACbeat AG AC

It is my father that I see Pedro beating.

A full account of perception clauses is given in chapter 7.

E. If unbounded Wh-movement were achieved by movement of the Wh- element through a Wh-COMP position on S', there would be no explanation for the presence of **-ta** accusative Case in addition to the genitive Case in (51), nor for the ungrammaticality of (52). There the Wh-word bears only one Case marker – the one corresponding to the Case assigned to it in the embedded clause. We have explained the presence of double Case marking by assuming that the moved element receives a second Case precisely when it moves through the CASE-COMP position of the clause it is extracted out of.

- (51) Pi -qpa -ta muna -nki platanu ranti -na -n -ta.

who GE AC want 2 banana exchange NOM 3 AC

Who do you want to buy bananas?

- (52) *Pi -qpa muna -nki platanu ranti -na -n -ta.

who GE want 2 banana exchange NOM 3 AC

F. Wh-movement, like Raising, is optional, as shown by the grammaticality of (53), where the embedded Wh-word has remained in its deep structure position.

- (53) Muna -nki [pi -qpa platanu ranti -na -n -ta].

want 2 who GE banana exchange NOM 3 AC

You want who to buy bananas?

G. Neither long distance Wh-movement nor Raising triggers object agreement on the higher verb, since the movement is to a non- θ -position, and object marking is θ -sensitive in Quechua. Both (54) and (55) are ungrammatical, since the main verb bears an object marker referring to a θ -role assigned by the embedded verb.

- (54) *Nuqa -nchis -ta -qa; muna -wa-nchis [_i platanu
 I 4 AC TO want 3su-4ob banana
 ranti -na -nchis -ta.
 exchange NOM 4 AC
 He wants us to buy bananas.
- (55) *Mayqin -ni -nchis -ta; muna -wa-nchis
 which EUPH 4 AC want 3su-4ob
 [_i platanu ranti -na -nchis -ta].
 banana exchange NOM 4 AC
 Which one of us does he want to buy bananas?

Wh-movement and Raising are one and the same process. They are allowed and prohibited by the same class of verbs and in similar environments. They both create a context for double Case marking and both are optional. For these reasons, we conclude that in Quechua unbounded Wh-movement is an instantiation of Move CASE, like Raising. This amounts to saying that the effect of unbounded Wh-movement is accomplished in three steps:

- a. Movement of the Wh-phrase, as if it were an ordinary Case-marked element, from its deep structure position to the CASE position in its clause;
- b. Movement, through Move CASE, to a position in the matrix clause VP;
- c. Movement, sensitive to the feature Wh, to the matrix clause- initial position.

We will assume that in addition to long distance Wh-movement, an instance of Move CASE, there is a local rule of Wh-Fronting, limited to the clause in which the Wh-element is found. This is a case of adjunction to S, as we have argued in chapter 2, and it may be a subpart of a more general local Focus-Fronting rule. The resulting structure is as in (56):

- (56) [_S Wh_i [... e_i...]]

Presumably step c. of the long distance movement described above is also an instance of this local process.

4. MOVE CASE AND THE NON-CONFIGURATIONAL PROPERTIES OF QUECHUA

So far we have studied Raising phenomena and Wh-movement in Quechua in relative isolation, and analyzed them in terms of a rule of Move CASE. Through this rule Case-marked elements are moved to non-argument positions, and co-Case-marked with their dominating constituent if moved outside of that constituent. Schematically this is represented as in (57):

(57) ... $X + \text{Case}_p + \text{Case}_q$... $Y - \text{Case}_q$...

Here Case_p is assigned to the deep structure or thematic position of an element, and this element is co-Case-marked with Case_q when it leaves a constituent marked Case_q .

In the standard examples, the constituent out of which an element is moved is a clause marked for accusative Case, as discussed in previous sections. Here we would like to discuss briefly three other types of movement which could be considered instances of Move CASE: Floating, Scrambling and Extraposition.

As was shown earlier, Floating is a phenomenon of the same order as Raising, but differs from it in that the constituent out of which movement takes place is a noun phrase, and the element that moves is most often a quantifier, an adjective, or another modifying element. For the rest it falls under the configuration (57) in the same way as Raising. The landing site for Floating is a non-argument position. Examples of Floating include the following:

(58) a. $[e_i \text{ papa } -ta_i] \text{ llipin } -ta_i \text{ mikhu } -ni.$

potato AC all AC eat I

I eat all the potatoes.

b. $\text{Hayk'a } -ta_i \text{ muna } -nki [e_i \text{ t'anta } -ta_i].$

how many AC want 2 bread AC

How much bread do you want?

c. $[e_i \text{ runa } -ta_i] \text{ kallpa } -yuq -ta_i \text{ riqsi } -ni.$

man AC strength with AC know I

I know a strong man.

cf. Sporkhove 1988

In all three examples the moved element is co-Case-marked with the constituent dominating it in the underlying representation. The floated element is presented here as occurring to the right of the element it modifies to show clearly that there are two separate constituents, but directionality is not essential for the process of neither Floating nor Raising.

Scrambling in Quechua could be described as Move CASE without co-Case marking. Co-Case marking does not occur because the moved element does not leave its constituent (assuming that Scrambling is defined as local). In Quechua subordinate clauses, the word order is strict in that the verb must occur in clause-final position. There is considerable liberty in matrix clauses, as well as in the pre-verbal positions of subordinate clauses. Although in actual usage the large majority of sentences is SOV, we find post-verbal objects, pre-subject objects, post-verbal subjects, etc. Let us assume that all these deviations from unmarked

word order are instances of Move CASE. Given that the landing site of Move CASE is a non-argument position, what makes Scrambling possible then is the availability of non-argument positions at various places in the clause. This could be termed $\bar{A}$ availability in Universal Grammar.

A third type of phenomenon which can be analyzed as Move CASE is Extraposition, e.g. of relative clauses. Examples include (59):

- (59) [e_i runa -ta] riqsi -nki -chu [qaynunchaw hamu -q -ta]_i.
 man AC know 2 Q yesterday come AG AC
 Do you know the man who came yesterday?

Here the relative clause has been extraposed out of its noun phrase, but at the same time it is co-Case-marked with that noun phrase. The relative clause is extraposed to a non-argument position, and $\bar{A}$ -binds its trace in the original noun phrase.

It is not possible here to discuss Floating, Scrambling, and Extraposition phenomena in detail. We merely wanted to suggest avenues for analyzing them in the same way as Raising and Wh- movement, i.e. as instances of Move CASE. Let us return now to the $\bar{A}$ availability parameter. Languages which are + $\bar{A}$ availability will allow Scrambling. Furthermore, if they allow for co-Case marking, they will allow for Floating, Raising and Extraposition as well. Hence the latter possibilities imply Scrambling, but the inverse implication does not hold.

It is tempting to relate the $\bar{A}$ availability parameter to the virtuality parameter discussed in Zubizarreta and Vergnaud (1982). In that work, the claim was made that purported non- configurational languages such as Japanese have a VP (and hence an asymmetry between subjects and objects) at the level of grammar at which thematic relations are assigned, but that this VP node is invisible or virtual at the level of representation at which constituent order is defined. At that level, subject and object would be simply sisters. Assume now that this level is relevant for Move CASE as well. Since the configuration in which thematic roles are assigned has become invisible, particularly VP, the positions in the tree are non-argument positions (except for those θ -marked at deep structure), and Move CASE can move elements to these positions. While non-maximal projection nodes can be virtual in this way, maximal projection nodes cannot.

This is where the coindexation or co-Case marking parameter comes in. In those languages which are positively specified for co-Case marking, maximal projections can be virtual as well. A first approximation of the relevant rule would be:

- (60) A maximal node α is virtual with respect to β if β is coindexed with α .

Co-Case marking is the way coindexation is realized in Quechua (as well as in Warlpiri, for instance (Hale, 1979)), but it is conceivable that other formal indexation types could exist.

In summary, we have tentatively proposed two parameters: $\bar{A}$ availability and coindexation or co-Case marking. The interaction between these two parameters and Move CASE, accounts for the non- configurational properties of Quechua, allowing for Floating, Raising, Scrambling and Extraposition.

The two parameters give rise to four options:

A. $-\bar{A}$ availability, $-$ co-Case marking

In this type of language, (English may be an example), there is no Scrambling, Raising or Floating. Wh-movement occurs only through a morphologically specified position, and Extraposition occurs only to the right.

B. $-\bar{A}$ availability, $+$ co-Case marking

In this type of language, (French may be an example), we do find Floating of non-argument elements such as specifiers:

- (61) Max a beaucoup_i lu e_i de livres (cf. Obenauer, 1981)
Max has read many books.

Floating is permitted because quantifiers can be marked (abstractly in (61)) for the same Case as the element out of which they are moved.

The type of extraction found in (62) is also accounted for by assuming that French is [$+$ co-Case marking]:

- (62) De qui_i Jean a-t-il vu [la soeur e_i]?
John has seen the sister of whom?

C. $+\bar{A}$ availability, $-$ co-Case marking

This type of language is characterized by considerable freedom of constituent order, but there is no extraction either out of noun phrases or out of clauses. Examples may include Japanese.

D. $+\bar{A}$ availability, $+$ co-Case marking

This is the situation for Quechua and Warlpiri, where there is both movement within constituents and extraction of Case-marked elements out of constituents.

5. SUMMARY

It appears from the data analyzed in this chapter that extractions out of N''' and V''' projections are parallel. Move CASE operates out of both types of projection, due to the fact that CASE is a feature of all maximal projections. Co-Case marking can thus take place in both projections. This, in conjunction with $\bar{A}$ availability, accounts for the non- configurational properties of Quechua. In chapter 7 we will see that it is the type of tense involved in nominalizations that creates an open domain for extractions out of all types of nominalizations.

COMPLEMENTATION VERSUS RELATIVIZATION

Nominalizations in Quechua encode both relative and complement clauses. In both types of clauses the same nominalizing affixes appear: **-q**, **-na**, and **-sqa**, and the nominalized clause can be either nominal or verbal. In this chapter we will show that relative clauses (in particular headless relative clauses) closely resemble complement clauses on the surface, but that they are quite distinct from them both in structure and in interpretation.

The surface similarity between relative and complement clauses, however, poses a serious problem for a theory of grammar that tries to account for language learning in addition to giving a principled analysis of the facts. One can distinguish three main differences between relative clauses and complement clauses which could enable the learner to distinguish them:

- A. The subcategorization of complement clauses and of relativized NPs by the matrix verb is not the same;
- B. The distribution of Case is rather different in the two types of clauses;
- C. The position of the head may distinguish relative clauses from complement clauses.

The three differences will be systematically explored through an analysis of Quechua relative clauses dealing with the following distinctions: headed versus headless relatives; the relativization of subjects versus that of non-subjects; relative clauses with an overt antecedent versus free relatives.

These distinctions will be taken up in turn. It turns out once again that Case plays a central role here. The rule of Move CASE introduced in the previous chapter accounts for the complex distribution of Cases found in Quechua relative clauses.

1. THE STRUCTURE OF RELATIVE CLAUSES

1.1. *Problems Raised by the Construction*

One of the principal ways in which relative clauses can be formed is through the morphological process of nominalization of the subordinate verb (for other strategies used to form relative clauses see Lefebvre and Muysken, 1982a). Examples are given in (1)-(3). Sentence (1) contains a relative clause in which the embedded subject is relativized.

- (1) [[Hamu -sha -q] runa] ñaña -y -pa wasi -n -ta ri -n.
 come PR AG man sister 1 GE house 3 AC go 3
 The man who is coming goes to my sister's house.

In sentence (2) the embedded object is relativized, and in (3) an NP which is an oblique object in the embedded clause.

- (2) [[Riku -sqa -y] warma -qa] hamu -nqa.

see NOM 1 girl TO come 3FU

The girl I saw will come.

- (3) [[Paqarin rima -na -yki] runa -ta] riku -sha -ni.

tomorrow speak NOM 2 man AC see PR 1

I see to the man that you will be speaking to.

Let us assume for now that these three sentences have something like the following structure in common:

- (4)

They differ, among other things, in the choice of the nominalizer involved: In (1), where the subject is relativized, we find the agentive nominalizer **-q**; in (2), where the action of the relative clause has been realized already, we find the nominalizer **-sqa-** followed by a person marker; and in (3), where the action of the relative clause has not yet been realized, we find the nominalizer **-na-** followed by a person marker. Schematically:

- (5) **-q**: subject relativized, no person marker
-sqa: non-subject relativized, action realized, person marker
-na: non-subject relativized, action unrealized, person marker

Since the nominalizing suffixes **-sqa-**, **-na-** and **-q** were shown to participate also in the formation of complement clauses, as seen in the previous chapters, a first point that will have to be elucidated is the status of these three suffixes in relative clauses. Do they all belong to the same paradigm?

A second problem raised by relative clauses has to do with the position of the understood head in surface structure. In examples (1)-(3) the position of the relativized element is empty and the head is external to the subordinate clause. It is quite possible, however, to have relative clauses in Quechua where the head is internal to the subordinate clause, as illustrated in the examples (6)-(8), which correspond directly to (1)-(3):

- (6) [Runa hamu -sha -q] ñaña -y -pa wasi -n -ta ri -n.

man come PR AG sister 1 GE house 3 AC go 3

The man who is coming goes to my sister's house.

- (7) [Warma riku -sqa -y -ta -qa] hamu -nqa.

girl see NOM 1 AC TO come 3FU

The girl that I saw will come.

- (8) [Paqarin runa rima -na -yki -ta] riku -sha -ni.

tomorrow man speak NOM 2 AC see PR 1

I see the man that you will be speaking to tomorrow.

Considering the position of the understood head in (1)-(3) and (6)-(8), the question arises as to whether and how these positions are related. Since no head appears *outside* the subordinate clause in (6)-(8), we will call these HEADLESS relative clauses.

At surface structure, relative clauses (6)-(8) greatly resemble complement clauses, so that a sentence like the embedded clause in (9) may receive two interpretations: that of a relative clause and that of a complement clause.

- (9) [Qaynunchaw wasi ruwa -sqa -yki -ta] riku -ni.

yesterday house make NOM 2 AC see 1

I see the house that you built yesterday. RELATIVE CLAUSE

I see that you built a house yesterday. COMPLEMENT CLAUSE

The major problem here is to decide what the internal structure of the relative clauses with an internal head might be. Do they share the basic structure of those which have an external head -that is a structure like (10), resembling (4) - or is their structure like (11), resembling that of a complement clause?

(11)

In other words, are headless nominalized relative clauses dominated by NP or just by S'? In the following sections we address these questions in turn.

1.2. *Time Reference*

Most analyses of Quechua assume that the three nominalizers mentioned in (5), together with the infinitival nominalizer *-y-*, form one paradigm. This assumption is based on two morphological considerations: all four convert a verbal element into an element carrying nominal inflection, Case marking, etc., and furthermore, all four appear to be in complementary distribution with the paradigms of tense markers and of adverbial subordinators, as sketched in (12) and (13).

Syntactically, however, *-q* is best analyzed as part of the AGR (agreement) system of INFL, and the other nominalizers as part of the tense system. For that reason we propose the configuration in (13) rather than the one in (12), which is usually assumed in the literature on Quechua (an issue to which we return in chapter 7):

(12)

(13)

Structure (17), (= (11)), presents an even more radically surfacist representation of headless relative clauses, in which the headless relative clause would be embedded directly in the matrix clause as an S':

This structure would make headless relatives structurally similar to complement clauses, which they resemble superficially, as shown in (9).

The basis for a choice between (16a), (16b) and (17) is in part theoretical. Structure (17) is ruled out, for instance, if subcategorization facts have to be accounted for at the level of lexical insertion. The verb **hamu-** 'come' in (7) does not select a sentential subject, while **riku-** in (9) can take a clausal complement. If subcategorization is accounted for after the rules of Logical Form construction have applied and a head has been created, as it were, structures of type (17) would be allowed for relative clauses. Pesetsky (1982) argues for this option on the basis of facts from Russian. Note that Pesetsky's argument concerning the level at which subcategorization holds is based almost entirely on QP and NP, so that the Quechua facts, based on S' potentially represent an important extension of this analysis.

A second issue is the power of the interpretive rules which convert surface structure into Logical Form. If we assume that in Logical Form all relative clauses have a structure like (18):

then, to get from (16a) to (18), we need a rule raising the lexical NP into an empty, coindexed and c-commanding position; to get from (16b) to (18) we need a structure-building rule creating an NP, daughter of the top NP node, and to get from (17) to (18) we need a rule adding an NP above the S' node, as well as an antecedent NP node.

Given the fact that the rules creating extra structure at the level of Logical Form remain relatively unexplored and are possibly too powerful from a formal point of view, and more importantly because we need a structure like (16a) anyway for headed relative clauses in Quechua, we will adopt the fairly abstract

phrase structure configuration (16a) for headless relative clauses as well, rejecting both (16b) and (17).

In section 4, we will argue that at the level of Logical Form the head position is never empty. A rule of predication, like that suggested by Williams (1980), coindexing the head and the position of the relativized NP through the COMP position, will account for relative clause interpretation of the syntactically headless relative clause, distinguishing it from a complement clause. Structure (16a), which assumes that the highest NP is expanded as a nominal constituent with a sentential modifier, has the additional advantage over structure (16b) (where NP exclusively dominates S or S') of falling within the general pattern of X' theory. Additional syntactic arguments for (16a) will be presented in sections 1.5, 2.2 and 2.3 of this chapter.

1.4. *Headed and Headless Relative Clauses Related through Raising?*

Alternations such as the ones between (1)-(3) and the corresponding headless sentences (6)-(8) have constituted a classical argument for a raising analysis in work based on Navajo (cf. Schachter, 1972 citing earlier work of Brame) and Yavapay (cf. Kendall, 1974)). According to this analysis all relative clauses are generated headless, and headed relative clauses as in (1)-(3) are created by raising the relativized NP into head position. For Quechua, Muysken (1976) and Cole *et al.* (1982) have adopted the same analysis. Even though there are no headless relative clauses in English, Vergnaud (1982) has suggested a raising analysis to account for the formation of relative clauses in this language. In his analysis raising is a syntactic transformation which extracts the relativized NP out of its basic position in the relative clause and moves it to the head NP position through the COMP of the relative clause.

Here we will reject the possibility that a raising rule operates in the syntax, on the basis of arguments (to be presented in section 3) bearing on the distribution of floating Case markers. We assume instead that all NPs are generated in the position in which they appear at the surface. Any NP position is either lexically filled or not, and the correct distribution of empty and lexically realized NPs is accounted for by the binding conditions and by an independent filter of type (19).

$$(19) \quad *[_{NP} [_{S'} \dots NP\text{-lexical}_i \dots] \dots NP\text{-lexical}_i \dots]$$

This filter guarantees that the head NP and the relativized NP coindexed with it are never lexically inserted at the same time.

This may be not a grammatical filter, but rather a filter belonging to a set of general constraints on repeating information. Evidence for this supposition is provided by the fact that in some marginal cases, involving long distances between the matrix or the head NP and the relativized NP, two lexical NPs *may* appear. If our filter were grammatical it would have to be part of the phonological component.

Alternatively, a way to derive (19) would be through principle C of the Binding theory, which states that lexical elements may not be bound within the sentence (Chomsky, 1981). Another possible way, finally, is to say that variables cannot have lexical content and that one of the two NPs in (19) would have to be a variable in an $\bar{A}$ chain. This latter approach, we think, is preferable. Other possibilities come to mind as well. In section 3 we further specify the general outline of our analysis.

While arguing that there is no raising rule operating in the syntax, we suggest that there *is* such a rule operating in Logical Form, raising the relativized NP to the head position in headless relative clauses. This suggestion follows from the assumption that in Logical Form all relative clauses have a structure of type (18). At the level of Logical Form there are no headless relative clauses.

1.5. COMP as a Possible Position for the Understood Head

So far we have presented examples of relative clauses in which the relativized NP is found either in the position of the head as in (1)-(3) or in its basic position within the relative clause itself as in (6)-(8). There exists another possible position for the relativized NP, however: the COMP of the relative clause itself. Sentence (20) exhibits this fact for a non-subject relative clause:

- (20) [e_i Riku -sqa -y warma -ta_i] hamu -nqa.
 see NOM I girl AC come 3Fu
 The girl I saw will come.

Note here that the accusative -*ta* Case on *warma* 'girl' can only be assigned by the lower verb and not by the higher verb, since the relative clause occupies the subject position with respect to the matrix verb, and the latter is intransitive. By what mechanism in the grammar is the COMP of the relative clause made available for the understood head? We suggest that it is by means of the rule Move CASE, discussed in the previous chapter.

Move CASE was suggested to account for the facts of raising, since it allows Case-marked (and therefore [+N]) elements of a lower clause to be raised out of that clause through a COMP-like CASE position on the S' level. Why would the raised NP remain in the COMP position as in (20)? The answer to this question follows from the theory of government and Case assignment under government. In chapter 5 it was argued that the raised element receives Case from the matrix verb when passing through the COMP-like CASE position of the clause out of which it is raised. Case assignment into COMP is possible only when the matrix verb governs the embedded clause. In relative clauses, Case assignment into COMP by the matrix verb cannot occur, since the COMP of the embedded clause is not governed by the matrix verb, the relative clause being embedded within an NP. In this case, the COMP-like CASE position is thus the highest position where the moved NP can land, as in (20). This explains the

contrast in grammaticality between (21) involving Raising out of a complement clause, and (22) involving Raising out of a relative clause. It is clear that in both sentences the raised NP has landed outside the COMP of the embedded clause.

- (21) Runa -q -ta_i yacha -ni [_{N^m} e_i ri -na -n -ta].
man GEAC know I go NOM 3 AC
 I know that the man will go. (cf. I know him to be going.)
- (22) *Runa -ta_i riqsi -ni [_{N^m} [_S e_i ri -sha -q -ta]]
man AC know I go PR AG AC
 I know the man who is going. (cf. I know him who is going.)

Note incidentally that there is a structure corresponding to the string in (22) which is grammatical, namely when the relative clause is extraposed out of its NP, as in (23), and receives the same Case as the constituent it is extracted out of:

- (23) [e_i Runa -ta] riqsi -ni [_S ri -sha -q -ta]_i.
man AC know I go PR AG AC
 I know the man who is going.

The above data confirm our analysis of relative clauses as embedded within an NP, in contrast to complement clauses. If headless relative clauses were syntactically like complement clauses there would be no explanation for the contrast in grammaticality between (21) and (22).

Returning to (20), the Case-marked element in COMP functions as an operator and binds a variable in the basic position of the understood head within the relative clause. Move CASE accounts satisfactorily for the availability of the COMP of the relative clause as a position for the understood head. Under this analysis Quechua relative clauses are not as dissimilar as they look at first glance from French and English relative clauses, which contain an operator in COMP, lexically expressed as a Case-marked relative pronoun and binding a variable in the relative clause.

Now, what happens in the much more common situation where Move CASE has not applied, that is when the understood head is found in its basic position within the relative clause? If Move CASE is a transformational rule, there is no way in which the two positions involved can be linked when Move CASE has not applied. If however Move CASE is a rule which coindexes the two relevant positions operating without regard to which position contains the lexical element, the two sets of data can be accounted for in a uniform way. Indeed, when the Case-marked lexical NP is in COMP, it binds a variable within the relative clause; when the Case-less lexical NP is in its basic position in the relative clause, the Case of that NP is linked to Case in COMP (morphologically realized on the nominalized verb), which functions as an operator. Consequently we will assume that the COMP position of Quechua relatives, if it contains no lexical element, is filled by a Case operator linked to the position of the relativized NP.

Having discussed the general structure of relative clauses we now turn to a more specific analysis of relative clauses out of subject position (**-q** clauses) and then of those out of non-subject position.

2. **-Q** RELATIVES AND OTHER **-Q** CLAUSES

The **-q** nominalizer is morphologically ambiguous in that it marks not only relative clauses but other clause types (past habituals, purposives, perception complements) as well. How can the language learner keep the different clause types apart? This question is particularly relevant because the relative clauses do not always have an external antecedent. In this section we explore the differences between the clause types, focussing on their internal structure, their distribution, and the Case marking of the head.

2.1. *General Structure*

We find references to headed **-q** relatives in Quechua in all sources, including Anonymous (1586), Holguin (1607), Middendorf (1855; 1972) and Cusihuamán (1976). To our knowledge there is not a single dialect where relative clauses similar to (24) cannot be formed.

- (24) Mariya riku -q runa -qa
 Maria see AG man TO
 the man that sees Maria

Since **-q** marks clauses in which the subject has been relativized, (24) cannot be interpreted as (25):

- (25) *the man that Maria sees

There can be headless subject relatives. Headless (26) corresponds to headed (24):

- (26) runa Mariya riku -q -qa
 man Maria see AG TO
 the man that sees Maria

Evidence that (26) is not simply a right-branching structure as in (27) is provided by (28), where a time adverb occurs before the subject:

(27)

(28)

qaynunchaw runa Mariya riku -q -qa
yesterday man Maria see AG TO
 the man that saw Maria yesterday

In our analysis, subject relative clauses have the general structure of (29):

(29)

In (29), which presents the structure of the headed subject relative clause, the subject of the *-q* clause is *pro*, which bears the features of person, Case, etc. We have analyzed the tree in (29) as containing two types of indexes: the *i* subscripts,

which indicate anaphoric binding, and the *j* superscripts, which indicate the ordinary agreement relation between the AGR node and the subject NP. The *pro* in subject position is governed by AGR, realized in (29) as **-q** bearing the feature [+anaphoric]. AGR in (29) is thus an $\bar{A}$ anaphor, bound by the Case operator in COMP. Binding is indicated with *i* subscripts. AGR could be said to be intrinsically nominative. In our analysis, the anaphoric element **-q** has argument status and carries the thematic role of the subject. The *pro* in subject position, co-superscripted with and governed by the anaphoric AGR, in fact has no independent thematic role and is an adjunct to AGR. It is bound by the operator in COMP only because of its sharing a superscript with AGR.

The index *i* percolates from COMP to *S'*, and the relative clause interpretation is established by the *S'* and the antecedent sharing an index.

Subject relative clauses differ structurally from other clauses formed with the **-q** affix, such as:

A. past habitual constructions with **-ka-** 'be':

- (30) Ri -q ka -rqa -ni.
 go AG be PA I
 I used to go.

B. complements of motion verbs such as **ri-** 'go' and **hamu-** 'come':

- (31) Puñu -q ri -ni.
 sleep AG go I
 I go to sleep.

These two clauses have the structure of (32), where [e] is the trace of the embedded NP moved to an NP position in the matrix clause in the case of (30), and controlled PRO in the case of (31).

(32)

a. past habitual

c. complement of motion verbs

C. complements of perception verbs as in (33) which have the structure of (34), as we will argue below.

- (33) Xwancha -ta puri -q -ta riku -ni.
Juan AC walk AG AC see I
 I see John walking.

(34)

(34) is a structure of control in which the subject of the -q clause is a big PRO.

In headless relative clauses as in (26), the subject position of the -q clause is filled by the noun corresponding to the understood head of the clause. This represents a major difference from the other -q clauses in which the subject position has to be empty at surface structure. This difference follows from our analysis of -q in these two groups of clauses. In the case of subject relative clauses there can be a lexical NP in subject position because this position is governed by AGR (-q) and therefore there can be a Case assigned to it. In the other -q clauses, -q does not govern the subject position through AGR since here INFL is [-T], and there can be no Case assigned to the subject position. This analysis makes the correct predictions, for in the case of past habituals the subject of the -q clause has to move to the matrix clause in order to be assigned Case. In the case of complements of perception verbs and of motion verbs the subject of the -q clause, is a big PRO which may not be governed.

2.2. Position of the -q Clauses within the Matrix

Noun phrases together with their modifying subject relative clauses can occur in two positions: in positions generated by the phrase structure rules in the matrix clause, and in the TOPIC positions on the matrix S'' level. In (35) the relative clause appears in the NP position inside of VP:

- (35) Santiyagu hamu -q warma -ta riku -n.
Santiago come AG girl AC see 3
 Santiago sees the girl that is coming.

In (36) it is in the leftmost TOPIC position.

- (36) Hamu -q warma -ta, Santiyagu riku -n.
come AG girl AC Santiago see 3
 Santiago sees the girl that is coming.

In (37) an NP in the rightmost TOPIC position on the S'' level is relativized:

- (37) Santiyagu riku -n, hamu -q warma -ta.
Santiago see 3 come AG girl AC
 Santiago sees the girl that is coming.

In (36) and (37) the head and the relative clause are separated from the matrix clause by a pause. When they are located within the S, however, they cannot be separated from the matrix clause by a pause, as is shown by the ungrammaticality of (38):

- (38) *Santiyagu, hamu -q warma -ta, riku -n.
Santiago come AG girl AC see 3
 Santiago sees the girl that is coming.

While matrix Case marking of the head is obligatory when the head is inside of S, as will be shown in section 2.3, it appears to be optional for some speakers when the head is generated on the S'' level. Consider the contrast between (39) and (40), which correspond to (35) and (36), respectively:

- (39) *Santiyagu hamu -q warma riku -n.
Santiago come AG girl see 3
 Santiago sees the girl that is coming.
- (40) ?Hamu -q warma -qa, Santiyagu riku -n.
come AG girl TO Santiago see 3
 The girl that is coming, Santiago sees.

Note that this should not constitute a problem for the Case Filter. If Case marking is conceived of as marking the relationship between the head and its arguments, elements in TOPIC position are not arguments themselves, but predicated of arguments, and therefore need not be subject to the Case Filter.

When in TOPIC position, as in (40), the relative clause may take the topic marker *-qa*. Within the S, as e.g. in (35), the topic marker *-qa* cannot occur, as

is shown by the ungrammaticality of (41):

- (41) *Santiyagu hamu -q warma -ta -qa riku -n.
Santiago come AG girl AC TO see 3

It is not possible either to have another element in TOPIC position in addition to the relative clause:

- (42) *Santiyagu -qa, hamu -q warma -ta -qa, riku -n.
Santiago TO come AG girl AC TO see 3

Obviously, if the relative clause is inside of S, however, there may be another TOPIC:

- (43) Santiyagu -qa, hamu -q warma -ta riku -n
Santiago TO come AG girl AC see 3
 Santiago sees the girl that is coming.

Sentences (35)-(43) show that headed subject relatives can occur either inside of S, or at the S" level in a leftmost or rightmost TOPIC position. (Headless relative clauses have the same distribution with respect to topicalization.) Note that it is impossible in Quechua to separate the head of a -q relative clause from the clause itself, e.g. by putting the clause in TOPIC position. Both (44a) and (44b) are ungrammatical:

- (44) a. *Hamu -q (-ta) (-qa), Santiyagu warma -ta riku -n.
come AG AC TO Santiago girl AC see 3
 b. *Santiyagu warma -ta riku -n, hamu -q (ta) (-qa).
Santiago girl AC see 3 come AC AG TO

It is possible however to extrapose the relative clause as shown in (45) (cf. our discussion on extraposition and co-Case marking in chapter 5). In (45) the relative clause is marked with the same Case, -ta, as the antecedent.

- (45) Runa -ta riqsi -ni chay -pi llank'a -q -ta.
man AC know I that LO work AG AC
 I know the man who works there.

Relative clauses and their heads behave like ordinary NPs with respect to their distribution, and unlike the other -q clauses. Other -q clauses – past habituals and complements of motion verbs (see (30) and (31)) – do not occur in TOPIC position; they have to remain in the VP next to the main verb. Complements of perception verbs can occur to the right of the verb, as shown in (46), which has

the same interpretation as (33):

- (46) Xwancha -ta riku -ni puri -sha -q -ta.
 Juan AC see I walk PR AG AC
 I see John walking.

The S' complement **puri-sha-q-ta** cannot fill the TOPIC position however, as shown by the ungrammaticality of (47):

- (47) *Xwancha -ta riku -ni puri -sha -q -ta -qa.
 Juan AC see I walk PR AG AC TO
 I see John walking.

The fact that subject relative **-q** clauses behave like NPs as far as their position in the matrix is concerned, differing in this respect from other **-q** clauses, constitutes an argument in favor of our analysis of **-q** relative clauses as forming one constituent with their antecedent.

2.3. Case Marking

Before discussing Case marking on subject relatives, i.e. relative clauses in which the embedded relativized NP is in subject position, we briefly describe Case marking within the relative clause itself, comparing it with the distribution of Case in other **-q** clauses.

If in subject relative clauses, the embedded subject position is lexically filled, as in (48), it is coindexed with the agentive marker **-q** and cannot appear in the genitive Case, unlike subjects in most nominalized clauses formed with the **-na/-sqa-** nominalizers.

- (48) a. Runa, Mariya -Ø riku -q_i...
 man Maria CA see AG
 the man that sees/saw Maria
- b. *Runa -q Mariya -Ø riku -q...
 man GE Maria CA see AG
 the man that sees/saw Maria

This shows that subject relatives formed with **-q** are exclusively V^{'''}, unlike embedded clauses formed with **-na-** and **-sqa-**, which can have either V^{'''} or N^{'''} as their maximal projections. The direct object may be marked with objective **-Ø** Case, as in (48a), or with accusative **-ta**, as in (49):

- (49) Qaynunchaw runa Mariya -ta riku -q
 yesterday man Maria AC see AG
 the man that saw Maria yesterday

In other **-q** clause types (perception clauses, complements of motion verbs and past habituals), the subject is empty and may not receive Case, as mentioned in section 2.1. In these clauses the object is marked with objective **-Ø** Case.

Externally, relative clauses carry the Case of their grammatical function within the matrix clause. Consider (50)-(52):

- (50) a. Runa Mariya riku -q -Ø hamu -sha -n.
 man Maria see AG NO come PR 3
 The man that saw Maria is coming.
- b. Mariya riku -q runa -Ø hamu -sha -n.
 Maria see AG man NO come PR 3
 The man that saw Maria is coming.

In the headless (50a), the relative clause is marked with **-Ø** Case, since it is the subject of the matrix clause. In (50b) the head is marked nominative.

Similarly in (51) the relative clause receives the **-ta** accusative Case assigned by the matrix verb **riqsi**- 'know'. Note that Case in all these examples is assigned regardless of whether the clause is headed or not, while the interpretation remains the same.

- (51) a. Runa Mariya riku -q -ta riqsi -ni.
 man Maria see AG AC know I
 I know the man that saw Maria.
- b. Mariya riku -q runa -ta riqsi -ni.
 Maria see AG man AC know I
 I know the man that saw Maria.

In (52) dative Case is assigned to the relativized NP:

- (52) a. Runa Mariya riku -q -man qulqi -ta qu -ni.
 man Maria see AG to money AC give I
 I give the money to the man that saw Maria.
- b. Mariya riku -q runa -man qulqi -ta qu -ni.
 Maria see AG man to money AC give I
 I give money to the man that saw Maria.

The (a) versions of (51) and (52) are problematic in that the Case marking on the relative clause refers to the Case of the understood head in the matrix. Assuming that CASE is a property of nominalized clauses as well as of noun phrases (see chapters 2 and 4), there are two separate positions available for Case in the structure adopted for subject relative clauses: one in the N''' expansion,

relating the head to the matrix verb, and one in the V''' expansion. Schematically this is presented in (53):

When we apply this general schema to (51a) and (52a) we see that there **-ta** and **-man** occur on the relative clause and hence Case_1 functions as if it were Case_2 . In (51) the **-ta** marker and in (52) the **-man** marker refer to the matrix Case relation. How do we resolve this discrepancy?

The nature of **-q** on the one hand, and the structural relation between the V''' clause and the matrix verb, on the other, account for the above facts. Since the relative clause is not governed by the matrix verb, nor Case-marked by the antecedent, the Case it could receive, $[\alpha \text{Case}_1]$, is not assigned, and the **-ta** and **-man** Cases on the nominalized verb in (51a) and (52a) have to percolate to the matrix NP, the Case_2 position. The type of percolation follows from the percolation conventions sketched in chapters 3 and 4. This explains the relation between the **-ta** and **-man** found on the nominalized verb and the Case assignment by the matrix verb.

In complements of perception verbs, however, the complement is not embedded within NP. It is directly governed by the matrix verb, from which it receives its Case:

Here the verb **riku-** 'see' selects as **-ta** marked complements both the direct object and the sentential complement.

If this analysis is correct, there still remains the problem of how, in examples such as (51a), **runa**, the understood head of the relative clause, gets Case. We suggest that it is through the same process that *pro* is assigned Case in that same position in headed relative clauses: under government by AGR (-q), along the lines suggested by *Finer* (1983; 1985). The subject relative being a V''' , the lexical NP in subject position will receive nominative Case.

2.4. -q Interpretation

Recall that in the basic analysis presented so far, the structure of subject relatives is essentially that in (55):

(55)

Either the head NP or the relativized NP is lexically filled, since the expansion of phrase structure nodes is optional. There is a general constraint against their both being filled, as discussed in section 1.4. An operator (see section 1.5) fills the COMP of the relative clause if no lexical NP is inserted there. This operator is coindexed with and binds the AGR position, which is an $\bar{A}$ anaphor. Case_2 of the whole NP corresponds either to the Case suffix on the head noun, or, when there is no head, to the Case suffix on the nominalized verb. Since there is no overt tense suffix, the tense reference of the relative clause is essentially free.

The **-q** suffix on the verb was analyzed as the realization of AGR. AGR was

shown to have the property of Case marking the co-superscripted subject position which is either a *pro* or a lexical element. Thus in (55) there is a chain, represented by the superscript (*j*), between AGR and the subject position and the COMP position, linked to another chain, represented by the subscript *i*, between AGR and COMP.

The interpretive rule we formulate to account for Quechua relative clauses is based on Williams' (1980) rule of predication, as in (56):

- (56) Given a configuration [_{NP} [_S'... NP_i...]] NP_j], interpret the embedded clause as predicating over the set of potential referents of the matrix NP.

Following this definition, in structure (55) the clause is predicated of N". The COMP position of the V''' is coindexed both with an NP position within the embedded clause and with the V''' node itself. It follows that N" is linked by predication, through COMP, to a co-referential NP within the embedded clause.

This general rule of relative clause interpretation applies to both headed and headless relative clauses. Indeed, it was argued (in section 1.4) that at Logical Form there are no headless relative clauses. When the predication rule applies, the head is always specified. This interpretation rule will be shown to apply also to non-subject relative clauses, whether V''' or N'''.

3. NON-SUBJECT RELATIVE CLAUSES

In Cuzco Quechua it is possible to relativize NPs in embedded non-subject argument positions by means of affixing the nominalizers **-sqa-** 'action realized' or **-na-** 'action unrealized' to the verb of the relative clause. Since these nominalizers are used in many other constructions as well, the problem again arises of how relative clauses differ, exactly, from other constructions. How are they to be distinguished? As with subject relatives, the Case marking on the head and the position of the relative clause force us to analyze non-subject relatives differently from other clause types.

Relative clauses formed with the **-na-/sqa-** nominalizing suffixes may be headed or headless. As was argued in section 1.3, even if headless relative clauses are embedded within N''', and are structurally distinct in this respect from complement clauses. In section 3.1. we contrast the internal structure of **-na-/sqa-** relative clauses with that of complement clauses.

In **-na-/sqa-** relative clauses, the understood head may be found in three positions: in its original position within the relative clause, in the COMP position of the relative clause and in the head position. The problem of the position of the understood head in non-subject relative clauses is tightly linked to the analysis of Case, and will be discussed in section 3.2.

In section 3.3. we discuss the position of the relative clause within the matrix clause with special reference to Case. Finally in section 3.4. we take up the question of why subject relative clauses cannot be formed with **-na-** and **-sqa-**.

3.1. *Non-Subject Relatives and -na-/-sqa- Complements*

In previous chapters, complement clauses were shown to have either the internal structure of an N''' or that of a V''' . Does this distinction hold for **-na-/-sqa-** relative clauses as well? The major difference between N''' and V''' complements is the Case distribution within the nominalized clause, as shown in (57):

(57)	N'''	V'''
Case subject	genitive	nominative
Case object	-Ø	-Ø or -ta accusative

These differences between nominal and verbal constructions hold for relative clauses as well. Compare (58), an N''' non-subject relative, to (59), a V''' non-subject relative:

- (58) runa -q qulqi -Ø qu -sqa -n warmi -man
man GE money CA give NOM 3 woman to
 the woman to whom the man gave the money

In (58) the subject is marked genitive, and the object is **-Ø**.

- (59) runa -Ø qulqi (-ta) qu -sqa -n warmi -man
man NO money AC give NOM 3 woman man
 the woman to whom the man gave the money

The relative clause in (59) is comparable to the V''' complements in that the subject is **-Ø** nominative and the object is optionally marked with **-ta**. In these examples the relativized NP appears with its Case external to the relative clause. We will see in the next section, 3.2, that this is not the only possibility.

Even though relative clauses are either N''' or V''' structures, as shown in (58)-(59), they differ from complement clauses with respect to the range of possible combinations of Case marking on subject and object. On the basis of the Case distribution, as discussed in chapter 4, it appears that the V''' configuration is marginal for relative clauses formed with **-sqa-** and non-existent (although theoretically possible in our view) for relative clauses formed with **-na-**. This constitutes a difference between **-na-/-sqa-** complement clauses, which occur freely and frequently as both N''' and V''' , and **-na-/-sqa-** relative clauses.

3.2. *The Position of the Understood Head and Case Floating Phenomena*

Disregarding the distinction between N''' and V''' structures, non-subject relatives can take various forms, depending on the position of the lexical NP and the type of Case marking present. The following sentences are all grammatical for some speakers of Cuzco Quechua, meaning 'The girl I saw will come.'

- (60) a. Warma riku -sqa -y -ta, hamu -nqa. HEADLESS
girl see NOM 1 AC come 3FU

b. [_{NP} [_S NP-Ø V-NOM-CASE_{rel}] e] VP

- (61) a. Riku -sqa -y warma -ta, hamu -nqa. HEADLESS
see NOM 1 girl AC come 3FU

b. [_{NP} [_S e V-NOM NP-CASE_{rel}] e] VP

- (62) a. Riku -sqa -y -ta warma -Ø hamu -nqa. HEADED
see NOM 1 AC girl NO come 3FU

b. [_{NP} [_S e V-NOM-CASE_{rel}] NP-Ø] VP

- (63) a. Riku -sqa -y warma -Ø hamu -nqa. HEADED
see NOM 1 girl come NO 3FU

b. [_{NP} [_S e V-NOM] NP-Ø] VP

Some speakers accept (61) but not (62), others accept (62) but reject (61). All accept (60) and (63).

A right-branching structure analysis of type (64), in which **warma** is outside the embedded S, is ruled out for (60a) on the basis of the fact that time adverbs within the relative clause precede the caseless relativized NP, as in (65), which is of the same type as (60a).

- (64) * [_{NP} Warma [_S riku -sqa -y -ta]] [_{VP} hamu -nqa].
girl see NOM 1 AC come 3FU

- (65) [_{NP} [_S Qayna warma riku -sqa -y -ta]e] [_{VP} hamu -nqa].
yesterday girl see NOM 1 AC come 3FU

The girl I saw yesterday will come.

What has happened to the Case marker of the relativized NP (CASE_{rel}) in (60b)-(63b)? In (63) it is absent, but in (60)-(61) it occurs outside of its S. The examples presented differ in various ways. In (60) the relativized NP occurs within the relative clause but its Case appears on the nominalized verb; in (61) there is no relativized NP in S, but it appears with its Case to the right of the nominalized verb in the COMP of the embedded S'; in (62) we find the Case of the relativized NP on the nominalized verb and the NP itself to the right of it in head position. The three cases are often characterized as instances of Case Floating.

This phenomenon apparently is quite rare among the languages of the world. It has been found in several Amerindian languages of the Southwestern United States, e.g. Yavapai, as described by Kendall (1974). Weber's (1978) thesis on relative clauses in Huánuco Quechua, a dialect which differs from Cuzco Quechua in many respects, presents surprisingly similar Case promotion phenomena.

How do we account for the strangeness of the phenomena encountered (descriptive adequacy) without sacrificing the generality of our descriptive apparatus? We will try to provide an analysis for (60)-(63) which departs as little as possible from the syntactic theory of Chomsky (1981) and which provides an explanation for the existence of the four options described, and for the relations between them.

Assume that the phrase structure rules can freely generate a large number of structures, by lexicalizing phrase structure positions or not, and that a set of independent filters of various kinds will rule out ungrammatical structures. Let us take as the basic structure of relative clauses the reduced structure given in (66), in which only the nominal positions and their Case are expanded. We use actual CASE positions here rather than features on nodes for the sake of clarity in the presentation.

As is shown in (66), three base-generated CASE positions are possible: 2, which is part of the expansion of the relativized NP, 4, which is part of the expansion of the relative clause V''' , and 6, which is part of the expansion of the head NP.

CASE position 4 is either identified through percolation of a Case suffix onto the nominalized verb, or it is lexically filled by a [+N] 'carrier' with a Case marker

affixed to it: i.e. the relativized NP. Assuming structure (66) and assuming free generation of both nominal elements (by lexical insertion) and Case elements (by word formation rule), we get an enormous number of possible structures, only a few of which are grammatical. We will formulate a number of principles, belonging to different components of the grammar, which together insure the correct outputs.

A first requirement is that we should be dealing with a relative clause structure. We needed an interpretive rule of predication yielding relative clause interpretation stated as (67), repeated from (56):

- (67) Given a configuration $[_{NP} [_{S'} \dots NP_i \dots] NP_i]$, interpret the embedded clause as predicating over the set of potential referents of the matrix NP.

This interpretive rule, general to relative clauses in most languages, insures identity in reference between a head NP and an NP within the relative clause.

Second, assuming free insertion of lexical elements in available NP positions and given that there can be only one position containing lexical material at S-structure, we need a filter, already discussed in section 1.4. and repeated here as (68) for convenience.

- (68) $*[_{NP} [_{S'} \dots NP \text{ lex}_i \dots] \dots NP \text{ lex}_i \dots]$

Filter (68) guarantees that the head NP and the relativized NP identical to it are never both lexically inserted.

Third, we need a rule having the same effect as Move α , coindexing the NP position within the relative clause with the COMP-like CASE position on the V'''. In section 1.5 we argued that the rule accounting for this is:

- (69) Move α , where α is CASE

Note that the empty nodes will have the following characteristics: within the relative clause itself the basic NP position will be a variable since it is left empty by Move CASE, which has the same effect as Move Wh. The COMP position will be filled by a Case operator. In the case of heads which are matrix subjects the head position, if empty, will be bound by a *pro* cosuperscripted with AGR of the matrix clause. In the case of heads which are matrix objects the head position will be properly governed by the matrix verb. These empty NPs as well as the lexical ones will all have to be assigned Case, given that the Case Filter applies to variables and *pro* as well as to lexical nominal elements. We now turn to the complex problem of Case distribution in the clauses under study.

Given (66), how do we account for the correct distribution of Case? In (66) there are three Case positions, each of which is paired with a [+N] position. All three Cases cannot be morphologically realized at the same time. The facts are

(60) (repeated)
Warma riku -sqa -y -ta, hamu -nqa. HEADLESS
girl see NOM 1 AC come 3FU

- (61) (repeated)
 Riku -sqa -y warma -ta, hamu -nqa. HEADLESS
see NOM 1 girl AC come 3FU

(62')

- (62) (repeated)
 Riku -sqa -y -ta warma hamu -nqa. HEADED
see NOM 1 AC girl come 3FU

(63')

- (63) (repeated)
 Riku -sqa -y warma hamu -nqa. HEADED
see NOM 1 girl come 3FU

In (60'), (62') and (63'), the Case in COMP functions as an operator, represented as $-\emptyset$ in the tree structures. In (61') COMP is filled by the relativized NP marked for Case which also functions as an operator, as argued in section 1.5. The chains are thus all headed by an operator in COMP, which is coindexed with S' through a general COMP... S' index percolation convention.

The Case assigned to the relativized NP within the relative clause will be assigned following the rules of Case assignment formulated in chapter 4. After these rules have applied, the right surface configurations obtain, that is (70a)-(70e). The difference between (62), in which the nominalized verb is marked for accusative Case, and (63), in which the nominalized verb is not so marked, reflects the difference in the spelling out of Case between a V''' structure and an N''' structure. Recall from chapter 4 section 3.2 that objective Case is realized as $-\emptyset$ in a [+N] context and $-ta$ in a [-N] context. Hence (62) is not distinct from (63), which is a welcome result. Case assignment to chains accounts elegantly for the fact that Case 2 and Case 4 can never both be morphologically realized: if Case is assigned once to a chain it must be realized once.

Output (70a) does not occur in **-na/-sqa-** relative clauses (nor in subject relatives, of course), as shown by the ungrammaticality of (71):

- (71) *Warma -ta riku -sqa -y hamu -nqa.
girl AC see NOM 1 come 3FU

Why is (71) (with the structure in (70a)) ungrammatical, since Case assignment to a chain makes position 4 Case-marked although Case is not realized there? We suggest that the Case 4 position has to be realized since it is Case 4 which is the operator in the relative clause construction under study and specifies which NP is being relativized within the sentence (in much the same way as Case-marked relative pronouns do in French or in English).

These facts provide a strong argument for the assumption that the Case Filter applies at the level of Logical Form. Since Case assignment is made possible through Wh-chains and since the latter must be indicated at the level of Logical Form, Case assignment to a chain has to be relevant at the level of Logical Form, and so does the Case Filter. Crucial here is the grammaticality of (60), where the **-ta** Case on the nominalized verb is interpretable as the Case of the relativized NP **warma**, which is Caseless at the level of phonology.

In **-na/-sqa-** non-subject relative clauses, the Case found on the nominalized verb cannot refer to the Case of the head NP, though it must in subject relative clauses (see section 2.3). This difference is due, we argued, to the fact that **-q** has the property of absorbing the Case of the S' it is part of, while **-na-** and **-sqa-** relative clauses create an opaque domain, a matter to which we return in section 3.3 and in section 4 on free relatives.

As for Case assignment to the head position of the relative clause, we assume that an element in COMP (here an abstract operator or a lexical NP marked for Case) breaks a chain into two separate chains for the purpose of assignment of Case and θ -roles (Chomsky, 1981, p.332). The position of the head NP of the relative clause will, therefore, not be accessible to a Case assigner within the embedded clause itself and will correctly be assigned Case by the matrix verb.

In section 1.4 we took the position that no raising rules operate in the syntax, moving the relativized NP into the head position. The complex distribution of Case in Quechua nominalized relative clauses provides a strong argument in favour of this. Indeed if such a rule were operating in the syntax the correct distribution of Case could not be derived.

3.3. *The Position of -na-/-sqa- Relative Clauses within the Sentence, and the Projection Principle*

In section 2.4 we showed that subject **-q** relatives and their heads can occur either in TOPIC position or within S. The same holds for non-subject relatives formed with **-na-** and **-sqa-**, but here the situation is slightly more complicated. Headed relative clauses may occur embedded in S, like any other NP, or in TOPIC position, as in (72) and (73) respectively:

- (72) Riku -sqa -y -ta warma hamu -nqa. EMBEDDED
 see NOM 1 AC girl come 3FU
 The girl I saw will come.
- (73) Riku -sqa -y -ta warma -qa, hamu -nqa. TOPIC
 see NOM 1 AC girl TO come 3FU
 The girl I saw, will come.

Headless relative clauses, however, occur embedded in S only if the Case of the relativized NP and of the head NP are identical as in (74).

- (74) Warma rima -sqa -y -wan puklla -ra -ni.
 girl speak NOM 1 with play PA 1
 I played with the girl that I talked with.

Otherwise, headless relative clauses are found in TOPIC position, either to the left or to the right of the matrix, as in (75). (**Warma-** in (75) and (76) is in COMP position, not in head position.)

- (75) Xwancha -q rima -sqa -n warma -wan -(qa),
 Juan GE speak NOM 3 girl with TO
 (pay -ta -puni) riku- ra -n.
 he AC EMP see PA 3
 He saw the girl with whom Juan spoke.

Sentence (76), where the headless relative clause is embedded within the matrix clause, is ungrammatical.

- (76) *Santiyagu Xwancha -q rima -sqa -n warma -wanriku -ra -n.
Santiago Juan GE speak NOM 3 girl with see PA 3

Santiago saw the girl with whom Juan spoke.

In (76) the subcategorization and Case assignment features of the matrix verb do not correspond to those of the relativized NP occurring in the COMP of the embedded relative. While *warma-* is marked with *-wan*, comitative Case, corresponding to its function in the embedded clause, the matrix verb *riku-* 'see' subcategorizes for a direct object marked with accusative *-ta* Case.

The above facts look very much like an instance of matching effects as discussed in Bresnan and Grimshaw (1978), Groos and van Riemsdijk (1981), and Harbert (1984). They were analyzed as such in Lefebvre and Muysken (1982a). This analysis is problematic, however, since Quechua free relatives formed with *-na-* and *-sqa-* do not exhibit matching effects.

How do we account for the facts of (74)-(76)? The apparent effect of matching observed here is the result of the Case assignment rule (interacting with the Projection Principle in the case of non-subject relative clauses) applying at all levels, including Logical Form. We argued against a raising rule operating in the syntax, on the basis of Case Floating phenomena (see section 3.2). Instead, we suggested that such a rule operates at the level of Logical Form in such a way that at that level there were no headless relative clauses.

Let us apply Raising to sentences (74)-(76). In headless relative clauses embedded within S, the only grammatical outputs, after Raising has applied in Logical Form, will be those exhibiting apparent matching effects in the syntax. Only in these cases (corresponding to (74)) will the subcategorization and Case assignment features of the matrix verb be met. In the other cases, such as (76), the Projection Principle is violated at LF as a result of raising the understood head at that level. If the relative clause is in TOPIC position however, as in (75), no violations of the Projection Principle follow after raising, the TOPIC position being a non- θ position and therefore not subject to the Projection Principle (Chomsky, 1981, p.38), and to obligatory Case marking.

In the case of headless relative clauses filling the subject position of the matrix clause, (i.e. outside of the direct government domain of the verb), the Case of the raised NP in LF has to conform to the Case assignment rules operating within the matrix clause. The Case of the subject NP within the matrix clause is assigned by INFL and must be nominative. Headless relative clauses filling the subject position of the matrix clause should thus be found embedded within S only if the relativized NP is also the subject of the relative clause. This prediction is borne out by the Quechua data and constitutes an argument in favor of the claim, made in chapter 5, that Case assignment applies at all levels, whenever its structural description is met.

The restriction imposed on the position that headless relative clauses may occupy at surface structure, embedded within S or in TOPIC position, follows from the requirement that Case assignment rules operate at all levels. This requirement interacts with the Projection Principle, stipulating that the subcategorization features and the Case assignment properties of the verb be met at all levels. Such a straightforward explanation is only possible if a rule of raising is assumed to take place at Logical Form, raising the understood head, base generated in the relative clause, to the head position. We believe the above data to constitute a confirmation of this analysis.

3.4. *Why can there be no Subject Relative Clauses Formed with -na-/-sqa-?*

We now turn to the question of why there can be no subject relative clauses formed with **-na-** and **-sqa-**. The answer to this question follows from the Binding Theory proposed in Chomsky (1981). Consider the ungrammatical sentence (77), in which a relative clause formed out of the subject position contains the nominalizer **-sqa-**:

- (77) a. *qu -sqa -n runa...
 give NOM 3 man
 the man who gave...

Here $[e_i]$ is a Case-marked variable, bound by the empty operator in COMP, and assigned Case by the AGR marker in INFL. The ungrammaticality of (77) follows from the binding theory: the AGR node is pronominal, since there is a person morpheme on the nominalized verb. Hence, according to Binding Theory, it should be free in its governing category. However, in (77) it is $\bar{A}$ -bound by an operator in COMP and therefore (77) is not grammatical. The ungrammaticality also follows from the bijection principle (Koopman & Sportiche, 1982): the subject position is $\bar{A}$ -bound twice: by the operator and by INFL.

3.5. *Concluding Remarks*

The structure and interpretation of Quechua relative clauses appears to be similar to that of English and French relative clauses, disregarding ordering of constituents. As we have argued, even headless relative clauses superficially resembling complement clauses share the abstract structure of relative clauses found in English or French, since at the level of Logical Form they are headed. Quechua simply offers more possibilities than French and English as to the positions the lexical NPs may occupy at S-structure. Our analysis shows however that this need not reflect differences at a more abstract level.

The differences between Quechua and French/English relative clauses appear to be mostly due to differences in the structure of their respective lexicons, and to the level where Move α applies in the grammar. Quechua relative clauses are formed through nominalization, while English and French relative clauses contain tensed verbs. Related to this is the contrast between the absence of relative pronouns in the Quechua relative clauses discussed in this chapter, and the presence of relative pronouns filling the COMP of the embedded clause in English and French relative clauses. We argued however that in Quechua a Case operator fills the COMP position of the relative clause, playing the same role in the grammar as Case-marked pronouns in French or English.

The other major difference between Quechua and English/French relative clauses lies in where Move α applies: in English and French it applies always in the syntax, in Quechua either in the syntax or in Logical Form (cf. Huang's (1982) work on Wh-movement in LF in Chinese).

4. FREE RELATIVES

In Quechua, we find free relatives, relatives with an empty head the reference of which is determined by the relative clause, formed through nominalization with the same suffixes as the restrictive relative clauses (headed or headless) analyzed in the previous sections. Again, the distribution of Case markers provides a way of distinguishing these clauses from complements.

Sentence (78) is a free relative formed with the agentive nominalizing suffix $-q$:

- (78) [[Suwa -q -ni -yki -chis -kuna -ta] e] hap'i -nki -chis.
rob AG EUPH 2 2pl PL AC catch 2 2pl
 You (pl.) will catch those who stole from you.

As in restrictive relative clauses, analyzed in section 2, **-q** binds the subject position of the relative clause. Object marking (2nd person plural) occurs to the right of the agentive/nominalizing suffix. Plural marker **-kuna** and accusative **-ta** correspond to the number and Case of the empty head.

Sentences (79), (80) and (81) are examples of free relatives formed with a nominalizing suffix taken from the **-sqa/-na-** paradigm. In this case the free relative may contain a Wh-element as in (79a):

- (79) a. Chay -ta -n tari -ra -ni [e [may uruma -sqa -yki -pi]].
that AC AF find PA 1 where fall NOM 2 LO
 I found this where you fell.

The Case corresponding to the function of the Wh-element is found on the nominalized verb and cannot occur on the Wh-element, as shown in (79b):

- (79) b. *may-pi uruma-sqa-yki

The **-pi** Case cannot be found on both the Wh-element and on the nominalized verb, as shown by the ungrammaticality of (79c).

- (79) c. *may-pi uruma-sqa-yki-pi

There is no matching effect in this construction. In (80) the Case found on the nominalized verb corresponds to the function of the Wh-element inside the free relative, not to that assigned by the main verb, which would be accusative **-ta** Case:

- (80) Riqsi -ni [[may uruma -sqa -yki -pi] e].
know 1 where fall NOM 2 LO
 I know (the place) where you fell.

Free relatives formed with nominalizing suffixes **-sqa/-na-** may be formed without a Wh-element as shown in (81):

- (81) [Xwancha -q rima -sqa -n -wan] e] riqsi -nki -chu.
Juan GE speak NOM 3 with know 2 Q
 Do you know (the person) to whom John talked?

There is no matching effect here either. The **-wan** Case on the nominalized verb

corresponds to the Case of the oblique object of the verb **rima**- 'speak', not to the Case of the object of **riqsi**- 'know', which assigns accusative **-ta** Case.

Free relatives may have the internal structure either of an N''' , as in (81), where the subject occurs in the genitive Case, or of a V''' , as in (82), where the subject occurs in the nominative Case.

- (82) [Xwancha -Ø rima -sqa -n -wan] e riqsi -nki -chu.
Juan NO speak NOM 3 with know 2 Q
 Do you know the person to whom John talked?

In Quechua we also find free relatives formed with a Wh-pronoun and a tensed verb. We will return to this option below in the course of the discussion of matching effects.

While the major issue in the recent literature on free relatives has been to explain matching effects observed in this construction in many languages of the world (see in particular Bresnan and Grimshaw, 1978; Groos and van Riemsdijk, 1981 and Harbert, 1984), here we have the task of explaining why there are no such effects in Quechua free relatives.

4.1. Structure

The structure of Quechua free relatives formed through nominalization is not syntactically different from that of headed or headless restrictive relative clauses, discussed earlier in this chapter.

Free relatives formed with a **-q** nominalizing suffix such as (78) have the structure of (83):

- (78) (repeated)
 [[Suwa -q -ni -yki -chis -kuna -ta] e hap'i -nki -chis.
rob AG EUPH 2 2pl PL AC catch 2 2pl
 You (pl.) will catch those who stole from you.

As in restrictive relative clauses, the free relative is embedded within an N''' . Arguments for this come from the presence of plural marker **-kuna** and Case marker **-ta** on the nominalized verb, both of which encode features of the projection of the empty head. The relative clause, S'_i in (83), is not governed for Case, and **-ta**, which corresponds to the accusative Case assigned by the main verb **hap'inkichis**, can percolate upward to the N''' node. Similarly, the plural marker **-kuna**, morphologically part of the relative clause, can only induce the feature [+plural] to percolate upward, as already seen in chapter 3.

Free relatives formed with **-na/-sqa-** nominalizing suffixes are embedded within an N''' . Sentence (79a) also has the structure of (84).

(79) a. (repeated)

Chay -ta -n tari -ra -ni [e [may uruma-sqa -yki -pi]].
that AC AF find PA 1 where fall NOM 2 LO
 I found this where you fell.

(84)

The Wh-element is adjoined to S. Free relatives must be embedded within an N''' for the same reason as headless and headed relatives: Raising cannot apply. This fact would not be explainable if an S' structure not embedded within an N''' were postulated, because such a structure would licence Raising.

The Case corresponding to the Wh-element, locative **-pi**, is found on the nominalized verb and is mapped on to the COMP of the S' . Therefore the Wh-position must be in the domain of that COMP, c-commanded by it, in order for the **-pi** Case to be correctly interpreted as connected to the Wh-word. Here the Chomsky-adjoined Wh-position is c-commanded by COMP. We have to assume that in some way, the Wh-element and the operator in COMP form a

discontinuous operator; otherwise the variable in (84) would be $\bar{A}$ -bound by two elements, and this would constitute a violation of the Bijection Principle.

Free relatives formed without a Wh-element, as in (81), have the same internal structure as those formed with a Wh-element. In both cases the variable in S is a trace of Move CASE. The structure of (81) is represented in (85).

- (81) (repeated)
 [Xwancha -q rima -sqá -n -wan] e] riqsi -nki -chu.
Juan GE speak NOM 3 with know 2 Q
 Do you know (the person) to whom John talked?

(85)

In the tree structures (83)-(85), the COMP is filled with a Case operator, as is the case in relative clauses with an overt antecedent.

Given the close superficial similarity between complement clauses, headless relatives, and free relatives, overt Case marking has a crucial signalling function in determining the nature of the construction. This is also evident when we look at the accessibility of the free relative to the Case marking of the antecedent.

4.2. Islandhood

Why is the Case marking of nominalized relatives optionally determined by the Case of the head in the matrix clause? Bresnan and Grimshaw (1978) have proposed that the Case matching/non-matching distinction in different languages is a structural one. In their view, in matching free relatives the introductory phrase fills the head position and thus has to conform in Case and category to the verb governing the free relative. In non-matching free relatives the head remains empty

and the introductory phrase is in the COMP of the embedded phrase. They assume that S' boundaries are barriers to subcategorization and Case assignment, which explains why the COMP is not accessible to Case marking and subcategorization by the main verb. The structure for free relatives proposed in section 4.1 conforms to the non-matching structure proposed by Bresnan and Grimshaw.

The explanation for the absence of matching effects in Quechua nominalized free relatives is not a structural one, but lies in the fact that the Case to the right of the S' is not the Case of the antecedent. As was shown throughout this chapter the Case of the embedded S' in nominalized **-na-/-sqa-** relative clauses always expresses a relation interpretable from inside the embedded S'. The Case feature on the embedded S' in nominalized relative clauses thus creates an opaque domain inaccessible to the main verb.

That this analysis is correct is confirmed by the fact that we do indeed find matching effects in free relatives formed with a Wh-word and a tensed verb. Consider the following sentences:

- (86) pi -Ø/ta -n ñawpaq -ta hap'i -nki, usu -n.
 who NO/AC AF first AC catch 2 loose 3
 Who you catch first, loses.

In (86) the Wh-element heading the free relative can either receive the Case marking of the relativized element (here accusative), or that of the understood head within the matrix (here nominative). In (86) there is no matching effect, while in (87) we do find one:

- (87) hap'i -saq pi -Ø/ta -n ñawpaq -ta uruma -nqa.
 catch 1FU who NO/AC AF first AC fall 3FU
 I will catch who falls first.

In (87) the matrix verb assigns accusative Case and the relative clause assigns nominative ~~nominative~~. The Wh-element occurring to the left of the tensed free relative cannot be said to fill the antecedent position of the free relative which is to the right of it. This dismisses the structural explanation of Bresnan and Grimshaw for matching effects, since there is no correlation between the position of the Wh-element and the possibility of having matching effects.

The sole difference between tensed free relatives and nominalized free relatives is the content of the COMP to the right of the S'. In the nominalized free relatives the COMP on S' is determined by the morphology of the nominalized verb, involving both tense (**-na-/-sqa-**) and Case, while in the tensed free relatives no such relation exists; since the verb is tensed, the Case assigned to the Wh-element is obligatorily expressed on the Wh-word itself which is moved to the leftmost position of the embedded sentence. As in this case there is no element that makes the embedded S opaque to outside Case marking, the Wh-element can be Case-marked **-ta** by the matrix verb.

These facts appear to confirm Groos and van Riemsdijk's (1981) conclusion that the difference between matching and non-matching effects in free relatives is not a structural one. Groos and van Riemsdijk have argued that there are languages, e.g. German, in which free relatives are subject to a matching requirement even though the Wh-phrase is demonstrably inside the relative clause. Quechua is such a language.

The analysis we proposed to explain non-matching effects in nominalized free relatives is confirmed by the presence of matching effects in free relatives containing a tensed verb. We take our data to argue, with Groos and van Riemsdijk, that the matching parameter does not involve structural differences but COMP accessibility. In Quechua nominalized free relatives, COMP is not accessible to the matrix verb because Case creates an opaque domain. In tensed free relatives such as (86), however, there is no COMP to the right of the clause that creates an opaque domain. This leaves the initial Wh-position accessible to the main verb in terms of Case assignment and subcategorization rules.

Harbert (1984) proposes to relate matching requirements to the properties of empty categories. According to his theory, matching is obligatory in PRO-headed relative constructions and cannot occur in *pro*-headed relative constructions. The prediction of his analysis is that no *pro*-drop language should exhibit matching effects in subject position, whether or not it exhibits them in other positions, since in this position INFL licences a *pro* (Chomsky, 1982). Example (87), exhibiting matching effects in a free relative out of subject position, is a direct counterexample to Harbert's theory. More generally, Harbert's theory is not borne out by the Quechua data, since it would entail that in nominalized free relatives the empty category of the head would have to be *pro* everywhere. This explains the absence of matching effects in this construction while in tensed clauses there would be no *pro* in this position.

There is no independent motivation for postulating the presence or absence of *pro* on the basis of the construction type involved. If we look at the type of empty category found in the head position of free relatives, we are led to the conclusion that there is no principled reason for such a distribution in Quechua. In subject position, PRO occurs in the context of [- T]INFL and *pro* in the context of INFL [+ AGR]. In free relatives, in which the head is in subject position, *pro* is thus the relevant empty category of the head since it is linked to agreement.

Empty categories occurring in the context of VP are assumed to be *pro*, since they are governed by the verb and contain pronominal features such as Case. This analysis yields the following results for the free relatives discussed above. In sentence (78), having the structure (83), the empty category of the head must be *pro*, since it has Case and plural features which are morphologically realized on the nominalized verb. (While in earlier conceptions PRO was allowed to have features as well, the analysis of PRO as essentially anaphoric precludes this.)

In sentence (81), having the structure (85), the empty category must be *pro*, since it is the direct object and consequently bears Case features. In sentence (79a), with the structure (84) in which the free relative is out of an oblique

position, the identification of the empty category of the head is more problematic. We could assume it to be *pro* bearing an inherent oblique Case.

The PRO/*pro* parameter proposed by Harbert (1984) does not correctly predict the facts of Quechua, which are best accounted for by the COMP accessibility parameter.

4.3. Interpretation

Is there movement of the relativized element to the head position at LF in free relatives?

For **-q** free relatives, e.g. (78) (= 83), there would not be anything to move. For **-na/-sqa-** free relatives constructed without a Wh-element, (81) (= 85), there would not be anything to move either, since there is only a non-lexical variable within the embedded S. Only in **-na/-sqa-** free relatives constructed with a Wh-element (79a) (= 84), could there be a possible element that could move to the head position in LF – the Wh-element appearing to the left on the S' level of the embedded clause.

If we want to account in a uniform way for the interpretation of free relatives, no rule of movement to head position should be formulated. Furthermore, since there are no matching effects in Quechua nominalized free relatives, such a movement rule in LF would violate the Projection Principle, which stipulates that grammatical relations must be respected at all levels. This entails that at LF the difference between restrictive relative clauses, headed or headless, and free relatives lies in the fact that in the former the head is always filled (see sections 1.4 and 3.3 of this chapter) (which explains the apparent matching effects found in this construction), while in the latter the head remains empty.

We suggest that the predication rule proposed in (56) (= 67), based on Williams (1980), to account for interpretation of restrictive relative clauses accounts for interpretation of free relatives as well. Following this rule, V''' in structures (83), (84), and (85) is predicated of N'' . Since the COMP position of the V''' is coindexed both with an NP position within the embedded clause and with the V''' node, it follows that N'' is linked by predication through COMP to a co-referential NP within the embedded clause. The *pro* in antecedent position is interpreted as a referent that is indefinite in itself, and of which the domain of actual reference is, as in ordinary relative clauses, defined by the relative clause predicated of it.

5. SUMMARY

We concluded that headless relative clauses should be analyzed as NPs with a lexical head at Logical Form. Even if on the surface complement clauses and relative clauses resemble each other, they are two distinct constructions. The complex distribution of Cases in relative clauses was accounted for by Move CASE, relating an operator in COMP to a variable in the clause, either at S-structure or at LF. We hope to have achieved our main goal, indicating how the mixed structures of nominalizations can be used to form relative clauses, and how relative clauses are to be kept apart from complement clauses.

NOMINALIZATIONS AS CLAUSES

In this chapter we explore the implications for semantics of the categorial neutralization between N and V in Quechua nominalizations, and argue that Quechua nominalizations, even those of the N''' type, can function as propositions. Constructions of the N''' and of the V''' type are similar in this way as in so many other ways.

For something to be interpreted as a proposition, it must:

A. have the internal structure of a predication, i.e. consist of a pair [subject_i, predicate_i];

B. have an operator for tense/mood/aspect.

Requirement B. is schematically summarized as:

(1) Proposition = Operator (Predication)

The operator is part of INFL, although not all INFLs are operators in the sense of (1). Only those INFLs that carry features for Tense can be operators. What we are claiming then is that nominalizations can be tensed.

The above claim raises the question of how nominalizations differ from main clauses. It is crucial to this question to understand the structure of AUX/INFL and how it is realized in different types of Quechua clauses. We will reserve the syntactic term INFL to refer to the features of Tense and Agreement, which are commonly manifested in Quechua in the verb morphology. The verb morphology controls an abstract INFL position. AUX is the more general semantic term for all elements on the level of S with sentential scope and meanings related to Tense, Modality, etc. It has a less clearly defined theoretical status. The term AUXILIARY SYSTEM is used to refer to the overall system of AUX elements, while the noun AUXILIARY refers to verbal elements with an auxiliary status.

We propose the following. First, we suggest that AUX may be conceived of as discontinuous. Part of it precedes, part of it follows the VP. Everything on the S level, except NP, VP and adverbs, can be considered as part of AUX, and S would have the following expansion.

(2)

Since not all clause types would have an equally rich auxiliary system, differences between them are often related to AUX.

Second, we introduce a formal distinction between Main Tense, relating the time of an event expressed in a proposition to the moment of speech, and Relative Tense, relating the time of an event to that of an event described in the matrix clause. The notion of Relative Tense adequately characterizes the temporal distinctions introduced by various nominalizers.

We then turn to the problem raised in chapter 2 concerning the status of INFL within X' theory. In most standard accounts INFL is considered to be the head of the clause, but this cannot hold for Quechua. On the one hand, Tense (under INFL) is a category that can occur in some noun phrases as well as in clauses. On the other hand, some clauses appear to have no INFL. Verbal complements that undergo restructuring, for instance, are analyzed as examples of clauses without INFL.

In this way, INFL is defined as a minor category, extraneous to X' theory rather than as a defining characteristic of a particular projection. The possibility that there are clauses which have no INFL at all is a logical consequence of the assumption that INFL is a minor category.

Central to any definition of 'clause' is the predication relationship. Our analysis of INFL as occurring internal to a major category, e.g. V''' , is incompatible with the theory of predication proposed in Williams (1980). There it is claimed that only maximal projections can be predicates. In our view not only maximal projections, but also intermediate (i.e. neither minimal nor maximal) projections linked to a subject through INFL can function as predicates. This is argued for on the basis of both nominalizations and small clauses in Quechua.

A major problem for our analysis throughout this chapter is to find a meaningful typology of clauses. We begin by presenting some preliminary considerations in section 1, and return to the typology of Quechua clauses at the end of the chapter.

1. CLAUSE TYPOLOGY

1.1. *Approaches in the Literature*

In the linguistic tradition we can distinguish three general approaches to the problem of clause typology:

- (3) a. in terms of the presence of a SUBJECT (e.g. Chomsky, 1980; 1981);
- b. in terms of COMP (Bresnan, 1972);
- c. in terms of AUX (Gee, 1975; Stowell, 1982; George and Kornfilt, 1981).

We will briefly discuss each of these approaches in turn.

The main property of clauses, in Chomsky's work, was formulated in terms of OPACITY: there are clauses which constitute opaque domains with respect to

Binding, and clauses which are transparent. Opacity in Chomsky's view is induced by the presence of a SUBJECT, which can either be an AGR node with features, a subject made possible through a Case assigning complementizer, or exceptional Case marking, or PRO. Clearly, the nature of the complementizer system and the auxiliary system contributes to the opacity of a clause, in Chomsky's view, only incidentally. As we will show, however, only particular types of Tense specification may (or perhaps must) co-occur with features on the Agreement node. Particular types of complementizers or particular properties of the complementizer system make a subject possible even when AGR is unspecified.

The principal attempt to distinguish between clauses through their complementizers was made by Bresnan. Bresnan (1972) distinguished between WH, THAT, and FOR-TO complements in English, claiming that each complementizer has a particular semantic interpretation, quite independent of the type of Tense involved and the syntactic context. The basic meanings are these:

- A. WH is a semantic function on the determiners in a given sentence, indicating that the reference of the element in the scope of the determiner is unspecified;
- B. THAT 'definitizes' the complement, which can express a 'specific, definite proposition';
- C. FOR marks intentional, purposive, and causal complements, other meanings, such as hypothetical, being derived.

In Bresnan's approach, the auxiliary system is not what distinguishes the different clauses. In fact, there is an intersection in English between complementizers and different tenses, as in (4):

(4)	THAT	WH	FOR
indicative	+	+	*
subjunctive	+	+	*
to-infinitive	*	+	+

There is certainly something to be said for the possibility that the meaning difference between clause types is determined by the complementizer rather than by the auxiliary. The fact that WH is compatible with all types of auxiliaries suggests that it has a different status than *that* and *for*. In some way, there is a fundamental distinction between tensed and tenseless complements, corresponding to the possibility of *that* and *for*, respectively. One can still maintain the independent semantic contribution of the complementizers, while allowing for the agreement phenomenon, expressible as:

(5)	[COMP	[AUX...
	[α Tns]	[α Tns]

So far the discussion has been limited to the tense/tensedness opposition.

One of the first attempts to create a clause typology in terms of the auxiliary

system was by Gee (1975), who noted that there is a third type of clause in English: the naked infinitives, lacking the particle *to* (which he assumed to be part of AUX). Naked infinitives occur with verbs of perception etc. Incorporating these types of infinitives, Gee arrives at the following tri-partition:

- (6) a. finite complements: She knows that Mary left.
- b. nonfinite complements: She wants for Mary to go.
- c. naked infinitives: She saw Mary run.

Stowell (1982) links the auxiliary system of clauses to the complementizer system in an interesting way, applying den Besten's (1978) analysis of Verb Second in Dutch to English. He argues that the reason that gerunds do not have an independent Tense interpretation, i.e. that the understood Tense of the gerund is completely malleable to the semantics of the governing verb, when occurring as complements is due to their not having a COMP. A clause receives a Tense interpretation when its auxiliary moves into COMP in LF, thus gaining scope over the clause it modifies. Infinitival control complements, on the other hand, have a uniform internally determined tense, just as finite tensed clauses do. This tense is unrealized tense, and infinitival complements have it because they have a COMP. Certain types of infinitival complements do not have an independent tense reference, e.g. complements of raising verbs, since they have no COMP. Hence the contrast between (7a) and (7b):

- (7) a. He wanted to be a nice man.
- b. He seemed to be a nice man.

In (7a) the time reference of being a nice man is unrealized with respect to the wanting, while in (7b) the seeming and the being can only be strictly contemporaneous.

Using this kind of argumentation, Stowell is able to hold on to the claim made in his thesis (1981) that what distinguishes clauses from noun phrases is the [+tense] feature on the former: Infinitive clauses are [+tense], but they have a rather special tense.

George & Kornfilt (1981) show that in Turkish, clauses with agreement suffixes behave differently from clauses without them. Clauses with agreement markers, i.e. finite clauses, are opaque with respect to rules such as Reciprocal Coindexing, Toppling (a type of scrambling), Passive, Disjoint Reference, Reflexivization, and Control. Finiteness in Turkish then is clearly related to, and subsumes, the Specified Subject Condition and Tensed S condition proposed in Chomsky (1973). The opacity in the clauses involved is obviously not due to Tense in the traditional sense of Main Tense, since a number of finite clauses in Turkish cannot have the whole range of Tense markers. To state, simply, that it is agreement morphology that makes a clause finite, as George & Kornfilt do, puts the whole problem one step back, however, for why should agreement occur with

certain types of clauses, while not occurring with others? In section 3.3 we will attempt to provide a more precise characterization of what type of auxiliary feature makes agreement possible. Before going on to a discussion of Quechua clause types and Tense, however, two more remarks are in order.

First, finiteness in Quechua has to do with the possibility of agreement rather than with it actually occurring. There are two types of finite clauses where agreement alternates with PRO, namely stative-like and obligational passives, formed with **-sqa-** and **-na-** respectively (Lefebvre & Muysken, 1982b).

Second, it is not clear whether, in Quechua, finiteness is a necessary criterion for islandhood. Infinitival complements are islands, it seems, unless they undergo restructuring (see section 4 of this chapter). Nonetheless, it remains necessary to specify the class of structures that can have agreement associated with them in some coherent way. This we attempt in the following discussion.

1.2. *Quechua Clause Types*

Since the majority of the Quechua clause types have a subject, and only one type of clause has a COMP that is clearly separable from the AUX system, the most fruitful way to approach a typology of Quechua clauses is through the auxiliary or Tense system. We will do this by first reviewing the types of clauses encountered, and then entering into a more systematic discussion of AUX and Tense in Quechua.

In Quechua we find a number of different clause types, distinguished by their morphology: [+ Main Tense] clauses and [- Main Tense] clauses: adverbial and nominalized clauses.

First, we find Main Tense in main clauses and adjunct subordinate clauses containing a lexical complementizer. Different types of main clauses (e.g. declaratives, questions, suppositions, etc.) are distinguished through the use of validation particles, such as **-mi** in (8a) and **-chu** in (8b):

- (8) a. Pay -mi hamu -nqa.
 he AF come 3FU
 He will come.

- b. Hamu -nqa -chu.
 come 3FU Q
 Will he come?

Imperative and exhortative clauses are marked with separate morphology. They will not be discussed here any further:

- (9) a. Mikhu -y.
 eat IM
 Eat!

- b. Mikhu- sun.
eat 1PL,IM
 Let's eat.

We find Main Tense morphology not just in main clauses but also in adjunct clauses such as:

- (10) a. [Paqarin runa chaya -mu -nqa chay -qa]tiyu -y -mi.
tomorrow man arrive CIS 3FU that TOuncle 1 AF
 The man that will come tomorrow is my uncle.
- b. Ni -wa -ra -n -mi Xwancha
say 1ob PA 3 AF Juan
 [paqarin hamu -na -n ka -ra -n chay -ta].
tomorrow come NOM 3 be PA 3 tha AC
 Juan said to me that he was going to come tomorrow.
- c. [Ña -taq mikhu -ru -ni chay -qa] mana chiri -wa -n -chu.
already EMP eat FORCE 1 that TO not cold 1ob 3 NEG
 Since I ate already, I am not cold.

In (10a) the adjunct is interpreted as a relative clause, in (10b) as a complement clause, and in (10c) as an adverbial. In all cases the adjunct appears as a semi-subordinate daughter of main clause S or S', and contains the lexical complementizer **chay** 'that'.

In addition to the adjuncts involving a Main Tense verb and a complementizer **chay** 'that', there are other types of [+ Main Tense] dependent clauses, such as in (11):

- (11) a. Warmi -n tapu -ku -sha -n icha ka -n -man papa.
woman AF ask RE PR 3 perhaps be 3 POT potato
 The woman wonders whether there may be any potatoes.
- b. Warmi -n tapu -ku -sha -n ka -n -man -chus papa.
woman AF ask RE PR 3 be 3 POT DUB potato
 The woman wonders whether there may be any potatoes.
- c. Para -sha -n hina -pas hamu -saq.
rain PR 3 like IND come 1FU
 Even if it rains I'll come.

Direct quotations can be embedded in Quechua under the form **nispa** 'saying', preserving their Main Tense:

- (12) Ni -wa -ra -n -mi Xwancha, paqarin hamu-saq, ni -spa.
say 1ob PA 3 AF Juan tomorrow come 1FU say SUB
 Juan said to me, "Tomorrow I'll come."

A second type of clause is adverbial clauses. These clauses are marked [– Main Tense]. They can either precede or follow the main clause, and they indicate condition, causation, temporal sequence, concession, etc. In (13) we give some examples of **-spa** clauses, in which the subject of the adverbial clause is identical to that of the main clause, and in (14) of **-qti** clauses, in which the two subjects are different.

- (13) a. Qaynunchaw nuqa wiqchu -ku -spa -y -minana -chi -ku -ni.
yesterday I slip RE SUB 1 AF hurt CAU RE 1
 Since I slipped yesterday I have pain.
- b. Lisas -ta alla -chi -spa -qa bindi -pu -saq -mi.
potato AC dig CAU SUB TO sell BEN 1FU AF
 After having made them dig the potatoes, I will sell them.

Note that in (13a) the person is (redundantly) marked, while in (13b) it is not.

- (14) a. Sinchi -ta llank'a -qti -yki qulqi -ta qu -sa -yki.
hard AC work SUB 2 money AC give FU 1-2
 If you work hard, I'll give you the money.
- b. Nuqa hamu -sha -ni misa tuku -ru -qti -n -ña.
I come PR 1 Mass finish FORCE SUB 3 already
 I am coming as soon as the Mass is finished.

In the next section we will present an analysis of the same subject/different subject alternation exemplified in (13) and (14). Adverbial clauses, like adjuncts, are best analyzed as daughters of the main clause S or S'.

For the sake of completeness it should be mentioned that there is a third type of adverbial clause, marked with **-sti-n**, to be discussed briefly in the following section. An example is:

- (15) Tuma -sti -n puri -rqa -n.
drink SUB 3 walk PA 3
 He walked around drinking.

Finally, we have [– Main Tense] nominalized clauses, which need no further explicit discussion here. They can occur in all Case-marked positions: subject, object, oblique, in relative clause position, and in non-Case-marked verbal complement position (cf. the discussion in chapter 2).

In section 5 of this chapter we will turn to small clauses and perception complements, which will constitute yet another type of clause. We will analyze them in a way consistent with the present approach.

In (16) we provide a summary of the preliminary descriptive typology achieved in this section:

(16)	Main clause	Adjunct position	Argument position	Case
a. Main Tense (main verb morphology)	+	+	-	±
		(with comp- lementizer)		
b. Adverbial (-spa, -qti-, -stin)	-	+	-	-
c. Nominalized (-na-, -sqa-, -y-, -q-)	-	+	+	+

In the following sections we expand and refine this typology.

In section 6 we provide a more elaborate typology of clauses in light of the discussion of the properties of AUX and COMP.

2. PROPOSITIONALITY AND AUX

In most versions of English grammar there is a syntactic category AUX, instantiated in the modals and in *have* and *be*, and with a specific position in the sentence.

The proposals by Stowell (1981) and Williams (1982) to make AUX categorially the head of S are incompatible with the Quechua data. These show that the temporal reference of certain types of structures is unrelated to their categorial definition as more verbal (V^{'''}) or more nominal (N^{'''}). We will argue that Tense, like AGR, is a minor feature, not dependent on, nor criterial for, any particular maximal projection. Typically, of course, clauses are tensed and noun phrases are not. We will argue, however, that this is due to the fact that clauses are normally about events, and noun phrases are not.

We will argue against one syntactic AUX node in Quechua by first showing that there are no lexical auxiliaries, and then describing in which way the semantic features commonly associated with auxiliaries are expressed. We do this in terms of a more abstract, discontinuous AUX, which is not a constituent in any syntactic sense but a set of elements that function as semantic operators. Tense, aspect, mood, negation and validation, we argue, are all features of AUX in Quechua. We discuss these features in turn, showing that while AUX is syntactically discontinuous, part of it preceding, part of it following the VP, it nonetheless forms a unit. Cohesion is achieved by agreement in features among its various

parts. The structure of AUX would be roughly:

(17)	AUX ₁	...	AUX ₂	...	AUX ₃
	validation		mood		tense/(mood)/aspect

2.1. *There are no Lexical Auxiliaries in Quechua*

The only serious candidate for the status of auxiliary in Quechua is the verb **ka**- 'be'. We find it in a number of syntactic environments:

- (18) *existentials*
 Papa mana -n ka -n -chu mikhu -na -y-paq.
potato not AF be 3 NEG eat NOM 1 for
 There are no potatoes for me to eat.
- (19) *equatives*
 Nuqa Manuil -mi ka -ni.
I Manuel AF be 1
 I am Manuel.
- (20) *predicatives*
 Papa allin -mi ka -sqa.
potato good AF be SD
 The potatoes are good!
- (21) *passives*
 Suwa -sqa ka -ni.
rob NOM be 1
 I have been robbed.
- (22) *irrealis forms*
 Mikhu -y -man ka -ra -n.
eat 1 POT be PA 3
 I would have eaten.
- (23) *obligation constructions*
 Ri -na -yki ka -ra -n.
go NOM 2 be PA 3
 You had to go.
- (24) *past habituals*
 Papa mikhu -q ka -ra -ni.
potato eat AG be PA 1
 I used to eat potatoes.

These constructions have in common that in each case there is an inflected verb **ka-**. They differ in that in (18), (19), (20), (21), and (24) the verb is inflected for the subject of the clause, while in (22) and (23) there is either an impersonal subject or the preceding clause functions as a subject.

Consider now the question of AUX in Quechua. The constructions given in (21) and (24) – passive and past habitual – are the only ones which could be AUX: in (18), (19), and (20) no other verb is present, so that **ka-** must be the main verb (given *X'* theory), assuming that there is no rule of **ka-** raising in Quechua. (There is no independent evidence for such a rule, but if it existed, our argument would be considerably weakened. The complement in (22) and (23) – irrealis and obligation – contains its own subject marking and can hence not be a VP sister to the AUX.

Consider now (21) and (24) in more detail. Assuming the element **ka-** in these constructions to be an auxiliary, the sister element must be a VP. This is compatible with the fact that both sister elements show no person marking for subject, but it also leads to a number of complications. First of all, (21) is quite similar to (25):

- (25) Suwa -sqa -n ka -ni.
 rob NOM 3 be I
 I have been robbed by him.

In this case, the complement of **ka-** contains person marking and a specific reference to an agent, and must be analyzed as a clause – an *S'*. Nothing prevents us from analyzing **suwa-sqa** in (21) similarly as an *S'*, containing a *PRO* subject. Then the structure of passives in Quechua would be as in (26) (cf. Lefebvre & Muysken, 1982b):

The subject NP in the complement can be either *PRO*, which is generally assigned an *arb* interpretation (i.e. reference to some arbitrary person), or *pro*, specified by the person marking on the verb. (In rare cases the *PRO* can be controlled by the

subject of the matrix clause, in which case an active interpretation involving a state resulting from an action is given.)

- (27) Mikhu -sqa ka -ni.
 eat NOM be I
 I am in the state of having eaten.

A similar argument can be constructed for the past habitual case. If **ka-** in (24) is an AUX, its sister must be a VP. Note, however, that the **papa mikhuq** clause is quite similar to S' complements of verbs of motion such as **hamu-** 'come' and **ri-** 'go', as in:

- (28) Papa mikhu -q hamu -ni.
 potato eat AG come I
 I come to eat potatoes.

Since it is implausible to assume that a lexical verb such as **hamu-** 'come' is an auxiliary, its complement is an S'. There are several other cases of **-q** clauses in Quechua, including subject relatives and perception clauses, and in all cases the empty subject of the clause is controlled by the first c-commanding NP, which in (28) is the subject. Nothing prevents us from analyzing the past habitual construction in the same way: the subject NP trace of **mikhuq** in (24) is bound by the matrix subject of the verb **ka-ni**.

Analyzing **ka-** in (21) and (24) as a main verb can be achieved at no extra cost to the grammar and can be shown to have some advantages, both empirical and theoretical. One empirical advantage is that the rule of **ka-n** deletion does not need to be stated separately for the auxiliary and for the copula **ka-n**. Note that the 3rd person singular present tense form of **ka-** (occurring in (29) with a question mark and parentheses) can be deleted and for many speakers must be deleted, except in the existential use, which may be the only one with lexical content. The impossibility of deleting the latter follows from general conditions on recoverability of deletions.

- (29) a. Pidru -n (? ka-n).
 Pedro AF
 It is Pedro.
- b. Hatun -mi (? ka-n).
 big AF
 It/he/she is big.
- c. Suwa -sqa -n (? ka-n).
 rob NOM AF
 He has been robbed.

- d. Ri -na -y -mi (? ka-n).

go NOM I AF

I have to go.

- e. Llank'a -q -mi (? ka-n).

work AG AF

He/she used to work.

The element **ka-ra-n** in the irrealis form (22) cannot be deleted, since it is past tense, while in the potential form corresponding to it, (30b), no present tense copula is present.

It is possible to have bare past habituals with a past tense interpretation. This is due to the fact that unmarked tense in general can indicate a past tense. Compare (30a) and (30b):

- (30) a. Hamu -y -man ka -ra -n.

come I POT be PA 3

I would have come.

- b. Hamu -y -man.

come I POT

I could come.

We analyze the (30b) form as resulting from **ka-n** deletion, parallel to (30a). If in (29c) and (29e) we had an auxiliary, and in (29a), (29b) and (29d) a copula, the deletion would be awkward to state.

A second empirical argument has to do with negation and affirmation, expressed with the independent suffixes **-chu** and **-mi** (with an alternative form **-n**), respectively. Generally, these affixes are placed on the element preceding **ka-**, no matter which construction (equative, predicative, passive, irrealis, obligation, or past habitual) is involved:

- (31) a. Manuil -mi ka -ni.

Manuel AF be I

I am Manuel.

- b. Mana Manuil -chu ka -ni.

not Manuel NEG be I

I am not Manuel.

- (32) a. Hatun -mi ka -ni.

big AF be I

I am big.

- b. Mana hatun -chu ka -ni.
not big NEG be 1
 I am not big.
- (33) a. Suwa -sqa -n ka -ni.
rob NOM AF be 1
 I have been robbed.
- b. Mana suwa -sqa -chu ka -ni.
not rob NOM NEG be 1
 I have not been robbed.
- (34) a. Mikhu -y -man -mi ka -ra -n.
eat 1 POT AF be PA 3
 I would have eaten.
- b. Mana mikhu -y -man -chu ka -ra -n.
not eat 1 POT NEG be PA 3
 I would not have eaten.
- (35) a. Ri -na -y -mi ka -ra -n.
go NOM 1 AF be PA 3
 I had to go.
- b. Mana ri -na -y -chu ka -ra -n.
not go NOM 1 NEG be PA 3
 I did not have to go.
- (36) a. Mikhu -q -mi ka -ni.
eat AG AF be 1
 I used to eat.
- b. Mana mikhu -q -chu ka -ni.
not eat AG NEG be 1
 I did not use to eat.

In this case the placement of the independent affixes is dependent on a rule of predication, and given (31)-(36) it is clear that all cases of **ka-** function in the same way with respect to this rule.

One of the reasons for analyzing past habitual **ka-** as an instance of AUX in earlier work (Muysken, 1980) was the fact that the past habitual construction shows 'clitic climbing':

- (37) a. Maqa-wa -q ka -ra -nki.

beat 1ob AG be PA 2

You used to beat me.

- b. Maqa-q ka -wa -ra -nki.

beat AG be 1ob PA 2

You used to beat me.

The marker **-wa-**, which indicates the object of **maqa-** 'beat', can also appear on the higher verb **ka-**, as in (37b). There it would have to govern the empty object position across an S' boundary, unless we assume that **ka-** in (37) is dominated by AUX, in which case there is no problem.

Note, however, that there are other constructions where clitic climbing occurs, such as out of infinitival complements:

- (38) a. Maqa-wa -y -ta qallari -ra -n.

beat 1ob NOM AC begin PA 3

He/she began to beat me.

- b. Maqa-y -ta qallari -wa -ra -n.

beat NOM AC begin 1ob PA 3

He/she began to beat me.

These constructions, where the higher verb certainly is a main verb, not an auxiliary, must have undergone restructuring (cf. section 4 below), making clitic climbing possible. Since there is no reason not to assume that a similar restructuring process has taken place in (37), the climbing phenomenon in past habitual constructions can no longer be analyzed as an argument for **ka-** as an auxiliary, hence for AUX. As we will show in section 4, the correct analysis for (37) and (38) must be that the complement verb is adjoined to the main verb, whether this is a verb such as **ka-** 'be' or a verb such as **qallari-** 'begin'.

Another argument against assuming that instances of **ka-** ever appear in an AUX position can be drawn from the theory of morphological control, discussed extensively in the chapter 3. Elements of the morphology of lexical heads may control adjacent abstract positions in their projection. Nothing, however, may intervene between controller and controllee at S-structure. Assume now an abstract COMP, controlled by the morphology of **ka-**. Two options for the position of **ka-** are then available:

(39) a.

b.

Structure (39a) is the AUX analysis, (39b) the main verb analysis. Now with respect to the possibility of elements appearing between V-q and ka-, the two analyses make different predictions. Both predict the ungrammaticality of (40):

(40) a. *NP ... V-q ka- X ...

b. *Xwan mikhu -q ka -sqa -n -ta papa -ta COMP
Juan eat AG be NOM 3 AC potato AC
 that Juan used to eat potatoes

Here **papa-ta** intervenes between COMP and the morphology controlling it.

Only the main verb analysis, (39b), blocks the equally ungrammatical (41), however:

(41) a. *NP... V-q X ka-...

b. *Xwan mikhu -q papa -ta COMP ka -sqa -n -ta
Juan eat AG potato AC be NOM 3 AC
 that Juan used to eat potatoes

Here **papa-ta** intervenes between the lower verb and the COMP of the lower clause, under analysis (39b). The only way (41) could be blocked under analysis (39a) is by assuming a locality condition on the government rule that links ka- to the complement verb, and accounts for its morphological shape (-q only co-occurs with ka-). Such a locality condition does not exist with other complements, however. In fact, past habituais may be extraposed, as we will show in detail in section 4.

The above analysis shows that all occurrences of the only verb that might be an auxiliary in Quechua, ka- 'be' have to be analyzed as main verbs. We conclude

that there are no lexical auxiliaries in Quechua. If there are none, how then do Quechua speakers express tense/aspect/mood distinctions?

2.2. *The Quechua Tense/Aspect/Mood System*

The principal way in which tense, aspect, and mood are expressed in Quechua is through the morphology of the verb. We will discuss these three categories in turn.

2.2.1. *Tense*

The paradigm for Tense in Quechua includes:

A. [+ Main Tense]: present (-Ø), past (-rqa-), future (various realizations), sudden discovery (-sqa-), occurring in main clauses and adjunct subordinate clauses.

B. [- Main Tense], including subordinators and nominalizers, occurring in subordinate clauses.

1. Subordinators: -spa-, -qti-, and -sti-, encoding both time and person reference
2. Nominalizers: -na- (future), -sqa- (past), -q- (agentive) and -y- (infinitive)

There are two person paradigms in Quechua, the selection of which is governed by the tense of the verb: Main Tense verbs take the [+ Main Tense] person paradigm (the -ni paradigm) and [- Main Tense] verbs take the [- Main Tense] person paradigm (the -y paradigm). We account for this fact by an agreement rule within INFL which will insure that the elements of the tense paradigm will occur with the corresponding elements of the person paradigms.

2.2.2. *Aspect*

The suffix -sha- encodes progressive aspect, with roughly the same meaning as the English progressive -ing form. It can occur before all the suffixes of the [+ Tense] paradigm, as in (42):

- (42) Ruwa -sha -saq.
 make PR 1FU
 I will be making it.

It can occur in adverbial clauses, as in (43):

- (43) kay-pi ka -sha -spa -y -ku
 this LO be PR SUB 1 PL
 while we were being there,...

Finally, -sha- can occur in nominalized clauses, as exemplified in (44), an N''' structure:

- (44) Yacha -ni Xwancha -q hamu -sha -sqa -n -ta.
 know 1 Juan GE come PR NOM 3 AC
 I know that Juan was coming.

Because aspectual **-sha-** may occur in conjunction with all [+ Tense] elements and aspect interpretation is inseparable from Tense interpretation (cf. Bull, 1971; Comrie, 1976), we suggest that it is part of INFL, as in (45):

2.2.3. Mood

Mood includes imperative/exhortative and potential. Sentence (46) is an example of a 2nd person and (47) an example of a 3rd person imperative. In (48) we give an example of exhortative mood which could also be glossed 1st person imperative.

- (46) Ri -y -chis.
 go IM 2pl
 Go (pl.)!

- (47) Ri- chun.
 go 3,IM
 (Tell him to) go!

- (48) Ri- sun.
 go 1PL,IM
 Let's go.

Since they are interpreted as directly embedded under a speaker-oriented abstract verb, imperative/exhortative moods occur only in main clauses. Since they contain person reference and occur in complementary distribution with tense markers in the verb, we analyze them as part of INFL as well:

The potential mood is handled^d somewhat differently, being formed in most cases by adding the suffix **-man** after the person and plural suffixes of a verb:

- (50) Ri -nchis -man.
 go 4 POT
 We would go.

The suffix **-man** cannot be affixed to a past tense:

- (51) *Ri -ra -nchis -man.
 go PA 4 POT
 We would have gone.

To express (51) there is an impersonal construction with the copula **ka-** (cf. 22).

Potential markers do not occur in nominalized clauses or adverbial clauses, a matter to which we return in section 2.5. We will tentatively assume that the potential mood is adjoined to INFL, roughly as in (52):

- (52)
- ```

 INFL
 / | \
 / | \
 TNS AGR POT

```

We can briefly summarize the description of tense/mood/aspect markers as in (53):

| (53)       | main clauses | main tense<br>subordinate<br>clauses | adverbial<br>clauses | nominalized<br>clauses |
|------------|--------------|--------------------------------------|----------------------|------------------------|
| aspect     | +            | +                                    | -                    | -                      |
| mood       | +            | +                                    | +                    | +                      |
| potential  | +            | +                                    | -                    | -                      |
| Main Tense | +            | +                                    | -                    | -                      |

We now turn to the distribution of negation elements in Quechua clauses.

### 2.3. Negation

Negation is encoded by **mana** or **ama**, occurring before the verb, as in the following examples:

- (54) Mana ri -n -chu.  
       not go 3 NEG  
       He does not go.

- (55) Ama ri -y -chu.  
*not go IM NEG*  
 Don't go.

The contrast between **mana** and **ama** shows that negation is marked for mood, **ama** being found with imperative/exhortative mood and **mana** occurring elsewhere.

In (54) and (55) **mana** and **ama** co-occur with the counter-factual validator **-chu**. One way of explaining these facts is to say that the mood agreement rule which links **ama** to **-y-** and **-chu** needs to refer crucially to the imperative and the negative in the same constituent. When negation is marked for mood we assume it to be part of the AUX system of Quechua. Since it occurs before the VP a position for it is provided as part of the expansion of S. This is represented in (56).

(56)

In (56), NEG contains both **mana** and **ama**, which are in complementary distribution, and the negation validator **-chu**, which will attach to a constituent in the domain of S.

While **mana** can occur in [+ Main Tense] clauses as well as in [- Main Tense] clauses, **ama** can only occur in main clauses, due to the fact that it agrees in mood with the elements of the tense paradigm, and imperative mood only occurs in main clauses. If **ama** is part of AUX, in the sense proposed here, we can explain why it does not occur in non-clausal constituents.

Two more observations are in order concerning negation and AUX: first of all, the analysis of **ama** and **mana** as part of AUX is supported by the distribution of **-chu** in predicative constructions. In indicative contexts, negative **-chu** is affixed to the predicate phrase, as in (57a), while in imperative contexts it appears on the copula itself, as in (57b):

- (57) a. Mana xillu -chu (ka -n).  
*not greedy NEG be 3*  
 He is not greedy.

- b. Ama xillu ka -y -chu.  
*not greedy be IM NEG*  
 Don't be greedy.

One way of explaining these facts is to say that the mood agreement rule which links **ama** to **-y** and **-chu** needs to refer crucially to the imperative and the negative in the same constituent. This explanation suggests that there is a difference between **mana** and **ama**, and that perhaps they differ not so much because **mana** shares the feature [ - imperative] with the copula in (57a), but because there is no agreement here at all.

This conclusion, which is compatible with the idea that **mana**, in contrast with **ama**, need not be part of AUX at all, is supported by the fact that **mana** can occur inside of noun phrases:

- (58) chay mana allin runa  
*that not good man*  
 that bad man

Here **mana** modifies the adjective, and is hence either part of the AP, or adjoined to it. We will leave undiscussed the problem of whether **mana** in verb phrases is drawn into the auxiliary system or remains outside of it.

#### 2.4. *Validators and AUX*

In Quechua there is a series of validational suffixes, we argue, which are part of AUX. These suffixes refer to the quality and status of the information. They include:

- (59) a. -mi, -n: affirmative      b. -chu: negative  
       -si, -s: hearsay  
       -cha: dubitative  
       -chu: interrogative

Examples are given in (60)-(64):

- (60) Ka -n -mi.  
*be 3 AF*  
 There is (some) (*affirmative*).  
 (61) Ka-n-si.  
*be 3 HS*  
 There is (some) (*hearsay*).

- (62) Ka-n-cha.  
*be 3 DUB*  
 There is (some) (*dubitative*).

- (63) Ka-n-chu.  
*be 3 Q*  
 Is there (some)?

- (64) Mana -n ka -n -chu.  
*not AF be 3 NEG*  
 There is none.

Negative **-chu** (class (b)) can be distinguished from the validators of class (a) on the basis of at least two facts: first, while validators of class (a) are mutually exclusive, the negation validator **-chu** can co-occur with a validator of class (a). An example is (64), where affirmative validator **-n** occurs on **mana** and **-chu** occurs on the verb.

Second, while no validators of class (a) can occur in [+ Main Tense] subordinate clauses, **-chu** may be found there, as exemplified in (65).

- (65) Mana (\*n) ka -n -chu chay -ta yacha -ni.  
*not AF be 3 Q that AC know I*  
 I know that there is none.

These facts indicate that negative **-chu** does not belong to the same paradigm as the other validators.

What arguments can we find for analyzing validators as part of AUX? They have the following syntactic characteristics:

A. Validators have scope over the clause in which they appear, rather than over the particular word to which they are attached; in (66) the validator **-mi** on the subject has scope over the whole clause.

- (66) Xwan -mi hamu -nqa.  
*Juan AF come 3FU*  
 Juan will come.

B. There can be only one validator of class (a) per sentence, a matter to which we return below.

C. Validational suffixes only occur in clauses containing [+ Main Tense] morphology. (67) is ungrammatical due to the occurrence of the validator **-mi** in a clause containing [- Main Tense] morphology, in this case the nominalizer **-na**:

- (67) \*[Xwan -mi hamu -na -n -ta] yacha -ni.  
*Juan AF come NOM 3 AC know I*  
 I know that Juan will come.

D. Validational suffixes only occur on constituents that are in the scope of Tense.

This is shown by four major restrictions on their distribution. First, validators cannot occur on a constituent which appears to the right of the tensed verb, as exhibited by the contrast in grammaticality between (68) and (69).

- (68)    *Merkadu -ta -n ri -sunchis.*  
          *market AC AF go 4FU*  
          We will go to the market.

- (69)    *\*Ri -sunchis merkadu -ta -n.*  
          *4FU market AC AF*

Presumably this is due to the fact that in (69), **merkaduta** has been extraposed and is thus outside of the scope of Tense. (An alternative explanation for the contrast between (68) and (69) would be that in fact the validators undergo LF movement, and need to be in a position where their trace can be properly governed by the verb.)

A second restriction is that validators cannot occur on an element which is unmarked for Case. Consider the examples in (70):

- (70) a. *Paqarin -ta -n merkadu -ta ri -sunchis.*  
          *tomorrow AC AF market AC go 4FU*  
          Tomorrow we will go to the market.
- b. *\*Paqarin -mi, merkadu -ta ri -sunchis.*  
          *tomorrow AF market AC go 4FU*
- c. *Paqarin merkadu -ta ri -sunchis*  
          *tomorrow market AC go 4FU*  
          Tomorrow we will go to the market.

In (70a) the adverb **paqarin** 'tomorrow' is assigned **-ta** by the verb. In (70c), the temporal adverb is outside the domain of the verb and therefore is not assigned Case by it (see chapter 4). Presumably it is also outside the scope of Tense: if the validator appeared on it, it would be outside of the scope of Tense, explaining the contrast in grammaticality between (70b) and (70c).

A third restriction has to do with the fact that validators do not appear on constituents which are inside NPs. While (71) and (72) are grammatical, (73) is not, since in the latter the validator **-mi** occurs inside of an NP.

- (71)    *Xwan -mi wasi -ta ruwa -n.*  
          *Juan AF house AC make 3*  
          Juan builds a house.

- (72) Xwan wasi -ta -n ruwa -n.  
*Juan house AC AF make 3*  
 Juan builds a house.
- (73) \*Xwan [Mariya -q -mi wasi -ta] ruwa -n.  
*Juan Maria GE AF house AC make 3*  
 Juan builds Maria's house.

These facts show that while S and VP can be considered virtual nodes for the interpretation of validators, NP cannot.

Fourth, validators cannot occur in a clause where the tensed verb has been deleted, as shown in (74):

- (74) a. Mama -y -qa Qusqu -ta -n ri -ra -n; tata -y -taq chakra -ta.  
*mother 1 TO Cuzco AC AF go PA 3 father 1 EMP field AC*  
 My mother went to Cuzco; my father to the field.
- b. \*...chakra -ta -n ...  
*field AC AF*

In the second part of (74a), the tensed verb is deleted together with all the elements related to Tense, including the validator; hence the impossibility of (74b).

On the basis of the syntactic distribution of validators, we suggest that validators have the feature [+ Main Tense], and that they are part of the AUX system. This explains why validators can only occur in clauses containing [+ Main Tense] morphology. What is the position of the validators in the Quechua AUX system?

The unmarked position for validators is on the first constituent of the clause. In (75) the validator is attached to the Wh-element, in (76) to the adverb *kunan* 'now', in (77) to the sentence-initial subordinate clause and in (78) to a clause-initial *chay* element.

- (75) Pi -n puri -n?  
*who AF walk 3*  
 Who walks?
- (76)\* Kunan -mi Pidru puri -sha -n.  
*now AF Pedro walk PR 3*  
 Pedro walks now.
- (77) Para -qti -n -mi, mana llank'a -saq -chu.  
*rain SUB 3 AF not work 1FU NEG*  
 When it rains, I will not work.

- (78) Chay -mi Pidru puri -ra -n.  
       *that AF Pedro walk PA 3*  
       Then Pedro walked.

Validators occur on the first constituent as an obligatory element of sentence grammar.

If we assume a base rule of type (79), in which the validator is the initial element of the expansion of S, we can formulate an attachment rule of type (80) which accounts for the unmarked position of validators on the first constituent of a clause.

- (79)  $S \rightarrow \text{validator} \dots$
- (80)  $\text{validator } X \Rightarrow \begin{matrix} 2 & + & 1 \\ 1 & & 2 \end{matrix}$

Rule (80) will account for the presence of validators on the adverb in (76) and on the subordinate clause in (77). In (78), in which the validator occurs on the **chay** element, either **chay** is base-generated in the validator position as a lexical carrier, or **chay** is base-generated in adverbial position next to the validator. Example (75), where the validator is found on the Wh-element, provides an argument for interpreting Wh-movement in Quechua as adjunction to S, rather than to S', since in this way the scope of the validator is limited to S.

Rule (80) could be generalized to negative **-chu** attachment. The affix **-chu** attaches to the VP, and it will be found on the tensed verb in its unmarked position. This is indeed the case as exemplified by (81).

- (81) Mana -n Qusqu -man ri -ni -chu.  
       *no AF Cuzco to go I NEG*  
       I do not go to Cuzco.

Validators may also be found on any other constituent than the first one in a clause. These cases constitute marked positions for validators, which trigger focus interpretation for the constituent to which the validator is attached. Consider the following examples:

- (82) Pidru wasi -ta -n ruwa -n.  
       *Pedro house AC AF make 3*  
       It is a house that Pedro builds.
- (83) Pidru kunan -mi wasi -ta ruwa -sha -n.  
       *Pedro now AF house AC make PR 3*  
       It is now that Pedro is building the house.



The position of negative **-chu** (class (b) validator) may also trigger focus interpretation. Consider the following contrast between the unmarked position for **-chu** on the verb in (81), and the marked position for **-chu** on the complement in (84).

- (84) Mana -n Qusqu -man -chu ri -ni.  
       *not AF Cuzco to NEG go I*  
       It is not to Cuzco that I go but (somewhere else).

So far we have considered two dimensions: the syntax and semantics of validational suffixes. There is another dimension to validational suffixes of class (a) which is independent from the position in which they occur in the sentence (initial/unmarked), non-initial/marked for focus interpretation). At the level of Logical Form, validational suffixes of class (a) function as speaker-oriented performative verbs. Examples are (85) and (86):

- (85) Mana -n ri -nqa -chu.  
       *not AF go 3FU NEG*  
       (I say that) he will not go.
- (86) Mana -s ri -nqa -chu.  
       *not HS go 3FU NEG*  
       (I heard that) he will not go.

In Quechua there are no performative verbs such as 'say', 'doubt', 'request', 'ask' with embedded sentential complements. In Quechua, the evidential perspective of the proposition with respect to the speaker is expressed by means of the validational suffixes, as in (60)-(64) and (85)-(86). This predicts correctly that there will be only one validator of class *a* per sentence, and accounts for the fact that validators of class *a* will not occur in subordinate clauses, even if these are [+ Main Tense]. The class *b* validator, negative **-chu**, however, simply marks the scope of the negation over a constituent:

- (87) **mana X-chu** is interpreted as: NOT X

Due to the fact that it is not interpreted as a performative verb at Logical Form, we expect to find negative **-chu** in both main and subordinate tensed clauses. This prediction is borne out by the data.

Validational suffixes can thus be analyzed along three dimensions. From a syntactic point of view, validators are [+ Main Tense] and have scope over the sentence they are part of. From a semantic point of view the position in which validational suffixes occur determines the scope of their interpretation: initial position, unmarked for focus interpretation, non-initial positions triggering focus interpretation. In Logical Form validational suffixes of class (a) function as performative verbs.

In what sense are validational suffixes related to propositionality in Quechua? From a syntactic point of view validators are marked [+ Main Tense]. In section 3 it will be argued that it is [+ Tense] in INFL which is the operator for tense interpretation defining propositionality. If this is correct, validators are not crucial, from a syntactic point of view, to the definition of propositionality in Quechua. They mark the focus of a proposition, however, and indicate the evidential perspective of the proposition with respect to the speaker.

### 2.5. *AUX in Main Versus Subordinate Clauses*

We will now discuss the distribution of various elements of AUX systematically, incorporating the conclusions of the previous discussion and tying up loose ends.

Consider the data in (88), summarizing the distribution of auxiliary elements in various clause types:

|                                  | main<br>clauses | tensed<br>subordinate<br>clauses | adverbial<br>clauses | nominalized<br>clauses |
|----------------------------------|-----------------|----------------------------------|----------------------|------------------------|
| aspect <b>-sha-</b> :            | +               | +                                | +                    | +                      |
| (negation <b>mana</b> :          | +               | +                                | +                    | +) )                   |
| VAL class (b): <b>-chu</b>       | +               | +                                | -                    | -                      |
| potential: <b>-man</b>           | +               | +                                | -                    | -                      |
| VAL class (a): <b>-mi</b> etc    | +               | -                                | -                    | -                      |
| subjunctive negation: <b>ama</b> | +               | -                                | -                    | -                      |
| imperative                       | +               | -                                | -                    | -                      |

There appear to be three classes of elements, each with a different distribution, which follows from independent principles of the Tense system.

While Main Tense is limited to tensed clauses, aspect can occur in all clause types that specify the time of occurrence of an event with respect to a reference point (see section 3, below). From this it follows that aspect will be excluded from infinitival clauses, as illustrated in (89):

- (89) \*Mikhu -sha -y -ta qallari -ni.  
       eat PR INF AC begin I  
       I begin to be eating.

The possibility of aspectual **-sha-** occurring in nominalized and adverbial clauses is an argument, in our view, for the presence of [+Tense] in the latter two types of clauses as well.

The negative element **mana** is not really part of the auxiliary system, we have shown, since it occurs inside all kinds of constituents.

Negative **ama** was shown to be marked for imperative mood; since imperative mood occurs only in main clauses, **ama** is never found in subordinate clauses of any kind. The negative **-chu** validator (of class *b*) will occur in subordinate tensed clauses as well as in main clauses, since it does not receive any interpretation at LF, in contrast to validational suffixes of class *a*, which at LF indicate the evidential perspective of the proposition.

Why does potential **-man** not occur in subordinate clauses? There are three explanations for this. First, in the case where the potential marker is fused with the tense marker as in (90), it is in complementary distribution with the nominalizing suffixes (as with any other tense markers) and thus it cannot co-occur with them.

- (90) Muna -swanchis.  
       want Tns/POT4  
       We would want.

A second possible explanation is also purely morphological: when the verb is nominalized, the position after the person and number affixes is interpreted as the Case position (disregarding **-pura** 'among' and delimitative **-lla**), and hence **-man** in that position cannot be interpreted as marking mood.

A more fundamental explanation, however, is semantic, and relies on the interaction of Tense and mood. Below in section 3 we will argue that in Quechua only Main Tense refers to the moment of speech directly, and that the other tenses refer to an event and to some reference point, but not to the moment of speech. Now suppose the potential mood is defined with respect to the moment of speech as well, but modally rather than temporally: what is suspended is the reality of the moment of speech. If this line of reasoning is correct, it automatically follows that potential mood can only occur in Main Tense contexts.

In conclusion, we need not postulate that AUX has a different structure in non-main clauses. The differences seen in the various realizations of AUX between main clauses and subordinate clauses fall out 1) from the unequal richness of AUX and COMP and from the theory of morphological control, 2) from feature agreement between the various parts of AUX, and 3) from the properties of the markers under consideration, specially those of validators. Nominalized clauses, both N''' and V''', are like main clauses in having an AUX and exhibiting an internal subject/predicate structure.

### 3. TYPES of TENSE in QUECHUA

The three-way division among Main Tense, adverbial, and nominalized clauses

that was made earlier (see sections 1. and 2.) is represented in (91):

(91) QUECHUA CLAUSE TYPES

| Form | Description                                | Distribution                                | Category |
|------|--------------------------------------------|---------------------------------------------|----------|
| MT   | present, past, future,<br>sudden discovery | main clauses, adjuncts with<br>lexical COMP | S'       |
| spa  | same subject<br>anterior/simultaneous      | adverbial clauses                           | S'       |
| qti  | different subject<br>anterior/simultaneous | adverbial clauses                           | S'       |
| na   | nominalized<br>posterior                   | NP positions,<br>relative clauses           | S', NP   |
| sqa  | nominalized<br>anterior                    | NP positions,<br>relative clauses           | S', NP   |
| q    | agentives                                  | subject relatives,<br>complements, SC       | S'       |
| y    | infinitives                                | complements, subjects                       | NP       |

A number of clarifying remarks are called for. The formal category MT (Main Tense) is distinguished not only by the type of morphology involved, to which we return below, but also by the type of person affixes with which it occurs (**-ni** instead of **-y** for 1st person, etc.). It is also distinguished by the fact that it can occur with validators and the negation marker **-chu**. This cluster of features we will mark by  $+X$ , leading to the very simple dichotomy in (92):

- (92) Main Tense clauses       $+X$   
       nominalized, adverbial clauses       $-X$

The feature  $+F$  is used for all tenses which can occur with Agreement, i.e. which are finite. This includes Main Tense as well as the tense of adverbial clauses, and some nominalized clauses. We will not enter here into a discussion of whether agentives are finite in the sense intended or not, since we will analyze the agentive marker **-q** in section 5 on complements of perception verbs. Now we can classify the various clause types as in (93):

(93) Main Tense  $\begin{bmatrix} +X \\ +F \end{bmatrix}$

Adverbial  $\begin{bmatrix} -X \\ +F \end{bmatrix}$

Nominalized

-na-  $\begin{bmatrix} -X \\ +F \end{bmatrix}$

-sqa-  $\begin{bmatrix} -X \\ +F \end{bmatrix}$

-q-  $\begin{bmatrix} -X \\ ?F \end{bmatrix}$

-y-  $\begin{bmatrix} -X \\ -F \end{bmatrix}$

It is important to realize that all the markers listed in the left column in (91) occur in roughly the same slot morphologically. They all define a certain type of clause. In most cases the superficial classification of clauses based on this set of markers corresponds to the more abstract syntactic behavior of the clauses. Only with **-q** and with **-y** (in restructuring contexts and perception complements) do we find a non-overlap of the abstract syntax and its morphological expression.

A final remark concerns the finiteness of subordinate adverbials. We saw in section 1 that agreement marking is optional with **-spa-** same-subject adverbial clauses (cf. (13)). With **-stin** it is necessary to analyze the **-n** as a separate affix from **-sti-**, as it can be separated from **-sti-** by the delimitative marker **-lla-**. The suffix **-n** behaves exactly like the dummy 3rd person marker we find in quantifiers. The only function of these markers seems to be that of satisfying the requirement that the empty subject, small *pro*, be identified. Thus we can maintain the idea that all adverbial clauses are finite in the requisite sense.

Now, what do the features [X] and [F] mean in terms of a system of formal representation? Before attempting to present a formal theory of Quechua Tense, we will briefly sketch the system informally. The principal division is between Main Tense and dependent or relative tense. The latter set of tenses, as will be outlined below, is specified with respect to the tense reference of the dominating clause, as being contemporaneous with/later than or being earlier than/contemporaneous with the higher tense reference.

In the Main Tense system we find four categories:

- (94) a. unmarked tense, most often interpreted as present;  
 b. simple past, marked with the affix **-rqa-** in all persons;  
 c. simple future, which has special forms for 1st, 3rd, and 4th person, but is identical with the unmarked present tense in its 2nd person;  
 d. sudden discovery tense (cf. Adelaar, 1977), a tense frequently glossed as 'it turns out that'. It can have past reference (e.g. in mythical or historical narrative), present reference (e.g. in complimentary remarks), or future reference (e.g. in threats or predictions).

Every main clause, except for imperatives, is marked for one of these four tenses. In section 2 we argued that there are no lexical auxiliaries properly speaking in Quechua, although it is possible to make statements in a past habitual tense (as in (95)), in a tense indicating unrealized future (properly speaking a modal), as in (96), and in a perfective tense (properly speaking an aspect, as in (97), always using a nominalization and the main verb **ka-** 'be':

- (95) Lima -pi llank'a -q ka -ni.  
*Lima LO work AG be 1*  
 I used to work in Lima.

- (96) Hamu -na -y ka -n.  
*come NOM 1 be 3*  
 I have/am to come. (lit. There is my to come.)

- (97) Xwancha  
*Juan*  
 riku -sqa -y ka -n.  
*see NOM 1 be 3*  
 I have seen Juan. (lit. There is my having seen Juan.)

All these cases will be analyzed using the system of dependent tense interpretation sketched in the next section.

Before turning to that section, it should be stressed once more that the categorical difference between  $N'''$  and  $V'''$  nominalizations is not related to AUX. Thus (98) contains a nominalized  $N'''$  complement expressing the same propositional

content as the V'' complement in (99):

- (98) Xwancha -q wasi ruwa -sqa -n -ta yacha-ni. N'''  
 Juan GE house make NOM 3 AC know 1  
 I know that Juan has built a house.

- (99) Xwancha wasi -ta ruwa -sqa -n -ta yacha-ni. V'''  
 Juan house AC make NOM 3 AC know 1  
 I know that Juan has built a house.

The only difference between (98) and (99) is categorial, which expresses itself in the Case involved, as was shown in chapter 4.

### 3.1. *The Formal Representation of Tense in Quechua*

Given the informal discussion above, we can now formulate a more precise representation of tense distinctions in Quechua. We will use the system devised by Reichenbach (1947) and further elaborated by Hornstein (1977a). In the Reichenbachian system, tense is defined with respect to three points:

- (100) S = the moment of speech  
 R = an abstract reference point in time  
 E = the time of the event referred to

Using these points, Quechua Main Tense can be represented as in (101):

- (101) past = E,R ————— S  
 present = S,R,E  
 future = S ————— R,E  
 sudden discovery = E ————— R  
 ... S ..

The past tense is characterized by the event time and the reference point coinciding, both being anterior to the moment of speech. In the present, the three points coincide, or at least, no stipulation is made about them being separate (if one takes the present to be simply the unmarked tense). The future is the mirror-image of the past tense.

The sudden discovery tense is somewhat like a perfect tense: the event time is anterior to some abstract reference point; but, as we saw above, both points are free in order with respect to the moment of speech. In some sense, the sudden discovery tense is ambiguous between the three perfect tenses of English:

- (102) future perfect S ————— E ————— R  
 present perfect E ————— S,R  
 past perfect E ————— R ————— S

The dependent tenses, in our analysis, do not refer to a moment of speech, though the main clause always does. Rather, the reference point of the lower tense is linked to the event point of the higher tense, as in (103):

Afterwards, the event point of the subordinate tense is lined up according to the tense representation of that lower tense. The tense representations are given in (104):

(104) a. subordinate clauses:

|     |     |
|-----|-----|
| spa | E,R |
| qti | E,R |
| sti | R,E |

b. nominalized clauses:

|     |     |
|-----|-----|
| sqa | E,R |
| na  | R,E |

Here we are using Hornstein's formalism, which relies on ordering as well as association (,) or dissociation (—). In this formalism the following ambiguities can be expressed:

- (105) a. E,R expresses either E,R or E ——— R;  
 b. R,E expresses either R,E or R ——— E.

It is precisely this ambiguity that characterizes the Quechua dependent tense system, as can be gleaned from the descriptive glosses in (91): *anterior to/contemporaneous with* etc.

Consider now how the association rule in (103), combined with the tense representations in (104), gives us an account of the full range of tense facts:

- (106) a. Hamu -na -yki -ta yacha -nqa.  
*come NOM 2 AC know 3FU*  
 He will know that you are to come.

Here the event of you coming may follow or coincide with the event of him knowing.

- (107) a. Hamu -sqa -yki -ta yacha -nqa.  
*come NOM 2 AC know 3FU*  
 He will know that you have come.

Here the event of you coming may precede or coincide with the event of his knowing.

- (108) a. Suya -sqa -nki llank'a -sqa -n -kama.  
*wait SD 2 work NOM 3 until*  
 You waited until he had done the work.

Here the moment of him working may (and, in the context, must) precede the moment of you waiting.

Before going on, it should be mentioned that the tense representation given here may solve one of the long-standing puzzles of Quechua scholarship: the relation between sudden discovery *-sqa-* (present in the main verb in (108a)) and the perfective nominalizer *-sqa-* (present on the verb in the postpositional phrase). They cannot be identified synchronically: the first one is followed by *-nki* person marking and occurs in main clause contexts, the other one is followed by *-yki* person marking and occurs in NP positions, but there is a possible diachronic relationship. In any case, they have one feature in common semantically: both express the tense representation E (—) R. If we take into account that point S 'floats' in the sudden discovery tense, it may be possible to argue that the sudden discovery tense grew out of the nominalizing use. Since the representation of the latter lacks an S point, the Main Tense use could have only a floating point.

In (109) and (110) we give two more examples of tense sequencing in Quechua.

- (109) a. Utku -ta karu -na -y -ta muna -rqa -n.  
*hole AC dig NOM 1 AC want PA 3*  
 He wanted me to dig the hole.

Here the event of digging may follow or coincide with the event of wanting.

- (110) a. Para -ri -mu -sti -lla -n -ña -n ka -sha -sqa -n.  
*rain INC CIS SUB DEL 3 already AF be PR SD 3*  
 It turned out to be ready to start raining.

b. ... S ..

In (110), finally, the event of the raining may follow or coincide with the event of it being ready to rain.

This series of examples illustrates the way in which the simple association rule in (103), combined with the tense representations in (101) and (104), gives an account of the temporal references expressed in Quechua complex sentences.

### 3.2. *R-Transparency and T-Transparency*

The formal definition of tenses in section 3.1. allows us to define the notion of T-TRANSPARENCY parallel the notion of referential or R-TRANSPARENCY. Steele *et al.* (1981) define Tense as the operator that maps propositional content onto a proposition, and gives it a truth value. On the basis of this definition, a distinction is made between subordinate clauses in English, where the subordinate or embedded clause can stand by itself (minus its complementizer) and have a truth value, as in (111), from subordinate clauses in Luiseño and presumably Quechua, where the complement cannot stand by itself and receive a truth value, as in (112):

- (111) I knew that [*the girl had left*]

- (112) [Warma lluksi -sqa -n] ta yacha -rqa -ni.  
*girl leave NOM 3 AC know PA 1*  
 I knew that the girl had left.

This distinction is claimed by Steele *et al.* to reflect a difference in the distribution of AUX: only English complement clauses have an AUX under this analysis.

If this is correct, the argument we have presented for  $N'''$  constituents such as nominalized clauses having an AUX to carry the markers of temporal reference would be false: the *E,R* and *R,E* expressions above have nothing to do with true Tense in this view. True Tense would crucially involve reference to S, the moment of speech. This view, however, cannot account for the complexity of the Quechua Tense system, which involves both elements that refer to S and elements that do not.

Furthermore, we find phenomena rather similar to the dependent tense complex in SWITCH REFERENCE or OBVIATION phenomena. Such phenomena are found in Quechua adverbial clauses. Consider the contrast between (113) and (114):

- (113) Mikhu -spa -qa llank'a -saq.  
           eat SUB TO work 1FU  
           I'll work after I have eaten.
- (114) Mikhu -qti -yki -qa llank'a -sun.  
           eat SUB 2 TO work 1PL,IM  
           We'll work after you have eaten.

The adverbial clauses differ only in the possibility of their subject being coreferential with the main clause subject.

In recent work *Finer* (1983; 1985) has argued that the phenomenon of switch reference, accounting for the contrast between (113) and (114), should be handled by giving the AGR node of the subordinate clauses the following features:

- (115) a. -sqa- = [+ anaphoric] AGR  
       b. -qti- = [+ pronominal] AGR

COMP does not intervene (by virtue of being absent or of being coindexed with the AGR marker), and hence the AGR of the subordinate clause is part of the domain of the higher clause, in the following way:

- (116) a. -sqa- = the anaphoric AGR is  $\bar{A}$  bound (Chomsky, 1981) by the AGR of the higher clause, and in this way the two subjects must be identical in reference, giving (113);  
       b. -qti- = the pronominal AGR is free of the AGR of the higher clause, and in this way the two subjects must be different, giving (114).

This phenomenon of the lower AGR being bound or free with respect to the higher AGR can be termed R-transparency: somehow the COMP of the adverbial clause, if present at all, does not create an opaque domain. The precise reasons why COMP has the property of creating an opaque domain need to be explored in more detail. The natural answer – that it is because COMP is a head – is unavailable to us, given our view of *X-bar* theory.

Taking into account this notion of R-transparency, we can now define a notion of T-transparency as well. Binding with respect to R refers to the domain of referential expressions; binding with respect to T refers to the domain of points in time. Adverbial clauses are both R-transparent and T-transparent: AGR acts as if it were in the domain of the higher AGR, Tense acts as if it were in the domain of the higher tense. Particularly, *E,R* and *R,E* expressions are pronominal with respect to the higher *E,R,S* domain: *E* can be expressed as being separate from R.

Nominalized clauses, we have seen above in (91) and (106)-(107), share the feature of T-transparency with adverbial subordinate clauses, but not that of R-transparency. We will assume that it is the CASE feature that blocks R-transparency, rather than some abstract complementizer, for reasons given below (cf. also chapter 5). Notice that ordinary noun phrases are R-opaque in the same sense:

- (117) a. Xwancha -n<sub>i</sub> [e<sub>i,j</sub> hamu -na -n -ta] yacha -rqa -n.  
           Juan       AF       come NOM 3 AC know PA 3  
           Juan knew that he was going to come.
- b. Xwancha -n<sub>i</sub> [e<sub>i,j</sub> mama -n -ta] riku -rqa -n.  
           Juan       AF       mother 3 AC see PA 3  
           Juan saw his mother.

In both cases, the AGR of the complement can be coindexed or not with the higher AGR.

The *that* complementizer in English induces both T-Opacity and R-Opacity, at least on the surface. It is clear, however, that sequence of tense phenomena in English are also linked up to some notion of Opacity. One indication of that is the contrast between *claim* and *discover* (non-factive versus factive predicates) noted by Kiparsky & Kiparsky (1971). Another indication comes from the behaviour of anaphoric PRO. David Lebeaux (personal communication) argues that anaphoric PRO is coindexed with an abstract operator in COMP, which then may or may not be linked to an element in the higher clause. Consider the contrast between (118a,b) and (119):

- (118) a. John<sub>i</sub> told me that PRO<sub>i</sub> shaving himself *was* difficult.  
           \* b. John<sub>i</sub> told me that PRO<sub>i</sub> shaving himself *is* difficult.
- (119) John told me that PRO shaving oneself *is* difficult.

For a PRO to be coindexed with an element in the higher clause, there has to be sequence of tense as well. Hence (118b) is ungrammatical, where there is no sequence of tense, but PRO still needs a definite antecedent (so that PRO itself

can be a proper antecedent for *himself*), is ungrammatical. We have to assume that the *that* complementizer in English can be transparent or opaque. How this distinction is to be realized, and what other implications it has, are questions beyond the scope of this research.

### 3.3. *A Binding Theory for Tense in Quechua and the Structure of INFL*

The notion of T-Transparency introduced in 3.2. makes it possible for us to sketch a binding theory for Tense in Quechua. Above, we summarized the cluster of properties of Main Tense clauses as [+X], and the property of being marked for agreement as [+F]. Now we will try to define these features in terms of the Reichenbachian theory of Tense that we have developed.

Consider first the tense representation of infinitival -y- clauses in Quechua. Their tense reference is always linked to a higher tense representation, but without the event of the infinitival verb being separate from that of the main verb. This makes it possible to define infinitives in terms of their temporal reference as constituting the point R.

Now we have a three-way distinction between Main Tense, dependent tense (in adverbial and nominalized clauses), and infinitival tense. In an interesting way, this recalls the distinction between names, pronouns, and anaphors from the binding theory introduced in Chomsky (1981). The relevant division would be:

|       |                 |                      |            |
|-------|-----------------|----------------------|------------|
| (120) | Type of tense:  | Defined in terms of: | Parallels: |
|       | Main Tense      | S, R, E              | Name       |
|       | Dependent tense | R, E                 | Pronominal |
|       | Infinitive      | R                    | Anaphor    |

Main Tense would have to be free in a Tense domain, dependent or pronominal tense would have to be free with respect to the higher tense, and infinitival tense would be linked to the higher tense. At the same time, this distinction makes it possible to define the features [X] and [I] introduced above in the following way:

(121) [+X] = ... S... (main Tense involves reference to the moment of speech)

[+F] = ... E... (finiteness involves reference to a time for E separable from the point R)

[-F] = ... R... (infinitives are linked through R to a higher tense, but have no independent tense reference)

Finiteness is a property of clauses with an E in their tense representation.

Given this definition of finiteness, how can we derive the necessary presence of agreement in a finite clause? Our claim would be that when there is a reference to an independent event, there must be also a reference to an independent subject as well, a subject marked by agreement. This brings us to a discussion of the structure of the INFL node in general. We will begin by reviewing the different types of INFL as such. First of all, we have cases of INFL with only AGR:

- (122)
- |             |            |
|-------------|------------|
| mama -yki   | INFL       |
| mother 2    | ↓          |
| your mother | [ AGR ]    |
|             | [ + pron ] |

Then there are the standard cases of Tense and pronominal agreement:

- (123)
- |       |                                                                                       |      |   |
|-------|---------------------------------------------------------------------------------------|------|---|
| mikhu | $\left\{ \begin{array}{l} -\emptyset \\ rqa \\ sqa \\ qti \\ na \end{array} \right\}$ | -nki |   |
|       |                                                                                       | yki  |   |
| eat   |                                                                                       | tns  | 2 |
- 
- |           |      |            |
|-----------|------|------------|
|           | INFL |            |
| [ + Tns ] | ↙    | ↘          |
| αF        |      | AGR        |
|           |      | [ + pron ] |

The feature [ + pronominal ] here is accompanied (or realized) by person and number features, etc.

With subject relatives (discussed at length in chapter 6), there is only an anaphoric (and in fact  $\bar{A}$  anaphoric) AGR present:

- (124)
- |                      |    |
|----------------------|----|
| mikhu-q              |    |
| eat                  | AG |
| the person that eats |    |
- 
- |        |           |
|--------|-----------|
|        | INFL      |
| [αTns] | ↙         |
|        | ↘         |
|        | AGR       |
|        | [ + ana ] |

Here it is possible for subject marking to occur in a position adjoined to the AGR position, which is itself anaphoric. We must assume that there is an agreement process, which matches the features of the subject marking with the features transmitted to the anaphor as part of the binding operation in LF. Consider (125):

- (125) a. mikhu -wa -q      -ni-nchis  
           eat    AG EUPH 3su-4ob  
           the person that eats us
- b. mikhu -wa -q      -ni-nchis runa  
           eat    AG EUPH 3su-4ob man  
           the man that eats us

Here the features of the antecedent **runa** are transmitted to the anaphoric element in INFL (in a way described in chapter 6), and must then correspond with the features of the adjoined pronominal element in INFL. A similar situation holds in proximate subordinate clauses, as in (126):

- (126) a. mikhu -spa  
           eat    SUB  
           when eating...
- b. mikhu -spa -yki  
           eat    SUB 2  
           when you eat...

Again, there must be a matching between the pronominal element and the anaphoric element.

While in (123)-(126) there was both an AGR and a positive specification for tense, in the INFL of infinitives and in certain kinds of *-q* clauses, the AGR node is lacking:

$$(127) \quad \begin{array}{ccc} \text{mikhu} - \left\{ \begin{array}{c} q \\ y \end{array} \right\} & & \text{INFL} \\ \text{eat} & & \begin{array}{c} | \\ [-\text{Tns}] \end{array} \end{array}$$

The subject of these verbs, if present, can only be PRO; no agreement morphology is allowed.

These configurations in INFL can be generated with the system in (128):

- (128) a. INFL  $\rightarrow$  (TNS) (AGR)
- b. TNS  $\rightarrow \pm \text{Tns, Asp, M, ...}$
- c. AGR  $\rightarrow \begin{bmatrix} \alpha \text{pron} \\ \beta \text{ana} \end{bmatrix}$
- d. + pron  $\rightarrow \begin{bmatrix} \gamma \text{I} \\ \delta \text{II} \end{bmatrix}$

#### 4. CLAUSES WITHOUT INFL: RESTRUCTURING VERBS

In sections 2 and 3 we have provided a number of arguments to the effect that Tense, and in general INFL, is a category that can occur in some noun phrases as well as in clauses. INFL is defined as a minor category, extraneous to  $X'$  theory (the domain of which is the relation between major projections and their heads). It is not a definitory characteristic of a particular projection (i.e. it is not the head of S). This suggests the theoretical possibility of there being clauses which have no INFL at all, as a logical consequence of the assumption that INFL is a not a head in Quechua. Verbal complements that undergo restructuring provide an example of a clause type without INFL.

Certain types of complements tend to form a cluster with the matrix verb, so that the two end up as one 'verbal unit'. This phenomenon, referred to in the literature on Romance languages as RESTRUCTURING, involves cases such as (129), (131), and (132):

- (129) [Mikhu -y -ta muna -ni].  
           eat IM AC want I  
           I want to eat.



In (129) an example is given of an infinitive complement. Restructuring verbs that take infinitive complements are:

- |       |          |              |
|-------|----------|--------------|
| (130) | muna-    | 'want'       |
|       | yacha-   | 'know'       |
|       | qunqa-   | 'forget'     |
|       | yuya-    | 'remember'   |
|       | qallari- | 'begin'      |
|       | tukuri-  | 'finish'     |
|       | ati-     | 'be able to' |

In (131) we find an example of the past habitual construction, involving the copula **ka-** 'be', and a complement marked with an agentive affix.

- (131) [Mikhu -q ka -ra -ni].  
*eat AG be PA I*  
 I used to eat.

In (132) we have an example of the purpose complement of a verb of movement, such as **ri-** 'go' and **hamu-** 'come'.

- (132) [Mikhu -q hamu -ni].  
*eat AG come I*  
 I come to eat.

While restructuring of types (129) and (130) is quite common for speakers of most varieties of Quechua, type (132) is restricted to only a few speakers. For most speakers (132) is ungrammatical – restructuring may *not* take place in this type of context. Hence we will use examples from the majority dialect, contrasting type (132) as a non-restructuring context to types (129) and (131) as restructuring contexts.

For all speakers, restructuring is optional. At one level of representation, the complement verb is part of a clausal complement, with its own objects etc. At another level of representation, the two verbs form one predicate and constituents subcategorized for by the complement verb behave syntactically as if they were part of the main clause. In discussing this phenomenon, we will at various points contrast the Quechua data with previous analyses of restructuring in Italian.

In all analyses, the non-restructured tree looks roughly like this: *see (133)*. Here the matrix verb is circled, and has the subscript *i*. The lower V and VP have the subscript *j*. The nature of the NP is unspecified, but in most analyses it is PRO. The complement clause in (133) constitutes an opaque domain, with respect to reference, since it contains a subject (Chomsky, 1981).

#### 4.1. Diagnostic Properties

Under restructuring, the complement clause becomes referentially transparent, as becomes clear when we consider four diagnostic properties of Quechua verb restructuring: Object Marker Climbing, NP Scrambling, Wh-movement, and Quantifier Float. In 4.1.1. through 4.1.4. we show how these distinguish restructured from non-restructured verbal complements. We then turn to the reason why they are diagnostic.

##### 4.1.1. Object Marker Climbing

The object of the complement verb, when 1st, 2nd, or 4th person, can agree with the matrix verb in restructured contexts, but not in non-restructured ones:

- (134) a.  $e_i$  Maqa -y -ta muna -wa<sub>i</sub> -n.  
           beat INFAC want lob 3  
           He wants to beat me.
- b.  $e_i$  Maqa -q ka -wa<sub>i</sub> -rqa -n.  
           beat AG be lob PA 3  
           He used to beat me.
- c.  $*e_i$  Maqa -q hamu -wa<sub>i</sub> -rqa -n.  
           beat AG come lob PA 3  
           He came to beat me.

Example (134c) is ungrammatical in dialects where complements of verbs of movement do not restructure. Here Object Marker Climbing is ungrammatical, as would be expected from the binding conditions, since there is an intervening subject. With respect to (134) it should be noticed that the object markers are not morphologically separate clitics, but really verbal affixes, as was argued in chapter 3. In fact, not only object markers can climb, but affixes such as reflexive and reciprocal as well. Another important feature of (134) is that the two verbs have to be adjacent for Object Marker Climbing to occur. Consider the contrast in (135):

- (135) a. e<sub>i</sub> Chay -ta qu -y -ta muna-wa<sub>i</sub> -rqa -n.  
           that AC give INF AC want 1ob PA 3  
           He wanted to give that to me.
- b. \*Muna -wa -rqa chay -ta qu -y -ta.  
           want 1ob PA that AC give INF AC

In (135b) the complement has been extraposed to the right of the verb. At this point restructuring, and hence Object Marker Climbing, becomes ungrammatical. For the sake of brevity, we will not repeat the observation that in extraposed contexts restructuring becomes ungrammatical for the other properties of restructuring given below.

#### 4.1.2. NP Scrambling

Noun phrases can scramble out of restructured contexts, but not out of non-restructured contexts (for a discussion of Scrambling, see chapter 5):

- (136) a. Mikhu -y -ta muna -ni papa -ta.  
           eat INF AC want 1 potato AC  
           I want to eat potatoes.
- b. Mikhu -q ka -rqa -ni papa -ta.  
           eat AG be PA 1 potato AC  
           I used to eat potatoes.
- b. \*Mikhu -q hamu -ni papa -ta.  
           eat AG come 1 potato AC  
           I come to eat potatoes.

Scrambling out of a clause is subject to the same set of opacity conditions as Object Marker Climbing – conditions which are suspended when restructuring has taken place.

#### 4.1.3. Wh-Movement

Wh-movement in Quechua is a local process (cf. chapter 5, and (137c)), and can

take place across clause boundaries only under special conditions, e.g. after restructuring:

- (137) a. Ima -ta Xwancha mikhu -y -ta muna -n.  
*what AC Juan eat INF AC want 3*  
 What does Juan want to eat?
- b. Ima -ta Xwancha mikhu -q ka -rqa -n.  
*what AC Juan eat AG be PA 3*  
 What did Juan use to eat?
- c. \*Ima -ta Xwancha mikhu -q hamu -n.  
*what AC Juan eat AG come 3*  
 What did Juan come to eat?

#### 4.1.4. *Quantifier Float*

In Quechua, quantifiers can occur separate from the term in their scope. Ordinarily, however, they have to occur in the same clause, except when restructuring has taken place:

- (138) a. Qulqi -ta suwa -y -ta muna -nillipi -n -ta.  
*money AC rob INF AC want 1 all 3 AC*  
 I want to rob all the money.
- b. Qulqi -ta suwa -q ka -rqa -ni llipi -n -ta.  
*money AC rob AG be PA 1 all 3 AC*  
 I used to rob all the money.
- c. \*Qulqi suwa -q hamu -ni llipi -n -ta.  
*money rob AG come 1 all 3 AC*  
 I come to rob all the money.

All four diagnostic features of restructuring mentioned so far can be abstractly represented as in (139); under restructuring, binding from the outside becomes possible:

- (139) a. non-restructured \*X<sub>i</sub> [e<sub>i</sub>]  
 b. restructured X<sub>i</sub> [e<sub>i</sub>]

Since restructuring induces referential transparency, it can be used as a diagnostic for determining which grammatical processes are sensitive to opacity conditions in Quechua. Those that are sensitive include Object Marker Climbing, NP Scrambling, Wh-movement, and Q-float. The latter three may be argued to

be the same process, i.e. Move CASE (cf. chapter 5). Of course, Move CASE was shown to be local only when co-Case marking has not applied. In at least the (b) examples in (134)-(138), co-Case marking has not applied.

In addition to the four diagnostic properties of verb restructuring given in sections 4.1.1. through 4.1.4., there are several other diagnostic features.

#### 4.1.5. *Validation*

While constituents inside of a nominalized complement cannot carry validation markers (see section 2 above), objects in restructuring contexts can:

- (140) a. Papa -ta -n mikhu -y -ta muna-nki-chu?  
*potato AC AF eat INF AC want 2 Q*  
 Do you want to eat potatoes?
- b. Papa -ta -n mikhu-q ka -rqa-nki-chu?  
*potato AC AF eat AG be PA 2 Q*  
 Did you use to eat potatoes?
- c. \*Papa -ta -n mikhu-q hamu-nki-chu?  
*potato AC AF eat AG come 2 Q*  
 Do you come to eat potatoes?

#### 4.1.6. *Negation*

Objects of restructured complement verbs can carry the negation marker **-chu**, while objects of non-restructured nominalized complement verbs cannot:

- (141) a. Mana Xwancha -ta -chu maqa-y -ta muna-ni.  
*not Juan AC NEG beat INF AC want 1*  
 It is not Juan that I want to beat.
- b. Mana Xwancha -ta -chu maqa-q ka -rqa-ni.  
*not Juan AC NEG beat AG be PA 1*  
 It is not Juan that I used to hit. not possible
- c. \*Mana Xwancha -ta -chu maqa-q hamu-ni.  
*not Juan AC NEG beat AG come 1*  
 It is not Juan that I come to beat.

In section 3 of this chapter, we saw that the possibility of carrying validation markers and the negation marker is diagnostic for a constituent being in the domain of a Main Tense verb. Hence, the data in (140) and (141) are an indication that an analysis in terms of thematic restructuring (Zubizarreta, 1980), in which the lower S node remains intact, is not appropriate for the Quechua data. The account given in Zubizarreta (1980) is inspired by the analysis of Rouveret &

Vergnaud (1980) of French causatives. The lower  $VP_j$  is adjoined to its own  $S$ , which remains unpruned. There is a rule of thematic co-superscripting, which assign the thematic superscript  $q$  of the higher verb  $V_i$  to the lower verb  $V_j$  as well, which then co-superscripts with its complement  $Y$  and its  $PRO$  subject. The latter becomes transparent once it has the thematic co-superscript of the higher verb, and the elements in its domain behave like arguments of the higher verb:

(142)

The lower  $VP_j$  remains an integral unit. Presumably, in such an analysis the Tense domain of the lower verb, which does not allow validation markers and negation to occur, would not be affected by thematic co-superscripting. This goes against the facts observed.

#### 4.1.7. Case Marking

A final characteristic of restructuring is the appearance of **-ta** objective Case on the object of the lower verb:

- (143) a. T'anta -ta ruwa -y -ta muna -ni.  
           bread AC make INF AC want I  
           I want to make bread.
- b. T'anta -ta ruwa -q ka -rqa -ni.  
           bread AC make AG be PA I  
           I used to make bread.
- c. \*T'anta -ta ruwa -q hamu -ni.  
           bread AC make AG come I  
           I come to make bread.

This contrast is very significant, because it indicates that the object of the lower verb enters into the domain of the matrix VP under restructuring. Recall that the presence of **-ta** in our analysis in chapter 4 is triggered by two conditions: sisterhood to a [+V] element, and daughterhood of an [-N] element.

4.1.8. *Analysis*

The fact that in non-restructured contexts *-ta* is prohibited suggests that the lower VPs are in fact [+N], and that this lower VP node is not dominating the object any more in restructured contexts. Hence (143) suggests that the analyses of Burzio (1986), and Zubizarreta (1980; 1982a), in which the lower VP is retained as a constituent, are inadequate for Quechua.

In Burzio (1986), it is assumed that there is a movement of  $VP_j$ , inserting it into the matrix  $VP_i$  to the right of the matrix verb  $V_i$ :

(144)

The complement clause is not pruned, and PRO is not deleted (for reasons to be specified below). The  $VP_j$  movement rule is very similar to the  $V'$  preposing rule given by Rouveret & Vergnaud (1980).

In Zubizarreta (1982a), the complement VP remains intact in the reduced tree as well:

(145)

The restructured tree in (145) resembles the one proposed by Rizzi (1978) sketched below in (146), but there are a number of important differences: (1) The VP that remains intact is the  $VP_j$ , not the matrix  $VP_i$  as in Rizzi's analysis; (2) the resulting verbal cluster is not a complex  $V'$ , as in Rizzi's analysis, but rather a simple  $V$ : the matrix verb is "prefixed" onto the complement verb.

Only something like Rizzi's original analysis is compatible with the Case marking facts. In Rizzi's analysis (1978), we have a derived structure as in (146):

(146)

The lower subject has been deleted, the S', S and lower VP have been pruned. The lower V<sub>j</sub> has been adjoined in a single verbal complex with the higher V<sub>i</sub>, and the complement of V<sub>j</sub> becomes a constituent of the matrix VP<sub>i</sub>.

The data in (134) through (143) suggest that restructured contexts have the following features:

- (147) a. the two verbs are adjacent to each other;
- b. the lower VP disappears and the object(s) of the lower verb is a daughter(s) of the matrix VP.

Note that only analyses (145) and (146) imply a principled account of the adjacency of the two verbs: they have to be adjacent because the two verbs form one constituent.

#### 4.2. Verb Cluster Properties

Before going on with our own analysis of restructuring, we will discuss some of the properties of the cluster of verbs.

##### 4.2.1. What is the Nature of the Requirement of Adjacency of the Two Verbs?

Rizzi (1978) notes that some elements can intervene between two restructured verbs in Italian: negation, some sentential adverbs, some (grammatical) propositions, perhaps a Wh-complementizer, auxiliaries (although it is perhaps possible to think of the auxiliaries as part of a chain of restructured verbs). In Quechua, only validators can intervene between the two verbs, as in (148):

- (148) Maqa-y -ta -n muna-wa-rqa-n.  
           beat INF AC AF want 1ob PA 3  
           He wanted to beat me.

Hence the generalization may be that the two verbs in restructuring contexts do not have to be directly adjacent, but that no thematic material may intervene between them. We could call this  $\theta$ -adjacency:

- (149) ... V (\* $\theta$ ) V...

This casts doubt on the idea that the verbs have to form a cluster. In Quechua



it is marginally possible, in addition, to invert the order of the elements in the cluster:

- (150) a. Papa -ta mikhu -y -ta muna -ni.  
           *potato AC eat INF AC want I*  
           I want to eat potatoes.
- b. Papa -ta muna -ni mikhu -y -ta.  
           *potato AC want I eat INF AC*  
           I want to eat potatoes.

Again, this seems to go against the idea that the verbs are necessarily a cluster syntactically, although in Dutch restructured verb clusters, the order change is diagnostic for restructuring.

#### 4.2.2. *Do the Two Verbs Form One Lexical Entry?*

There are several indications that the two verbs do not form one lexical entry. First, there is a restriction in Quechua on two plural markers occurring on the same verb, discussed in chapter 3:

- (151) a. Maqa -wa -nki -chis.  
           *beat 1ob 2 2pl*  
           You (pl.) beat me.
- b. Maqa -wa -nki -ku.  
           *beat 1ob 2 PL*  
           You beat us.
- c. \*Maqa -wa -nki -chis -ku.  
           *beat 1ob 2 2pl ku*  
           You (pl.) beat us.

Either the plural marker refers to the subject, as in (151a), or to the object, as in (151b), but both plurals cannot be marked on the same verb, as in (151c). In chapter 3 we argued that this restriction is not purely a morphological one. Sequences of two plural markers are possible as long as they refer to different lexical entries at the level of Logical Form. Interestingly enough, in restructured verb clusters, both verbs can have a plural marker, and it is possible to have (152):

- (152) Maqa -wa -q -ku ka -rqa -nki -chis.  
           *beat 1ob AG PL be PA 2 2pl*  
           You (pl.) used to beat us.

The ungrammaticality of (153) constitutes another argument against the idea

that the verbs form one lexical entry together:

- (153) \*Maqa-su-q ka-rqa-nki-ku.  
           *beat 2ob AG be PA 2 PL*  
           They used to beat you.

The verb cluster in (153) is ungrammatical because the subject-object marker combination **su-nki** '3rd person subject – 2nd person object' is only interpretable within one lexical entry as a combination. The form **-su-** by itself does not mean anything. Hence we have to argue that the two verbs do not constitute one lexical entry. Note that it is not possible simply to say that the two affixes have to be morphologically adjacent: they can be separated by the tense affix.

A similar argument derives from reciprocal marking, which (as is argued in Muysken, 1981b) involves a discontinuous affix **-na... -ku-**. Again, the two cannot be separated, as in (154c,d):

- (154) a. Maqa-na -ku-y -ta muna-n -ku.  
           *beat REC RE INF AC want 3 PL*  
           They want to beat each other.  
       b. Maqa-y -ta muna-na -ku -n -ku.  
           *beat IM AC want REC RE 3 PL*  
           They want to beat each other.  
       c. \*Maqa-na-y-ta muna-ku-n-ku.  
       d. \*Maqa-ku-y-ta muna-na-n-ku.

#### 4.2.3. Do the Two Verbs Form One Thematic Unit?

Even if the two verbs do not constitute one single lexical entry, the two verbs have one argument structure or thematic grid (cf. chapter 3). Formally, we might represent this as follows:

We will first give some arguments why this must be the case, and then discuss the precise nature of the junction.

The climbing of object markers, reflexives, and reciprocals by itself is an argument for thematic junction, given the idea developed in chapter 3 that object marking etc. is an operation on a thematic grid. A concrete example of (155) is given in (156) (= (135a)).

- (156) a. Chay -ta qu -y -ta muna -wa -rqa.  
           *that AC give INF AC want lob PA*  
           He wanted to give me that.

Here the Agent, Theme, and Goal are the arguments of the lower verb 'give' and the *X* corresponds to the argument that the higher verb 'want' may have (a question to which we return below). Now the object marker of 'want' is linked to the goal, originally an argument of 'give', and we need thematic junction to accomplish this. The two verbs share one thematic grid.

It is not possible to say that the object marker has simply moved from one lexical entry to the other (a notion implicit in the 'climbing' terminology), since both verbs can be marked for object:

- (157) Chay -ta qu -y -ta muna -wa -rqa.  
           *that AC give INF AC want lob PA*  
           He wanted to give me that.

Here the object markers map onto the same thematic grid, common to both of the verbs.

Another argument for thematic restructuring is that there are cases of affixes affecting the argument grid that also climb: **-mu-** 'movement towards the speaker' and **-pu-** 'benefactive, movement away from the speaker'. Thus we have:

- (158) a. Ri -pu -y -ta muna -ni.  
           *go BEN INF AC want I*  
           I want to go away.
- b. Ri -y -ta muna -pu -ni.  
           *go INF AC want BEN I*  
           I want to go away.

This type of climbing can be accounted for in a theory which has thematic junction. The case of (158b) could be represented as follows:

(159)

Assuming the need for thematic junction sufficiently well established, we now turn to its precise formal characteristics. What characterizes the class of matrix verbs that allow restructuring? We will assume that they have the semantic property of being able to form a viable predicate together with another verb (of an arbitrary semantic class). Of course the notion *VIALE PREDICATE* (what Hornstein & Weinberg (1981) term “semantic word”) is extremely ill-defined, and so far without empirical content. One approach to giving it content would be to require that a viable predicate be paraphrasable as a single word in some natural language. Perhaps *want to go* could be a viable predicate, while *promise to go* could not be. Whether this is in fact the case remains to be seen. In the light of the phenomenon of object incorporation and other complex morphological processes, the definition may be too permissive. We will assume the notion here, however, without further discussion.

Given that the two verbs form a single predicate at the level of Logical Form, we have to ask to what extent their external arguments can be combined. Zubizarreta (1982a) claims that all restructuring verbs are raising verbs, i.e. do not have a thematic role assigned to their subject. In fact, most restructuring verbs can easily be argued to be raising verbs. In these cases, the higher verb does not contribute an external argument (and often no argument at all) to the joint thematic grid. A case where the higher verb, interestingly enough, *does* have an external argument is the class of movement verbs. Note that both in Quechua and in Italian this class is marginal as far as restructuring is concerned. The marginality may be interpreted in two ways: either the external arguments can only marginally be mapped onto one single subject NP (since this constitutes a violation of the  $\theta$ -criterion), or movement verbs have a very ill-defined external argument. Perhaps at a more abstract level these two possibilities amount to the same thing.

Assuming that restructuring occurs only with raising verbs explains nicely the contrast between (160a), (160b) and (160c):

- (160) a. Papa -ta mikhu -y -ta yacha -ni.  
           *potato AC eat INF AC know I*  
           I usually eat potatoes.

- b. Papa mikhu -y -ta yacha -ni.  
*potato eat INF AC know I*  
 I know how to eat potatoes.
- c. Papa mikhu -y -ta yacha -chi -wa -n.  
*potato eat INF AC know CAU 1ob 3*  
 He teaches me to eat potatoes.

Causative affixes impose an argument reading on the subject of the verb stem in their scope. Therefore, while *yacha-* is ambiguous between a raising (160a) and a control (160b) interpretation (which corresponds roughly to the ambiguity between 'knowing' and 'being used to'), the causative counterpart does not have this ambiguity, and there is no restructuring. In both (160b) and (160c) the absence of *-ta* shows that there has been no restructuring.

Thus we assume the semantics of restructuring to be as follows: under the condition of  $\theta$ -adjacency the argument structures of the two verbs coalesce, and the two verbs together form one predicate. Do the two verbs form one syntactic unit as well? So far no clear evidence has been adduced that this must be the case, but perhaps the facts of recursive restructuring force us to assume this as well. Consider (161):

- (161) Qan -ta -qa qunqa -ru -y -ta qallari-y -ta  
*you AC TO forget FORCE INF AC begin INF AC*  
 muna -yki.  
*want I-2*  
 I want to begin to forget you.

Complex predicate formation must be assumed to be cyclic, first affecting 'begin' and 'forget', and then 'want' and 'begin-forget'. Suppose there were no clusters, but simply a derived representation as in (162a), as contrasted with (162b):

- (162) a. VP

... 'you' .. 'forget' .. 'begin' .. 'want'...

From a tree such as (162a), it would be impossible to derive the correct scope relations between the predicates involved. Let us assume then a representation roughly as in (162b).

#### 4.2.4. A Syntactic Account of Restructuring

Now we will turn to a syntactic account of restructuring. First of all, we will return to the proposal made earlier in this chapter that INFL is a minor category, and incidental to the  $X'$  system. Assume an  $X'$  theory which includes the following tenets:

- (163) a.  $X^i \rightarrow \dots X^{i-1} \dots$  (heads are obligatory, non-heads are optional)  
 b. V is the head of  $S'$  or S.

Such a theory has as a consequence that all four trees in (164) are possible expansions of S:

Expansion (164a) needs no discussion here, but consider the  $NP^*$  in expansion (164b). What kind of  $NP^*$  can occur here?  $NP^*$  can be lexical only if there is exceptional government by the higher verb, or when there is dative Case marking. It cannot be PRO, since the verb can govern the NP if there is no INFL present to create a separate government domain. It cannot be small *pro* since there is no agreement to identify it (cf. Chomsky, 1982). It cannot be a variable or a trace of NP since there is no proper governor. The alternative is to lexically specify the class of restructuring verbs as proper governors, which would be a questionable move, especially in the case of the copula. Assume, for instance, that COMP is absent when INFL is absent. We then can conclude that (164b) is impossible unless there is a special type of higher verb, such as perhaps causative *faire* in French. In the general case, INFL is necessary to allow for a subject to be present.

This leads us to a consideration of (164d), where S dominates only VP. VP cannot by itself be a proposition, given (165):

- (165) proposition  $\rightarrow$  ... subject ... predicate ...

For the subjectless VP, then, to form part of a proposition, it has to associate with a higher predicate. It can only associate with another predicate if co-superscripted with a higher predicate, and co-superscripting takes place under government. If the higher verb is of the class that can be a viable predicate when combined

with a lower verb, then restructuring can occur. In this view, restructuring verbs do not *trigger* thematic co-indexing; they *allow* it, just in those cases where their complement lacks an INFL node. The relative stability, then, of the class of restructuring verbs across languages is due to their semantic characteristics.

This leaves (164c). Here restructuring is obligatory as well, since there is no subject, but the presence of INFL (a governor) blocks co-superscripting of the higher verb and its complement VP, since co-superscripting takes place under government.

Assuming that this picture of thematic restructuring is correct, how can we account for  $\theta$ -role assignment in restructured contexts? Recall the discussion in chapter 3 of the relation between inflection and external arguments. It was claimed that the external  $\theta$ -role of a verb is linked to the inflection of the verb, and will be assigned to the NP in the domain of INFL, which is controlled by the inflection. Now restructured complement verbs are inflected (e.g. with the agentive marker or with the infinitive marker), and so they allow for an external argument. But their projection, we have claimed, contains no INFL node to create an external domain within which the external  $\theta$ -role could be assigned. Hence the  $\theta$ -role must be assigned to the NP in the domain of the first INFL dominating the verb, and this will be the INFL of the higher verb. This type of  $\theta$ -role assignment gives the effect of Raising, without NP-movement actually taking place. It has the same restriction as Raising, in that the higher verb cannot assign a  $\theta$ -role to the NP in question.

The one question we have not provided an answer to here is why there is clustering. Is there an actual verb movement rule, and if so, what are its formal characteristics and what triggers the movement? This question we will leave unanswered here. Another question to explore is whether thematic co-superscripting can take place only when there is a unique sister relation between the two verbs involved, i.e. when the node dominating the two verbs dominates no other constituents.

This concludes our discussion of restructuring in Quechua. It supports a number of notions brought forward earlier: that INFL can be absent in the verbal projection, that propositions need to include both a subject and a predicate, that inflection defines the external argument.

## 5. PREDICATION AND THE COMPLEMENTS OF PERCEPTION VERBS

At the beginning of this chapter we defined a proposition as in (166):

(166) Proposition = Operator (Predication)

Here we will attempt to further specify what is involved in predication, taking up the idea of the previous section that predication involves minimally a subject and a predicate. We will assume that the pair [subject<sub>i</sub> predicate<sub>i</sub>] constitutes the minimum content of what has been referred to as a SENTENCE RADICAL ("that

cf. however  
Luján 1978 and  
Kavir 1987!

specifies a state of affairs", (Lewis, 1972, p.206) or PROPOSITIONAL CONTENT. With Williams (1980) we assume that this pair is not limited in its distribution to a particular projection such as S (as has been assumed in the 'small clause' theory of Chomsky, 1981), but can occur in other constituents as well. In the theory of Williams the only constraint on the structural relation between subject and predicate can be stated as follows: in predicate structure (a level of representation intermediate between S-structure and Logical Form) any predicate or variable bound by a predicate must be c-commanded by (or be c-subjacent to) its subject.

Applying this definition to the Quechua data, we find that the subject can be lexical or *pro* in main clauses, in adverbial clauses, and in most nominalized clauses. It has to be PRO in -y- infinitive clauses and perhaps in some agentive clauses as well. In all cases it corresponds to the thematic external argument, in the sense of Williams (1981b). The predicate can be a V' or an intermediary nominal projection such as N', as was shown in chapter 2. In this respect, the analysis presented in chapter 2 runs counter to the theory of predication of Williams (1980), where it is claimed that predicates must always be maximal projections.

Since we assume that categories other than maximal ones can be predicates, INFL serves, in our analysis, to create a domain within which predication holds. Schematically, then, the view expressed by Williams contrasts with the view adopted here as (167a) with (167b):

It is the presence of INFL, we argued, that makes noun phrases clause-like in character. Now we make that claim more precise by stating that INFL creates a predication domain, which can exist within clauses as well as within noun phrases in Quechua.

All instances of predication that we have looked at so far involved the relation sketched in (167b), where an INFL defines a predication domain. Do we also find constructions in Quechua where we are forced to adopt Williams' definition of predication, (167a)? We will consider this question, looking at clausal and non-clausal complements of perception verbs in Quechua. These are particularly relevant, because their English equivalents have been analyzed as clauses without INFL.

A number of verbs in Cuzco Quechua, including **riku-y** 'see', **uyari-y** 'hear', **saqi-y** 'let', and **tari-y** 'find, encounter' occur in a structure roughly as in (168):

There are a number of arguments for this structure.

A. The understood subject of the complement verb can be marked on the higher verb:

- (169) a. Pay-mi [ $e_i$ ] puklla-q -ta saqi-wa<sub>i</sub>-n.  
*he AF play AG AC let 1ob 3*  
 He lets me play.
- b. Pay-mi [ $e_i$ ] tusu -q -ta riku-wa<sub>i</sub>-n-ku.  
*he AF dance AG AC see 1ob 3 PL*  
 He sees us dance.

In chapter 3 we argued that object marking is sensitive to argument status: not only must the NP be a constituent of the matrix VP, it has to be an argument of the matrix verb. As such, the object NP in (169) contrasts with e.g. NPs that are raised into the matrix VP: the latter are not marked on the verb (cf. Lefebvre & Muysken, 1982b).

B. The understood subject is obligatorily marked **-ta** accusative, not nominative or genitive:

- (170) a. Nuqa Xwancha -ta tusu -sha-q -ta riku-ni.  
*I Juan AC dance PR AG AC see 1*  
 I see Juan dance.
- b. \*Nuqa Xwancha - $\emptyset$  tusu -sha-q -ta riku-ni.  
*I Juan NO dance PR AG AC see 1*
- c. \*Nuqa Xwancha -q tusu -sha-q -ta riku-ni  
*I Juan GE dance PR AG AC see 1*

We would expect either (170b) or (170c) if the subject were part of a separate clause.

C. The understood subject undergoes Wh-movement freely:

- (171) Pi -ta -n Pidru puri -sha-q -ta riku-n.  
*who AC AF Pedro walk PR AG AC see 3*  
 Who does Pedro see walking?

Ordinarily, subjects of complement clauses can undergo Wh-movement only under special conditions (cf. chapter 5).

D. The understood subject can be marked with validation clitics and with **-chu** negative:

- (172) a. Pidru -ta -n puri -sha -q -ta riku -ni.  
*Pedro AC AF walk PR AG ACsee I*  
 I see Pedro walking.
- b. Mana Pidru -ta -chu puri -sha -q -ta riku -ni.  
*not Pedro AC chu walk PR AG ACsee I*  
 It is not Pedro that I see walking.

Validation markers cannot occur inside embedded clauses.

E. The order of main verb, complement, and understood subject is free:

- (173) a. Nuqa Xwan -ta uyari -ni taki -q -ta.  
*I Juan AC hear I sing AG AC*  
 I hear Juan sing.
- b. Nuqa uyari -ni Xwan -ta taki -q -ta.
- c. Nuqa Xwan -ta taki -q -ta uyari -ni.
- d. Nuqa uyari -ni taki -q -ta Xwan -ta.

Given that the matrix object status of the embedded understood subject is sufficiently well established in (169)-(173), we must now ask ourselves what its relation is to the complement. Are these complements VPs or Ss? Morphologically, they are marked with agentive **-q**, just like subject relative clauses. We may say that the agentive marking replaces the subject marking, and in fact neither relative clauses nor perception clauses carry subject marking:

- (174) a. hamu -q runa  
*come AG man*  
 the man that comes
- b. \*hamu -q -ni -n runa  
*come AG EUPH 3 man*  
 the man that comes
- c. Runa -ta hamu -sha -q -ta riku -ni.  
*man AC come PR AG AC see I*  
 I see the man coming.

- d. \*Runa -ta hamu -sha -q -ni -n -ta riku -ni.  
*man AC come PR AGEUPH 3 ACsee 1*  
 I see the man coming.

There is an important difference between subject relative clauses and perception complements, however, which may be represented as:

(175) a. relative clauses

b. perception clauses

This difference shows up in clauses which themselves contain an object. Both perception clauses and relative clauses can be marked for object, as in (176):

- (176) a. Xwancha runa -ta riku -n maqa -wa -sha -q -ta.  
*Juan man AC see 3 beat 1ob PR AG AC*  
 Juan sees the man hitting me.
- b. maqa -wa -q runa  
*beat 1ob AG man*  
 the man that beats me

There is a class of object markers, however, that can only occur combined with the subject marker (as has been pointed out repeatedly in previous chapters):

- (177) a. su .. nki '2ob-3su'  
 b. wa .. nchis '4ob-3su'

Interestingly enough, these can occur in relative clauses, but not in perception complements:

- (178) a. Tata -yki -ta riku -ni maqa -su -q -ni -yki -ta.  
*father 2 AC see 1 beat AGEUPH 3-2 AC*  
 I see your father, who used to beat you.
- b. \*I see your father beating you.
- (179) a. Tiyu -nchis -ta riku -ra -n maqa -wa -q -ni -nchis -ta.  
*uncle 4 AC see PA 3 beat AG EUPH 3su-4ob AC*  
 He saw our uncle, who always beat us.
- b. \*He saw our uncle beating us.

Presumably, the impossibility of (178b) and (179b), which always beat us.

b. \*He saw our uncle beating us.

Presumably, the impossibility of (178b) and (179b), which are strictly parallel to (176a), is due to the fact that in perception clauses, subject inflection is not allowed. The acceptability of (178a) and (179a) suggests that in relative clauses, subject inflection is theoretically possible (but generally redundant because the agentive marker binds the subject). This contrast could be explained by assuming that perception clauses are VPs, and relative clauses Ss. The major problem with this analysis, however, has to do with  $\theta$ -role assignment: if the understood subject is an argument of the higher verb, it receives a  $\theta$ -role from it. At the same time the understood subject receives a  $\theta$ -role from the lower verb. This results in a violation of the  $\theta$ -criterion, which states that each argument NP or argument chain can only have one  $\theta$ -role associated with it.

In Williams (1982) it is suggested that this type of violation does not really constitute a violation of the  $\theta$ -criterion properly conceived, since the perception complement itself would be an adjunct of the matrix clause, and not receive a  $\theta$ -role itself. The understood subject would be getting two  $\theta$ -roles – an adjunct  $\theta$ -role from the complement clause, and an argument  $\theta$ -role from the matrix verb – and this would be allowed (cf. also Zubizarreta, 1982a).

Note however that it would be very difficult to maintain for Quechua that the perception complement is an adjunct. First of all, it is marked for Case, which does not mean that it receives a  $\theta$ -role, as we have seen in chapter 4, but which does mean that there is a relation of selection between the complement and the matrix verb. Second, the precise morphological shape of the complement verb is determined by the matrix verb. Why the agentive marker and not the infinitive marker? This type of morphological dependency surely is constrained by the government relation, and adjuncts are assumed to be ungoverned.

In addition to the violation of the  $\theta$ -criterion, there is a problem that the VP analysis would pose for the theory of external argument that we defend. In our view the EXTERNAL ARGUMENT of a lexical head is the argument linked to the INFL in the projection of that head. Now consider a case such as (180):

(180)

I see him killing a cow.

Here the NP **pay-ta** would be assigned the external  $\theta$ -role of the verb **sipi-q-ta**, in an account such as Williams (1981b, 1982), where *external* means "external to a maximal projection". In our account, **pay-ta** cannot receive the external  $\theta$ -role from the complement verb, since it is not in the domain of INFL, simply because the complement contains no INFL.

For these reasons, we cannot adopt the VP analysis presented in (180), but must adopt a control structure as in (181):

It turns out that in infinitival clauses no subject-related person marking can occur either:

- (182) \*Maqa -wa -y -ni -nchis -qa mana -n allin -chu.  
*beat 1ob INF EUPH 4 TO not AFgood NEG*  
 To beat us is not good.

- (183) \*Pay -ta yanapa -saq maqa -su -y -ni -yki -ta.  
*he AC help 1FU beat 2ob INF EUPH 3-2 AC*  
 I will help him beating you.

Perception complements, then, have the same person marking possibilities as clauses containing a PRO, such as infinitival clauses (both in control structures, e.g. (183), and in non-control structures, e.g. (182)).

We can analyze perception clauses simply as a special class of object control structures, distinguished from ordinary object control structures as in (184) only by the marking on the complement verb.

- (184) a. Yanapa -yki papa alla -y -ta.  
           *help 1-2 potato dig INF AC*  
           I help you dig potatoes.
- b. Manaku -yki papa alla -y -ta.  
           *beg 1-2 potato dig INF AC*  
           I beg you to dig potatoes.

Note that the perception complements also resemble control complements in taking  $\emptyset$  marked direct objects, as in (180) and (184).

The analysis of complements of perception verbs as clauses containing an INFL node is supported by the fact that they can contain the aspect marker **-sha-**, which is in fact preferred here (cf. (174c)). We have argued in section 2 that the presence of **-sha-** is indicative of the presence of INFL in a projection. In this respect it is revealing to see that restructuring complements cannot contain **-sha-** progressive marker. This is the case not only for infinitive **-y-** complements that undergo restructuring, but also for **-q** complements:

- (185) \* $[e_i]$  Maqa -sha -q ka -wa<sub>i</sub> -rqa -n.  
           *beat PR AG be 1ob PA 3*  
           He used to be beating me.

This neatly illustrates the contrast between restructuring complements and perception complements: only the latter contain an INFL node. The fact that the former do not supports the analysis that INFL is not the head of a clause, but a minor category.

While postulating a control structure in the case of clausal complements to perception verbs, the theory defended here does not allow a similar approach to small clause type complements such as the ones in (186), where we have a noun phrase and an adjective phrase as complements of a perception verb.

- (186) a. Pay -qa  $e_i$  waqcha -ta saqi -wa<sub>i</sub> -rqa -n.  
           *he TO orphan AC leave 1ob PA 3*  
           He left me (as) an orphan.
- b.  $e_i$  Llaki -lla -ta riku -wa<sub>i</sub> -nqa.  
           *sad DEL AC see 1ob 3FU*  
           He will see me sad.

The reason is that PRO can only occur when there is a particular type of INFL governing it, rather than that PRO can simply occur in any ungoverned position. In our view, PRO is a specific type of pronominal element with its own licencing conditions, in the same way as *pro*. Therefore structures such as (187a) and (187b), which we would need to make (186) parallel perception complements, are

impossible in our framework:

This type of structure has been proposed by Stowell (1981). While in Stowell's approach it is the generality of the subject position across categories that leads to categorial generalization, here we stress the general distribution of INFL across different categories.

What, then, can we conclude about predication? Clause-like complements of perception verbs can be analyzed as control structures, in a way compatible with our proposal that INFL creates the predication domain. The same cannot be said, however, for adjective and noun complements to perception verbs, as in (186). The grammaticality of (186) forces us for the moment to assume that in Quechua two kinds of structures can involve predication: both those with a maximal projection as the predicate, as in (188a), and those involving an  $X'$  in the domain of INFL, as in (188b):

This result may appear to be discouraging, but it is indicative of the fact that predication is not a structure-specific relation, but rather dependent only on the very general configuration in (189):

(189)

#### 6. TYPOLOGY OF CLAUSES REVISITED

On the basis of their morphological characteristics, three types of clauses were distinguished in Quechua:

- (190) a. clauses with a Main Tense verb morphology
- b. adverbial clauses
- c. nominalized clauses

The more detailed analysis in the previous sections suggests, however, that (190) only makes a superficial set of distinctions. Criteria that have emerged from the sections 3. through 5. allow us to revise the preliminary typology of clauses with the following questions in mind:

- (191) a. does the clause possess an INFL node or not?
- b. does the clause have an independent tense reference and agreement marking?
- c. does the clause have Main Tense reference?
- d. is the clause marked for Case?

We distinguished between opaque and transparent clauses in two dimensions: transparency with respect to temporal reference (T-Transparency) and Transparency with respect to nominal reference (R-Transparency).

The distinctions made have led us to a much more detailed clause typology than the one in (190). The morphological marking on the verb of a clause is certainly a necessary, but not a sufficient condition for establishing its abstract features. In (192) we present a sketch for a more principled Quechua clause typology, based on the analysis in the previous chapters.



(192)

The fact that the feature [Main Tense], a feature of the Tense system, is crucial in defining Quechua clause types runs counter, at first sight, to Bresnan's (1972) proposal for English that clause types are independent from the type of Tense involved and are distinguishable on the basis of the type of COMP they possess. The distribution in (192) suggests that clause typology cannot be accounted for in terms of one feature (e.g. type of COMP, type of Tense, etc.). Rather it emerges from the interaction of various subsystems or modules of the grammar which combine in various ways.

This raises a question to which we have not paid systematic attention in the typology of Quechua clauses presented so far: what is the relation between COMP and INFL? Consider the ungrammatical sentence (193):

- (193) \*Hamu -sqa -n chay -ta yacha -ni.  
           *come NOM 3 that AC know I*  
           I know that he has come.

Sentence (193) is ungrammatical because a nominalizer is combined with a lexical complementizer. Why is this not allowed? We could say that there is an obligatory agreement rule between INFL and COMP. Since the complementizer is [+ Main Tense], the INFL would have to have the same feature. Such an assumption would handle (193), since the INFL, morphologically controlled by the nominalizer -sqa-, is not Main Tense. When generalized, it forces us, however, to assume a COMP with some Tense features in every type of clause, and in the other types of clauses only INFL is realized. Suppose we say then that only Main Tense subordinate clauses have a COMP with Tense features. This would have the disadvantage that the agreement rule is less generally applicable.

A possible alternative would be to say that the lexical COMP, with the Main Tense feature, acts like a Subject with respect to the binding theory for Tense sketched in section 3.3. above. If *chay-ta* has the same index as the pronominal tense feature of the nominalizer, we have a violation of principle B of the binding theory, stating that pronouns must be free in their referential domain. The ungrammaticality of (193) would then be on a par with that of (194):

- (194) \*Mary<sub>i</sub> saw her<sub>i</sub>.

If, on the contrary, the Tense index of COMP is different from that of INFL, there is a violation of the LF principle that propositions must have a unique Tense specification. Under this proposal, we have to account for the cases where we have both a Main Tense verb and a lexical complementizer, as in (195):

- (195) [Hamu -rqa -n chay -ta] yachani.  
           *come PA 3 that AC know I*  
           I know that he came.

We could say that there is an optional agreement rule linking INFL and COMP, which is sufficient to block principle C, stating that referential expressions – such as Main Tense – must be free, from applying. COMP does not count as a c-commanding antecedent for INFL when they agree in this way.

One advantage of claiming that only subordinate clauses with a lexical complementizer have a COMP is that the facts of Move CASE can be made to follow rather easily, following familiar proposals trying to derive the [that t] filter (Chomsky and Lasnik, 1977) from other principles. If we say that a doubly filled COMP does not allow percolation of the referential index of the moved constituent, and that the trace of Move CASE must have an antecedent in its own projection, then the contrast in (196) follows naturally:

- (196) a. Xwan -pa -ta<sub>i</sub> yacha -ni [<sup>+<sub>Y</sub></sup><sub>i</sub> hamu -sqa -n -ta] <sup>+<sub>Y</sub></sup><sub>i</sub>.  
           Juan GE AC know 1 come NOM 3 AC  
           Juan I know has come.
- b. \*Xwan -ta<sub>i</sub> yacha -ni [<sup>-<sub>Y</sub></sup><sub>i</sub> hamu -rqa -n] chay -ta].  
           Juan AC know 1 come PA 3 that AC  
           Juan I know that has come.

In this account (196b) is ungrammatical because the trace in COMP does not c-command the empty position in the clause. Notice that there are no subject/object asymmetries with respect to extraction in Quechua, however.

A lexical COMP creates a domain which is opaque with respect to both Tense interpretation and extraction. A Case-marked nominalized clause allows extraction and relative tense interpretation, as we have seen. It is referentially opaque in another respect, however. Consider again the contrast, discussed in section 3. of this chapter, between (197a) and (197b):

- (197) a. [pro hamu -qti -n -qa] pro ri -nqa.  
           come SUB 3 TO go FU  
           When he<sub>i</sub> comes, he<sub>j</sub> will go.
- b. [pro hamu -sqa -n -ta] pro yacha -n.  
           come NOM 3 AC know 3  
           He<sub>i</sub> knows that he<sub>i,j</sub> has come.

In (197a) we have switch reference: the pronominal features of INFL in the lower clause, coupled with the absence of a COMP that could function as an intermediary Subject, forces a disjoint interpretation of the two subjects, in line with principle B of the binding theory.

Why is this effect absent in (197b)? The answer must lie in Case marking. The Case marking in (197b) gives a referential index to the complement clause. This referential index acts like a Subject with respect to the binding theory and blocks

obligatory disjoint reference between the subjects of the two clauses. The prediction follows that switch reference phenomena occur only in adjunct clauses, and this prediction is correct, as far as we know.

Extraction out of Case-marked complements remains possible, however, because an element can move into the Case position of the complement, receive the referential index of the complement clause, and move into the matrix clause. Since the extracted element receives the referential index of the complement clause, it is now disjoint in reference with respect to the matrix subject. The contrast between the possible reference of a non-extracted and of an extracted element is shown in (198).

- (198) a. *Mariya yacha -n [Pidru pay-ta maqa -na -n -ta].*  
*Maria know 3 Pedro (s)he-AC beat NOM 3 AC*  
*Maria<sub>i</sub> knows that Pedro will beat her<sub>i,j</sub>.*
- b. *Mariya pay -ta yacha -n [Pidru e maqa -na -n -ta].*  
*Maria (s)he AC know Pedro beat NOM 3 AC*  
*Maria<sub>i</sub> knows of her<sub>j</sub> that Pedro will beat her<sub>j</sub>.*

The raised element **pay-ta** in (198b) now has the referential index of the clause out of which it is raised, and therefore it has to be disjoint from the matrix subject.

## 7. SUMMARY

We have shown that both  $N'''$  and  $V'''$  nominalizations can contain an INFL node. In doing so, we explored the nature of AUX and Tense in Quechua, the properties of complements without INFL, and small clauses. The Tense system in Quechua distinguishes Main Tense from Relative Tense. This distinction allows us to define the notions of R-Transparency and T-Transparency, which led in turn to a straightforward typology of clauses in Quechua, in terms of the properties of Tense and Case characterizing them.

## MODULE INTERACTION AND CATEGORY THEORY

In this book we provided a principled account of nominalizations in Quechua, relating their morphology and semantics to their syntactic structure. From this account a number of differences between Quechua and other languages with respect to their category systems emerge. We claim that the typology of categories in natural languages is not accounted for in one single component, i.e. Phrase Structure, but results from the interaction of various subsystems. In the light of the analyses presented in this book, we further explore this issue, showing how the properties of Quechua discovered in previous chapters are related to one another in clusters. We will argue for a module interaction approach to parametric variation. This approach is characterized by the assumption that variation between languages results from differences in the way the various modules of the grammar interact. There is no parametric variation inside the modules themselves, and UG does not specify immediately how elements in one module relate to those in another one, since each module is defined in terms of a separate vocabulary: elements from different modules can therefore be related in different ways.

In this chapter, we will begin by listing systematically the proposals made in the previous chapters regarding the structure of Quechua and how it differs from that of other languages. We then go on to show how these differences can be grouped in such a way that they relate directly to the way the modules of the grammar interact. We finish by outlining how the grammar of Quechua nominalizations can be learned by the child, given a set of assumptions about how UG structures the language acquisition device.

We wish we could make the strongest and most interesting claim: that all parametric variation is due to module interaction. We have not been able to establish this, but we hope that our approach offers sufficient possibilities to define a research program.

### 8.1. *Listing the Properties of Quechua*

We will begin by sketching the properties of Quechua from the perspective of the list-fixing approach to parametric variation. In this approach, parametrized statements have the following general format:

- (1) *List fixing*
  - a.  $\alpha$  has property  $X$
  - b.  $\alpha = p, q, (r)$

Examples of this approach are familiar from the parameter literature, and include:

- (2) a. Binding nodes for subadjacency are NP, S', (S), (PP), (AP)
- b. Features of elements that can move are +Wh, +N, (+Q), (+R), (+ pronominal)
- c. Heads are N, A, V, (P), (INFL), (COMP)
- d. Proper governors are V, (A), (N), (P), (AGR)

As can be seen in (2), the values for each parameter have been assumed to be partly fixed, and partly variable (indicated with parentheses). Formulated in the list-fixing approach, the properties of Quechua discussed in this book include A through P.

#### A. *Categorial Neutralization*

In chapter 2 we proposed a categorial neutralization rule to account for the fact that both nominal and verbal projections can be headed by nominalized verbs which are defined by the features [+N, +V]. This rule is subject to variation between the Quechua dialects. It has the following general format:

$$(3) \quad \begin{bmatrix} \alpha F_a \\ -F_b \end{bmatrix}^1 \rightarrow \dots \begin{bmatrix} \alpha F_a \\ \beta F_b \end{bmatrix} \dots$$

In general the southern dialects have more nominal elements dominating the nominalized verb, resulting in (4b), and the northern dialects more verbal structures, as a result of (4a). Both rules in (4) are more specific versions of (3):

$$\begin{array}{ll} (4) \text{ a. } \begin{bmatrix} -N \\ +V \end{bmatrix}^1 \rightarrow \dots \begin{bmatrix} \alpha N \\ -V \end{bmatrix} \dots & \text{Northern} \\ & \text{Quechua} \\ \text{b. } \begin{bmatrix} +N \\ -V \end{bmatrix}^1 \rightarrow \dots \begin{bmatrix} -N \\ \alpha V \end{bmatrix} \dots & \text{Southern} \\ & \text{Quechua} \end{array}$$

The variable elements involved in the parameter include the possible initial features ( $\alpha N$ ,  $\beta V$ , or both), the switch in features that can occur ( $\alpha N$ ,  $\beta V$ , or both), and the level at which the switch can occur. In chapter 4, a marked version of the rule, (5), was suggested to account for all the possible combinations of Case markings found in the Cuzco Quechua dialect:

$$(5) \quad \begin{bmatrix} \alpha F_a \\ -F_b \end{bmatrix}^i \rightarrow \dots \begin{bmatrix} \alpha F_a \\ \beta F_b \end{bmatrix}^{i-1} \dots \quad \begin{array}{l} \text{Cuzco} \\ \text{Quechua} \end{array}$$

The difference between (3) and (5) is that in (5) the category switch is allowed to take place at any non-maximal level of the projection, while in (3) as well as in (4a and 4b), the switch can only take place at level 1 of the projection.

### B. *The INFL in NP Parameter*

For Quechua, INFL was shown to be a minor category of NP as well as of S, so that the parameter would be which maximal projections can contain an INFL:

$$(6) \quad N'' \rightarrow \dots N' \dots \text{INFL} \dots$$

Moreover, we showed in chapter 7 that INFL was not obligatory in Ss. These two aspects of INFL make the Quechua  $N'''$  and  $V'''$  projections structurally very similar. There is no doubt that the inflection of nouns for person represents a genuine difference between Quechua and English, that can be stated in terms of parameter (6). Quechua noun phrases are very different in structure from English ones, but quite similar to those of languages like Turkish (George & Kornfilt, 1981) that share the feature 'INFL in NP'.

cf. alternatively  
Almug 1987's  
DP = nominative

### C. *Left Branching*

It became clear in chapter 1 and 2 that Quechua phrase structure is left branching, one of the two options or the direction of government that UG allows (Stowell, 1981):

$$(7) \quad \text{In Quechua, government is leftward.}$$

This stipulation does not play a role in our analysis of the categorial system, of course.

### D. *Morphosyntax*

The structure of the Quechua lexicon as described in chapter 3 appears to be very different from that of English. Languages with a rich morphology, such as Quechua, encode person, number, mood, aspect, tense, Case, etc., by means of affixes on nouns and verbs. This has the consequence that, with a few exceptions (e.g. Case-marked lexical complementizers), there are no minor lexical categories in Quechua. Presumably there is a universal inventory of lexical categories, a subset of which is realized in each individual language.

### E. *Directional Percolation*

In Quechua the features of Case and plural, for instance, do not percolate along the head projection line, but percolate down to the rightmost lexical element in a projection. This property of Quechua percolation can be stated, we have argued, as a formal parameter of percolation trees.

In chapter 4 some crucial properties of Quechua were listed:

### F. *Case Distribution: Case as a Feature of all Major Projections*

This property discussed in chapter 2 and 4, may be stated as in (8):

$$(8) \quad \begin{array}{l} X^{max} \\ [+ \text{Case}] \end{array}$$

UG allows various options as to which elements are Case-marked in a given language. The specification for Quechua that all maximal projections can be Case-marked makes verbal projections more similar to nominal projections. How specific is this parameter to Quechua, in comparison to English? Obviously, English does not mark clauses and adverbs overtly for Case, but then overt Case marking is rare in English anyway. It may be far-fetched but it is not impossible to analyze the English complementizer *that* and the adverbs marked with *-ly* as carriers of Case (being nominal in nature), allowing the projections of which they are a part to be marked for Case. But even if we do not make this assumption, we still find Indo-European languages where elements such as adjectives are marked for Case. Admittedly, adjectives are [+N] elements, and in Quechua it is true as well that only [+N] elements can be Case carriers morphologically. The difference at this point between Quechua and English might reduce, then, to categorial neutralization, which allows heads to have a slightly different feature specification from their projections.

#### G. Case Assignment

In chapter 4, it was suggested that the following rules for structural Case assignment hold for Quechua:

- (9) a. [+V] assigns objective Case.  
[AGR] assigns subjective Case, in both nominal and verbal projections.
- b. All [+N] heads can be marked for Case, and all projections can have the Case features;
- c. The feature composition [ $\alpha$ N] of the domain in which Case is assigned determines the morphological realization of Case: Subjective Case is realized as **-q** in the context [+N] and as **-Ø** in the context [-N]. Objective Case is realized as **-Ø** in the context [+N] and as **-ta** in the context [-N].

Obviously, languages differ as to which features assign Case and in which contexts.

#### H. Move Case

One of the most obvious differences between Quechua and English is the relative freedom of Quechua word order. We have accounted for this by assuming a particular interpretation of Move  $\alpha$ . It was suggested in Chomsky (1980) that the rule Move  $\alpha$  is subject to parametric variation with respect to the choice of the values of  $\alpha$  and the possible landing sites for moved elements. In chapter 5 we proposed that in Quechua the value of  $\alpha$  is CASE (there are also a few instances of Move NP in Quechua not discussed in this book). Move CASE moves Case marked elements out of their constituents. Move CASE takes place out of N''' as well as out of V''' projections, which, once again, makes nominal and verbal projections similar. Move CASE, in conjunction with two other parameters, A availability and co-Case marking (see below), accounts for the non-configurational properties of Quechua.



### I. $\bar{A}$ Availability

The landing site for Move CASE was argued to be a  $\theta$ -less position within the VP. The option of having  $\theta$ -less positions within the VP was presented as the  $\bar{A}$  availability parameter. This parameter specifies that in a given language there are a number of non-argument positions within the VP which NPs can move into, leading to considerable freedom of constituent order inside a projection.

### J. Co-Case Marking

Co-Case marking expresses the possibility of marking a constituent as having the same Case as the projection it is moved out of. Languages such as Quechua which are positively specified for that parameter will allow Raising of arguments, and Floating and Extraposition of non-arguments.

### K. Optional COMP

A final feature of Quechua clauses that we explored in chapter 5 was the fact the lexical complementizers only occur in some kinds of subordinate clauses. Whenever they occur, the clause is opaque for movement, tense interpretation, and binding of anaphoric inflection. Whenever the complementizer is not lexical, the clause becomes transparent for movement, tense interpretation and binding of anaphoric inflection. The parameter involved here may be conceived of as what types of constituents may function as sentential complements.

In our analysis of relative clauses in Quechua (chapter 6) three features emerged that set Quechua relative clauses apart from more familiar types of relative clauses in the Indo-European languages: the movement of an abstract operator rather than of a Wh-element, the possibility of movement in LF, and the definition of INFL as an  $\bar{A}$  anaphor:

### L. Operator Movement

We argued that the trace in the relative clause is not bound by a Wh-element in a clause-initial position but rather by an operator in a clause-final COMP position. This may be seen on a more abstract level as another specification of the parameter of Move CASE discussed under I. In our analysis, the operator is not always present in COMP at S-structure, and when it is not the antecedent is lexically realized. We suggested the possibility of LF-movement of the antecedent as an option in Quechua grammar.

### M. INFL as an $\bar{A}$ -Anaphor

To explain the alternation between different nominalizing affixes in subject and non-subject relative clauses, we assumed that the nominalizers indicated properties of the INFL node, and that in subject relatives the INFL functions as an  $\bar{A}$ -anaphor. This assumption is part of a much more complex analysis of the INFL node in Quechua, involving both the tense and the agreement system. By determining the properties of the INFL system, Quechua verbal morphology interacts with the syntax. UG allows a set of feature specifications for INFL including

[ $\pm$  pronominal], [ $\pm$  anaphoric], and languages vary as to what features their INFL has.

While in chapter 6 the agreement component of INFL plays a central role, in chapter 7 the focus is on the tense component. After arguing that there is not just one auxiliary node, we focus on the formal properties of the tense system. We assume that the features [ $\pm$  anaphoric], [ $\pm$  pronominal] play a role here, in the same way as in the agreement system.

#### N. *Relative Tense*

The Quechua tense system involves three types of tense, which constitute a subset of the tenses specified by UG:

- (10) a. Main Tense, which is neither anaphoric nor pronominal, and which includes a reference to the moment of speech;
- b. relative tense, which is pronominal, and is related to a temporal reference point;
- c. non-finite tense, which is anaphoric.

Relative tense is the type of tense that we find in nominalizations and in adverbial clauses.

We have now listed 14 properties of Quechua syntax, roughly in the order that they have been presented in the six main chapters of this book. At different points we could have entered into much more detail, and this would have yielded a much longer list. If we take parameter theory as list-fixing, the properties mentioned above can be seen as parametrized specifications of optional features of the rules of Universal Grammar. A simple example would be Case marking. Suppose Universal Grammar had a general Case assignment rule as in (11):

- (11) a. [ $\alpha$   $F_a$ ] assigns Case<sub>*a*</sub> under government.
- ...
- [ $\gamma$   $F_n$ ] assigns Case<sub>*n*</sub> under government.
- b. Categories [ $i$   $F_i$ ,  $k$   $F_j$ ] can be marked for Case.
- c. Case<sub>*i*</sub> is realized as /*pqr*/ in the context of [ $i$   $F_i$ ].

Given this general format in Universal Grammar, individual languages will have particular systems. The set of features  $\{F_a \dots F_n\}$  may be quite restricted, as well as the possible Cases<sub>*a...n*</sub>. In addition, there may well be considerations of markedness playing a role. Normally, verbs are Case assigners, and nouns are elements marked for Case. This could be expressed in terms of the contrast between [ $-$  N] assigners and [ $+$  N] assignees; our work on Quechua nominalizations tends to suggest a contrast between [ $+$  V] assigners and [ $+$  N] assignees.

Given the general format in (11), the feature system we propose for Case in (9) is a characteristic example of the list-fixing approach. In this approach, however, the individual properties of Quechua grammar remain isolated from each other.

It will be clear by now that the phenomena accounted for by the above parameters are not unrelated. Categorical neutralization is related to the fact that Case is a property of all maximal projections in Quechua, which allows for  $V'''$  to be assigned Case. The fact that Case is a property of all maximal projections is a condition for both Move CASE and co-Case marking. Move CASE, co-Case marking and  $\bar{A}$  availability account together for movement out of constituents in Quechua, a phenomenon which cannot be predicted from any of these properties taken separately.  $\bar{A}$  availability allows for clause-internal Scrambling of major constituents, and co-Case marking allows for Floating and Extraposition of non-arguments. The raising phenomena analyzed in chapter 5 can only be predicted from the interaction of  $\bar{A}$  availability and co-Case marking. The phenomena accounted for with the INFL in NP parameter are not unrelated to those that follow from the categorical neutralization parameter. The latter produces  $N'''$  projections, headed by nominalized verbs, which need to contain an INFL. The INFL in NP parameter derives from the feature system of INFL in Quechua, which makes it possible for INFL to be nominal in character. The Case assignment parameter proposed for Quechua reflects the mixed properties of the categories under study: nominalized verbs can be Case assigners due to their [+V] feature, while being Case assignees due to their [+N] feature; AGR is a Case assigner in  $N'''$  projections as well as in  $V'''$  projections. The above properties are all related to the structure of the Quechua lexicon, in particular the Case morphology related to INFL.

In the next section we will explore an approach to parametric variation that may shed some light on the way that the various properties are related.

## 8.2. *Relating these Properties to Each Other: Module Interaction*

The basic insight we want to explore in this section is that a number of the properties of Quechua syntax listed above cluster around INFL and Case, and that INFL and Case play a central role in the category system. We will do this in a module interaction approach, defined as in (12):

### (12) *Module Interaction*

- a. The grammar consists of a set of autonomous modules, defined in terms of separate vocabularies.
- b. The interaction between the modules is partially specified in UG, subject to conditions of markedness, and partially left open.

This approach has also been used in the parameter literature. A few examples are given in (13):

- (13) a. Does rule *R* operate in the syntax or in the morphology (Chomsky, 1981)?  
 b. Does the projection principle hold only for lexical structure or only for the syntax (Hale, 1983)?  
 c. Do principles of linear adjacency hold in the syntax or only in phonology (van Riemsdijk, 1981)?

For the sake of the following discussion we will limit ourselves to those properties of Quechua directly related to categoriality. Recall the central components of category theory that we listed in chapter 1 and that have structured our analysis of nominalizations:

- (14) *Projection*  $[\alpha F]^i$   
 $\quad \quad \quad \begin{array}{c} | \\ [\alpha F]^{i-1} \end{array}$  where  $[\alpha F]$  is a 'visible' (e.g. lexical) feature
- (15) *Lexical categories*  
 $X = [\alpha N, \beta V]$
- (16) *Predication*  
 a. Predication holds between  $NP_i$  and  $X_i$ .  
 b. The relation between NP and *X* is a local one.
- (17) *Propositionality*  
 Proposition = Tense operator (Predication).
- (18) *Referentiality*  
 $X$  is an argument at LF iff  $X = [+ \text{Case}]$ .

In the module interaction view that we would like to explore with respect to parametric variation, it is these five components of category theory that determine the shape of categories in different languages, and it is the different ways in which these components interact that produces interlinguistic variation.

To see how these components interact to produce Quechua nominalizations, consider first a language without these types of structures. Two clusters of semantic and syntactic categories would exist in this language:

There will be a principled relation between nominal and verbal features. In the most common view about categorial systems N and V are essentially contradictory, the definition of the category Adjective as  $[+N, +V]$  being an artifact with no grammatical consequences. For all practical purposes, in this view nominals and verbals are two disjoint classes which could be characterized with just one feature, e.g.  $[+V]$ . This means that the features  $[\alpha N, \beta V]$  are not seen as truly independent of each other, freely combinable to yield a third grammatical category. What our analysis shows is that  $[+N, +V]$  can be combined to yield a third category – nominalizations.

Now the properties of Quechua can be seen as together yielding the possibility of a third, mixed category. Categorial neutralization is related to the fact that Case is a property of all maximal projections in Quechua, which allows for  $V'''$  to be assigned Case, the latter being realized on the head of the nominalized verb. The INFL in NP property is not unrelated to categorial neutralization. The latter produces  $N'''$  projections, headed by nominalized verbs, which need to contain an INFL. The INFL in NP parameter derives from the feature system of INFL in Quechua, which makes it possible for INFL to be nominal in character. The Case assignment parameter proposed for Quechua reflects the mixed properties of the categories under study: nominalized verbs can be Case assigners due to their  $[+V]$  feature, while being Case assignees due to their  $[+N]$  feature; AGR is a Case assigner in  $N'''$  projections as well as in  $V'''$  projections. The above properties are all related to the structure of the Quechua lexicon, in particular the Case morphology and the morphology related to INFL (e.g. tense, nominalizing and subordinating suffixes, person morphology).

The interrelation between these various properties makes it possible to reduce them to two clusters interacting with each other. The first cluster of properties builds around Case, which defines referentiality, and the second cluster of properties builds around INFL, which defines propositionality. The two clusters are related through the rich morphology of Quechua. The result of this 'conspiracy' for Quechua is that the Case cluster makes clauses more like nouns and that the INFL cluster makes nominal projections more like clauses.

The following figure graphically represents this situation, which is a considerable complication of the one in (19).

The interactive approach that we are sketching, involving the components of category theory in (14)–(18), assumes that the mapping from the features  $[\pm N, \pm V]$  onto the semantic categories 'referent' and 'proposition' is not direct, but takes place via the categories Case and INFL. The fact that V can be related to Case and N to INFL has the effect of creating the possibility of syntactic nominalization.

This is not the only result of our analysis, however. It also makes predictions as to whether V or INFL will be the head of S in particular languages. A recent proposal is to make these two possibilities subject to parametric variation with respect to the category system of languages. Taraldsen (1983) claims for example that Norwegian differs from French in that, in the former  $S = V^{\max}$ , and in the

FIGURE 1: A SCHEMATIC REPRESENTATION OF THE RELATION BETWEEN SYNTACTIC AND SEMANTIC CATEGORIES

latter,  $S = \text{INFL}^{\text{max}}$ . Our modular approach allows us to predict whether V or INFL will be the head of S in a given language in that, in the former  $S = V^{\max}$ , and in the latter,  $S = \text{INFL}^{\text{fin}}$ . Our modular approach allows us to predict whether V or INFL will be the head of S in a given language. This prediction follows from the interaction between projection theory and propositionality theory. On the one hand, projection theory says that only lexical elements project. On the other hand, propositionality theory states that there must be a Tense Operator to define a proposition. Consequently, INFL can only be the head of S if it is lexical. In languages where it is not a separate lexical item but morphologically realized on the verb, as in Quechua, INFL cannot be the head of S. In Quechua, and presumably in Norwegian, the Tense Operator does not project, while in French or in English it does. Consequently, in INFL-headed languages, INFL will always need to be lexically filled at S-structure. This can be done either at the level of lexical insertion or in the transformational component, by verb movement to INFL (cf. Emonds (1976) and McA'Nulty (1982) for French, and Koopman (1983) for Kru languages). In V-headed languages however, INFL will always be lexically empty at S-structure and controlled by the morphology on the head, as is the case for Quechua. The presence of verb movement to INFL versus morphological control of INFL by the head thus falls out of our theory.

It follows from the above that in languages where INFL is not the head of S, INFL is extraneous to the  $X'$  system. This predicts that theoretically, INFL could occur in any projection. This prediction is borne out by the Quechua data. In Quechua, INFL may occur in both NP and S. This makes it possible for a mixed

category, half-way between NP and S to emerge, namely nominalizations. Nominal as well as verbal projections can thus be interpreted as propositions. Conversely, the theory predicts that in languages in which INFL is the head and thus not extraneous to the  $X'$  system, INFL will not occur in NPs. This is the case in languages like English. This reduces the possibilities of emergence of mixed categories in these languages and predicts a sharper separation between nominal and verbal projections.

In languages where INFL is extraneous to the  $X'$  theory, INFL is optional. This has the effect that both nominal and verbal projections may appear without an INFL node. In Quechua, verb restructuring occurs when there is no INFL in  $V^{\max}$ . Similarly, we predict that there is no verb restructuring in English.

If we take Stowell's (1983) conception of small clauses as projections from their predicate component to be parametric, then there would be languages where predication theory and projection theory interact, producing syntactic small clauses, and languages where they do not interact.

In Figure II we give a schematized but more systematic representation of this general approach:

FIGURE II: MODULE INTERACTION AND CATEGORY THEORY

The interaction of the modules in Figure II makes the following predictions for interlinguistic variation:

(a) Propositionality/Projection:

Languages may vary as to whether the propositionality operators, syntactically realized as INFL/COMP, project or not. To mention just an example from the current literature, Taraldsen's (1983) claim – that Norwegian differs from French in that in the former language  $S = V^{\max}$ , and in the latter,  $S = \text{INFL}'$  – could be stated in terms of the interaction of projection theory and propositionality: in Norwegian the Tense Operator does not project, while in French it does.

(b) Predication/Projection:

Similarly, languages may differ as to whether predicates project or not. If we take Stowell's (1983) conception of small clauses as projections from their predicate component to be parametric, then there would be languages where predication theory and projection theory interact, producing syntactic small clause constituents, and languages where they do not, resulting in a much looser organization of the verb phrase.

(c) Predication/Propositionality:

When predication can occur unsupported by INFL (cf. Higginbotham, 1983) a language has non-clausal predicational structures (which then again may project or not, as seen in b). If not, the language has nothing corresponding to small clause phenomena.

(d) Lexical Categories/Projection:

Languages may differ as to whether lexical features are fully projected or not, i.e. whether there is categorial neutralization.

(e) Lexical Categories/Propositionality:

Propositions may differ from language to language with respect to their categorial status. Obviously,  $V^{\max}$  can be a proposition, but we have argued that in Quechua  $N^{\max}$  can be propositional as well.

(f) Lexical Categories/Predication:

Languages may differ in the categorial definition of their predicates: VP is a natural predicate, but in some languages AP, and sometimes NP and PP can be used predicatively as well.

(g) Reference/Propositionality:

Languages may vary as to whether propositions may function as arguments externally.

(h) Reference/Predication:

A possible point of interaction between the reference module and the predication module may be whether in a given language just NPs may function as subjects in a predication relationship, or other categories, such as clauses, can be subjects, provided that they are referential. This type of interaction has consequences for the possible derivation of the Extended Projection Principle (Chomsky, 1982) from predication theory.

(i) Reference/Lexical Categories:

Another way in which languages may differ is in whether only  $N^{\max}$  can function as an argument or also  $V^{\max}$ , etc.



Returning now from this general matrix of module interactions to the categorial properties of Quechua nominalizations, we can define Quechua nominalizations with respect to Figure 2 as follows, where (a') corresponds to (a), and so on:

(a') Since INFL in Quechua is non-lexical, it does not project:

$S' = V^{\max}$ .

(b') Quechua predicates project.

(c') Predications in Quechua need not be supported by INFL: as shown in chapter 7, we have small-clause-like structures in Quechua.

(d') Lexical features need not be projected: hence categorial neutralization.

(e') Both  $N^{\max}$  and  $V^{\max}$  can function as propositions.

(f') As far as can be ascertained, all categories may function as predicates in Quechua.

(g') As we have shown, Quechua nominalizations, even when propositional, can function as arguments.

(h') Problematic for our analysis remains the fact that Quechua  $V'''$  nominalizations do not appear in the subject position of a predication. We have no explanation for this fact at this point.

(i') Both  $V^{\max}$  and  $N^{\max}$  nominalizations can function as arguments in Quechua.

Certain formal aspects of the module interaction approach have so far remained implicit. First of all, two types of variation were mentioned: situations in which variation resulted from the presence or absence of interaction between the modules (a), (b) or (c), and situations in which variation resulted from the interaction of modules with different elements from the categorial modules (e), (f). Theoretically, this is unsatisfactory, but the only way to remedy it at this point would be to divide the module of categorial features into a separate N module and a V module. Even though it might be in itself an attractive option, we are not prepared at this point to explore the full implications of this. Second, the different interactions may not always be independent from each other. An example would be the need for the clause node to have categorial status. One could argue that it must be the projection of something, e.g. either of the VP or of INFL.

Now we may ask ourselves (1) how the module interaction approach is different from the list-fixing one; (2) what predictions it makes about language acquisition.

With respect to the first question, we can begin by stressing an important conceptual difference. In our view the very concept of modularity in the language faculty may begin to explain the Babel problem, i.e. if language is a biologically determined structure, why is there so much diversity in it? Our answer would be that there is no theoretically specified one-to-one mapping between elements in different modules. There may be considerations of markedness that play a role, e.g. VPs are natural predicates; full projection of lexical features is the unmarked Case; nouns are natural referents. We have tried to argue, however, that these are not absolutes, but only the unmarked options leading to the two clusters in (19). Now the module interaction view accounts for the variation in terms of the non-direct relation holding between modules, thus predicting variation.

Aside from the general conceptual benefits we also would like to point to the specific relations created, by the modular approach adopted here, between syntactic and semantic categories. The fact that all  $X^{max}$  categories are Case-marked elements in the list-fixing approach makes no explicit predictions about the relation between syntactic and semantic categories. Clauses can link up to the module of reference since they can be Case-marked. Contrary to Kayne (1982), we think it is not the [+N] feature but the [+Case] feature which makes this possible. Similarly, nominal expressions can link up to the propositionality module, due to their having an INFL with sufficient internal structure and at least a reference to point E (the event point). Again, contrary to Kayne, it is not V that has the effect postulated.

From a formal point of view, of course, the approaches are very similar, having the following general format:

(20)

Two independent binary parameters yield four language types. The independence of the parameters is not always evident, however. It is in fact clear that certain properties can be linked. A case in point is the absence in Quechua of verbal auxiliaries together the presence of nominal agreement.

(21) a. Tns in S' non-lexical  $\rightarrow$  Tns non-headb. AGR in NP  $\rightarrow$  AGR non-head

c.

Property (21a) may be related to (21b) through the postulation of (21c). This is of course what we have done in the matrix in Figure 2.

How does our model satisfy the condition that easily accessible linguistic data must suffice to fix the way the various modules interact? We will assume that morphology is the primary data accessible to the language learner and that it is in part the type of morphology involved that gives a child access to the basic syntactic properties of a given language. What are the morphological properties that a child has to identify in order to deduce the category system of Quechua on the basis of frequent main clause evidence? Here we will discuss only the evidence for categorial neutralization.

First, a child will identify person morphology on nouns and verbs. In Quechua the two person paradigms are rather similar, as shown in (22):

|      |                    |            |                    |                  |   |
|------|--------------------|------------|--------------------|------------------|---|
| (22) | puri- <b>ni</b>    | 'I walk'   | mama- <b>y</b>     | 'my mother'      | 1 |
|      | puri- <b>nki</b>   | 'you walk' | mama- <b>yki</b>   | 'your mother'    | 2 |
|      | puri- <b>n</b>     | 'he walks' | mama- <b>n</b>     | 'his/her mother' | 3 |
|      | puri- <b>nchis</b> | 'we walk'  | mama- <b>nchis</b> | 'our mother'     | 4 |

On the basis of this primary data he will deduce AGR in NP, AGR in S and hence AGR in *XP*.

Second, the child will identify Case morphology as in (23):

|      |             |                       |
|------|-------------|-----------------------|
| (23) | nominative  | /[ <sub>-N</sub> AGR] |
|      | genitive    | /[ <sub>+N</sub> AGR] |
|      | - <b>ta</b> | /[ <sub>-N</sub> AGR] |

The child will identify Case as a property of NP, AP,..., deducing that it is a property of all maximal projections. At the same time he will notice that Case marking goes with nominal, [<sub>+N</sub>], morphology: no verbs are marked for Case.

This evidence is provided to him in main clauses. When presented with data structured as in (24) and (25), which contain nominalized clauses, he will infer category switch and the mixed categories of Quechua.

(24) [<sub>+N</sub> NP-q [<sub>+N</sub> NP-o V + Case]]

(25) [<sub>-N</sub> NP- $\emptyset$  [<sub>-N</sub> NP-ta V + Case]]

He will observe a Case on the nominalized verb and then deduce its mixed properties:

(26) [<sub>+V</sub>], because there is an object present  
 [<sub>+N</sub>], due to Case marking on the verb.

He will recognize the genitive Case on the subject in (24) as assigned in the context [<sub>+N</sub>], and conclude from the absence of -**ta** on the object that Case here is being assigned in the context [<sub>+N</sub>]. Similarly, in (25) he will recognize the - $\emptyset$  Case on the subject and the -**ta** Case on the object as being assigned in the context [<sub>-N</sub>].

The language learner can then deduce the categories of his language from the interaction between the two clusters of properties he has identified – Case and INFL as in Figure I – determining whether N and V reduce to [ $\alpha$ V] or whether they can be combined to yield a mixed category [<sub>+N</sub>, <sub>+V</sub>] – nominalizations. This type of positive morphological evidence will allow the child to deduce the marked interaction of the modules which has resulted in nominalizations. We predict therefore that only languages with overt morphological processes will have syntactic nominalizations of the kind we find in Quechua.

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# Mixed Categories

## Nominalizations in Quechua

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The problem addressed here is that of mixed categories, particularly the mixture of noun-like and verb-like properties that we find in syntactic nominalizations. Understanding nominalizations is crucial to an understanding of the grammar of such languages as Quechua, which is spoken in the Andes and is the focus of this book. The analysis is based on the theoretical framework and overall research aims of the theory of Government and Binding described in recent work by Chomsky and other workers in the same tradition.

Mixed categories in Quechua raise a number of issues which are here discussed in detail: the modularization of phrase structure, the interface between morphology and syntax, the morphological and syntactic status of Case, the syntactic base for propositionality, and the relation between complementation and nominalization. The book concludes with a new approach, in terms of module interaction, to the parametrization of category theory.

Front cover: Coca leaves, *Erythroxylon coca*

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