

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI

A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600

NOTE TO USERS

The original manuscript received by UMI contains pages with indistinct and/or slanted print. Pages were microfilmed as received.

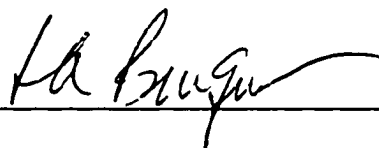
This reproduction is the best copy available

UMI

A GRAMMATICAL DESCRIPTION OF TARAHUMARA

The members of the Committee approve the masters
thesis of Diana Cohen

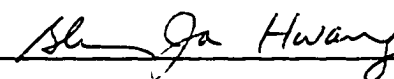
Donald A. Burquest
Supervising Professor



Jerold A. Edmondson



Shin Ja Hwang



To Luterio

A GRAMMATICAL DESCRIPTION OF TARAHUMARA

by

DIANA COHEN

Presented to the Faculty of the Graduate School of
The University of Texas at Arlington in Partial Fulfillment
of the Requirements
for the Degree of

MASTER OF ARTS IN LINGUISTICS

THE UNIVERSITY OF TEXAS AT ARLINGTON

August 1998

UMI Number: 1391489

**UMI Microform 1391489
Copyright 1998, by UMI Company. All rights reserved.**

**This microform edition is protected against unauthorized
copying under Title 17, United States Code.**

UMI
300 North Zeeb Road
Ann Arbor, MI 48103

ACKNOWLEDGMENTS

Everything I have is ultimately a gift from some generous person who was willing to supply me with something useful from their own stores. With particular reference to this thesis, if others had not shared their time, expertise and resources so unstintingly with me, I would have nothing further to offer in the investigation of the fascinating Tarahumara language.

Dr. Don Burquest, my supervising professor, first provided a foundation in the theory used in this work through his tireless teaching and willingness to explain puzzling points of the theory again and again. Then his close, uncomplaining readings of an overly-long draft and his careful recommendations allowed the project, from a shapeless mass of words, to take the form of a thesis. His wise counsel saved the day a number of times and kept my work moving forward when I thought it was at an impasse.

Dr. Jerry Edmondson cheerfully invested much time from his demanding schedule to bring to my attention a number of issues that lay buried within the thesis and to provide his unique and broad perspective on these issues. I am particularly grateful for the sense of value he attached to this study.

Dr. Shin Ja Hwang first made clear to me the significance and genius of text analysis, which plays an essential role in this study. Besides providing me with resources on Tarahumara and contacts with others who have worked on Tarahumara, she also assisted me to envision the project and make a bold start, and then to carry it through carefully.

Dr. Susan Herring sparked my interest in the Tarahumara language by her own admiration for its unusual characteristics. Not only did she place resources and contacts for Tarahumara into my hands, she also supplied me, far beyond the duties of the classroom, with abundant, well-considered comments regarding interpretations of its structures.

Karen McIntosh consistently gives forth a glad fountain of good counsel, reassurance and courage to persevere. Like a superb parent, she makes each student feel that he or she is the one she is most concerned about, when in fact she is an enthusiastic supporter of every one of us.

Margaret and George have been faithful encouragers, always understanding so completely the moods and stages of writing and deftly offering the very words of hopeful support that could adjust my perspective upward and onward.

My father's comments about this project have always included a casual "You can do it!" that helped immensely in keeping the project in perspective and not relying upon its outcome for a definition of my identity.

Ken and Martha Hilton labored meticulously to provide the New Testament translation in Tarahumara as well as some other excellent materials in the language. I am grateful for their unselfish provision of materials to students of Tarahumara and for their gracious permission to use the corpus of texts that they gathered.

Paul and Ellen Carlson provided plentiful study materials on Tarahumara to my family long ago in expectation of their usefulness, little suspecting that I would employ them in preparing a thesis. If these materials had not been so readily available, perhaps it would never have occurred to me to explore the intricacies of Tarahumara.

Wes Shoemaker, immediately upon receiving my inquiry, sent an enthusiastic letter of support for further analysis of the complex grammar of Tarahumara. I greatly appreciate his unselfish interest.

Don Burgess has already published invaluable theoretical and descriptive materials on Tarahumara. Willing to help beyond making these resources generally available, he readily assisted me in this study with timely letters of encouragement, with mailings of recent publications and with kind permission to use texts he had gathered.

Dr. Jim Copeland has published striking discoveries in the Tarahumara language based on extensive research. These insights contribute immeasurably towards an understanding of phonological and syntactic variability in language. It was reading about these discoveries, at the recommendation of my teachers, that aroused my interest in the great flexibility of Tarahumara and drew me in to studying it for myself.

I am vastly indebted to these special people who have made this study possible, and hereby express my sincere appreciation to each one. Most of all, however, I thank my unchanging heavenly Father, who gives daily life and breath, strength and grace. "Every good gift and every perfect gift is from above, and cometh down from the Father of lights, with whom is no variable-ness, neither shadow of turning" (Jas 1:17, KJV).

May 6, 1998

ABSTRACT

A GRAMMATICAL DESCRIPTION OF TARAHUMARA

Publication No. _____

Diana Cohen, M.A.

The University of Texas at Arlington, 1998

Supervising Professor: Donald A. Burquest

The Uto-Aztecan language Tarahumara demonstrates such a high degree of syntactic variability that some linguists have questioned whether the language lends itself to construction of a formal grammar. This work attempts to construct such a formal account of the syntax through application of Government and Binding theory to data from ten spoken and four written texts. Methodology of functional origin gives attention to discourse context of data so as to discover explanations for observed variability in forms. Results of the study indicate that the binary-branching hierarchical configurations of Government and Binding theory accommodate the Tarahumara data adequately, allowing all noun phrases to be properly governed and licensed. The theory posits NP-movement and Wh-movement transformations to account for the many departures from basic SOV word order. Pragmatic functions, including emphasis, special focus, discourse organization and ease of cognitive processing, are able to explain preposing and postposing of most re-ordered constituents.

CONTENTS

| | |
|---|-----|
| ACKNOWLEDGMENTS | iv |
| ABSTRACT | vii |
| LIST OF FIGURES | xi |
| LIST OF TABLES | xiv |
| Chapter | |
| 1. INTRODUCTION | 1 |
| 1.1 Cultural-linguistic overview | 1 |
| 1.2 Purpose and organization of this study | 6 |
| 1.3 Literature review | 13 |
| 2. PHONOLOGICAL SKETCH | 28 |
| 2.1 Preview of the phonological overview | 28 |
| 2.2 Segments and their alternations | 29 |
| 2.3 Tarahumara syllables | 47 |
| 2.4 Tarahumara prosody | 51 |
| 2.5 Transcription used in this work | 62 |
| 2.6 Conclusion to the phonological sketch | 64 |
| 3. LEXICAL CLASSES | 66 |
| 3.1 Lexical classes that commonly have argument structure | 67 |
| 3.2 Lexical classes that have little or no argument structure | 117 |
| 3.3 Conclusion for lexical classes | 168 |

| | |
|--|------------|
| 4. PHRASE STRUCTURE | 169 |
| 4.1 Phrase structure within the Government and Binding perspective | 169 |
| 4.2 Inflectional phrases in Tarahumara | 172 |
| 4.3 Verb phrases in Tarahumara | 189 |
| 4.4 Noun phrases in Tarahumara | 217 |
| 4.5 Adjective phrases | 241 |
| 4.6 Postpositional phrases in Tarahumara | 249 |
| 4.7 Adverb phrases in Tarahumara | 256 |
| 4.8 Complementizer phrases in Tarahumara | 265 |
| 4.9 Collapsing of X-bar structures and statements | 278 |
| 4.10 Negation in Tarahumara | 281 |
| 4.11 Questions in Tarahumara | 292 |
| 4.12 Abstract case assignment in Tarahumara | 303 |
| 5. TRANSFORMATIONS | 321 |
| 5.1 Terminology and principles of movement in the theory | 321 |
| 5.2 NP-movement | 325 |
| 5.3 Wh-movement | 330 |
| 5.4 Summary of discussion of movement transformations | 347 |
| 6. TEXT ANALYSIS | 349 |
| 6.1 Overview of the text | 349 |
| 6.2 Formal features of the text and their interpretation | 358 |
| 6.3 Word order flexibility in the text | 383 |
| 6.4 Conclusions of the text analysis | 397 |

| | |
|--|-----|
| 7. THEORETICAL IMPLICATIONS | 398 |
| 7.1 A cross-linguistic perspective on Tarahumara | 399 |
| 7.2 Tarahumara and Government and Binding theory | 405 |
| 7.3 Integration of the Government and Binding model with text analysis | 414 |
| 7.4 Directions for further research | 417 |
| Appendix | |
| A. MAP OF THE SIERRA TARAHUMARA IN RELATION TO NORTHERN MEXICO AND THE SOUTHWESTERN UNITED STATES | 419 |
| B. MAP OF THE SIERRA TARAHUMARA | 421 |
| C. UTO-AZTECAN LANGUAGES | 423 |
| D. LIST OF TEXTS AND SPEAKERS | 426 |
| REFERENCES | 428 |
| LIST OF ABBREVIATIONS | 433 |

LIST OF FIGURES

| Figure | Page |
|---|------|
| 1. Strength of Articulation within Classes of Consonants and Vowels | 45 |
| 2. Tree Representation of Example (322) | 176 |
| 3. Tree Representation of Example (329) | 180 |
| 4. Tree Representation of Example (335) | 185 |
| 5. Tree Representation of Example (340) | 190 |
| 6. Tree Representation of Example (342) | 191 |
| 7. Tree Representation of Example (343) | 192 |
| 8. Tree Representation of Example (345) | 194 |
| 9. Tree Representation of Example (348) | 197 |
| 10. Tree Representation of Example (351) | 201 |
| 11. Tree Representation of Example (357) | 207 |
| 12. Tree Representation of Example (359) | 209 |
| 13. Tree Representation of Example (362) | 211 |
| 14. Tree Representation of Example (363) | 212 |
| 15. Tree Representation of Example (383) | 223 |
| 16. Tree Representation of Example (390) | 226 |
| 17. Tree Representation of Example (391) | 227 |
| 18. Tree Representation of Example (396) | 230 |

| | |
|--|-----|
| 19. Tree Representation of Example (412) | 240 |
| 20. Tree Representation of Example (414) | 243 |
| 21. Tree Representation of Example (429) | 246 |
| 22. Tree Representation of Example (431) | 248 |
| 23. Tree Representation of Example (434) | 251 |
| 24. Tree Representation of Example (437) | 254 |
| 25. Tree Representation of Examples (439) and (440) | 258 |
| 26. Tree Representation of Example (442) | 259 |
| 27. Tree Representation of Example (444) | 261 |
| 28. Tree Representation of Example (457) | 271 |
| 29. Tree Representation of the Affirmative Clause in Example (467) | 283 |
| 30. Tree Representation of the Negative Clause in Example (467) | 284 |
| 31. Tree Representation of Example (469) | 287 |
| 32. Configuration Needed to Represent Interrogative Sentences | 292 |
| 33. Tree Representation of Example (479) | 296 |
| 34. Tree Representation of Example (485) | 299 |
| 35. Tree Representation of Example (490) | 305 |
| 36. Tree Representation of Example (491) | 305 |
| 37. Tree Representation of Example (492) | 307 |
| 38. Tree Representation of Example (493) | 310 |
| 39. Tree Representation of Example (499) | 315 |
| 40. Tree Representation of Example (508) | 327 |

| | |
|---|-----|
| 41. Tree Representation of Example (511) | 328 |
| 42. Tree Representation of Example (517) | 333 |
| 43. Tree Representation of Example (531) | 341 |
| 44. General Tree Representation of Adjunction | 343 |
| 45. Tree Representation of Example (533) | 344 |
| 46. Thematic Bands Adapted for This Text from Longacre's Spectrum Approach..... | 379 |

LIST OF TABLES

| Table | Page |
|---|------|
| 1. Tarahumara in the Uto-Aztecan language family | 5 |
| 2. List of texts examined in this work | 7 |
| 3. Basic word order frequencies in texts | 8 |
| 4. Phoneme chart of Tarahumara consonants | 29 |
| 5. Phoneme chart of Tarahumara vowels | 40 |
| 6. Graphemes for Tarahumara transcription with corresponding phonetic and phonemic symbols..... | 63 |
| 7. SV and VS orderings with intransitive and transitive verbs | 76 |
| 8. Nominative case pronouns | 144 |
| 9. Clitic pronouns (nominative case) | 145 |
| 10. Accusative case pronouns | 150 |
| 11. Genitive/possessive case pronouns | 152 |
| 12. Genitive case pronouns using the genitive construction | 153 |
| 13. Genitive case pronouns in reduced relative clause construction | 154 |
| 14. Inflection of verbs | 177 |
| 15. Structures and their constituents | 281 |
| 16. Inflections that are sufficiently complete to assign abstract case | 308 |
| 17. Scheme for organization of the text | 355 |
| 18. List of full noun phrases in the text | 362 |

| | |
|--|-----|
| 19. List of personal pronouns in the text | 364 |
| 20. List of demonstrative pronouns in the text | 367 |
| 21. Null arguments in the text | 368 |
| 22. Means of identification of antecedents of pronouns in the text | 369 |
| 23. Purposes for full noun phrase encoding | 376 |
| 24. Types of verbal encoding occurring in the text | 379 |

CHAPTER 1

INTRODUCTION

Between fifty and sixty thousand Tarahumaras scattered throughout the Copper Canyon and across the pine-forested Sierra Madre mountains of northern Mexico speak the Uto-Aztecan language called "Tarahumara" by outsiders (B. Grimes 1996: 100-101). Tarahumaras call themselves *Rarámuri*, meaning "foot runners" (Fontana 1979: xiii) or possibly "children of the sun-god" (Burgess 1984: 54). They call their language *Rarámuri* also, and it is this language that is the subject of this study.

1.1 Cultural -linguistic overview

The first part of this chapter focuses upon the geographical, cultural and linguistic setting of the Tarahumara as crucial background for the remainder of the work. The latter parts of this chapter explain the purpose and organization of the study and provide an introduction to the available literature concerning the language.

1.1.1 Geographical setting

The Tarahumara people or their ancestors have lived in the area now covered by the Mexican states of Chihuahua, Sonora, Sinaloa and Durango for perhaps the last one thousand years, as scanty archeological evidence suggests. High degrees of similarity and large numbers of cognates with other Uto-Aztecan languages suggest that these people have not been living in the area longer than a millennium; otherwise, given the extreme isolation of groups of speakers from one another,

the various Uto-Aztecan languages would most likely have become more differentiated than they are today (Spicer 1969: 782, cited in Kennedy 1978: 12).

In order to acquaint the reader with the larger geographical context of the region inhabited by the Tarahumaras and with the towns and villages mentioned in this study, maps are provided in appendices A and B of this work.

1.1.2 Cultural description

Clinging tenaciously to a lifestyle much like they had before the Spanish colonialists arrived, the Tarahumaras survive on the frequently drought-ridden mountain slopes of the Sierra Madre at an altitude of three hundred to six thousand meters, by semi-nomadic pastoralism and peasant agriculture combined with hunting and gathering of the forest's natural resources (B. Grimes 1996: 100-101). Although some Tarahumaras have settled in small towns such as Samachique and Guachochi, the largest number of them live in caves built into the mountainsides or in log cabins on the high meadows, arranged in clusters of a handful of families or completely isolated from other families.

Distinctives of the Tarahumara culture include their colorful voluminous cotton clothing, their cross-country, all-terrain footraces, their extensive use of edible and medicinal herbs and their violin-carving, basket-making, and blanket-weaving. Another distinctive is the Tarahumara Holy Week festivals (Sheridan 1996: 155-158) which have appropriated religious symbols from Roman Catholicism but re-interpreted them to express unique Tarahumara meanings. A well-known mark of Tarahumara social life is the frequent *tesgüinado* gathering (Sheridan 1996: 154-155) that brings isolated families together for agricultural work projects followed by feasting and heavy drinking of a corn-based fermented beverage called *tesgüino* which has an alcohol content similar to beer.

1.1.3 Linguistic milieu

As a result of preservation of their traditional lifestyle, the Tarahumara language enjoys the prospect of continued wide use. Maintenance of the language seems likely even though literacy in Tarahumara (and in Spanish) is very low, perhaps only 20% (B. Grimes 1996: 101). Moderate bilingualism in Spanish is common for trading purposes but seems unlikely to spread to sufficient domains of language use to occasion a widespread shift to Spanish. Minimal bilingualism in Spanish is a necessity, however, because a large population of Spanish-speaking Mexicans has moved into the towns in the Tarahumara area. These Spanish-speaking people usually operate the stores where Tarahumaras buy certain foods and dry goods, the government bureaus where Tarahumaras may obtain seed, fertilizer and food supplements, and the larger places of employment, such as sawmills and mines, where some Tarahumaras seek intermittent employment. Despite this use of Spanish for economic purposes, Tarahumaras actively maintain their language by speaking it in nearly all domains except to non-Tarahumaras who do not know it, by speaking it with their children and by affording it the same high degree of esteem that they assign to their traditional lifestyle, which they determinedly protect from the encroaching patterns of western and Mexican cultures.

Tarahumara is the most widely-spoken member of the Sonoran branch of the Uto-Aztecan language family and is most closely related to the Guarijío language, another Tarahumaran language that is spoken just to the west of the Tarahumara region in the Mexican states of Chihuahua and Sonora. Besides these two Tarahumaran languages, other extant members of the Sonoran branch include the Mayo, Yaqui, Cora, Huichol, Northern Tepehuan, Southeastern Tepehuan and Southwestern Tepehuan, Pápago-Pima, Nevome and Lower Piman languages. These Sonoran

languages are spoken in northwest Mexico and in south central Arizona in the United States. (Miller 1992: 212-216, J. Grimes 1996: 122-123).

Other branches of the Uto-Aztecan language family besides the Sonoran branch are the Shoshonean branch composed of languages spoken in the western United States, and the Aztecan or Nahuatl branch composed of languages spoken in central Mexico, Guatemala, Honduras and El Salvador. Some of the well-known languages in the Shoshonean branch include Shoshoni, Comanche, Ute, Southern Paiute and Hopi. As for the Aztecan branch, the famed classical language of the ancient Aztec empire has given rise to the modern Aztecan or Nahuatl languages that are still spoken by more than half a million people (Miller 1992: 212-216).

Table 1 provides the Uto-Aztecan pedigree, the family tree of the Tarahumara language. Each Uto-Aztecan branch and group is shown according to the classification of Miller 1992, and all languages are shown for the Sonoran branch to which Tarahumara belongs (the presence of <*> in the table indicates that individual languages are not shown for other groups). The number of speakers given for each of the Sonoran languages is based on surveys taken during in the 1980s, although some languages with very low numbers of speakers show data from the 1960s and 1970s and may now be extinct (Miller 1992: 212-216). A complete listing of Uto-Aztecan languages is provided in appendix C of this work.

Grammatical features of the Uto-Aztecan languages which Tarahumara shares include extensive agglutinative suffixal morphology for verbs, postpositions, a pronounced verb-final tendency, adjectives derived from verbs, pronominal clitics, and a nominative-accusative case-marking system for nouns that are not otherwise marked. Tarahumara does not share the switch-reference system for subordinate clauses that is common to other Uto-Aztecan languages (Miller 1992: 213-214, Heath (Asher) 1994: 4865-4866). In the area of phonology, Tarahumara prosody

does not share the feature of phonemic tone that characterizes some other Uto-Aztecan languages (B. Grimes 1996: 101).

Table 1. Tarahumara in the Uto-Aztecan language family

| Family | Branch | Group | Language | Speakers |
|-------------|-----------------|-------------------|-----------------------|---------------|
| Uto-Aztecan | Shoshonean | Numic | * | ~8,000 |
| | | Tübatulabal | * | 6 |
| | | Takic | * | ~160 |
| | | Hopi | * | 5,000 |
| | Sonoran | Cáhita | Mayo | 50,000 |
| | | | Yaqui | ~25,000 |
| | | Corachol | Cora | 15,000 |
| | | | Huichol | 12,500 |
| | | Opatan | Eudeve | extinct |
| | | | Jova | extinct |
| | | | Ópata | extinct |
| | | Tepiman | Papago-Piman | 15,000 |
| | | | Lower Piman | 1000 |
| | | | Nevome | 1000 |
| | | | Northern Tepehuán | ~8,000 |
| | | | Southeastern Tepehuán | 5,000 |
| | | | Southwestern Tepehuán | ~6,000 |
| | | | Tepecano | extinct |
| | | Tarahumara | Guarijio | ~3,000 |
| | | | Central Tarahumara | 30,000-40,000 |
| | | | Northern Tarahumara | 500 |
| | | | Southwest Tarahumara | 100 |
| | | | Western Tarahumara | 5,000-10,000 |
| | | Tubar | Tubar | extinct |
| | Aztecan/Nahuatl | Nahuatl | * | ~1,000,000 |
| | | Pipil | * | 20 |
| | | Pochutec | * | extinct |

1.2 Purpose and organization of this study

Having presented the geographical, cultural and linguistic background of the Tarahumara, the discussion now undertakes a description of the plan chosen for preparing this study of the Tarahumara language.

1.2.1 Scope and methodology

Varieties of spoken Tarahumara differ from village to village but fall roughly into four main groups, the Central, the Northern, the Southern and the Western groupings (B. Grimes 1996: 100-101, Burgess et al. 1997: 2-3). This present study focuses upon the Central variety as it is spoken in and around the town of Samachique by some fifty thousand speakers (B. Grimes 1996: 100).

In the syntactic section, the model employed is the Government and Binding theory, but the methodology is not typical of this model. Rather than studying a particular syntactic pattern in a Western language based on the analyst's native-speaker intuitions about the grammaticality and ungrammaticality of self-created possible sentences, the research strategy used here, as defined by Burquest (1996: v), attempts to describe all the essential structures of a non-Western language in at least a cursory fashion. The sole use of sentences taken from spoken and written texts substitutes for the benefits of the analyst's ability to speak the language and make grammaticality judgments.

The study is, therefore, text-based, making use of ten spoken texts gathered by Kenneth Simon Hilton and Martha Hilton of the Summer Institute of Linguistics during the 1950s and four written texts prepared during the 1960s. The latter four texts, although modified slightly toward the developing written style, were adapted from Tarahumara folktales in the oral tradition and continue to show strong evidence of colloquial style. A list of these fourteen texts, using titles that capture

their content, appears in table 2. A more detailed list of these texts including the names of speakers appears in appendix D.

Table 2. List of texts examined in this work

| Mode | Type of Text | Title | Length |
|---------|--------------|---|--------------|
| spoken | narrative | "Our Search for Other Tribes" | 21 sentences |
| spoken | narrative | "How a Man Killed a Deer with a Sarape" | 24 sentences |
| spoken | narrative | "My Search for the Family Cows" | 35 sentences |
| spoken | expository | "Birds of the Mountains" | 17 sentences |
| spoken | procedural | "How Footraces Are Run" | 23 sentences |
| spoken | procedural | "How To Skin a Coyote" | 7 sentences |
| spoken | procedural | "How To Make an Axe Handle" | 5 sentences |
| spoken | procedural | "How To Make a Violin" | 15 sentences |
| spoken | procedural | "How To Make a Head Scarf" | 6 sentences |
| spoken | procedural | "How To Shoe a Donkey or Horse" | 4 sentences |
| written | expository | "Introduction to the Three Folktales" | 2 sentences |
| written | narrative | "The Tale of the Bear and the Wasp" | 23 sentences |
| written | narrative | "The Legend of the Giant Canó" | 21 sentences |
| written | narrative | "The Tale of the Buzzard and the Heron" | 34 sentences |

1.2.2 Problem and proposed solution

The Tarahumara demonstrate a cultural value on variety and individualism that is in keeping with the lack of homogeneity of lifestyle and physical surroundings. As writers such as Copeland (1994b) have pointed out, this lack of regimentation in the culture mirrors the flexibility evident in their language. The phonology shows a high degree of apparently-unmotivated free variation, and the syntax evidences extremely variable word order, with SOV, SVO and OVS orders all occurring frequently and VOS, VSO and OSV orders also occurring occasionally. After providing a brief review of the existing literature and an overview of the phonology, this thesis focuses on the syntax

of the Central variety of Tarahumara, not surrendering to a label of “non-configurational” for the language but rather attempting to provide plausible explanations for the variability in word order.

This thesis strives to integrate the Government and Binding model of linguistic theory with some concepts of the Functional model in order to account adequately for the syntax of the Tarahumara language. The Government and Binding approach helps to account for the forms of the various orderings at clause level in the syntactic section of the thesis. Then the approach becomes Functional during the use of discourse analysis to find the pragmatic or discourse considerations that motivate various re-orderings as well as those that motivate the many forms of verbal encoding and the complex distribution of full noun phrases, pronominal forms and empty categories.

In order to show the magnitude of variability in word order, table 3 displays the proportions of the six basic word orders found for Tarahumara sentences in the fourteen texts examined for this study. Forty-one clauses were identified that had overt subjects and overt objects and did not involve speech verbs, which invariably occasion a VO ordering due to the phonological and syntactic complexity of the quotation that is the object of the speech verb. The basic word orders found in the texts are displayed in order of decreasing frequency, with the most frequently occurring word order, SVO, appearing at the top.

Table 3. Basic word order frequencies in texts

| Basic order | Number of clauses | Proportion |
|-------------|-------------------|------------|
| SVO | 24 | 58.5% |
| SOV | 6 | 14.6% |
| OVS | 6 | 14.6% |
| VSO | 2 | 4.9% |
| OSV | 2 | 4.9% |
| VOS | 1 | 2.4% |
| Total | 41 clauses | 99.9% |

As mentioned earlier, SOV is taken to be the basic word order for Tarahumara sentences and the five remaining orderings are considered to be derived from the SOV by postposing of the subject or the object or both. The phrase structure rules that account for the SOV ordering are described in chapter 4, sections 4.2 and 4.3, and the movement transformations that account for the preposing and postposing of subject and object noun phrases are described in section 5.3.3 of chapter 5.

The remarkable circumstance about the array of figures in table 3 is that the word order that most analysts consider basic for Tarahumara, the SOV order, and taken as basic in this study, is not the most frequently occurring order. Rather, a variant order, the SVO order, occurs most frequently. Reasons are given in chapter 4, section 4.3, for claiming an SOV rather than an SVO order for Tarahumara despite its lower frequency. Reasons for the postposing of the object to create the frequent SVO order, as well as for movement of other constituents to derive other word orders, are mentioned throughout this work. Reasons related to phonology are discussed in section 2.4.2 in chapter 2. Reasons related to syntactic complexity, emphasis, object topicalization and discourse organization are discussed in section 6.3 in chapter 6.

Analysts working from a strictly formal perspective and a strictly functional perspective may present results that demonstrate little common ground because of the divergence between them in their presuppositions, their methodology and their targeted data. This divergence is well-expressed in Hopper 1988, which details the essential opposition of the “A Priori Grammar Postulate” at the extreme formal position, and the “Emergence of Grammar” view at the extreme functional position.

The *a priori* view of grammar presupposes an inborn language faculty in humans that endows each speaker with a ready-made set of syntactic structures needing only to be parametrized

for each language. The focus, from this viewpoint, is on the set of rigid grammatical structures a speaker brings to a speaking situation, a set that is considered to be significantly large if not actually complete.

The “emergence of grammar” viewpoint presupposes an ongoing grammaticalization process of forms during speaking situations so that grammar is negotiated by participants depending on their varied pragmatic purposes. The focus is on the frequent modifications of form that speakers bring about as they speak, re-negotiating forms to express meaning as they choose and creating continuous changes in the grammar of the language.

The position taken in this paper is that the abundant variability in Tarahumara is not an argument in favor of continuous re-negotiation of grammar during speech such that there is no set of grammatical structures that remains constant, but is rather an argument for using methodology of the functional method, such as text analysis, to explain variability. The abundant variability is also an argument for the importance of integrating the study of pragmatics with a formal approach to increase understanding of the syntax of a language.

The claim made here is that while the grammaticalization process is at work to change a limited number of forms in the grammar of Tarahumara, the large body of syntax of the language is conventionalized based on universal principles and is carried about as a constant in the mind of speakers. Therefore, it is possible and profitable to account for the structures of the language according to a formal, hierarchical, stable framework, while it is also beneficial to thoroughly investigate the pragmatics of speaking situations and to do detailed discourse analysis in order to broaden one’s understanding of the grammar of the language in its largest sense. The study, thus, searches for some middle ground between the two opposing views, where helpful concepts and

methodology of both approaches can be employed to draw a more complete picture of the language than either approach could draw alone.

A corresponding major purpose of the study is to provide, by means of use of both theoretical viewpoints, a panoramic view of the structures of Tarahumara, appreciating the unique characteristics of the language and noting implications of these characteristics for the formal and functional theories, as well as the contributions of both theories toward a more accurate understanding of these aspects of the language. Unique characteristics of Tarahumara that will be discussed in the study include the widespread zero anaphora system, the use of clitic pronouns for nominative case, the use of noun phrases as adjuncts to verb phrases, the unusual genitive construction and the significantly higher proportion of VS ordering with intransitive verbs as compared to transitive verbs.

1.2.3 Organization of the thesis

Seven chapters comprise this work: chapter 1 which provides an introduction, chapter 2 dealing with phonology, chapters 3, 4, and 5 dealing with syntax, chapter 6 devoted to text analysis and, lastly, chapter 7 drawing theoretical implications from the study.

Following this introductory chapter, the phonological sketch in chapter 2 provides phoneme charts for Samachique Tarahumara and describes the segments, the principal allophonic alternations, the syllable structure and the prosodic features of the language. One of these prosodic features, the Weight Filter, is presented as helpful in predicting which constituents are likely candidates for movement out of their normal positions in a sentence. Chapter 2 also describes the orthography used for Samachique Tarahumara so that readers of the thesis will be able to scan transcriptions of the data with ease.

The treatment of the wide array of syntactic structures of the Tarahumara language will be organized into discussions of lexical classes in chapter 3, phrase structure in chapter 4 and transformations in chapter 5. The Government and Binding theory yields insights into structures in each of these chapters through application of such generative concepts as hierarchical structure of phrases, empty categories, multiple levels of representation and abstract-case assignment and thematic-role marking through the configurations of c-command and government.

In chapter 6 the discussion changes to the Functional perspective in order to explore the relationship of syntactic encoding to text organization. The approach employs typical methodology for Functional theory such as counting the various forms of noun phrases and verbal encodings within one selected discourse. Chapter 6 also addresses the problem of sentence-order variability at the textual level and posits a basic SOV sentence order upon which variations are made for specific purposes. Results show that normal pragmatic factors such as topicalization, special thematic roles, “heavy”-constituent shift, and emphasis are able to account for the observed word order variability.

After concluding the syntactic and textual analyses, the last chapter, chapter 7, will evaluate the effectiveness of the Government and Binding model, conceived for explaining less highly variable Western languages, in describing and explaining Tarahumara syntax. The study as a whole will show that despite the apparent lack of any enforced metalinguistic standard in this nearly totally-oral culture, the Tarahumara people have a highly-organized subconscious knowledge of the complexity of their grammar and a uniform set of rules for its use. The study will also suggest that despite the Tarahumaras’ value on individualism and creativity in the culture, extending to their use of language for self-expression, the proportion of language that is re-negotiated in each speech situation is quite small and remains dependent upon a sizeable backbone of conventional language usage.

1.3 Literature review

The remainder of this introductory section concentrates upon the already-existing available literature concerning Tarahumara. The discussion is arranged according to the chronological order of appearance of the first major work of each author: Brambila, Thord-Gray, Hilton, Gathings, Lionnet, Burgess, and Copeland.

1.3.1 Brambila

Brambila's 1953 work Gramática Rarámuri is an impressively comprehensive (644 pages) analysis of Tarahumara grammar, written in precise Spanish linguistic terminology and based on sound linguistic field methods. Data was meticulously recorded and filed during ten years of elicitation and natural conversations in an interactive language-learning setting on Roman Catholic mission stations in Norogachi and Naráachi. Each grammatical point of uncertain analysis was checked again and again with different informants over a period of months and dated records were kept of data from individual speakers. Brambila claims that regional differences are insignificant and that his work is definitive and accurate for the entire region where Tarahumaras dwell.

Brambila 1953 examines phonology, morphology and syntax over the course of eighty chapters of classification, explanation, and illustration. The work begins with a concise phonological introduction and explanation of the Tarahumara transcription used throughout the book. The first massive yet well-organized section of the book, "Morphology," addresses each part of speech and the function of each morpheme that is able to be combined with others to form sentence constituents; the topic of verbal inflection alone occupies twenty chapters in this section. The second section of the book, "Syntax," deals with combinations of constituents to form sentences and discusses, among other types of clauses, the formation of possessive, comparative, enunciative,

interrogative, coordinate, optative, concessive, subjective, modal, attributive, consecutive time, simultaneous time, completive, conditional, causal and temporal clauses. The book concludes with a briefer third section, "Derivation and Composition of Verbs," that returns to the topic of morphology and explains the derivation of a variety of verbs from verbal and nominal roots combined with derivational suffixes.

Thus, simply by amassing a variety of data and by presenting well-organized, lucid explanations, Brambila proves without argument that Tarahumara grammar is complex, intricate and capable of expressing nearly every possible nuance of meaning. The very comprehensiveness of the work may be prohibitive to students not yet well versed in the language, however, in that many constructions are not likely to be encountered until later in language learning. The technical Spanish linguistic terminology may also render the work inaccessible to English-speaking readers who have only a little Spanish.

1.3.2 Thord-Gray

Thord-Gray's 1955 work, Tarahumara-English, English-Tarahumara Dictionary with an Introduction to Tarahumara Grammar, is an extensive and definitive masterpiece representing the Tarahumara lexicon. Its major contribution is in the area of lexicography, consisting of at least five thousand detailed entries in 1,170 pages. Many entries are nearly encyclopedic, describing at length many types of edible and medicinal plants, birds and animals of the mountains, ceremonial practices, cosmological beliefs and specific topographical terms used by Tarahumaras in describing their mountain surroundings. While the precise region from which the data has been gathered is not mentioned, the entries appear to be identical or cognate with lexical items of the Samachique variety of Tarahumara.

Thord-Gray's sketch of the grammar and morphology uses terminology and categories familiar to Western Europeans in describing their own languages and, thus, is available to a readership not trained in linguistic analysis. The work evidences a thorough compilation of data and command of the language in the abundance of examples given for each point of grammar, although the grammatical introduction centers more on listing a variety of ways to form a construction than on classifying constructions into broader groups or attempting to explain or account for observations. As befitting a lexicographer, Thord-Gray's examination of verbs manifests meticulous and insightful classification, and his handling of "Impersonal Verbs," "Frequentative Verbs," and "The Verb *To Be*" (1955: 37-40) has been unparalleled in later works. But because Thord-Gray has limited his structural observations to the phrase without mention of the relative orderings of subject, verb and object and without description of the syntax of sentences, this work may best be used by the syntactician as a lexical reference.

1.3.3 Hilton

Hilton's 1959 work Vocabulario Tarahumara is a handy tool for language learning and text glossing, containing some 1,100 entries with Spanish glosses and a Spanish-Tarahumara word list in easy-to-use format. Intended for Tarahumara speakers wishing to learn Spanish and for Spanish speakers wishing to learn Tarahumara, the work contains no English; all description and glossing is in Spanish. The work presents the Samachique variety of Tarahumara, with the claim that all speech areas can understand Samachique speech with little difficulty (1959: vii); some entries differing from Samachique usage are noted along with the locality of usage, such as Aboreachi or Tatahuichi. A brief section of grammatical notes provides an overview of the pronominal system, noun morphology, verb classes and future tense inflection and other verbal suffixes, and a few suffixes that

may be added to adverbs and adjectives. No phonological description is provided, nor are any comments made about sentence structure.

Hilton's Vocabulario Tarahumara (1975) is a revision of the work just described, involving reorganization of lexical entries and modification of examples and glosses within lexical entries. Within the section of grammatical notes, some explanation regarding verbs has been clarified, additional verbal suffixes have been added along with their functions and several inadequately analyzed verbal suffixes have been omitted. This vocabulary includes almost all words used in the text compilation to be described immediately.

Hilton's 34 Textos en el Idioma Tarahumara de Samachique, Chihuahua (n.d.) is a compilation of thirty-four procedural, expository and narrative texts recorded by Richard Anderson and Kenneth Simon Hilton over a number of years. The set includes three sixty-minute cassettes which contain a single recording of each text as given by the original speaker, one looseleaf notebook containing a transcription of each text in Tarahumara, one looseleaf notebook entitled "Traducciones Literales" ("Literal Translations") containing Spanish word glosses for each text, and one looseleaf notebook entitled "Traducciones Libres" ("Free Translations") containing Spanish sentence glosses for each text.

The thirty four texts in the compilation were recorded by nine different men who live in and around the town of Samachique. The texts demonstrate a variety of speaking styles, from very slow pace with clear enunciation and little emotion to rapid pace with much slurring and vocal evidence of intense emotion. The compilation includes no texts composed by women speakers or younger speakers, however, nor does it include any hortatory texts. Certain of the narrative texts, while remaining profitable for syntactic analysis, do not lend themselves to discourse analysis in

that they are unpolished, episodic accounts of childhood or adult experiences and as such do not manifest features of a cohesive story.

Hilton's Diccionario Tarahumara de Samachique (1993) is a revised edition of the 1959 dictionary. This edition includes a number of new vocabulary items and example sentences as well as subentries, cross-references, a more complete Spanish index and a bibliography of writings on the Tarahumara culture and language. Like the previous editions, this publication includes Hilton's grammatical notes "aimed at allowing the student to quickly gain a knowledge of how the language works" (Hilton, 1997, personal communication).

1.3.4 Gathings

Gathings' 1972 work A Grammatical Statement of Tarahumara is a master's thesis presented to The University of Texas at El Paso following field work and analysis of the grammar of Tarahumara from a theoretical perspective of tagmemics. Personal investigation by the writer in Sisoguichi and Tewelichi during a three-month period forms the basis for this grammatical treatise. The variety of Tarahumara described here seems very similar to the Samachique variety but some usages are different, such as *tumujé* rather than *'yemi mi* for the second person plural and *mi* rather than *echo 'ná* for the distal deictic.

Gathings organizes his work under the general headings of Phonology, Word Structure, Phrase Structure, Clause Structure, Sentence Structure and Text Analysis. Following a brief phonological sketch Gathings outlines morphology by listing closed class elements such as various types of pronouns, functor words and particles, then by organizing inflectional and derivational affixes according to their functions in making up the elaborate verbal system and in forming nouns.

The section on phrase structure discusses slots and elements that may fill them within the noun phrase and verb phrase and includes a statement of the dominant order found in the noun phrase. The section on clause structure enumerates and exemplifies the nuclear tagmemes found in five types of independent clauses: the topicless, the stative, the intransitive, the untransitive and the bitransitive. The section on sentence structure describes and exemplifies methods of forming interrogative, imperative, declarative, passive and special focus sentences. The final section provides a fourteen-sentence procedural text and analyzes it by parsing each sentence morpheme by morpheme and then stating the phrase level, clause level and sentence level slots and classes filled by the Tarahumara constituents of the text according to the procedures of tagmemics.

Gathings 1972 is limited to description within the tagmemics framework of structures up to the sentence level, restricting even sentence-level discussion to independent clauses; no discussion of coordinate or subordinate clauses is included. A tagmemic analysis of text at the discourse level is also not provided. While the flexible word order, lack of extensive case-marking and lack of verb inflection for person and number is noted, no accounting for variable word order is attempted.

Well-expressed insights of Gathings 1972 include the classification and exemplification of pluralization strategies (1972: 39-42), the correlation of the variety of stative verbs with the level of animacy of the subject indicated by the verb selection (1972: 34-35), and the documentation of the tendency for inflected auxiliary verbs to follow participial verbs of greater semantic force (1972: 31-34). Important individual analyses include the use of *ke* (*que*) as an object marker for nouns (1972: 6-7), the use of *acha* to begin corroborative questions (1972: 64-65), and the permissibility of discontinuous question words when the reduced form of the subject pronoun intervenes between morphemes of the question word (1972: 67-68).

1.3.5 Lionnet

The major contribution of Lionnet's Elementos de la Lengua Tarahumara (1972) is in the areas of semantics and morphology. Lionnet's succinctly stated analyses in the area of syntax are also highly relevant to current investigations of sentence structure, and the implications of his thorough listings of carefully transcribed variants are wide-ranging in the area of phonology. Lionnet addresses these areas from a descriptive viewpoint, without attempting to fit his observations into any particular theoretical framework, although he seems interested in finding Aztecan roots for many of the morphemes, exhibiting a tendency towards etymology and historical reconstruction of the proto-language. While his work is inspired by the Diccionario Rarámuri-Castellano (Gonzalez 1952) prepared in a neighboring variety of Tarahumara (the Sisoguichi variety), Lionnet has prepared his own analysis based on data given by informants speaking the Norogachi variety and on his own insights.

Lionnet's premise is that the Tarahumara lexicon is formed primarily from monosyllabic and disyllabic morphemes, joined together to form multisyllabic words in synchronically productive processes of derivation. Lionnet is also sensitive to phonological conditioning of allowable combinations of morphemes, and to phonological free alternations and regional variations of elements. Lionnet is culturally sensitive to the "mental twist" required to grasp the compositional meanings of many derived words from a Tarahumara point of view.

Lionnet's concise syntactic section provides fuel for most of the ideas developed later in this paper. This syntactic introduction captures such significant generalizations as the head-final orientation of the language, the positioning of long subjects after verbs whereas pronouns precede verbs, the tendency of pronouns to be suffixed to the first word in the sentence unless they are placed in initial position for emphasis, the juxtaposition of subordinate verbs to the main verb

(preceding the main verb as do other types of complements unless they are being placed in “relief” for emphasis at the end of the sentence), and the coordination of clauses by mere juxtaposition. Other content useful to the syntactician includes Lionnet’s discussion of the common origin of many apparently independent singular and plural forms, his sampling of selected but complete verb paradigms, and his listing of verb roots that give rise to seemingly unrelated words.

1.3.6 Burgess

Burgess’ 1980 publication Relatos de los Tarahumaras is a reader for newly literate Tarahumaras, consisting of three folktales presented with both Spanish and the Central or Samachique variety of Tarahumara on each page, along with relevant illustrations. The author who developed a written form for these folktales is Ramón López Bautista, a Tarahumara native to Samachique, who has served as language consultant to linguists and translators and as schoolteacher, town mayor and Protestant pastor. As prepared by López Bautista, the style of the texts is primarily colloquial but includes some adjustments for the more formal register of standardized written format.

Burgess’ 1984 work Western Tarahumara is an English grammatical description of the Western or Rocoroibo variety of Tarahumara. General linguistic terminology is used; no particular theoretical approach dominates. The work includes bibliographical and phonological overviews as well as a glossed text in Western Tarahumara, one of the noted “Coyote” genre folktales. In addition to the exhaustive treatment of derivational and inflectional morphology and of phrase level syntax, enlightening discussion extends to basic sentence structure and word order, non-distinct argument phenomena, and structure and use of embedded questions, complement clauses, relative clauses and adverbial clauses.

Although Burgess 1984 applies to a variety of Tarahumara distinct from the one studied in this paper and numerous lexical differences immediately come into view, the structural generalizations made for this Western variety may be profitably compared with Central Tarahumara structures, especially at the clause level where syntax is very similar although conjunctions and relators differ phonologically. Particularly relevant to this study is Burgess' generalization that SOV is the most neutral word order, whereas subject emphasis is achieved by an SVO order and object emphasis by an OVS order (1984: 9-10). In regard to word order, Burgess also states that temporals and locatives in neutral clauses occur sentence-finally although in most clauses, one or the other is moved to a sentence-initial position for emphasis (1984: 9).

Burgess et al. Compendio Básico de la Gramática Rarámuri (1997) is a basic Spanish grammatical description of Tarahumara drawn up by a committee of Tarahumara speakers from seven towns representing the entire chain of regional varieties of the language. The treatise proposes to document the regional variation of the language, to serve as a basis for school textbooks and for the teaching of the language in bilingual schools, to aid in translations from Spanish to Tarahumara for public purposes and to provide an appreciation for the complexity of the language so that speakers may augment their sense of esteem for the language.

After a brief review of the sound system, Burgess et al. 1997 centers on comparing the different regional varieties with regard to their means of forming verbs, nouns, adjectives, colors, affirmatives and negatives, questions, locatives, temporals and numbers. Of particular usefulness is the brief sketch of sentence word order in the various varieties (generalizations are in agreement with Burgess 1984) and the overview of varying methods of clause connection for certain types of sentences, including ideas of contrast, alternatives, possibility, purpose, result, consecutive time

and concession. The work concludes with glossed transcriptions of a version of the “Coyote and Rabbit” folktale as told in each of the seven regions.

1.3.7 Copeland

Copeland’s “Comparisons of Similarity in Tarahumara” (1988) is a short article printed from a paper presented at the 1987 LACUS Forum. This paper addresses patterns used for expressing comparisons of similarity in the eastern slope variety of Tarahumara spoken in Muriciki and Tuciaci. Copeland’s premise is that word order variation in this language serves particular discourse functions and is not a result of “free word order” in the language (1988: 260). He asserts that as a SXV language, Tarahumara’s two positions of prominence are the sentence-initial Topic position and the sentence-final position, while middle positions accommodate less-salient elements. Therefore, as expected, the proposition to be compared, which usually needs to be overtly stated and foregrounded, is most often found in sentence-initial position. Or, also as expected, the proposition to be compared may be separated in two parts with the topic placed in initial position and the compared attribute in final position. Meanwhile, the standard of comparison (the entity or event with which the topic is being compared) and the statement of relation (one of the relator words such as *mapu* or *mapuregá*) are found in middle positions. When the standard of comparison and statement of relation are found in initial or final positions, however, this structure is a marked order being exploited for special discourse functions such as giving special salience to an exceptional topic (1988: 259).

Copeland’s “Intensification, Contrast, and Metaphor in Tarahumara: Comparisons of Dissimilarity” (1990) is also an article published following the LACUS meetings. In this paper Copeland points out the correlation between Tarahumara’s lack of dedicated morphemes of

comparison and its widespread use of implied rather than explicit comparisons. Tarahumara does have a structure for making explicit comparisons involving an intensifier, the conjunction *ke* and the postposition of accompaniment *uga*. Most commonly, however, either the standard of comparison or the statement of relation--or both--is left unsaid, resulting in an implicit or implied comparison. To form implicit comparisons, an intensifier from a scale of intensifiers at increasing distances from the norm is chosen for use with an overtly-mentioned compared entity, as in "Rimijio is working extremely hard" (1990: 337). Implied comparisons may be formed by juxtaposing clauses that contrast some perceptible difference between the compared and the standard, as in "This field is yellow, that one over on the other side is green"(1990: 341). No matter which method is chosen, the hearer will need much direct context to interpret the comparison properly. Such context dependent strategies in Tarahumara are not surprising in light of the lack of any comparative or superlative morphemes such as English *-er* and *-est*.

Copeland's 1991 paper "The Relativizing Complementizer mapu in Tarahumara Discourse" deals with all types of backgrounded clauses in Tarahumara and posits that the all-purpose complementizer *mapu* serves simply to indicate embedding and backgrounding as it introduces these dependent clauses. Copeland does not follow other analysts in supposing that *mapu* has many meanings, one for each type of clause, but suggests that *mapu* depends on other elements that combine with it, such as the classifiers *-ki*, *-curú*, *-ari*, *-gitá* and *-regá* to provide information about the specific relationship between the dependent and independent clauses. The paper applies the Semantic Binding Scale of Talmy Givón to Tarahumara, listing the manipulative, cognitive utterance and modality verbs for Tarahumara and placing them in the appropriate positions of the hierarchy according to the syntactic coding and the discourse functions that they assign to their dependent clauses.

Copeland's "Discourse Prerequisites for Phonological Analysis: Free Alternation in Tarahumara" (1992) is a striking, concisely written paper that provides functional motivation for the extensive apparently free variation within consonant sets and vowel sets in Tarahumara speech. Copeland suggests that, even though the variations may not be "ideationally" motivated, they do indicate iconically the prominence that the speaker wants the word to have in a discourse. A simple, elegant chart entitled "Strength of Articulation" illustrates the continuum of prominence for each of the commonly varying sets. According to this chart, choices of voiceless stops, the glottal stop and nonassimilated vowels are iconic of greater discourse prominence. On the other hand, choices of voiced stops, nasals, glides, null consonants and assimilated or suppressed vowels are iconic of reduced discourse prominence.

Copeland's 1993 paper "Tarahumara Reduplication: the Grammaticalization of Iconic Intensification" proposes the view that expansion in the form of a word represents intensification in the meaning of the word. After pointing out that many previously-productive iconic reduplications have grammaticalized to become fixed lexical items, Copeland presents two common phonological reduplication patterns. The first pattern reduplicates the first syllable of the word and denotes intensification away from the prototypical meaning of the word, as by changing the normal singular, specific, focused sense of the word to a plural, distributive or habitual sense. The second pattern reduplicates the last syllable of the word and denotes intensification towards the prototypical meaning of the word. The article advances the concept that contrasts achieved by reduplication, such as this antithesis of *focused* and *diffuse*, may be a type of aspect even though they have little to do with temporal distinctions.

Copeland's "Unmotivated Free Alternation in Tarahumara: The Principle of Emergence in Phonology" (1994a) is a later version of Copeland 1992 reviewed earlier in this section. In this

version the dependence of phonological form upon discourse functions is used as evidence for emergent phonology, consistent with the concepts of emergent culture and emergent grammar promoted by some functional linguists. Copeland argues that language is not rigidly codified in the realm of phonology before it rises to other rigidly structured realms of grammar and semantics, but rather that the phonology of language is also in process or flux as discourses are negotiated. Thus, functionally motivated phonetic free variation in Tarahumara may support a “trickle-down” cognitive approach to phonology that differs widely from the premises of generative phonology.

Copeland’s “Variation and Constancy of Patterning in Language and Culture: the Case of Tarahumara” (1994b) is the paper on which an address was based at the 1993 LACUS Forum. Copeland argues for emergent phonology, grammar and culture by marshalling evidence that Tarahumara’s omnipresent free variability in phonological word shapes, in morphological choice and in syntactic word order correlates with a positive cultural value on diversity and corresponding lack of homogeneous, standardized bodies of belief. He describes in detail many individual variations of belief on shared cosmological themes such as the number of worlds in the universe, the number and nature of spirit beings, the number of souls that a person has and the activity of those souls to produce sleep, dreams, illness, inebriation and death. Copeland also points to the extreme diversity of architecture and artifacts in the culture and the improvisation common in religious ceremonies, contrasting the “anything goes” cognitive style of the Tarahumara with that of the Pueblo Indians of the Mesa Verde who, following similar beginnings of personal experimentation, developed over centuries of growing population a complex, rigidly standardized culture.

Another aspect of the culture that seems to account for the variability in the language, according to Copeland 1994b, is that the Tarahumaras are a non-literate culture, lacking any visual models that could be used to standardize their language. He notes that all prescriptivism of language

form is lacking, diversity of form being the rule rather than the exception. Moving along these lines, Copeland goes so far as to say, “This lack of a conscious metalinguistic standard may also call into question the expected presence of a well-defined body of covert knowledge of homogeneous grammar in the culture” (1994b: 9).

Given this integrated view of the relationship between culture and language, Copeland 1994b recommends that linguistics look to culture for explanations, not assuming that cultural beliefs are a static body of knowledge to which all members conform nor assuming that language is a pre-structured mechanism independent of other cognitive activities. He suggests that linguists cease to consider grammar as a “static, internally consistent system of linguistic knowledge” and rather view grammar as they should view other cognitive activities, as a “dynamic, always highly variable, and partially inconsistent phenomenon” (1994b: 28).

Copeland’s 1995 paper “The Copula in Tarahumara: Paths of Grammaticalization” addresses the grammaticalization process of the copula in Tarahumara. The copula paradigm has many alternant forms, mostly derived from the Proto-Uto-Aztecan verb **ani* which meant ‘do, exist, have.’ Copeland details the functions of the copula and discusses the semantic bleaching of intransitive positional verbs to become existential and locational copulas. Focusing on the copula *kame*, Copeland outlines the process by which this form has become a verbal nominalizer in both stative and active constructions, a fused part of color terms, and finally a finite clause marker in stative and active assertions. All of these functions of *kame* are in current simultaneous use and show phonological reduction that reflects their grammatical reduction, so that the forms *kame*, *-kame*, *-game*, *-ame*, *-me* and *-m* all are now possible.

1.3.8 Implications of the literature review

This literature review demonstrates that the lexicon, phonology, morphology, syntax and semantics of Tarahumara have already been investigated in depth from descriptive/structural and functional perspectives, including approaches of cognitive linguistics and tagmemics. The language has not yet been cast in the light of the generative framework; thus, a formal account of its structures is lacking. The thought-provoking proposals of Copeland and others regarding the functions of variability in the language further warrant a rigorous method of testing for such proposals. Furthermore, textual studies of larger chunks of discourse have apparently not yet been published, at least not for the Samachique variety of Tarahumara.

Therefore, in the first place, there is room for a new study of Tarahumara syntax from the generative perspective which can provide the formalism needed to account for the variable syntax and can supply a rigorous method (within the confines of the theory) of testing some of the proposals of functional analysts. Secondly, the lack of a textual study and the need to reach to the textual level to provide pragmatic explanations for syntactic phenomena at the sentence level requires attention to entire texts as a basis for such a study. This work attempts to fill in both of these gaps.

CHAPTER 2

PHONOLOGICAL SKETCH

In order to familiarize the reader with the salient points of the Tarahumara sound system and orthography, this chapter provides an overview of the phonology in four areas: segments and their alternations, syllables, prosodic features and transcription method.

2.1 Preview of the phonological overview

This chapter begins with phoneme charts and phonetic descriptions of the fifteen consonants and five vowels of Tarahumara. This first section further describes the allophones of each phoneme and summarizes the common phonological alternations occurring in the language, offering some account for these alternations as natural processes. This section notes the considerable amount of apparently unmotivated free variation among certain natural classes of segments and refers to Copeland's discoveries of pragmatic functions that account for this widespread phonological variation.

The discussion moves on to describe the few variations in the CV syllable template that appear in loan words or stem from elision of vowels in allegro speech. Two important aspects of Tarahumara prosody also appear here: word stress and the phonological "weight filter." A variety of patterns of word stress results from the long words produced by Tarahumara's agglutinative morphology. The phonological "weight filter" is presented as a mechanism that helps to predict constituents that are candidates for movement on the basis of a high syllable count that corresponds to the increased salience or complexity of that constituent in discourse.

Finally, in order to facilitate reading of the examples, this chapter closes with a description of the transcription used in this work, a transcription based on standard Spanish orthography.

2.2 Segments and their alternations

This section separates the treatment of segments and their alternations into a description of the consonants and a description of the vowels of Tarahumara.

2.2.1 Tarahumara consonants

Table 4 represents the fifteen phonemic consonants of the language.

Table 4. Phoneme chart of Tarahumara consonants

| | Bilabial | Alveolar | Palatal | Velar | Glottal |
|----------------------|----------|----------|---------|-------|---------|
| Voiceless obstruents | p | t | | k | ʔ |
| Voiced obstruents | b | | | | |
| Affricates | | ts | | | |
| Fricatives | | s | | | h |
| Nasals | m | n | | | |
| Liquids | | r | | | |
| | | l | | | |
| | | R | | | |
| Glides | | | j | w | |

2.2.1.1 Obstruents

Tarahumara has five obstruent consonant phonemes, four of them voiceless and one of them voiced. These obstruents occur at the bilabial, alveolar, velar and glottal places of articulation.

2.2.1.1.1 Bilabial obstruents

The oral bilabial stops /p/ and /b/ are phonemic. Minimal pairs in (1) and (2) show evidence of voiced-voiceless contrast in the initial segment of each word. (The first citation <H16> appearing in example (1) refers to Hilton 1975: 16; the citation <H109> refers to Hilton 1975: 109, and so on throughout this chapter.)

- | | | | |
|-----|--------|------------------------------------|------|
| (1) | bi'tʃi | 'to be scraped' | H16 |
| | pi'tʃi | 'to sweep' | H109 |
| (2) | po'sa | 'to eat one's fill'--plural stem | H108 |
| | bo'sa | 'to eat one's fill'--singular stem | H21 |

In addition to occurring in contrast as shown, the oral bilabial stops /p/ and /b/ also occur in free variation in many other words, with slight phonetic gradations occurring along continua of voicing, aspiration and nasality. Allophones in this freely varying set include a slightly aspirated voiceless [p^h], an unaspirated voiceless [p], a slightly voiced [b], a somewhat more fully voiced [b], and even the fully voiced nasal stop [m]. The initial consonants in examples (3) and (4) illustrate the variation that is possible within the natural class of bilabial stops. (The citation <Text 6> appearing in example (3) refers to the audio recording corresponding to the sixth numbered text in Hilton's 34 Textos en el idioma Tarahumara de Samachique, Chihuahua (n.d.), and so on throughout this chapter.)

- | | | | |
|-----|---------------------|---------------------------|--------------------|
| (3) | p ^h i're | 'one,' indefinite article | Text 6 |
| | pi're | 'one,' indefinite article | Text 6 |
| | bi're | 'one,' indefinite article | Text 6 |
| (4) | pi'no | 'himself' (refl) | Copeland 1992: 360 |
| | bi'no | 'himself' (refl) | Copeland 1992: 360 |
| | mi'no | 'himself' (refl) | Copeland 1992: 360 |

The oral bilabial voiced stop /b/, besides the allophone [b], has an additional allophone [β] which occurs intervocalically. This lenition process appears in both Tarahumara lexically derived words as exemplified in (5) and Spanish loan words as exemplified in (6).

- | | | | |
|-----|-----------|-------------------|--------|
| (5) | a'riβitʃe | 'later, and then' | Text 4 |
| (6) | 'klaβo | 'nail' | Text 6 |
| | ka'βajo | 'horse' | Text 6 |

This fricativization of /b/ to [β] is a natural lenition process, in which the obstruent assimilates to the sonority of the preceding and following vowels.

Occasional examples indicate that a preceding sonorant consonant may trigger the lenition of /b/ to /β/, as in example (7), and that the lenition process is optional, as shown by the retention of the obstruent /b/ in (8).

- | | | | |
|-----|-----------|-----------|--------|
| (7) | 'ʔuurβija | 'chisel' | Text 4 |
| (8) | ku'lubəsi | 'arbutus' | Text 3 |

2.2.1.1.2 Alveolar obstruent

The oral alveolar stop /t/ is phonemic. Its voiced counterpart is the phonemic flap /t/, to which has been added the feature [+sonorant] lacking in [t]. These two sounds are in contrast in many words; minimal pairs exist, as shown in example (9).

- | | | |
|-----|------|------------------------|
| (9) | a'ti | 'to be present, exist' |
| | a'ri | 'later, soon after' |

These two sounds are not in contrast in many other words, however; they are in free variation. Examples (10) and (11) typify the variation between these segments in words of identical meaning.

- | | | | |
|------|-----------|-------|---------|
| (10) | ta'we | 'day' | Text 7 |
| | ra'we | 'day' | Text 17 |
| (11) | ʔi'ʔukare | 'owl' | Text 7 |
| | ri'ʔukari | 'owl' | H123 |

Phonemic /t/ has a number of allophones including freely varying phonetic gradations of aspiration; the phoneme may appear as a slightly aspirated [t^h] (the slight degree of aspiration is not indicated in the transcription) or as unaspirated [t]. Several allophones also appear in complementary distribution in conditioning environments. The dental [t̪] appears before front vowels [i] and [e], as shown in (12). The retroflex [ɖ] appears before back vowels [u] and [o] as shown in (13), and the alveolar [t] occurs elsewhere, that is, before the central vowel [a], as exemplified in (14).

- | | | | |
|------|----------|---------|--------|
| (12) | bi'ʔeami | 'heavy' | Text 4 |
| (13) | ʃuʔu'tʃi | 'hoof' | Text 6 |
| (14) | 'tasɪ | NEG | Text 4 |

These alternations are a natural process of assimilation of the place feature of the consonant to the place of articulation of the following vowel.

2.2.1.1.3 Velar obstruent

The velar stop /k/ is phonemic; minimal pairs in (15) show that it is in contrast with /t/ and /p/.

- | | | | |
|------|--------|--------------------|------|
| (15) | pi'tʃi | 'to sweep' | H108 |
| | ki'tʃi | 'to hate' | H110 |
| | ʔi'tʃi | 'to comb the hair' | H140 |

The velar stop is unaspirated and varies freely on a continuum of voicing between a voiceless [k], a slightly voiced [g] and a fully voiced [g]. Minimal pairs in example (16) show the free variation of voicing of /k/ in words that have identical meaning. (The different degrees of voicing are not indicated in the transcription.)

| | | | | |
|------|---------|---------------|--------|-----------------------|
| (16) | ku'siki | 'stick, pole' | Text 4 | |
| | gu'sigi | 'stick, pole' | Text 4 | (slightly voiced [g]) |
| | gu'siki | 'stick, pole' | Text 4 | (fully voiced [g]) |

2.2.1.1.4 Glottal stop

The glottal stop /ʔ/ is phonemic, its presence being the sole contrast in many words.

Examples (17) and (18) are minimal pairs illustrating the phonemic status of /ʔ/.

| | | | |
|------|--------|-----------------|-----|
| (17) | koʔ'na | 'downhill' | H32 |
| | ko'na | 'salt' | H32 |
| (18) | ʔme | 'so much' | H75 |
| | me | 'to earn wages' | H75 |

Phonotactic constraints restrict the glottal stop to syllable initial position in the first or second syllable of a word and but allow it to be the only consonant to participate in a consonant cluster onset. When the glottal stop is part of a consonant cluster onset, it precedes the other consonant. These constraints are verified by examples (17) and (18).

The glottal stop is in free variation with its absence in many other instances. Examples (19) and (20) show that the glottal stop may appear or not appear without affecting the word's meaning.

| | | |
|------|----------|---------|
| (19) | etʃo'na | 'there' |
| | etʃoʔ'na | 'there' |

- (20) wa'ru 'great, large'
 ?wa'ru 'great, large'

2.2.1.2 Affricate

Tarahumara has only one affricate, the alveolar affricate /ts/. This alveolar affricate /ts/ is phonemic and is in contrast with the alveolar stop /t/, as shown in (21), as well as with the alveolar fricative /s/, as shown in (22).

- (21) mi'tʃa 'month,' 'moon' H75
 mi'ta 'to defeat (someone) in a game or race' H76
- (22) ri'tʃi 'uncle' (father's younger brother) H117
 ri'si 'to become tired' H122

Examples (21) and (22) contain palatal affricates rather than alveolar affricates, yet the alveolar affricate [ts] is considered to be the phoneme having the palatal affricate [tʃ] as an allophone for reasons to be mentioned immediately.

The alveolar affricate /ts/ has two allophones, the palatal affricate [tʃ] and the alveolar affricate [ts], which are in complementary distribution, although free variation is also involved. In the environment preceding mid and high vowels, the affricate takes on a [-anterior] feature and becomes the palatal affricate, [tʃ]. Examples of the palatalization of the affricate before the high vowel [u] and before the mid vowel [e] appear in (23).

- (23) tʃ^huʔjaka 'blue jay' Text 7
 ko'ratʃe 'crow' Text 7

This process may be seen as natural in that the affricate assimilates to the place feature of a following vowel, if a correlation is drawn between the [-low] aperture feature or the [dorsal] place of articulation of mid and high vowels and the palatal [-anterior] place of articulation of the preceding affricate.

In the environment preceding the low vowel [a] the alveolar affricate [ts] freely varies with the palatal affricate [tʃ]. An example of free variation between the alveolar and the palatal affricates preceding the low vowel is shown in (24).

| | | | |
|------|----------------------|----------|---------|
| (24) | tsa'be | 'before' | Text 7 |
| | tʃ ^h a'be | 'before' | Text 19 |

These affricates occur in freely varying slight phonetic gradations along the continuum of aspiration, with a slightly aspirated [tʃ^h] being the most common allophone in the set. Example (25) typifies a word that may be pronounced with an aspirated or an unaspirated initial palatal affricate.

| | | | |
|------|--------------------------------------|--------|--------|
| (25) | tʃ ^h uru'g ^w i | 'bird' | Text 7 |
| | tʃuru'gi | 'bird' | Text 7 |

2.2.1.3 Fricatives

Tarahumara has two fricative consonants, the alveolar and glottal fricatives. The alveolar fricative /s/ and the glottal fricative /h/ are phonemic and are in contrast with one another as shown by minimal pairs in (26) and (27).

| | | | |
|------|-------|-------------------------|------|
| (26) | su | 'sew' | H135 |
| | hu | 'is, are, am' | H70 |
| (27) | ni'he | 1SG pronoun | H95 |
| | ni'se | 'to care for, shepherd' | H96 |

The phoneme /s/ has two allophones, the alveolar fricative [s] and the palatal fricative [ʃ]. The palatal fricative freely varies with the alveolar fricative in the environment preceding the high vowels [i] and [u]. Examples (28) shows that the fricative remains alveolar before the low vowel [a] and the mid vowel [o], while examples (29) and (30) show that the fricative varies between the alveolar and the palatal place of articulation before the high vowels [i] and [u].

| | | | |
|------|-----------|----------------------|---------|
| (28) | ka'posari | 'owl' | Text 7 |
| | roso'ra | 'nest' | Text 7 |
| (29) | si'ruma | 'that I might catch' | Text 17 |
| | gu'ʃiki | 'stick, pole' | Text 4 |
| (30) | gu'suwame | 'singers' | Text 7 |
| | ʃuʃu'tʃi | 'hoof' | Text 6 |

The glottal fricative /h/ has only one allophone, [h], although this phone occurs with freely varying degrees of friction. The process of psilosis or loss of friction in the glottal fricative may be at work in this variation, in which strong friction is heard in some instances while in other instances, even the same word pronounced by the same speaker in a different clause, the friction is barely heard at all. Example (31) illustrates the varying amounts of friction in pronunciation of the [h] within the same word, by the same speaker, within the same discourse.

| | | | | |
|------|-------------------|---------|---------|-------------------|
| (31) | ni ^h e | 1SG.NOM | Text 16 | (strong friction) |
| | ni ^h e | 1SG.NOM | Text 16 | (slight friction) |

The first instance, typical of many, shows strong friction with the appearance of [h], while the second instance typifies the slight friction that occurs with many other appearances of [h].

2.2.1.4 Nasals

Tarahumara has two nasal stops, bilabial /m/ and alveolar /n/, which are phonemic. They are in contrast with one another, as illustrated by the minimal pairs in (32) and (33). Note that each of these nasals has only one allophone, [m] and [n].

- | | | | |
|------|-------|----------------------------|------|
| (32) | ma'ra | 'daughter (of the father)' | H74 |
| | na'ra | 'to cry' | H90 |
| (33) | ra'me | 'tooth' | H114 |
| | ra'ne | 'to have children' | H115 |

The participation of [m] in free alternation with [p] and [b] is a matter of phonological alternation relevant to the phonemes /p/ and /b/ as discussed in section 2.2.1.1, so that [m] in those instances is an allophone of /p/ and /b/ rather than an allophone of /m/.

2.2.1.5 Liquids

The liquids of Tarahumara are the retroflex flap /r/ and the lateral /l/. In many words these two sounds are in contrast, as demonstrated by the minimal pairs (34) and (35).

- | | | | |
|------|-------|------------------|------|
| (34) | la'la | 'blood-SPCF' | H71 |
| | ra'ra | 'foot' | H116 |
| (35) | lo'wi | 'to have rabies' | H71 |
| | ro'wi | 'rabbit' | H123 |

Outside the group of words in which /l/ and /r/ may not be interchanged, these phones freely vary as allophones of the universal Tarahumara liquid here represented as /R/. Allophones of /R/ include not only the retroflex flap [ɽ], the most common of the allophones, the lateral [l], and the

voiced trill [r], but also the common phone [ɺ] which has qualities of a lateral and of a retroflex at the same time.

Example (36) shows free variation of the retroflex flap [ɻ] and the lateral [l] in different instances of a single word. (Citations are not given because these variant forms are extremely common and generally acknowledged; lack of citations elsewhere in this chapter is for the same reason.)

- (36) ga're 'to like, love'
 ga'le 'to like, love'

Example (37) shows free variation among the retroflex flap [ɻ], the lateral [l] and the combined phone [ɺ] in different instances of the same word.

- (37) a'ripitʃe 'and then'
 a'libitʃe 'and then'
 a'ɺibitʃe 'and then'

Example (38) shows free variation between the retroflex flap [ɻ] and the combined phone [ɺ] in different instances of the same word.

- (38) ni'ru 'exist'
 ni'ɺu 'exist'

Example (39) shows free variation between the retroflex flap [ɻ] and the voiced trill [r] in initial position in different instances of the same word. The voiced trill is heard only occasionally and appears only in word-initial position.

- (39) ra'we 'day' Text 17
 ra'we 'day' Text 15

See also the discussion of phonemic status and free variation of /t/ and /r/ in section 2.2.1.1.2 regarding the alveolar obstruent /t/.

2.2.1.6 Glides

Tarahumara has two glides, the palatal glide /j/ and the labiovelar glide /w/. Both of these have phonemic status and are each in contrast with all other consonants. They are not inserted by default between front or back vowels but are lexically present, as demonstrated by near-minimal pairs in examples (40) and (41).

| | | | |
|------|---------|---------------------------------|-----|
| (40) | hi'wera | 'to be strong' | H69 |
| | hi'jeta | 'they keep on following tracks' | H69 |
| (41) | ba'ʔyo | 'to be good-looking' | H16 |
| | na'wo | 'four' | H85 |

The labiovelar glide /w/ may, however, freely vary with its absence, as exemplified in (42).

| | | | |
|------|------------|-----------------|--------|
| (42) | ani'riame | 'called, named' | Text 7 |
| | ani'riwame | 'called, named' | Text 7 |

2.2.2 Tarahumara vowels

Tarahumara has five phonemic vowels. This section describes the vowels in terms of their features, the principal alternations in which they are involved and the circumstances under which certain vowels are lengthened.

2.2.2.1 Features of Tarahumara vowels

Table 5 charts the basic phonetic features of the five vowel phonemes of Tarahumara. Variation in specific phonetic features commonly occurs and is described in section 2.2.2.2.

2.2.2.2 Alternations involving vowels

In unaccented syllables, the front high and mid vowels may be freely interchanged. This alternation is illustrated in example (45) as it commonly occurs in the first person singular pronoun.

- | | | | |
|------|-------|-----------------|---------|
| (45) | ni'he | 1SG.NOM pronoun | Text 16 |
| | ne'he | 1SG.NOM pronoun | Text 16 |

In unaccented syllables, the central and back vowels may be freely interchanged. Example (46) illustrates the variation among [a], [u] and [o] in different instances of the same word within a single discourse.

- | | | | |
|------|----------|--------|---------|
| (46) | choma'ri | 'deer' | Text 25 |
| | chuma'ri | 'deer' | Text 25 |
| | chama'ri | 'deer' | Text 25 |

In unaccented syllables, the low central vowel often becomes a schwa, [ə], in allegro speech. Example (47) illustrates the appearance of the low central vowel in careful, slow-paced speech and the appearance of schwa in the same word in faster-paced speech later in the same discourse.

- | | | | |
|------|----------|----------------|--------|
| (47) | a'karama | 'will be shod' | Text 6 |
| | ə'karəmə | 'will be shod' | Text 6 |

In unaccented syllables, the low central vowel may also be completely elided in allegro speech. Compare the pronunciation of the word for 'will be shod' in example (48) with the pronunciations of the same word by the same speaker in example (47).

- | | | | |
|------|--------|----------------|--------|
| (48) | 'karmə | 'will be shod' | Text 6 |
|------|--------|----------------|--------|

This complete elision is subject to conditioning constraints on syllable templates. A word-initial unaccented [a] may be elided only if the previous word ended in the same low central vowel. A

word-medial unaccented [a] may be elided only if the consonant immediately preceding it is sonorant.

The high and mid front vowels /i/ and /e/ may optionally be laxed to [ɪ] and [ɛ] in word-final unaccented syllables. Example (49) illustrates two words in which lax vowels appear in the final syllable.

- | | | | |
|------|------------|-----------------|--------|
| (49) | ka'posari | 'owl' | Text 7 |
| | ani'riwame | 'called, named' | Text 7 |

A word-final unaccented non-high vowel--thus, [a], [e] or [o]-- may be completely elided in allegro speech. The preceding consonant, which then joins the preceding syllable as its coda, is unreleased as it ends the word. The examples in (50) and (51) illustrate first a word having an unreduced final syllable, then another instance of the same word in which the final vowel has been elided.

- | | | | |
|------|----------------------------|--------------------|--------|
| (50) | 'huko | 'am, is, are' | H70 |
| | ʔa'we 'ʔjenami 'huk' ha're | 'some are diurnal' | Text 7 |
| (51) | wa'riname | 'light, nimble' | H54 |
| | 'tasi mee wa'rinam' | 'not very light' | Text 7 |

Any of the vowels may be devoiced in an unaccented word-final syllable, effectively adding the allophones [ḁ], [ɛ̥], [j̥], [o̥], and [u̥] to the vowel inventory. Examples (52), (53), and (54) illustrate words in which the final vowel has become devoiced.

- | | | | |
|------|-----------|---------------|--------|
| (52) | 'huko̥ | 'am, is, are' | Text 7 |
| (53) | ə'jenə̥ | 'also' | Text 7 |
| (54) | ko'ratʃə̥ | 'crow' | Text 7 |

2.2.2.3 Occurrence of long vowels

Long vowels, having approximately double the duration of short vowels, occur frequently but not invariably in accented syllables and in single-syllable words used as intensifiers. Their appearance may not be completely predictable but it is pragmatically motivated; thus, long vowels need not be represented lexically. This lengthening represents auditorily the speaker's desire not to change the essential meaning of the word but simply to intensify its meaning, as is often done in English when a speaker draws out the [i] vowel to several times its normal length in the word 'really' in order to emphasize the word, as in example (55).

(55) 'It was [ˈɪ i:li] wonderful!'

Example (56) illustrates pragmatic focus on the word [taa]. The vowel in [taa] is, therefore, lengthened but the vowels in the intensifier [pe] and the copula ['niri] are not lengthened.

(56) pe taa ə'niri-ne 'I was a small boy' Text 17

In example (57), however, the same copula ['niiri] has pragmatic focus and its accented vowel is, therefore, lengthened.

(57) wa'be 'tʃeəti 'niiri 'were very dishonest' Text 26

In example (58) the intensifier [pee], used in example (56) without focus, does have pragmatic focus and its vowel is lengthened.

(58) 'tʃokame 'huko pee 'they are slightly dark' Text 7

Example (59) further demonstrates that the vowel of an intensifier lengthens to indicate the degree of intensity that the speaker wishes to accord the emphasized constituent.

(59) wee ka'ra pa'ʔjoame 'really very pretty' Text 4

Thus, the lengthening of short vowels provides evidence that phonological alternations may serve pragmatic or discourse functions. In this case, the lengthened vowel corresponds to increased pragmatic focus upon the word that contains the vowel. The next section suggests that this pragmatic function for phonological alternation may help to explain many of the instances of free variation mentioned earlier in this section.

2.2.3 Copeland's work on phonological free variation

The descriptions of consonants and vowels and their alternations referred frequently to the widespread free variation within natural classes of segments, a feature of Tarahumara phonology that is attested by Brambila (1953: 5-9), Thord-Gray (1955: 26-27), Lionnet (1972: 12-14, 15-16) and nearly every other writer on the subject of the Tarahumara language. In this decade Copeland (1992, 1994a) has published some remarkable discoveries regarding the discourse-based factors that motivate speakers to select one form rather than another within the natural classes that had formerly been thought to be freely varying.

Working from a functional perspective that leads him to search for a difference in meaning wherever he notes a difference in form (1992: 359), Copeland states that while there may be no "difference in ideational meaning" between varying forms, there are definite discourse functions served by the variation (1992: 359, 364). Copeland's primary claim is that different "strengths" of articulation have iconic functions. Intensified articulation in adverbial expressions, for example, is iconic of greater distance or greater time, as shown in examples (60), (61) and (62), cited from Copeland 1992: 362.

(60) mítú 'down over there'

- (61) mihtú 'way over there down'
 (62) mmmihtú 'way down there far away'

The intensified articulation of examples (61) and (62) is a creative means of indicating greater distance. Copeland states that such processes, involving "phonological gesturing" and codified onomatopoeia, are very productive in the language (1992: 362).

Copeland has conceived a useful chart for determining the strength of articulation of the phonemes that vary within natural classes. In general, voiceless obstruents and unreduced vowels are perceived as being articulated strongly, while voiced segments, reduced vowels and the suppression of segments indicate weak articulation. This chart is reproduced from Copeland 1992: 363 in figure 1.

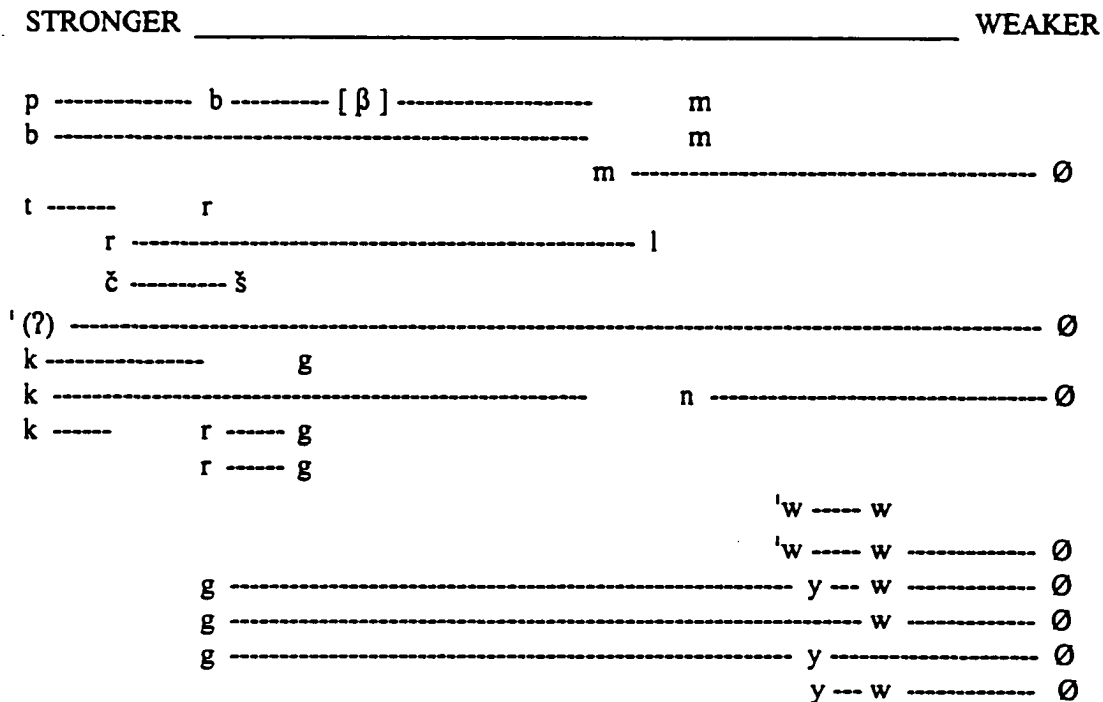
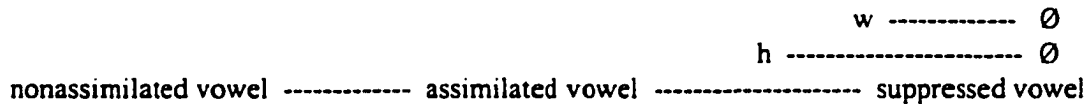


Figure 1. Strength of articulation within classes of consonants and vowels.

Figure 1--*Continued.*

In a later publication by Copeland (1993) the reader notes from the examples that phonological intensified articulation works in parallel with phonological patterns of reduplication to derive, as Copeland observes, intensified forms of words that add a sense of plurality, distributiveness or frequentative/habitual aspect to the original word. Examples (63) and (64) are adapted from Copeland 1993:317.

- | | | |
|------|--------------------------|--|
| (63) | be ^{-h} -té | ‘to dwell’ (singular stem) |
| | e- ^h pe-ré | ‘to dwell’ (plural stem) |
| (64) | ri-si-méa | ‘to tire’ |
| | i- ^h ti-sí-ma | ‘to tire a lot’ (frequentative/habitual/iterative) |

Not only does the plural or frequentative form demonstrate a reduplicated morpheme and loss of a voiced consonant; some plural or frequentative forms also show devoicing of the obstruent in the reduplicating syllable. Copeland suggests that the intensification of meaning resulting from the reduplication process (and, it may be inferred, from the strengthened articulation of the obstruent) corresponds to diffuse aspect. This diffuse aspect in plural or frequentative forms is in opposition to the focused or concentrated aspect of the plain form (1993:321-322). Copeland argues that diffuse aspect requires intensification of form (by reduplication, strengthening of articulation, etc.) because intensification in Tarahumara denotes movement **away from** the prototypical sense of the word, either by diminishing or by augmenting the meaning of the word (1993: 322-324).

From these stimulating proposals by Copeland it may be gathered that a reasoned accounting exists for the large amount of variation in Tarahumara phonology, provided that this accounting is sought in the larger discourse context rather than merely in the immediate phonological context. Variation among segments within natural classes may be iconic of discourse prominence of the involved constituent, just as movement of phonologically “heavy” constituents, to be discussed later in this chapter, may correspond to their discourse salience.

2.3 Tarahumara syllables

This section first provides an overview of Tarahumara syllable structure, then details constraints on syllables with illustrative examples.

2.3.1 Overview of syllable structure

The syllable template for Tarahumara is (C)V. Onsets are not obligatory but are present in the majority of syllables, so that CV is the norm for syllables. With two exceptions, to be specified in the discussion, consonant clusters are prohibited in syllable onsets. The nucleus of the syllable always consists of a vowel, never a consonant, not even a sonorant consonant. Only geminate vowels may extend the nucleus; no diphthongs occur. Open syllables are the norm but a few closed syllables exist in which the coda is usually a sonorant, occasionally a fricative, and rarely an obstruent. These closed syllables are always either loan words from Spanish or the result of phonological processes such as elision of vowels in unstressed syllables, particularly during derivations; closed syllables do not originate in the Tarahumara lexicon.

2.3.2 Description of constraints

The generalizations just summarized are now described in greater detail and supported with evidence from words that contain relevant syllable patterns.

Examples (65) and (66) illustrate words that begin with a syllable having no onset, of the type V, and that have a second syllable of the more common CV type.

(65) o.'ra 'to do' Text 17

(66) 'e.tʃi distal demonstrative Text 17

Examples (67) and (68) illustrate words that begin with a syllable of the type CCV. These are some of the few syllables that show a consonant cluster in the onset. Only two types of consonant clusters are licensed in Tarahumara syllables: those in which the first consonant is a glottal stop, and those in which the second consonant is the labiovelar glide. Example (67) illustrates the type of cluster that includes a glottal stop while example (68) illustrates the type of cluster that includes a labiovelar glide.

(67) 'ʔna.ta 'think' Text 17

(68) si.'kwi 'ant' H129

Words borrowed from Spanish and not yet assimilated to the Tarahumara sound system may demonstrate initial consonant clusters other than the two types just mentioned. Example (69) illustrates such a borrowed word, [klaβo]. This word continues to show the unmodified initial [kl] consonant cluster that it has in Spanish.

(69) klaβo 'nail' < Spanish [klaβo] Text 6

Example (70) and (71) illustrate the lengthened or geminate vowels that alone may extend the syllable nucleus. The sequence of vowels in (71) extends across two syllables and is not a

diphthong. Likewise, the sequence [aj] in example (72) should be considered the nucleus and coda of a closed syllable rather than a diphthong.

- | | | | |
|------|-------------|---------------|---------|
| (70) | 'kuu.tʃi.ka | 'little ones' | Text 17 |
| (71) | 'ur.bi.a | 'chisel' | Text 4 |
| (72) | waj.'jo.ka | name of bird | Text 7 |

Spanish loanwords involving diphthongs tend to separate those diphthongs into two syllables for their Tarahumara pronunciation. Example (73) illustrates a Spanish loanword in which the diphthong [io] is separated into two syllables in Tarahumara.

- | | | | |
|------|----------|-------------------------|---------|
| (73) | ri.'os.i | 'God' < Spanish [dʰios] | Text 24 |
|------|----------|-------------------------|---------|

Closed syllables are infrequent, and those that do occur are usually found in loanwords from Spanish, adapted to the sound system of Tarahumara. Examples (74) through (76) illustrate closed syllables in Spanish loanwords.

- | | | | |
|------|--------------|--------------------------------------|--------|
| (74) | son.'tar.si | 'soldiers' < Spanish [sol.ɖa.ðos] | H135 |
| (75) | ri.'sen.si.a | 'permission' < Spanish [li.sen.si.a] | H122 |
| (76) | mar.'ti.jo | 'hammer' < Spanish [mar.ɰi.jo] | Text 6 |

The segments appearing in the codas of these closed syllables are [ŋ] and [r], both sonorant consonants. The few closed syllables of Tarahumara are most commonly closed by sonorant consonants.

Some closed syllables in Tarahumara result from phonological processes that delete vowels in allegro speech. As a result of vowel elision a resyllabification takes place so that the consonant

that formerly was a syllable onset becomes a coda for the preceding syllable. Examples (77) and (78) illustrate syllable codas formed as a result of vowel elision.

(77) 'pol.ma 'will cover' Text 4

(78) ba.'ʔjo.am#ca.'je.na 'finish it beautifully' Text 4

In both examples (77) and (78) the single coda consonant is a sonorant consonant. But in example (79) the coda consonant is a fricative, a segment of such decreased sonority as to be very rare in Tarahumara closed syllables.

(79) 'pas.ca 'throwing' Text 25

Example (80) illustrates an even more rare occurrence, a word that as a result of multiple vowel elisions contains a consonant cluster in the coda of one of its syllables.

(80) si.'mi.bamp.ta 'we went along' Text 20

The second consonant in this cluster is an obstruent, the segment [p], which can hardly ever be found in a Tarahumara syllable coda. The Sonority Sequencing Principle (Kenstowicz 1994: 254) is observed even in this unusual syllable, however, in that the segments of least sonority appear at the syllable margin, while segments of greater sonority are arranged by degree of sonority toward the nucleus of the syllable, which, being a vowel, is the most sonorous.

One other type of closed syllable appears in Tarahumara as the result of optional suppression of the last syllable of words ending in [-wi]. This last syllable is deleted and the palatal glide [j] is added to the coda of the preceding syllable, as illustrated in example (81).

(81) ri.ho.wi 'man' Text 4
 ri.hoj 'man' H119

2.4 Tarahumara prosody

Tarahumara prosody boasts no exceptional suprasegmental features as it is not a tonal language and its patterns of intonation and sentence stress are unremarkable. Two interesting aspects of Tarahumara prosody do merit discussion here, however. These are the areas of word stress and the phonological “weight filter.” Word stress is essential to the discussion because it is not predictable; the long words produced by Tarahumara’s agglutinative morphology are lexically marked for stress. The phonological “weight filter” is noteworthy as a mechanism invented for this language that helps to predict, on a phonological basis, those constituents that are candidates for movement. These two prosodic features are addressed in turn.

2.4.1 Word stress

After showing evidence for the phonemic nature of stress in Tarahumara, this section provides a description of various metrical patterns in long words and outlines the relationship between morphological processes and stress changes.

2.4.1.1 Lexical assignment of stress

Stress is phonemic rather than predictable in Tarahumara. Minimal pairs abound in which only a stress difference distinguishes the meanings of the words. Three of these minimal pairs appear in examples (82), (83) and (84).

| | | | |
|------|--------|---------------------------------|-----|
| (82) | 'wika | 'sharp stick for planting corn' | H56 |
| | wi'ka | 'many, much' | H56 |
| (83) | 'kotʃi | 'pig' | H30 |
| | ko'tʃi | 'dog' | H30 |

- | | | | |
|------|-------|-----------------------|-----|
| (84) | 'niwa | 'to have, to possess' | H94 |
| | ni'wa | 'to make' | H94 |

A difference in stress placement is the only distinguishing factor in these and many other minimal pairs in Tarahumara.

2.4.1.2 Stress patterns in longer words

As a result of Tarahumara's agglutinative morphology, long words of three or more syllables are not uncommon. Words of three and four syllables show a variety of stress patterns. Examples (85), (86) and (87) show the three stress patterns possible for three-syllable words. One of these patterns, the first one, includes a secondary stress in addition to a primary stress.

- | | | | |
|------|------------|---------|---------|
| (85) | ˌro.ko.'go | 'night' | Text 16 |
| (86) | ke.'ta.si | NEG | Text 16 |
| (87) | 'ku.ro.wi | 'boys' | Text 16 |

Examples (88) through (91) show the stress patterns possible for four-syllable words. Three of these patterns include a secondary stress that helps to create a metrical foot.

- | | | | |
|------|---------------|-----------------------------|---------|
| (88) | ˌma.po.li.'ka | 'in order to' | Text 17 |
| (89) | ˌri.hi.'ma.ri | 'brother' | Text 16 |
| (90) | a.ˌli.βi.'tʃe | 'and then' | Text 4 |
| (91) | ku.'se.ra.-ma | 'to attach a handle to'-IRR | Text 5 |

To allow for rhythm and meter in the language, words of five syllables or more generally have both a primary and a secondary stress. Secondary stresses may be added to preserve the meter of the word, that is, to permit alternation of stressed and unstressed syllables. Example (92) shows

the addition of a secondary stress to a word when it gains a fifth syllable and the subsequent change in position of the secondary stress when a compound of the same word increases the count to seven syllables.

| | | | |
|------|-----------------------|----------------------|--------|
| (92) | a.'je.na.tfo | 'also' | Text 5 |
| | a.'je.na.,tfo.ko | 'also' | Text 7 |
| | a.je.nə.tʃi.'ko.ri.kə | 'in the same manner' | Text 6 |

Exceptions to the tendency to use secondary stress in words of five syllables are not uncommon. Example (93) demonstrates a five-syllable word that has only primary stress.

| | | | |
|------|-----------------|---------|---------|
| (93) | bi.mo.'ri.ta.ri | 'foggy' | Text 16 |
|------|-----------------|---------|---------|

The agglutinative morphology of Tarahumara, thus, results in many polysyllabic words that make use not only of primary stress but also of secondary stress to preserve the meter of each word.

2.4.1.3 Effect of affixation on stress

For the most part affixation does not affect stress; stress tends to stay on the syllable where it originated lexically. Functional affixes usually do not carry stress and so do not interfere with the original position of stress in the stem morpheme. Examples (94) through (96) demonstrate that the past tense suffix *-ri*, the passive participial suffix *-rati* and the temporal suffix *-watʃi* do not affect the stress of the stem.

| | | | |
|------|----------------|-------------------------|---------|
| (94) | ma.ha.'ha | 'to be frightened' | H73 |
| | ma.ha.'ha-ri | 'to be frightened'-PAST | Text 15 |
| (95) | a.'tʃa | 'to place' | H2 |
| | a.'tʃa.-ra.ti | 'to place'-PASSPTCP | Text 16 |
| (96) | ro.'mo | 'winter' | H124 |
| | ro.'mo.-wa.tʃi | 'winter'-TEMP | Text 16 |

Certain functional affixes, however, do carry stress, such that attachment of these affixes causes the stress of a word to change. A stress-bearing participial suffix attaches to the verb in example (97), causing stress to move from the stem to the first syllable of the suffix after affixation.

| | | | |
|------|------------|---------------------------------|---------|
| (97) | ra.'he | 'to light (a fire, torch, etc.) | H114 |
| | ra.hi.-'ga | 'to light'-PTCP | Text 16 |

Likewise, in example (98), a stress-bearing irrealis suffix attaches to a verb, causing stress to move from the second syllable of the stem to the first syllable of the suffix after affixation.

| | | | |
|------|-------------|---------------|---------|
| (98) | ri.'wa | 'to find' | H118 |
| | ri.wi.'me.a | 'to find'-IRR | Text 15 |

In addition to changing the stress-bearing syllable in a derived word, affixation may occasionally cause a secondary stress to be added to preserve the meter of the word, that is, to allow alternation of stressed and unstressed syllables. Example (99) demonstrates that the attachment of the passive suffix to a verb causes stress to change from primary stress on the second syllable of the stem to secondary stress on the first syllable of the stem and primary stress on the first syllable of the suffix. Thus, the originally stressed syllable remains without stress after affixation.

| | | | |
|------|---------------|----------------|--------|
| (99) | ni.'wa | 'to make' | H94 |
| | ni.wa.-'ri.wa | 'to make'-PASS | Text 4 |

This change allows the four-syllable word to be composed of two iambic feet. In each iambic foot a stressed syllable is followed by an unstressed syllable.

With a few exceptions, therefore, affixation does not affect the placement of stress in words.

2.4.2 The phonological “weight filter”

The importance of word order variation and movement processes in Tarahumara intrudes even into the realm of the sound system. The prosodic characteristic of **length** of constituents,

defined as the amount of phonological material of which a constituent is composed, relates immediately to their status as candidates for the ubiquitous movement phenomena in the language and, therefore, cannot be passed over in this section.

2.4.2.1 Indications, purposes and method for study

Although phonology is usually concerned with the interaction of features and segments in words and sometimes across phrases, an important aspect of Tarahumara prosody is the interaction of phonological length with syntactic word order. This interaction effectively extends the domain of phonological investigation to the discourse level in a sphere distinct from spheres of tone, intonation and stress that are commonly examined in discourse phonology.

When the amount of phonological material exceeds a certain limit, a mechanism begins to operate that tends to require the constituent involved to undergo a syntactic process of movement that places the constituent at the end of the sentence, or less commonly, at the beginning of the sentence. In this study, the mechanism is called the phonological “weight filter” because the exceeding of a certain maximum “weight” or “length” limit triggers the preference to remove the constituent from its underlying position. In this process the amount of phonological material in constituents interacts with syntactic phrase boundaries, syntactic positions and cognitive processing capabilities.

The aim of this section is to define in phonological terms the limits on size of constituents that may remain in normal syntactic position and to predict on a phonological basis when a constituent is a candidate for movement. The section also attempts to determine whether there is theoretical validity in claiming a phonological motivation for syntactic re-ordering in view of the

time-honored convention that syntactic complexity rather than phonological length occasions movement.

The phonological unit chosen for defining the weight filter is the syllable, as the most relevant and least variable unit of phonological material. Segments and moras seem to be fragments too small to be relevant, while phonological phrases, on the other hand, seem too unwieldy and too variable for use in counting. As Tarahumara words also vary greatly from one to eight or more syllables, even the phonological word is not a stable unit for measurement of phonological material. Syllables, however, appear at the middle of this ranking of phonological units and vary little from the CV template. Therefore, syllables are selected here as the most relevant and stable unit for measuring phonological length.

Three positions are discussed as slots for filling by constituents of varying phonological lengths. These are normal position, initial or preposed position and final, postposed position. Normal position for constituents is considered to follow the basic SXV sentence pattern for Tarahumara that will be discussed in chapters 4 and 6. The expectation is that the weight filter will cause heavy items to be postposed from their normal position. As a less frequently used alternative, the preposed position may attract heavy items out of normal position.

Preposing of constituents appears to facilitate cognitive processing to an extent. Preposing is likely to facilitate processing in that it allows the processor to move obliques and complements out of the way before reaching the subject and verb, which are more easily processed if they are in close proximity to one another. The increased prominence granted constituents by appearance in initial position may also facilitate cognitive processing of those constituents.

Preposing must cause a certain degree of processing burden, however, by delaying the announcement of the constituents that provide the framework of the sentence. If preposing did not

cause some processing burden, Tarahumara would most likely use the preposing strategy more frequently. In the texts examined for this study the major re-ordering strategy is postposing, with the ratio of preposing to postposing of re-ordered constituents at about one to fifteen. Thus, preposing of a long constituent is apparently allowed only when the benefit of initial salience enhances the efficiency of cognitive processing, or at least outweighs the detraction of the extra effort required for processing preposed material.

The method used here is to scan all fourteen texts examined for this work and note minimum, maximum and average number of syllables for each of the three positions, normal, preposed and postposed. Averages are estimated modes, being the **most commonly occurring** number of syllables found in inspection of the fourteen texts. Averages were not calculated statistically due to limitations on the scope of this study. Results of syllable counts for each of the three positions appear, along with typical examples.

2.4.2.2 Normal position

Given that Tarahumara is basically an SXV language, normal position constituents were considered to be subjects occupying subject position and predicate adjuncts and complements occupying sentence-medial position. (Sentence-medial verb phrases were not counted, being considered a stable, base position verbal constituent than a candidate for movement.) The minimum number of syllables for a constituent in normal position is two, as illustrated in example (100). (Transcription of illustrative sentences, rather than being phonetic, uses the Samachique Tarahumara orthography to be described in the next section. The bracketed citation following the English free translation refers to the text and sentence number from which the example is taken; see appendix D for text codes.)

2.4.2.3 Preposing

Constituents in preposed position were subjects and adjuncts or complements of the predicate that had been moved to initial or near-initial position in the sentence. The minimum number of syllables for a preposed constituent is two, as illustrated by the preposed pronoun in example (103).

| | | | | |
|-------|----------------------------------|-------------|-----------------|----------|
| (103) | | O | S | V |
| | ¿Acha | tamí | [jaré carúmati] | co'-mea? |
| | perhaps | 1SG.ACC | some animals | eat-IRR |
| | 'Would some animal eat me?' [v3] | | | |

The maximum number of syllables for a preposed constituent was twenty nine, as illustrated by the string of time obliques and subordinate clauses found at the beginning of example (104).

| | | | | |
|-------|---|------------------------|----------------------------|-----------------------|
| (104) | Time oblique | | Time oblique | |
| | [Chabé qui'yá | bamibali], | [mapuyena | ne choquichi] |
| | before in antiquity | years | until | very beginning |
| | Subordinate time clause | | | |
| | [mapalí | nihuá-lati | je'ná huichimoba], | |
| | when | make-PASSPTCP | PROX earth | |
| | S | | V | |
| | [bilé | rijoy cúchu-ami] | bité-ali | |
| | INDEF | man have children-AJZR | live(sg.)-PAST | |
| | 'Many years ago, when the world began, there lived a family . . .' [g1-3] | | | |

Presumably the maximum number of syllables can increase if additional subordinate clauses are included in the string of preposed material.

The most commonly occurring number of syllables in preposed material is about eleven, a common length for a single subordinate clause, although preposed material ranges widely from simple pronouns to strings of multiple subordinate clauses. Example (105) typifies an eleven-syllable preposed subordinate clause.

| | | | | | |
|-------|-------------------------|---------|-------------------------------|-----------|--|
| (105) | Subordinate time clause | | | | |
| | Chopi | [mapalí | echi rijoy hue nóchali | | |
| | but | when | DEF man very | work-PAST | |

| | | | | |
|------|---------|------------|--------------------|---|
| O | | | V | S |
| [ne | hualubé | co'huáami] | basú-nara=te | |
| very | great | food | cook-DESID-1PL.NOM | |

'but whenever the man worked for them, they had to prepare a lot of food' [g35-36]

2.4.2.4 Postposing

Postposed constituents include subjects, complements, obliques, non-finite verb phrases and subordinate and relative clauses that have been moved to sentence-final position. The minimum number of syllables for a postposed constituent is two, as illustrated in example (106).

(106)

| | | | |
|------|--------|------------|-------|
| | | V | O |
| Arí | a | rarinea-ma | jaré. |
| then | indeed | sell-IRR | some |

'Then for sure it can be sold to some people.' [c6]

It seems unreasonable to speak of a maximum number of syllables for postposed constituents because this is the receiving position for material of theoretically unlimited length. There will likely be a limit to what participants in communication can process even in this position, however; therefore, syllables in texts for this position were duly counted. The maximum number of syllables found in the texts was fifty six, in a sentence of a folktale that provided a simple post-verbal list of animal characters invited to a competition. The next greatest number of syllables was thirty eight, found in a postposed element of high complexity as illustrated in example (107).

(107)

| | | | | |
|--------------------|-----------|----------------|--------------|--------------------------------|
| | V | S---> | | |
| Jena'i | nirú | [baquia | taraca | ra'icha-lú-ami |
| here | exist | three | recount-PTCP | speak-PASS-AJZR |
| nije=ni | | nama-li | echi | nijé apalócha-la |
| 1SG.NOM-1SG.NOM | | hear-PAST | DEF | 1SG grandfather-SPCF |
| mapalí nijé | pe | táa | tohuí | níili]. |
| when | 1SG.NOM | slightly small | boy | be-PAST |

'Here are three stories that I heard told by my grandparents when I was little.' [i1-3]

The most commonly occurring number of syllables found in postposed constituents is about twenty, as illustrated by the twenty-two syllable postposed object in example (108).

| | | | |
|-------|---|---------------|----------------------|
| (108) | S | V | O---> |
| | ariga=mi | oméra-ma | [echi o'hueli huási, |
| | nevertheless-2SG.NOM | defeat-IRR | DEF large cow |
| | echi | ohueli | auché |
| | DEF | large | other |
| | | jaré | huicabé |
| | | some | many |
| | | | namuti]? |
| | | | animal |
| | 'will you nevertheless be able to defeat the larger animals?' [o10] | | |

The phonological weight filter is not an absolute requirement; it is a tendency. A speaker may choose to retain a phonologically long constituent in normal position, subject to certain considerations. Retention of a long constituent in normal position is allowed only if the constituent is phonologically long but not syntactically complex in the sense of having several embedded constituents involving VP, IP or CP. The phonological weight filter is also not absolute in that it is not the only factor that causes constituents to be postposed; phonologically short constituents may also be postposed for other reasons to be discussed in chapter 6.

Phonological "heaviness" as a motivation for syntactic re-ordering has theoretical validity in that phonological length often corresponds to discourse emphasis. Constituents important in discourse context are likely to be encoded with additional phonological material for rhetorical purposes. Tarahumara often preposes or postposes stressed constituents in order to provide them with added salience. That the stressed and moved constituents are phonologically long is, therefore, iconic of their prominent role in the discourse. Thus, phonological weight is iconic of discourse prominence.

A relationship between phonological weight and syntactic complexity also exists. When rhetorical underlining or pragmatic prominence dictate an augmentation of phonological material, this increase is normally carried out by building additional syntactic structures. Besides selecting

longer lexical items, adding syntactic structure is the only way to lengthen a constituent. Syntactic complexity and phonological weight are not exactly parallel, however, because constituents can include many adjoined phrases such as NP, AP, AdvP, Det and PP that increase phonological length without greatly burdening the cognitive processor. Even when they are of equivalent phonological weight, structures like adjoined or complementing VP, IP and CP would more greatly burden the cognitive processor than the simpler structures just mentioned. This consideration accounts for the preceding statement that phonologically long elements may be retained in normal position if they have no highly complex members such as VP, IP or CP.

It is natural that efficient cognitive processing of phonologically long or syntactically complex elements should work hand in hand and not at cross purposes with the drive to place stressed elements in positions that mark them as prominent. It is no surprise that positions that allow easier cognitive processing are identical with positions that impart added highlighting to elements that fill them.

2.5 Transcription used in this work

Tarahumara is spoken within the borders of Mexico, and literacy in Tarahumara is regarded as educationally most efficient if it allows an effortless transition to literacy in Spanish, the national language. Therefore, the orthography used for Samachique Tarahumara is based on standard Spanish orthography. The source materials on which this study is based became available in the 1970s and 1980s when the orthography in vogue for Samachique Tarahumara used only the common letters of the Spanish alphabet and followed Spanish spelling and stress-marking rules. This is the orthography used throughout this work; text examples are reproduced here exactly as printed in the source materials, with occasional modifications of punctuation and line numbering.

Some more modern publications in Samachique Tarahumara, such as primers and grammars, employ a simpler orthography that marks all stressed syllables and uses the graphemes <w> and <k> even though these are not graphemes used in standard Spanish orthography, except for words of foreign origin. Transcriptions in this latter orthography appear occasionally in this paper in examples taken from sources other than the text materials.

Table 6 is provided for reference when reading the transcription of examples used in this study; this table shows the symbols used in the Tarahumara transcription together with the corresponding IPA symbols for phones and phonemes.

Table 6. Graphemes for Tarahumara transcription with corresponding phonetic and phonemic symbols

| Tarahumara transcription | Symbol for phoneme | IPA symbols for phones |
|---|-------------------------------|------------------------|
| p | p | p p ^h b m |
| b | b | p b β m |
| t | t | t ṭ t̥ r |
| c before a, u, and o qu before e and i | k | k k ^h |
| g before a, u and o gu before e and i | k | k g |
| ' | ʔ | ʔ |
| r | r | r r̄ t l |
| l | l | l r̄ |
| r | R (see discussion of liquids) | ḷ r̄ l |
| s | s | s ʃ |
| j | h | h |
| ch | ts | ts tʃ ^h tʃ |
| m | m | m |
| n | n | n |
| y | j | j |
| hu | w | w |

Table 6--Continued.

| | | | | | |
|---|---|---|----|----|------|
| i | i | i | ɪ | j | ii |
| e | e | e | ɛ | ɛ̣ | ∅ ee |
| a | a | a | ɶ | ə | ∅ aa |
| u | u | u | ụ | uu | |
| o | o | o | ɔ̣ | ə | ∅ oo |

An inspection of table 6 reveals that only seven symbols differ between the transcription of Tarahumara used in this paper and the International Phonetic Alphabet symbols for Tarahumara phonemes. In the transcription employed here, <hu> is used for /w/, <y> is used for /j/, <ch> is used for /ts/, <j> is used for /h/, <r> is used for /R/, the apostrophe <'> is used for /ʔ/, and <c>, <qu>, <g> and <gu> are used for /k/.

The transcription adopted in this work marks stress in multisyllabic Tarahumara words according to standard accent-writing rules for Spanish. Because some of the conditions of the rules for Spanish do not apply to the CV template of Tarahumara, a single statement suffices: stress should be read as falling on the penultimate syllable of a word unless orthographically marked on a different syllable by means of an acute accent. As a concession to the frequent occurrence of unpredictable secondary stress, another rule not existent in Spanish applies: mark secondary stress, if present, with an additional acute accent.

2.6 Conclusion to the phonological sketch

The small and unremarkable phoneme inventory of Tarahumara and the simple transcription method belie the enormous amount of variation among segments and the extensive interaction of the phonological component with syntax and pragmatics in movement operations. Fortunately, thanks

to the work of Copeland, the variation among segments can be accounted for by appeal to discourse considerations. The relationship of phonological length to syntactic complexity and cognitive processing in movement phenomena can also be explained by appeal to factors of discourse prominence. Evidence of interaction of phonology with syntax and pragmatics, as discussed in this chapter, will surface repeatedly throughout this study.

CHAPTER 3

LEXICAL CLASSES

This chapter attempts to represent those aspects of the Tarahumara lexicon that relate closely to syntactic structure. A discussion of material originating in the speaker's lexicon is integral to an investigation of the grammar of the Tarahumara language because of the Projection Principle of Government and Binding theory which states that "lexical information is syntactically represented" (Haegeman 1994: 55). This principle indicates the significant influence that lexical information has in determining syntax. Ultimately, structures are composed of lexical items, but only items from certain classes may appear in particular structural positions. This chapter first describes the eight classes from which Tarahumara lexical items are drawn; the next chapter, chapter 4, then describes the syntactic structures in which items from these classes may appear.

Lexical items classified and described here are limited for the most part to items found in the texts examined for this study. Additional evidence of the influence of lexical information on syntactic structure will be found outside these texts, but such investigation is beyond the scope of this study.

Chapter 3 is divided into two major sections, each covering several of the lexical classes of Tarahumara. The first section deals with two classes that have argument structure: verbs and postpositions. The second section deals with six classes that have little or no argument structure: adjectives, adverbs, nouns, pronouns, conjunctions and interjections.

3.1 Lexical classes that commonly have argument structure

The upcoming discussion proposes to reflect the argument structure and subcategorization frames of the Tarahumara lexicon.

3.1.1 Predications and arguments

The sentences of Tarahumara, like those of any language, may be understood as logical propositions that have arguments and that have predications about those arguments. Arguments refer to entities, such as persons or things, selected from the Tarahumara universe of discourse. Predicates define a particular relation between these entities or arguments (Haegeman 1994: 43). Predicates in Tarahumara are verb phrases. Postpositions also show evidence of argument structure. The arguments of Tarahumara predications are typically realized by noun phrases (including pronouns) and postpositional phrases.

3.1.2 Verbs and their argument structure

Tarahumara verbs are the first lexical class to be addressed, as they are the most common type of predication. The principal means of describing Tarahumara verbs is by specifying the exact types of arguments taken by these verbs. Depending on their semantics, Tarahumara verbs may take one, two or three arguments. The lexicon stipulates the number of arguments required by a particular verb. The mental lexical entry for each verb provides the Tarahumara speaker not only with the subcategorization frame for that verb, indicating how many complements or internal arguments the verb requires within the verb phrase, but also with the argument structure for the verb, indicating the total number of arguments required, both internal to the verb phrase and

external to it. The external argument is the subject argument which is realized outside the verb phrase (Haegeman 1994: 45).

Thematic structure of Tarahumara verbs will also be dealt with in the following discussion: thematic structure provides information about the differing semantic relationships between a verb and each of its arguments. The distinct relations between verbs and arguments are normally described in terms of their thematic roles or theta roles, including such roles as AGENT, THEME, PATIENT, EXPERIENCER, BENEFACTIVE, INSTRUMENT, SOURCE, LOCATIVE, and GOAL.

Thematic and argument structure are related in Government and Binding Theory by the Theta Criterion, which states that every argument of a verb must be assigned one thematic role and every thematic role must be assigned to one argument. Therefore, this section on the thematic and argument structure of verbs does not treat adjuncts, which are not arguments; the lexical entry for the verb does not subcategorize for adjuncts. Instead, this section illustrates the outworking of the Theta Criterion by demonstrating the saturation of Tarahumara thematic roles with noun phrases or other arguments, within the framework of great tolerance allowed in this language for implicit, or non-overt, arguments.

3.1.2.1 One-argument verbs in Tarahumara

Also called one-place predicates, Tarahumara verbs having only one argument include several distinct types: weather verbs, intransitive verbs, transitive verbs having an incorporated object, and passive verbs. Each of these types is discussed in detail with examples and a list of others of that type.

3.1.2.1.1 Weather verbs

A few Tarahumara verbs appear to take no arguments at all. These are verbs predicating meteorological conditions and other natural phenomena. The sentences occur as bare predications combined with adjuncts, as in examples (109) and (110).

(109) Ø Ucu.
 pro rain-Ø
 'It's raining.' [H142]

(110) Ø ne hualubé quipa-mea. . .
 pro very great snow-IRR
 'It would snow very hard.' [g77]

Although these sentences appear to lack subject arguments, the **Extended Projection Principle (EPP)** demands that the subject position be filled. This principle is a general grammatical property of all sentences; no matter what their argument structure, sentences must have subjects. The EPP is fulfilled for these sentences by means of a non-overt subject, called *small pro* in the technical language. The non-overt subject is a position projected at the **D-structure** (deep structure) of these sentences and related to the inflection on the verbs as evidenced in their present, past or irrealis suffixes, but empty in the **S-structure** (surface structure). These structures are illustrated with brackets in (111) and (112) for the Tarahumara sentence (IP) in example (110).

(111) D-structure: [IP [NP *pro*][INFL [VP [AdvP ne hualubé] quipa-] -mea]]

(112) S-structure: [IP [NP *e*][INFL [VP [AdvP ne hualubé] quipa-] -mea]]

'It will snow very hard.'

Thus, the evidence of the subject required for this sentence appears in the irrealis mode singular number *-mea* inflection on the verb *quipa* 'to snow.'

3.1.2.1.2 Intransitive verbs

The second type of single-argument verb is the intransitive verb, which has a single noun phrase argument in subject position. This type of noun phrase is called an external argument because it occurs outside the verb phrase; its semantic relation to the verb is not as close as is the relation of a complement to the verb. Tarahumara verbs in this category theta-mark the external argument with AGENT, EXPERIENCER or THEME thematic roles. The discussion deals first with intransitive verbs that have external arguments that are AGENTs, and then turns to intransitive verbs that have external arguments that are EXPERIENCERs or THEMEs.

3.1.2.1.2.1 Intransitive verbs with AGENT external arguments

For intransitive verbs in this category, the subject argument stands in the role of actor or intentional initiator of the action defined by the predicate. No noun phrases occur that would receive the action of the verb, thus, there are no complements having the thematic roles of THEME, PATIENT, BENEFICIARY or EXPERIENCER. While expressions may occur in these verb phrases that describe semantic relations such as GOAL, LOCATION, SOURCE or INSTRUMENT, such expressions are optional and not tightly connected to the action of the verb; they are adjuncts.

The clearest examples of one-argument intransitive verbs are those defining purposeful physical actions performed without necessarily affecting other entities, such as verbs meaning 'get up' and 'sing' as illustrated in (113) and (114).

(113) Aríbiche 'náta-ga nijé **asisa-ri.**
 then think-PTCP 1SG arise-PAST
 'Thinking hard, I got up.' [v7]

(114) Bi'yá rocojó **cusu-ri** echi **tori.**
 early in the morning sing-PAST DEF rooster
 'Early in the morning the rooster crowed.' [v6]

In order to clearly portray the argument and thematic structures of these verbs, lexical representations are given for the verbs found in examples (113) and (114).

- (115) *asisa, sisa* 'get up' Verb: NP
AGENT
- (116) *cusú* 'sing,' 'crow' Verb: NP
AGENT

The representations in (115) and (116) provide the Tarahumara spelling of the verb, the English gloss, the nature of the constituent (Verb), the number and nature (NP) of the arguments including the indication (by underlining) that these are external arguments, and the thematic label assigned to the argument (AGENT).

Other verbs of this type include *nocha* 'to work,' *ubá* 'to bathe,' *'ma* 'to run (singular stem) and *juma* 'to run (plural stem).'

A second group of intransitive verbs include verbs of motion that suggest complements of place, such as source, goal, or path. Because sentences in texts omit identifications of place as often as they include them with these verbs, such identifications of place are here considered to be adjuncts rather than internal arguments of the verb. The semantics of the verbs seem to focus on the direction of purposeful movement rather than the specific locations or times of motion; in fact when such locations or times appear, they are often given special stress. Two examples follow in (117) and (118), involving the verbs for 'leave' and 'return.'

- (117) Echi jaré chabé jona **simiba-ri**
DIST some before from leave-PAST
'Those others had set out earlier' [v15]
- (118) aribiche auché biré huaquiná cu 'ma **nori-ni**
then other one toward here again run-PTCP return-PAST
'then the other boy came running back' [v32]

Two intransitive verbs that belong to this first group is the pair of verbs *bité* ‘live (singular stem)’ and *piré* ‘live (plural stem).’ These verbs often co-occur with a noun phrase or postpositional phrase indicating the location of living, as demonstrated in example (121).

- (121) Je'ná **piré-ali** biléana hualú risochí pacháami.
 PROX live(pl)-PAST in just one part big cave inside
 ‘These people lived inside a big cave.’ [g6]

In this example, *biléana hualú risochí pacháami* specifies the location where the people lived, but this locative expression and others like it are not considered complements of the verb set *bité/piré* because instances of these verbs often occur without any locative expression in order to express manner of life or simple existence. Thus, the location is not closely tied to the semantics of the verb in the way that complements are closely tied. Rather, these locative expressions are adjuncts, like the adverb of manner *echirigá* ‘thus’ in example (122).

- (122) Echirigá **bité** echi churuguí.
 in this manner live(sg) DIST bird
 ‘This is how that bird lives.’ [b14]

Other intransitive verbs that theta-mark their external argument as a THEME include *cunama* ‘become a widow,’ *bi'hui* ‘become clean,’ *huinomihua* ‘to be rich,’ *anacha* ‘last, endure,’ and *napoli* ‘be covered, be blanketed.’

Some other intransitive verbs in Tarahumara are those that theta-mark their external argument with the role of EXPERIENCER, the entity whose nervous system registers the state or change of state expressed in the predicate (Burquest 1996: 1; Haegeman 1994: 49). In the texts, these arguments all refer to animate beings, whether humans, folktale characters, talking animals in legends or ordinary animals. This type of intransitive verb refers to the physical and psychological conditions and the physical activities undergone by these animate EXPERIENCERS.

state or change of state, as are the intransitive verbs just described as having THEME or EXPERIENCER subjects .

The existence of a distinction in Tarahumara between unaccusative and ordinary intransitive verbs should be argued on syntactic grounds and not only on semantic grounds. Burzio (1986) argues for the existence of unaccusative verbs in Italian, for example, by demonstrating that this class of verbs permits the process of *ne*-cliticization and the selection of the perfective auxiliary *essere* while ordinary intransitive verbs do not permit either of these (Haegeman 1994: 323-331). Thus, if a separate class of unaccusative verbs exist in Tarahumara, some syntactic differences should appear to distinguish them from intransitive verbs that do take external arguments.

Careful examination of the fourteen texts yields no evidence of any syntactic distinction that would identify this type of one-argument verb as unaccusative rather than intransitive. The relative order of subjects and verbs in sentences of both types was investigated but revealed no difference in the proportion of SV to VS orderings within subtypes of intransitive verbs. The only significant distinction in SV and VS ordering proved, unexpectedly, to show contrast between intransitive and transitive verbs. Table 7 provides the results of the count of relative orderings of subject and verb with respect to two subtypes of intransitive verbs and to transitive verbs of all types except speech verbs.

While the results shown in table 7 indicate that the SV ordering is generally preferred to the VS ordering, they show in particular that this SV ordering is much more strongly preferred for transitive verbs than for intransitive verbs of both types. These results prevent the conclusion from being drawn from this data that greater volitionality of surface subject is indicated as normal by pre-verbal position, while decreasing volitionality is marked as special by relegation to a less-prominent position rightward in the sentence. It is not clear at this point in the analysis why the SV ordering is

more strongly preferred for transitive verbs than for intransitive verbs. The reason may have to do with a tendency to block movement of subjects to post-verbal position if an object argument of a transitive verb has already moved to fill the post-verbal position. The reason may also relate to information structure in some way yet to be discovered.

Table 7. SV and VS orderings with intransitive and transitive verbs

| | Total tokens | SV ordering | Proportion of SV ordering | VS ordering | Proportion of VS ordering |
|---|--------------|-------------|---------------------------|-------------|---------------------------|
| Intransitive verbs with AGENT subjects | 25 | 14 | 56% | 11 | 44% |
| Intransitive verbs with EXPERIENCER or THEME subjects | 67 | 38 | 57% | 29 | 43% |
| Monotransitive and ditransitive verbs | 62 | 48 | 77% | 14 | 23% |

3.1.2.1.4 Passive verbs

A major sub-type of unaccusative verbs, shown clearly to exist in Tarahumara, is the set of passive verbs. Passive verbs are one-place predicates that, like other unaccusative verbs described in the previous section, have only an internal argument and no external argument. Passive verbs are related to semantically- and phonologically-similar active transitive verbs, except that the external argument theta-marked as AGENT by the transitive verb is not part of the argument structure of the passive verb. The passive verb requires only an internal argument, theta-marked as THEME, EXPERIENCER or PATIENT, and this internal argument becomes the surface subject of the sentence by a process of NP-movement, to be explained in chapter 5. The AGENT theta role is not realized by any noun phrase in Tarahumara passive sentences in the texts, not even as an adjunct.

Tarahumara passive verbs are related to their active transitive counterparts by a process of morphological lexical derivation. While morphological rules must be written to derive each of the three morphological types of passivized verbs found in the texts examined for this study, the following lexical rule captures the effect of the derivation in causing the loss of the external theta role. This rule may be represented as in (125).

$$(125) \quad V: \quad \begin{array}{ccc} \underline{NP} & NP & (NP) \\ X & \text{THEME} & X \end{array} \quad + \text{Pass} \quad \dashrightarrow \quad \begin{array}{ccc} \text{Vpass: } NP & & (NP) \\ & \text{THEME} & X \end{array}$$

The rule in (125) indicates that a verb having some noun-phrase external argument as well as an internal noun-phrase argument with the theta role of *THEME* and perhaps some additional noun phrase argument, receives an addition of passive morphology, resulting in a passive verb that has a noun-phrase internal argument with the theta role of *THEME* as well as the additional internal noun phrase argument if it was required for the active verb. This rule applies optionally, so that not every transitive verb must surface as a passive verb (Burquest 1996: 5).

3.1.2.1.4.1 Passives with *-rihua*

The first morphological type of Tarahumara passive verbs is the set of verbs that adds the passive suffix *-rihua* to the stem of the transitive verb. This type is a promotional passive, in which the object is promoted to subject status, the verb is detransitivized and the subject of the active verb is left unspecified. Two examples from the texts of passive sentences using this type of verb are provided, along with examples of their active counterparts. The first pair of examples illustrates an active verb, *nihua* 'make' and its corresponding passive verb *nihuarihua* 'be made.'

- (126) Jarecho **nihuá** huarú rojuá huirí-ami, echo'ná.
 some make big oak stand-AJZR there
 'Some also make a big figure of an oak tree standing there.' [p5]

- (127) Ari mo'óra echi culúbasi nihua-rihua.
 then head DEF arbutus make-PASS
 'Then the head (of the violin) is made of arbutus (wood).' [u5]

The lexical representation for each of these verbs is given in (128) and (129), in order to illustrate the loss of the external argument in the derivation of the passive verb.

- (128) *nihuá* 'to make' Verb: NP NP
 AGENT THEME

- (129) *nihuarihua* 'to be made' Vpass: NP
 THEME

The representation in (129) shows that the passive verb *nihuarihua* has only an internal noun phrase argument with the theta role of THEME, corresponding to the noun phrase *mo'óra* 'head' in sentence (127). The noun phrase *echi culúbasi* in sentence (127) should be considered an adjunct, commonly occurring with the verbs *nihuá* and *nihuarihua* to indicate the source of the material used in making things. The representation in (128), however, shows that the active verb *nihuá* has both an external argument with the theta role of AGENT, corresponding to the indefinite pronoun *jarecho* 'some' in sentence (126), and an internal argument with the theta role of THEME, corresponding to the noun phrase *huarú rojuá huiriami* 'big standing oak.'

The second pair of examples, (130) and (131), illustrates the related verbs *ani* 'to say' and *anirihua* 'to be called.'

- (130) Ari biche nijé ani-ri: ¡Loca-bó!
 then 1SG say-PAST prepare porridge-1PL.EXH
 'Then I said, "Let's prepare porridge!"'

- (131) Ritúcari ani-rihua-mi ju-co echi churuguí.
 owl say-PASS-AJZR be-EUPH DEF bird
 'These birds are called owls.' [b3]

These speech verbs both demonstrate the presence of an internal argument having the theta role of THEME, an internal argument that may have the form of a noun phrase (NP) or a clause (indicated

verb discussed here is an impersonal passive in which the unknown or unimportant subject is omitted and the object is continuously topical in the discourse and often appears in focus position sentence initially or sentence finally rather than in the normal non-focus medial position for objects.

These impersonal passives are most often found in procedural texts, in which the series of actions and the patients acted upon are intrinsically more important than the agents of the action, who are assumed to be a wide range of possible actors. Impersonal passive verbs most often appear with the irrealis suffixes attached, as is appropriate for procedural texts in which the action is not considered to have been completed at a particular time but rather could be performed at any time. The irrealis endings also correlate well to the decrease in agentivity of the impersonal passive because the lack of a specific time of completion of action corresponds to the lack of an identifiable performer of the action.

Two example sentences will illustrate the use of this impersonal passive in procedural texts. The first verb, *acara* 'be shod,' occurs in a text about the shoeing of donkeys, and the second verb, *bisú* 'be peeled,' occurs in a text about the skinning and curing of coyote pelts.

(138) Echi biré burito **acara-ma** echi biré clavo yuhua.
 DEF one donkey be shod-IRR DEF one nail with
 'You shoe a donkey using nails.' (impersonal sense of "you") [d1]

(139) echo'ná cutachí bachá **bisu-ma** echi basachí
 there on the neck first be peeled-IRR DEF coyote
 'first the coyote is skinned from the neck' [c1]

The two example sentences illustrate the suffixation of the irrealis ending *-ma* to the impersonal passive verb and the inclusion of adjuncts having semantics of instrument or source such as 'with a nail' and 'from the neck.' Example (139) also illustrates the tendency for object arguments of impersonal passives to move to sentence-final position for increased prominence.

Other impersonal-type passive verbs used in the texts examined for this study include *catehuama* 'be prepared,' *cuserama* 'have a handle put on,' *cayena* 'be finished,' *michona* 'be nailed,' *pasa* 'be passed,' *rarinea* 'be sold,' *simema* 'be played,' and *uchema* 'be anointed with.'

This section shows that Tarahumara passive verbs of both the promotional and impersonal types are a form of unaccusative verb, having only internal arguments after deletion of the AGENT-role subject argument. The internal argument of the passive verb (or one of these internal arguments in the case of verbs having two internal arguments) becomes the surface subject and is moved to subject position in the sentence in order to receive case and theta-marking. This required NP-movement to subject position may be non-apparent because this noun phrase argument has been generated in a pre-verbal object position in this SOV language. The further optional Wh-movement of this argument to sentence-final position for increased prominence, however, will be readily apparent.

3.1.2.1.5 Verbs that semantically incorporate their objects

Some intransitive Tarahumara verbs are frequently glossed in English in such a way as to imply that the verb is transitive and there should intuitively be a complement, but no complements appear with these verbs in the texts and the verbs are best understood as complete definitions of action in themselves. The semantics of the verb itself incorporates the object, thus, no internal argument is required by the verb. The internal argument should not be thought of as merely non-overt because it does not appear in context as other non-overt objects do and because no other type of object can be taken by the verb; the semantics of the verb itself prescribe a highly specific object, so that no internal argument is needed to identify among various possible object arguments.

These verbs are divided into three empirical groups: those that take an AGENT-role subject but never (in these texts) take a complement, those that take an AGENT-role subject and optionally take a complement, and those that take a less-intentional subject having a THEME or EXPERIENCER role. One typical verb from each group is illustrated in the discussion.

3.1.2.1.5.1 AGENT subject, no complement

In the first group are verbs such as those meaning ‘to prepare corn porridge’ and ‘to build a nest.’ These verbs require an AGENT-role subject but permit no complement. A lexical representation (140) and an example sentence (141) illustrate the incorporation of the object concept of ‘corn porridge’ within the semantics of the cooking verb *loca* ‘to prepare.’

(140) *loca* ‘to prepare corn porridge’ Verb: $\frac{NP}{AGENT}$

(141) Ari biche nijé ani-ri: ;Loca-bó!
 then 1SG say-PAST prepare porridge-1PL.EXH
 ‘Then I said to him, “Let’s prepare corn porridge!”’ [v31]

This verb *loca* seems not to be used for other forms of food-preparation, but only for the preparation of *pinole* or ‘corn porridge.’ The theta grid in (140) indicates that the theta-role of the subject is that of AGENT, because the action of mixing and cooking the porridge is an intentional task undertaken by human actors.

The following verbs also follow this pattern of taking only an AGENT-role subject argument and allowing no internal argument: *rosoraba* ‘make a nest (used of birds),’ *nají* ‘make challenges,’ and *nutú* ‘carry food for the journey.’

3.1.2.1.5.2 AGENT subject, optional complement

In this second group are verbs meaning 'to carry water,' 'to run a race while kicking a wooden ball' and 'to throw stones.' These verbs have AGENT-role subject arguments implying intentional human actors and may optionally take complements. These complements appear for the purpose of emphasis and are not required for clarity, being already specified in the semantics of the verb itself. A lexical representation (142) and example sentence (143) illustrate the optionality of the object argument for the verb *tu*.

(142) *tu* 'to carry water' Verb: NP (NP)
AGENT THEME

(143) Mapalí Ø **tu-li** ba'hui
when *pro* carry water-PAST water

Ø echoná hualú bacochoi jonsa Ø **tu-li**
pro there large river from *pro* carry water-PAST
'When they went for water they had to bring it from the large rivers. . .' [g27]

In example (143) note that the subject is non-overt, being understood to refer to *echi o'hueli rijoy* 'those large people' mentioned in the previous clause. The first use of *tuli* in example (143) demonstrates the inclusion of the internal noun phrase argument *ba'hui* 'water' for the purpose of emphasis. But the second use of *tuli* later in the same sentence demonstrates the omission of the internal noun phrase argument since this object is already made clear in the semantics of the verb *tu*. The principle of economy in language use guards against unnecessary statements of arguments that are predictable from the semantics of the verb, from knowledge of the world or from other sources. .

Other verbs that have the same pattern of optional object-specification are *rarajipa* 'run with the ball' and *pasa* 'throw.'

3.1.2.1.5.3 THEME or EXPERIENCER subject

The third group of object-incorporating verbs are those that permit no internal argument and that take a THEME-role or EXPERIENCER-role subject argument in which intentionality is reduced. Example (144) illustrates the THEME-role of the argument *echi* that is the subject of the verb *ané* 'produce sounds.' This verb permits no overt complement in Tarahumara.

- (144) Hue gará **ane-ma** echi mapari Ø ma simé.
 very good produce sound-IRR DIST when *pro* already play-Ø
 'That one (violin) will sound very good when they play it.' [u15]

Another verb like *ané* is *ni'ura* 'win a race.' This latter verb takes an EXPERIENCER-role subject argument and appears without overt complements in the texts. Both the verb *ané* and the verb *ni'ura* demonstrate reduced intentionality on the part of their subject arguments, being non-volitional entities as far as the action of the verb is concerned.

So while the English glosses 'produce sound' and 'win the race' might imply the necessity of a complement, the corresponding Tarahumara verbs *ané* and *ni'ura* are intransitive verbs expressing in themselves quite specific actions. The concepts of the complements that would seem to be required are incorporated in the semantics of the verbs. Thus, these verbs remain one-place predicates requiring only external arguments.

3.1.2.2 Two-argument verbs in Tarahumara

The most common type of predicate in Tarahumara, accounting for the majority of verbs in the texts examined for this study, is the two-argument verb, also called the **monotransitive** verb. These verbs have an external argument corresponding to the subject of the sentence and an internal argument corresponding to the complement or object of the verb. This argument structure holds for

each verb, regardless of whether the noun phrase argument is overt or non-overt in the sentences-- and indeed, they are often non-overt because of continuity of subjects and objects in discourse.

These two-place predicates are grouped into six categories based upon the theta roles that each verb assigns to its arguments. The first five groups have subject arguments in the AGENT role but vary in the theta roles assigned to their internal arguments; these theta roles may be THEME, PATIENT, GOAL, SOURCE or ASSOCIATIVE. The sixth group has subject arguments that are assigned an EXPERIENCER role. Sections 3.1.2.2.1 through 3.1.2.2.6 present the theta grid for each group of verbs, provide a sentence example of a representative verb from that group, and then list other verbs from the texts that have the same theta grid.

3.1.2.2.1 AGENT subject, THEME complement

The first group comprises verbs assigning an AGENT theta role to their external argument and a THEME theta role to their internal argument as indicated by the theta grid in (145).

(145) Verb: NP NP/IP
 AGENT THEME

This group of verbs is typified by the verb *chapi* 'to catch' occurring in example (146).

(146) Ari biche nijé **chapi-ri** echi tamoque.
 then 1SG catch-PAST DEF honeycomb
 'Then I caught the honeycomb.' [v30]

In example (146) both the external argument *nijé* and the internal argument *echi tamoque* are overt, as necessary in the text for a reinstatement of previous referents as topical after a brief change of topic. These arguments, furthermore, are noun phrases, although in the case of some verbs, the required argument is a clause.

Other verbs in this group, having an AGENT-role external argument and a THEME-role internal argument, are the following: *a* 'look for,' *bayé* 'call,' *buré* 'bet,' *me* 'earn,' *nacarehua* 'agree to,' *nihua* 'make, do,' *naqui* 'want,' *nochá* 'touch,' *ohui* 'choose, invite,' *rará* 'buy,' *ri'eca* 'play' and *suní* 'finish.'

3.1.2.2.2 AGENT subject, PATIENT complement

The second group is composed of those monotransitive verbs that have an AGENT-role external argument and a PATIENT-role internal argument, because the entity that is acted upon by the AGENT undergoes some change as a result of the action, and does not remain the same as before the action. The theta grid for this group is given in (147).

- (147) Verb:

| | |
|-----------|---------|
| <u>NP</u> | NP |
| AGENT | PATIENT |

Example sentence (148) illustrates the use of the representative verb *sirú* 'to catch, to hunt.'

- (148)

| | | | | | |
|-------------|----------------|--------------|------------|-----------------|-----------------|
| <i>nijé</i> | <i>huicabé</i> | <i>rochí</i> | <i>hue</i> | <i>sapé-ami</i> | <i>siru-ma.</i> |
| 1SG | very many | fish | very | be fat-AJZR | catch-IRR |

'I will catch a lot of fat fish.' [z37]

Sentence (148) shows the use of the first person singular pronoun *nijé* to realize the external argument of the verb *siruma* 'will catch,' while the noun phrase *huicabé rochí* 'many fish' realizes the internal argument of the verb. The complement 'many fish' has the theta role of a PATIENT because it is strongly affected by the action of being caught.

In example (148) both external and internal arguments are overt, but as is common in many Tarahumara sentences in connected discourse, either the external or the internal argument, or both, are non-overt. The use in (149) of the verb *pa* 'to knock down,' also from this group, demonstrates both a null subject and a null object.

- (149) Ari biche Ø cara Ø pa-ri.
 then *pro* completely *pro* knock down-PAST
 'Then he knocked it down completely.' [v34]

Sentence (149) fulfills the theta grid for the verb *pa* 'to knock down' with external and internal arguments, but both of these arguments are non-overt; that is, they are understood from the context. The subject argument is null, or *small pro* in the technical language (Haegeman 1994: 455), and refers to *echi auché biré tohui* 'the other boy' mentioned in the preceding clause. Tarahumara, being a **pro-drop language** like Spanish and Italian, permits such non-overt subjects.

The object argument in example (149) is also null and refers to *tamoque* 'beehive,' a continuous topical object in the discourse from which the sentence was taken. This null complement is also represented as *small pro* in the technical language, a non-overt noun phrase argument co-indexed with a referential expression outside its own clause but present in discourse or deictic context. Such non-overt object arguments are licensed in some other languages besides Tarahumara, such as Italian (Haegeman 1994: 458-462).

Other monotontransitive verbs in this second group include the following verbs from the texts: *basú* 'cook,' *bo'ná* 'uproot,' *co'huá* 'eat,' *chihuá* 'hit, make a hit,' *huisá* 'snatch,' *mea* 'drive away,' *nosobú* 'disarrange,' *omero* 'overcome' and *raji* 'light, kindle.'

3.1.2.2.3 AGENT subject, GOAL complement

The third group of monotontransitive verbs assigns the AGENT role to its external argument, like the other verbs, but assigns the thematic role of GOAL to its internal argument, according to the theta grid in (150).

- (150) Verb: NP NP
 AGENT GOAL

3.1.2.2.4 AGENT subject, SOURCE internal argument

The fourth group of monotransitive verbs comprises verbs that assign the AGENT role to their external arguments and the SOURCE role to their internal arguments, according to the subcategorization frame in (153).

- (153) Verb: NP PP (+ *jonsa* 'from')
 AGENT SOURCE

The following sentence exemplifies the use of a verb of this type, the verb *machina*, meaning 'to come out, set out, leave.'

- (154) mapali ma cu **machina-li** echo'ná bu'hui-chí jonsa
 when already again come out-PAST there water-LOC from
 'and when he came back out of the water, . . . ' [z87]

The external, subject argument of example sentence (154) is non-overt, being continuous from the subject of the previous clause, which is the referring expression *echi huilú* 'the buzzard.' The internal argument is the postpositional phrase *echoná bu 'huichi jonsa* 'from the water.'

3.1.2.2.5 ASSOCIATIVE postpositional phrase complement

The fifth group of monotransitive verbs assigns a thematic role of ASSOCIATIVE to the postpositional phrase complement that it requires. The ASSOCIATIVE or ACCOMPANIMENT role indicates that the actor performed the action in the presence of or with the cooperation of another animate entity. The postposition most often occurring in these postpositional phrase complements is *yuhua* 'with.' A theta grid for this group of verbs is provided in (155).

- (155) Verb: NP PP (+ *yuhua* 'with')
 AGENT ASSOCIATIVE/ACCOMPANIMENT

(158) Ø **maye=ni**
pro suppose-1SG

[mapu mujé echoná ba'hui-chi hue si'li-ma]
 that 2SG there water-LOC very drown-IRR
 'I think that you will drown there in the water. . .' [z44]

The clitic pronoun =*ni* attached to the verb *mayé* is co-indexed with the null subject of the sentence, understood from context to be the first person singular referent. By means of this co-indexation the clitic pronoun fulfills the verb's subject argument requirement, while the noun clause *mapu mujé echoná ba'huichi hue si'lima* 'that you will drown there in the water' fulfills the object argument requirement. The verb *machi* 'to know' and sometimes the verbs '*ne* 'see' and *raila* 'like' also take clausal arguments.

Simple noun phrases may also fulfill the internal argument requirement of verbs in this group. The sensory verbs '*ne* 'see' and *sa* 'smell' follow this pattern, as do the cognitive verbs *ra'ila* 'like' and *biné* 'learn' when they do not take clausal arguments.

In this section on two-place predicates, also called monotransitive verbs, we have seen that this type of verb requires two arguments. The external argument may be assigned the thematic role of AGENT or EXPERIENCER, depending on the semantics of the verb. If the external argument has the role of AGENT, implying an intentional, animate actor, then the internal argument may be assigned a thematic role of THEME, PATIENT, GOAL, SOURCE or ASSOCIATIVE. If, however, the external argument has the role of EXPERIENCER, implying a less-intentional animate being that merely reacts to or senses the action, then the thematic role assigned to the internal argument is limited to that of THEME, corresponding to the situation to which the subject responds.

3.1.2.3 Three-argument verbs in Tarahumara

The next major group of verbs comprises those that require three arguments: one external argument and two internal arguments. These verbs are distributed among three categories according to the thematic roles of their internal arguments. The first group includes those that resemble *'ya* 'to give' because one of the internal arguments is a BENEFACTIVE. The second group includes those that resemble *achá* 'to put or place' because one of the internal arguments is a GOAL. The third group includes those that resemble *jeané* 'to say' because one of the internal arguments is a COMMUNIQUE. For each group a theta grid, example sentences, and a list of verbs following the same pattern are supplied.

3.1.2.3.1 Verbs of giving

In the case of verbs resembling *'ya* 'to give' the external argument is a noun phrase with the theta role of AGENT, implying the intentionality of the action. One of the internal arguments is a noun phrase having the theta role of BENEFACTIVE because this animate entity is a beneficiary of the action. The other internal argument is a noun phrase or a noun clause having the theta role of THEME or PATIENT and refers to the entity or activity that the actor causes to become beneficial to the recipient. A typical theta grid for these verbs appears in (159).

| | | | | |
|-------|-------|-----------|-------------|---------------|
| (159) | Verb: | <u>NP</u> | NP | NP/IP |
| | | AGENT | BENEFICIARY | THEME/PATIENT |

Example (160) illustrates the verb *binera* 'to teach' which follows this pattern.

| | | | | |
|-------|--------------|---------|---------|-----------|
| (160) | mapu=mi | mujé | tamí | binéra-ma |
| | that-2SG.NOM | 2SG.NOM | 1SG.ACC | teach-IRR |

rochí siru-ya
 fish catch-PTCP
 'that you should teach me to catch fish. . .' [229]

Sentence (160) shows that pronouns can realize the subject and indirect object arguments, and that a clause can fulfill the requirement for an object argument representing the THEME of the beneficial action.

Other verbs that follow the pattern of *ya* 'give' and *binera* 'teach' are *co'náa* 'feed' *bayela* 'call, invite,' *ohui* 'choose, invite,' *rihuira* 'show,' and *to* 'carry, take, bring.'

3.1.2.3.2 Verbs of placement

The second group of three-argument verbs are those resembling *achá* 'put or place.' For these verbs, the external noun phrase argument is an AGENT, implying its purposefulness in initiating the action. The two internal arguments include a noun phrase THEME, referring to the entity that is manipulated by the action, and a verb phrase or noun phrase GOAL, referring to the place, activity or purpose to which the actors cause that entity to be brought. The theta grid for verbs of this type looks like (161).

| | | | | |
|-------|-------|-----------|-------|-------|
| (161) | Verb: | <u>NP</u> | NP | NP/VP |
| | | AGENT | THEME | GOAL |

Example (162) illustrates the use of *achá* 'put or place' with two non-overt arguments and one overt internal argument that has the role of THEME.

| | | | | | |
|-------|--|---------------|------|------------------|----------------|
| (162) | ∅ | ∅ | hue | naso-ca | acha-li |
| | <i>pro</i> | <i>e</i> | very | protect/hide-GER | put/place-PAST |
| | <i>echi</i> | <i>cúuchi</i> | | <i>cúruhui</i> | |
| | DEF | little ones | | children | |
| | 'for protection, [the people] placed the little children [in hiding places]' [g48] | | | | |

Participial phrases like *hue nasoca* are considered to be adjuncts of purpose, manner or other adverbial function, and thus, not arguments of the main verb. Therefore, the only overt argument in sentence (162) is the noun phrase *echi cúuchi curuhui*, referring to the little children who needed to

be placed in hiding when the giant in the folktale came to their houses. The null subject argument, referring to 'the people' and represented by *small pro*, does not need to be mentioned in the sentence because it is continuously topical in the discourse. The other null internal argument, referring to the exact places where the children were put in hiding and represented by *e*, an unspecified empty argument, is omitted because such specific identification is unimportant; the idea that hiding places of some sort were used is left to the listener's knowledge of the real world based on his understanding of the semantics of the verb *achá*.

Other verbs that follow the same pattern as *achá* include *uché* 'anoint, put on,' *jura* 'send,' and *pola* 'cover.'

3.1.2.3.3 Verbs of communication

The third group of three-place predicates includes the verbs of speaking, *jeané* and *ané*. Both verbs mean 'to say, tell,' but *jeané* is followed by a direct quotation while *ané* is generally followed by an indirect quotation. The direct-quotation speech verb is formed from the more basic speech verb stem *ané* by attachment of the proximal deictic particle *je-* which means 'this, here' and adds a sense of immediacy and directness to the idea found in the stem. The external or subject argument for both verbs is a noun phrase AGENT, referring to the speaker. The internal arguments for both verbs include first a noun phrase or postpositional phrase BENEFACTIVE, referring to the animate entity hearing the message, and then a noun phrase or clausal THEME, referring to the message that is communicated. A theta grid is given in (163).

| | | | | |
|-------|-------|-----------|-------------|-------|
| (163) | Verb: | <u>NP</u> | NP/PP | NP/IP |
| | | AGENT | BENEFACTIVE | THEME |

According to the set of constituent functions proposed by Ilah Fleming (1988: 70-71, 1990: 85) a similar theta grid could be drawn as in (164), with different theta roles.

- (164) Verb: NP NP/PP NP/IP
 SPEAKER ADDRESSEE COMMUNIQUE

Example (165) illustrates the use of *jeané*, the direct speech verb, with a postpositional phrase indirect object.

- (165) Alibiche [echi huilú]; echoná nahua-li
 then DEF buzzard there arrive-PAST

Ø_i echi huachó yuhua **jeane-li**:
pro DEF heron with say-PAST

“¡Cuiraba mujé tihué huachó!”
 Hello! 2SG girl heron

‘Then the buzzard came over there and said to the heron, “Hello, Miss Heron!” [z4]

This sentence demonstrates the use of the noun phrase *echi huilú* ‘the buzzard’ to realize the subject argument of the verb *nahuali* ‘arrived’ and by topic continuity also to provide a co-indexed antecedent for the null subject of the verb *jeaneli* ‘said.’ The internal arguments of *jeaneli* are realized by the postpositional phrase *echi huachó yuhua* ‘with the heron’ and the quotation expression “*Cuiraba mujé tihué huachó!*” which means “‘Hello, Miss Heron!’” In other sentences, rather than taking a postpositional phrase BENEFACTIVE/ADDRESSEE argument, the verb *jeané* may occur with noun phrases having the same BENEFACTIVE theta role and sometimes with a non-overt BENEFACTIVE-role argument that can be retrieved from discourse context.

Example (166) illustrates the use of *ané*, commonly used as an indirect speech verb, with the phonologically fused pronominal compound *nimi*, meaning ‘I to you,’ that accounts for both the SPEAKER-role and the ADDRESSEE-role arguments. The verb *ané* here uses a noun phrase argument *echi nihuicuami* to realize the theta role of THEME or COMMUNIQUE.

- (166) pe télico nimi **ane-ma** echi nihuicua-mi.
 a little while 1SG-2SG say-IRR DEF get married-NMZR
 ‘and right away I will tell you about the wedding.’ [z47]

In (166) the argument indicating the message is summarized by a nominalized verbal, while in other instances the verb *ané* takes a classic full clausal indirect quotation as its THEME-role argument.

Other speech verbs that follow the pattern of *jeané* and *ané*, with some variations, include *nijehua* ‘to answer,’ *ruqué* ‘to ask,’ *ruyé* ‘to warn, inform’ and *sinacha* ‘to shout.’ In most sentences that use these verbs, at least one of the arguments is implicit and may be understood from discourse context. Quotation sentences will be described in greater detail in chapter 4, in the section dealing with the structure of complementizer phrases.

3.1.2.4 Raising verbs

The texts provide only one possible instance of a raising verb, one that lacks an external argument but requires a clausal internal argument that may be moved into subject position. At first glance this Tarahumara verb, *ritihua*, appears to correspond to the English raising verbs ‘seem,’ and ‘be believed.’

- (167) mapujiti nije=ni mi_i **ritihua-Ø**
 because 1SG.NOM-1SG 2SG.ACC see-PRES

 [Ø hue simate ba’yo-ami Ø]
 t_i very pretty good-looking COP
 ‘because you look so beautiful to me’ [z18]

On closer examination, however, this verb *ritihua* ‘see’ is found to have a clear external argument in addition to a clausal internal argument. The external argument in (167) is the first person singular pronoun *nijé*. The presence of this external argument denies *ritihua* the status of a raising verb, because there is no unoccupied subject position into which the subject of the embedded clause can

simplifies the analysis of adjectival and nominal predicates by not having to propose that adjectives (section 3.2.1) and nouns (section 3.2.3.4) assign theta roles to external arguments.

3.1.2.5.1 Existential copulas

Existential copulas have a noun phrase subject argument having the theta role of THEME but lack an internal argument. This single argument appears in the theta grid for *nirú*, the most common existential copula, in (169).

(169) *nirú* Existential copula: NP
THEME

Example sentence (170) illustrates the single argument of the existential copula *nirú* to be realized by the noun phrase *echi cusí ureque anirihuami* ‘the wood called “ash.”’

(170) Echi, echo'ná *nirú* tu comichi,
DIST there exist down creek

echi cusí ureque ani-ríhua-mi.
DEF stick ash say-PASS-AJZR
‘That kind, the wood called “ash,” is found down there in the creek.’ [h3]

Because in sentences using *nirú* the main idea is the existence rather than the location of the entity, the locative noun phrases *tu* and *comichi* in the sentence should be considered adjuncts rather than complements of the existential copula.

Another form of existential copula is the verb *ati* along with its variants *ité* and *te*, which Thord-Gray lists as meaning ‘last, endure, continue,’ ‘be,’ or ‘exist, subsist’ (1955: 74). Thord-Gray also notes that the related form *ati-ki* functions to express the meanings ‘there is’ and ‘there are’ (1955: 74). These forms of the existential copula do not occur in the texts examined for this study.

The verb *niiri*, mentioned again as part of the second copula set, may also be used as an existential copula with a single, external argument.

- (171) Echi bilé ono-lá **nii-ri,**
 DEF one father-SPCR be-PAST
- echi iye-la ayénacho,
 DEF mother-SPCR also
- echi bilé tohúi rana-la ayénacho **nii-li.**
 DEF one boy son-SPCR also be-PAST
 'There were the father, the mother and one son.' [g5]

Example (171) appears simply to introduce well-known characters in a folktale using the copula *niiri* and its phonological variant *niili* in an existential presentative construction that makes no further predications about the characters beyond their existence.

3.1.2.5.2 Copulas that are fully semantically bleached

An ancient copula set that is derived from the existential copula *nirú* occurs in a nearly complete paradigm (Hilton 1975: 95), presented in (172).

- (172) *ju* present
niili/niiri past
niima irrealis, singular and third person plural
niibo irrealis, first and second person plural
niimiri conditional
niisa progressive, participial

These copulas have assertive and attributive functions and take two arguments, corresponding to the subject noun phrase about which something is asserted or to which something is attributed, and the adjective phrase, noun phrase, postpositional phrase or clause that tells what is asserted or attributed to that subject argument. The theta grid in (173) indicates that the subject noun phrase is the external argument of the copula and the co-occurring adjective phrase, noun phrase, postpositional phrase or clause is the internal argument of the copula.

- (173) *ju* Copula: NP AP/NP/PP/IP
 THEME ATTRIBUTION/ACCOMPANIMENT

Examples (174) and (175) illustrate the uses of this type of copula for attributive functions, in conjunction with predicate adjective phrases that have external subject arguments.

(174) mapujiti=*ni*_i \emptyset _i hue taa ju
 because-1SG *pro* very small be-PRES
 'because I am very small.' [o8]

(175) \emptyset Cu machina-sa hue ba'yóame **nii-ma**.
pro again come out-PTCP very good-looking be-IRR
 'When you come out you will be very handsome.' [z61]

The copulas *ju* and *níima* in sentences (174) and (175) have non-overt external arguments, the null subject \emptyset that is co-indexed with the clitic pronoun =*ni* in (174) and the null subject \emptyset in (175). These copulas also have complements, the adjective phrases *hue taa* in (174) and *hue ba'yóame* in (175).

Example (176) illustrates the use of the copula for an associative function with a postpositional phrase. The sentence asserts the accompaniment of the doe mentioned in the text by a fawn.

(176) A \emptyset biré 'marichi yuga nii-ri.
 indeed *pro* INDEF fawn with be-PAST
 '[The doe] had a fawn with her.' [Hilton n.d.: 18.15]

Example (176) demonstrates that a postpositional phrase, here '*marichi yuga* 'with a fawn,' can serve as the complement of a semantically bleached copula.

Sentence (177) illustrates the use of the copula for an assertive function in a relative clause.

(177) bilé rijoy cúchu-ami bité-a-li
 one man have children-NMZR live-?-PAST

 echi mapu ne o'hueli rijoy **níiri**.
 DEF REL very big man be-PAST
 'There lived a man who had children, one who was a very big man.' [g4]

In example (177) the copula *niiri* occurs in association with its complement, the predicate noun phrase *ne o 'hueli rijoy* 'a very big man.' The copula also takes an external subject argument *mapu*, the relative pronoun which is co-indexed with the demonstrative pronoun *echi* in the higher clause.

3.1.2.5.3 Copulas that are partially semantically bleached

A more recent copula set has been recruited from semantically complete verbs of position and locomotion to fulfill locative functions of the copula. These functions may be locations in space or in conditions and activities. These copulas have been partially bleached semantically from their status as verbs of position and locomotion, but they have kept the argument and thematic structure of the original verbs. The theta grid following in (178) presents the argument and thematic structure for the verb *asá*, which is typical of a partially-bleached verb of position that is often used as a copula.

| | | | | | |
|-------|------------|---------------------|---------|-----------|------------------------|
| (178) | <i>asá</i> | 'live,' 'sit,' 'be' | Copula: | <u>NP</u> | AP/IP |
| | | | | THEME | LOCATION/ CONDITION |

The copular use of *asá* has grammaticalized from the ordinary use of the positional verb *asá* which means 'live, inhabit, dwell, lie in a place' and 'sit down, squat down, be seated' (Thord-Gray 1955: 72). The copular use of *asá* is illustrated in example (179).

| | | | | |
|-------|--|-------------------|----------------|--------------|
| (179) | <i>mapalí echi</i> | <i>muquí echi</i> | <i>táa</i> | <i>tohui</i> |
| | until DEF | woman DEF | small | boy |
| | <i>ma galá</i> | <i>póla-ta</i> | <i>asa-li.</i> | |
| | already well | cover-PTCP | be-PAST | |
| | 'until the woman and the small boy were well covered.' [g88] | | | |

In example (179) the partially-bleached positional verb *asali* takes an external argument *echi muquí echi táa tohui* 'the woman and the small boy,' as well as a clausal complement, *ma galá pólata*

'already well-covered.' This clausal complement attributes not so much a position as a condition to the external argument, indicating that this use of the verb is more copular than positional.

The plural copula stem corresponding to the singular copula *asá* is *muchi*, which is derived from the positional verbs *mochi*, meaning 'be seated, sit down, squat down,' and *muchiwe*, meaning 'reside, dwell, lie in a place' (Thord-Gray 1955: 263).

While the copula *asá* applies only to human beings, other partially-bleached positional verbs apply only to non-human or inanimate entities. The copula *chucú*, presented in the theta grid in (180), means 'be standing' when applied to animals and 'be suspended, be hanging in the air' when applied to inanimate entities (Thord-Gray 1955: 141).

| | | | | | |
|-------|--------------|--------------------------|---------|-----------|----------|
| (180) | <i>chucú</i> | 'be standing (singular)' | Copula: | <u>NP</u> | NP |
| | | 'be hanging (singular)' | | THEME | LOCATIVE |

Example (181) illustrates the use of the partially-bleached positional verb *chucú* with an inanimate subject.

| | | | | | |
|-------|--------------------------------------|-------|------|---------|-----------------|
| (181) | Huamí | ripá | biré | amoco | chucú-Ø! |
| | there | above | one | beehive | be hanging-PRES |
| | 'There is a beehive up there!' [v23] | | | | |

The corresponding plural stem for *chucú* is *uchú*, which like the singular form, means 'be standing' when applied to animals and 'be hanging' when applied to inanimate entities (Hilton 1975: 142).

A pair of verbs of locomotion has also been recruited to function as a copula in many Tarahumara sentences. This is the singular/plural pair *iyena*^/*yena* that has grammaticalized from the corresponding verbs of locomotion that mean 'walk about, travel' (Hilton 1975: 145, Thord-Gray 1955: 494). In sentences involving a copular use of these verbs the focus is not on the motion of walking or traveling so much as on the location of the subject.

Because these verbs continue to be used synchronically alongside the semantically bleached copula verbs, it is often difficult to distinguish between the semantically complete and the semantically bleached uses of these verbs. The same argument and thematic structure are posited for both uses, because the bleaching process has apparently not progressed far enough to leave syntactic evidence of a distinction.

3.1.2.5.4 Zero copula

Copeland has posited the existence of a zero copula in Tarahumara adjectival predicates (1996: 158) but notes that this construction occurs only in predicates of asserted attribution, and then only optionally, an overt copula being the alternative. The texts examined for this study provide only a very few instances of the use of a zero copula.

In these cases, adjectival expressions occur alone in the predicate without any copula being present. Following in (182) is an example sentence that includes a predicate adjective but lacks a copula.

- (182) Jaré churuguí huayoca anirihuami **pe** **sitácami** \emptyset
 some bird woodpecker called slightly pink-colored COP
 'Some birds called "woodpeckers" are somewhat pinkish in color.' [b10]

In example (182) the color adjective *pe sitácami* is attributed to the subject of the sentence, *jaré churuguí huayoca anirihuami* 'some birds called "woodpeckers."' No overt copula appears in the sentence, but a zero copula is posited as appearing in final position.

Example sentence (183) provides further exemplification of a non-overt copula.

- (183) Jaré cuácari **anirihuami** \emptyset **ayena cho**
 some "woodpeckers" called COP also
 'Some (other) birds are also called "woodpeckers."' [b17]

Sentence (183) demonstrates a subject argument, the indefinite pronoun *jaré*, and a predicate adjective, *cuácari anirihuami* ‘called “woodpeckers.”’ A zero copula is posited to provide theta-marking for both of these phrases and is placed just before the final oblique.

3.1.2.6 Auxiliaries

The assumption regarding auxiliaries is that, unlike lexical verbs, they have no arguments and assign no thematic roles (Haegeman 1994: 65-68). However, the texts provide no clear cases of auxiliary verbs in Tarahumara in order to explore this claim. The tendency to chain verbs together in serial verb constructions and the presence of affixes that express various verbal aspects and moods work together to obviate the necessity for auxiliary verbs.

While some verbs do require verbal complements, as in examples (184) and (185), these verbs are not clear cases of auxiliaries because of the unusual head-first ordering.

(184) **oméra-li** raquibu-ya
 be able-PAST push-PTCP
 ‘could push’ [g44]

(185) **suni-li** nocha-Ø
 finish-PAST work-INFV
 ‘finished working’ [g56]

Examples (184) and (185) are significant because the usual serial verb pattern of less-finite verb followed by fully inflected verb does not apply here; instead, the first verb is fully inflected and is followed by a participial or null-suffix verb, which seems to be the complement of the first verb. In this head-final language, auxiliaries would be expected to follow rather than precede their less-inflected but semantically more-complete main verb. Thus, examples (184) and (185) are more likely to illustrate semantically complete verbs that take other semantically complete verbs as their

complements rather than auxiliaries that provide inflection and other information for semantically complete verbs.

The most likely candidates for auxiliary status in Tarahumara are those verbs that have already been identified as copulas. Both traditional and recently recruited copulas may co-occur with semantically complete verbs, and in these cases the fully inflected copula follows the semantically complete verb in the expected position for an auxiliary.

The copula may co-occur with a fully-inflected verb, as illustrated in example (186).

- (186) loche-ma nii-ma
 be hungry-IRR be-IRR
 'will be hungry' [z75]

The copula may co-occur with a present tense verb that lacks overt inflection, as illustrated in example (187).

- (187) huabe=ta 'nata muchi-ri
 much-1PL think-Ø sit doing somethings-PAST
 'we were thinking hard' [v1]

The copula may co-occur with a participial verb, as illustrated in example (188).

- (188) aboni pe taa nutu-gué 'yena-ri
 3PL.NOM small amount carry food-PTCP go about-PAST
 'went about carrying very little food for the journey' [v18]

The copula may co-occur with nominalized or adjectivized verbs, as illustrated in example (189).

- (189) naji-saca 'yen-ami ju-co
 challenge-PTCP go about-NMZR be-EUPH
 'are challenging-go-abouters' [r3]

Thus, although there are no clear cases of modal or aspectual auxiliaries in the texts examined for this study, the traditional and recruited copulas come the closest to auxiliary status when they accompany semantically complete verbs. Copulas may function to provide tense and

aspect for accompanying verbs when they are equally inflected as or more fully-inflected than the accompanying verb and appear in the sentence-final auxiliary position appropriate to Tarahumara as a head-final language.

3.1.2.7 Summary for verbs and their argument structure

This first major section of this chapter has described Tarahumara verbs as a lexical class that has important argument structure. Most verbs make predications about their external arguments, or subjects, as well as being closely associated semantically with their internal arguments, or complements. This generalization applies to the transitive and ditransitive verbs that form the bulk of the class of verbs in the Tarahumara lexicon. Even the three types of Tarahumara copulas were claimed to have both external and internal arguments.

Exceptions found to this generalization regarding verbs were the passive verbs that have internal arguments only and lack subject arguments. Other exceptions to the generalization were the weather verbs and intransitive verbs that have external arguments only and lack complements, along with the transitive verbs that have semantically incorporated, non-overt complements. Auxiliaries would most likely lack argument structure altogether if clear cases could be identified.

Having addressed the lexical class, verbs, that not only has argument structure but also makes predications about external arguments, the discussion turns now to the only other lexical class that has significant argument structure: the class of postpositions.

3.1.3 Postpositions and their argument structure

Tarahumara, being a head-final language, uses postpositions rather than prepositions in conjunction with noun phrases that function as objects or complements of these postpositions.

Because these noun phrases are required complements in postpositional phrases, postpositions may be considered to have internal argument structure; postpositions subcategorize for certain types of noun phrase complements. Tarahumara postpositional phrases rarely occur with semantically bleached copulas as the predications of sentences, and when they do, the copula is considered to take both an external and an internal argument. Thus, postpositional phrases are not considered to have external argument structure or to be genuine predicates. Because of their internal argument structure, however, postpositions appear in this section on lexical classes that have argument structure. The discussion mentions the various postpositions found in the texts and describes their subcategorization frames.

The Tarahumara texts examined for this study indicate use of seven postpositions. For each of these seven a theta grid showing the number and nature of the postposition's internal arguments is provided, along with some example sentences.

3.1.3.1 The postposition *yuhua*

The most commonly-used postposition is *yuhua*, which may be roughly translated 'with.' The postposition *yuhua* most often has an internal argument with an ASSOCIATIVE theta role as shown in the theta grid following in (190).

(190) *yuhua* 'with' Postposition: NP
ASSOCIATIVE

Example sentence (191) illustrates the use of the postposition *yuhua* together with its complement, the pronoun *mi*.

(191) *nijé* *naquí* *ni-mí* *yuhua* *upe-ma*
1SG want 1SG.NOM-2SG.ACC with marry a wife-IRR
'I would like to marry you' [z19]

- (196) Echi biré burito acára-ma echi biré clavo yuhua.
 DEF one donkey put on shoes-IRR DEF one nail with
 'A donkey is shod using nails.' [d1]

In (196), the theta role of the noun phrase object of the postposition is INSTRUMENT, expressing the means by which the donkey's shoe is put in place.

3.1.3.2 The postposition *jiti*

Another common postposition is *jiti*, or its phonological variant *jite*. These postpositions may be roughly translated 'by means of' or 'through the use of.' A theta grid indicating the argument structure of the postposition *jiti* is provided in (197).

- (197) *jiti* 'by means of, using' Postposition: NP
 INSTRUMENT

Example sentence (198) illustrates the use of the postposition *jiti* with an instrumental meaning.

- (198) hue galá hualú pola-sa echi ocó sahua-la jite
 very well great cover-PTCP DEF pine leaf-SPCR by
 'they cover them well with a lot of pine needles' [g84]

3.1.3.3 The postposition *jonsa*

A third common postposition is *jonsa*, which has a spatial meaning of 'from' or 'out of' or a temporal meaning of 'since.' Thord-Gray lists this postposition according to the more expected CV-syllable form *jonesa* and glosses it as 'place from where' (1955: 189). The thematic role assigned by this postposition to its internal argument is that of SOURCE, as indicated in the theta grid in (199).

- (199) *jonsa* 'from, out of, since' Postposition: NP
 SOURCE

Example (200) illustrates the spatial meaning, 'out of,' of the postposition *jonsa*.

- (200) Cu machína-ga echo'ná ba'hui-chí jonsa!
 again come out-PTCP there water-LOC from
 'Come out of that water!' [z68]

The use of *jonsa* in sentence (200) requires a spatial SOURCE-role complement, telling from where in space the subject is commanded to emerge.

Example sentence (201) illustrates the temporal meaning, 'since,' of the postposition *jonsa*.

- (201) Echi jaré chabé jona simíba-ri
 DEF some before since leave-PAST
 'Those others had left earlier,'
- chabé pagónara jona simíba-ri.
 before day-before-yesterday since leave-PAST
 'they had left two days earlier' [v15]

The use of *jonsa* in sentence (201) requires a temporal SOURCE-role complement, telling from what location in time the action of leaving had taken place.

3.1.3.4 The postposition *ocúa*

A fourth postposition with locative and temporal meanings is *ocúa* 'out of, from' and 'since.' A theta grid is given in (202), showing the SOURCE theta role of its internal argument.

- (202) *ocúa* 'from, out of, since' Postposition: NP
 SOURCE

Example sentence (203) illustrates the locative use of the postposition *ocúa*.

- (203) Ø Huaminá ca'yé cuhuana
 pro there ridge behind
- rité-rari ocúa hui-ri-ri.
 rock-LOC from stop-PAST
 'He came to a stop along the ridge behind a rock bluff.' [v29]

In example (203) the postpositional phrase *ritérari ocúa* 'from a rock bluff' functions together with the preceding adverb *chuhana* 'behind' to produce the meaning 'behind a rock bluff.'

Example (204) illustrates the temporal use of *ocuá*.

- (204) echi mapu jaré pagónara ocuá simiba-ri
 DIST REL some day before yesterday since pass-PAST
 'those who had been out since the day before yesterday' [v20]

Note the similarity of these locative and temporal uses of *ocuá* to the uses of *jonsa* as described in the preceding section, section 3.1.3.3.

3.1.3.5 The postposition *pacháami*

A fifth postposition with a locative function is *pacháami* 'inside.' A theta grid is given in (205).

- (205) *pacháami* 'inside' Postposition: NP
 LOCATIVE

An example of the use of *pacháami* appears in sentence (206).

- (206) Je'ná piréa-li biléana hualú risochi **pacháami**.
 PROX live (plural)-PAST in just one part big cave inside
 'These people lived inside a big cave.' [g6]

In example (206), the postpositional phrase is *biléana hualú risochi pacháami* 'in just one part of the inside of a big cave.' The postposition *pacháami* occurs at the end of the phrase and requires the internal argument with the theta role of LOCATIVE that is realized in this example as *biléana hualú risochi* 'in just one part of a big cave.'

3.1.3.6 The postposition *moba*

A sixth postposition is the locative word *moba*, meaning 'above,' 'on,' 'over,' 'at the top' or 'on top of.' Although Hilton classifies *moba* as an adverb (1975: 77), *moba* is here analyzed as a postposition because it is closely related to the locative noun phrases with which it co-occurs. A theta grid in (207) indicates the argument structure of *moba*.

- (211) bachá echoná bahuí-rali nijé huisabé nír-aga baquí
 first there water-LOC 1SG many times be-SBJNV enter-Ø
 'first I go into the water a number of times' [z12]

The word *niráa* fails to be a clear postposition because it sometimes follows adverbs rather than noun phrases as in example (212).

- (212) Siné rahué echi huilú iyéna-li echoná ripabé niláa.
 one day DEF buzzard go about-PAST there very high as
 'One day the buzzard was flying about high up in the sky.' [z1]

In (212) *niráa* is closely related to the adverbs *echoná* 'there' and *ripabé* 'very high.' These words could be considered to be nominalized adverbials used as a noun phrase complement of the postposition *niráa* in this sentence. Alternatively, there could be two words of the form *niráa*, one of them being a postposition, as in examples (210) and (211), and the other being an adverb as in example (212).

3.1.3.8 Low number and low rate of frequency of postpositions

Other than the five clear cases of postpositions and the two possible postpositions *moba* and *niráa*, no postpositions appear in the texts examined for this study. Even these few postpositions do not occur frequently. Several facts about Tarahumara explain for the low number and frequency of postpositions.

3.1.3.8.1 Locative suffixes substitute for postpositions

One reason is that locative suffixes such as *-chi* and *-rari* attach to noun phrases to realize many locative adjuncts as simple adverbialized nominals; various specifics of spatial position are subsumed in the general locative suffix. A sentence using such a locative suffix appears in (213).

- (213) mapalí echoná **nai-rali** socuáli-ya asa-li
 when there fire-LOC warm oneself at the fire-PTCP sit-PAST
 'while we were sitting warming ourselves around the fire' [I5]

In example (213) the noun phrase *nai* together with its locative suffix *-rali* suffice to express the meaning for which a prepositional phrase is required in English: 'around the fire.'

3.1.3.8.2 Genitive constructions substitute for postpositions

Another reason for the infrequent use of postpositions is the compensatorily frequent use of the genitive construction by parataxis of the two noun phrases and attachment of the specifier suffix *-ra* (also realized as *-la*) to the head noun. The idea of possession or other genitive relationships between nouns might be expressed in other languages by adpositions, but Tarahumara handles these constructions, as in example (214), by using the genitive construction instead.

- (214) echi basachí huichi-ra
 DEF coyote skin-SPCF
 'the skin of the coyote' [c5]

Note that the suffix *-ra* (or *-la*) is unlikely to be the genitive marker because it attaches to the head noun rather than to the noun that refers to the possessor. This fact, along with the formation of the genitive construction, will be discussed in greater detail in the section on nouns later in this chapter and in chapter 4 in the section on noun phrases.

3.1.3.8.3 Adverbs and noun phrases substitute for postpositions

A third reason for the infrequent use of postpositions is the common use of simple adverbs and noun phrases to express concepts that may be expressed by prepositional phrases in familiar western languages. The exact relationship between the adverbials or nominals and other noun

phrases is understood from discourse context and from interlocutors' shared knowledge of the real world, as in sentences (215) and (216).

(215) Ari mo'óra echi culúbasi nihua-rihua.
 then head DEF arbutus make-PASS
 'Then the head (of the violin) is made from the arbutus.' [u5]

(216) Echarí rocogó nahua-ri biré táa namuti.
 then night arrive-PAST one small animal
 'Later, during the night, there came a small animal.' [t47]

As will be argued in chapter 4, not only postpositional phrases and adverb phrases but also noun phrases like *echi culúbasi* and *echari rocogó* are permitted as adjuncts within Tarahumara verb phrases. Although English expresses meanings like 'from the arbutus' and 'during the night' by using prepositional phrases, Tarahumara follows the economy principle in expressing these concepts with simple noun phrases and leaves the interpretation of the exact relationship between these noun phrases and other noun phrases in the sentence to the listener's common sense.

3.1.3.9 Summary of the argument structure of postpositions

Unlike verbs which have both external and internal arguments and can make predications about noun phrase arguments outside the verb phrase, postpositions have internal arguments only. These internal arguments are their noun phrase complements and appear with such thematic roles as ASSOCIATIVE, INSTRUMENT, GOAL, SOURCE, LOCATIVE and MANNER. Postpositions are few in number and occur infrequently in discourse. Their function of relating noun phrases to other noun phrases in the sentence is largely taken over by locative suffixes, genitive constructions and oblique noun phrases.

The first major section of this chapter, section 3.2, has described two lexical classes that have argument structure--verbs and postpositions. The next major section of this chapter, section 3.3, deals with the remaining six lexical classes that have little or no argument structure.

3.2 Lexical classes that have little or no argument structure

Except for certain adjectives and certain nouns that are related to verbs and may take complements corresponding to those required by the related verb, the lexical items to be described in this major section of the chapter, section 3.2, show no evidence of argument structure. These lexical items fall into six lexical classes: adjectives, adverbs, nouns, pronouns, conjunctions and interjections. Each of these six classes is now described in turn.

3.2.1 Adjectives

3.2.1.1 Overview of three types of adjectives

Tarahumara adjectives fall into three categories: 1) determiners and quantifying adjectives, 2) proper qualifying adjectives, and 3) qualifying adjectives derived from synchronic verbs. Each type of adjective is briefly described.

The class of determiners and quantifying adjectives includes definite and indefinite articles, demonstrative adjectives, numbers and other adjectives used for quantifying purposes. A few representative adjectives that are from this first class and that have occurred in texts examined for this study appear in (217).

| | | |
|-------|------------------|------------------------|
| (217) | <i>biré</i> | 'a,' 'an,' 'one' |
| | <i>osa macoy</i> | 'twenty' |
| | <i>huicabé</i> | 'many' |
| | <i>echi</i> | 'the,' 'that,' 'those' |
| | <i>je'ná</i> | 'this,' 'these' |
| | <i>jaré</i> | 'some' |

| | |
|----------------|---------|
| <i>auché</i> | 'other' |
| <i>suhuaba</i> | 'all' |

Items from the second class, the class of proper qualifying adjectives, may be used within noun phrases or with copulas in predicates to make equational, assertive or attributive statements.

Representative examples of qualifying adjectives from texts appear in (218).

| | |
|-------------------|----------|
| (218) <i>gará</i> | 'good' |
| <i>semati</i> | 'pretty' |
| <i>micabé</i> | 'far' |
| <i>huarubé</i> | 'great' |
| <i>íaa</i> | 'small' |
| <i>cúuchi</i> | 'small' |

Proper qualifying adjectives may also function as adverblike adjuncts within verb phrases, as will be discussed in the section on verb phrases in chapter 4. These lexical items are adjectives in their own right and are not derived from verbs by morphological processes operating synchronically.

The third class is comprised of qualifying adjectives derived from verbs. When used as adjectivals, these expressions appear within noun phrases or as predications with assertive, attributive and equational functions. Representative text examples of derived adjectives appear in (219).

| | |
|------------------------|----------------|
| (219) <i>rijoráami</i> | 'enduring' |
| <i>huaquichéami</i> | 'dry' |
| <i>siyócamí</i> | 'blue' |
| <i>naó ronéami</i> | 'four-legged' |
| <i>hualínami</i> | 'fleet-footed' |

This group of qualifying adjectives is derived from verbs that are also used synchronically; these adjectives are derived by adding the participializing suffix *-ami* to verb stems. This participial suffix forms only adjectival expressions, not adverbial expressions, and is descended diachronically from a proto-copula *kame* according to Copeland (1996: 157). Adjectivals thus formed may be used, in a further step of the grammaticalization process, as nominals, so that *rijoráami*, for example, comes to mean 'those who endure,' and *huaquichéami* comes to mean 'the dry ones,' and so on.

A sub-group of this class of derived adjectives consists of those adjectives that have been lexically compounded with a negative morpheme word to form an adjective having a meaning opposite to that of the original adjective. Two representatives of this group, with indication of their derivation, appear in (220) and (221).

- (220) *quetasi buhueami* 'bald'
 < *quetasi* + *buhuéami*
 NEG 'having hair, having fur'
- (221) *tarapé rehuélami* 'unashamed'
 < *tarapé* + *rehuélami*
 NEG 'ashamed'

Example (222) illustrates the use of all three types of adjectives within a single sentence.

- (222) **Tarapé rehuél-ami echi o'hueli huicabé** namuti hue nala-ca!
 NEG ashamed DEF large many animal very cry-PTCP
 'How shameful for such large animals to be crying!' [o23]

In example (222) the definite article *echi* and the adjective *huicabé* 'many' belong to the class of determiners and quantifying adjectives. The adjective *o'hueli* 'large' belongs to the class of proper (lexical) qualifying adjectives. The negative compound adjective *tarapé rehuélami* belongs to the class of qualifying adjectives derived from verbs, being derived from the verb *rihuera* 'to be ashamed.' In this sentence the adjectives of the first two types function within the noun phrase subject of the sentence while the derived adjective is a constituent of the predicate of the sentence, along with the zero copula posited in section 3.1.2.5.4.

While Haegeman (1994: 46-47) and others working within the Government and Binding framework posit argument structure for adjectives that are constituents of the predicate of the sentence, the analysis preferred in this study is that copulas, including the zero copula, have argument structure. This latter analysis is preferred because it allows consistency with other

Tarahumara verbs which do have argument structure and greatly simplifies the amount of argument structure required for adjectives and nouns. Thus, the predicate adjectives appearing in association with copulas in predicates have no argument structure. In an attributive sentence like (223), the adjective *hualínami* ‘fleet-footed’ is considered to have no argument structure.

- (223) echi rijoy hue hualínami níi-li
 DEF man very fast-running be-PAST
 ‘the man was very fleet-footed’ [gl1]

In (223), the copula *niiri* is considered to take an external argument *echi rijoy* ‘the man’ as subject of the sentence and also to take an internal argument, *hue hualínami* ‘very fleet-footed,’ as predicate adjective.

Qualifying adjectives are not used as extensively in Tarahumara as in English or as in some other familiar languages. Several reasons may be found for this. In the first place, many Tarahumara verbs contain a descriptive meaning that is glossed in English by using adjectives, as in (224).

- (224) Hue **sihue-li** echi huilú!
 very be sad-PAST DEF buzzard
 ‘How sad the buzzard was!’ [z48]

In the second place, a specific descriptive meaning is often incorporated in the semantics of the noun selected for use in a particular phrase.

- (225) Echi **noquela** ayena cho echi uleque cho nihua-rihua.
 DEF curved sides also DEF ash also make-PASS
 ‘The violin’s curved sides are also made of ash wood.’ [u9]

In the third place, genitive constructions, rather than qualifying adjectives that modify the head noun, are often used to express the relationship between one noun and another, as in (226).

- (226) biré ripurá cusi-rá
 one axe pole-SPCR
 ‘an axe handle’ [h1]

227 echí roya sáhu-la
 DEF oak leaf-SPUR
 'the oak leaves' [255]

3.2.1.2 Summary of description of Tarahumara adjectives

Tarahumara adjectives are of three types: determiners and other qualifying adjectives, proper (lexical) qualifying adjectives and verbally-derived qualifying adjectives. Adjectives may be constituents of noun phrases and of verb phrases headed by either active verbs or copulas. Adjectives found in these texts have no argument structure because the argument structure associated with sentences involving a predicate adjective is ascribed to the copula. Adjectives do not appear with as great frequency as might be expected because Tarahumara commonly uses several alternative strategies to describe and modify nouns.

3.2.2 Adverbs

A great variety of lexical adverbs are used in Tarahumara, usually in regard to the action of the verb, to tell time, frequency, order of precedence, repetitiveness, manner, extent, intensity, distance or place. Adverbs offering each of these senses are listed, followed by discussions of the adversative adverb *arigá* and of the two adverbial expressions *echirigá* and *echari* that also occur as coordinating conjunctions.

3.2.2.1 Semantics of adverbs

Common adverbs found in the texts examined for this study are characterized according to the ways in which these expressions modify verbs and other constituents. The list includes several frozen forms or compounds of two words each rather than of a single word:

Two common adverbs of time are *chabé* 'before' and *siné rahué* 'one day.'

Adverbs of frequency noted in the texts include *sinibi* 'always,' *sinibi rahué* 'every day,' and *que siné* 'never.'

Adverbs showing order of precedence include the following: *bachá* 'first,' *echari* 'then,' *ari* 'then,' *ma* 'already,' *pe télico* and its variant *pe teeli* 'immediately afterward' or 'a little while,' and *huiribeco* 'afterward.'

Adverbs that have a sense of repetitiveness are *cu* 'again,' *huisabé* 'many times,' and *auchecho* 'again.'

Adverbs of manner include *gará* 'well,' *niraga* 'as it were,' *arigá* 'nevertheless,' *mapurigá* 'as, like,' *echirigá* 'in this manner,' and *áchicochirigá* 'in the same manner.'

Adverbs of extent include *huabé* 'greatly,' *huicabé* 'greatly, extremely,' and *huaminabi*, 'much more.'

Adverbs of intensity found in these texts are limited to these three: *hue* 'very,' *ne* 'very, indeed,' and *pe* 'very slightly,' 'a very little bit.'

Adverbs of distance include *miná* 'a little farther,' *micabé* 'very far,' *ripabé* 'very high,' and *huaminá* 'farther.'

Adverbs of place include *echo'ná* 'there,' *chaquena* 'to one side,' and *suniami* 'everywhere.'

Adverbs with a negative meaning are formed by placing a negative morpheme such as *quetasi* before another adverb. Two negated adverbs found in the texts examined for this study are *quetasi cho* 'not yet,' and *que siné* 'never.'

3.2.2.2 Functions of adverbs

As will be discussed in chapter 4, adverbs appear most frequently as adjuncts within verb phrases but also function as adjuncts within adjective phrases, as adjuncts within adverb phrases and as specifiers in verb phrases, adjective phrases, adverb phrases, postpositional phrases and even noun phrases.

3.2.2.3 The adversative adverb *arigá*

The list of lexical adverbs includes a peculiar adverb that appears frequently and requires some discussion. This is the adverb *arigá*, which might be glossed ‘nevertheless’ or ‘however’ in English; often, however, *arigá* takes no overt gloss when translated to English. This adverb indicates the presence of conflicting tendencies in a situation and might best be thought of as an adversative, showing oppositions in the logic of the interlocutors or the narrated situation.

For example, in the passage in which the heron warns the buzzard that the lime paste he must put on his head will be very itchy, she admonishes the buzzard to put up with the itchiness because the use of the paste will make him handsome. The clause using this special adverb is provided in (228).

(228) *chopi arigá hue anacha-ga ola-Ø*
 but ADVERS very endure-PTCP do-PRES
 ‘but you must nevertheless endure it’ [z58]

Example (228) illustrates the use of *arigá* together with the coordinating conjunction *chopi* ‘but’ to indicate an opposing force in the situation: the buzzard’s enduring action is required to stand up against the itchiness of the lime paste that would tempt him to wash the paste off.

Other instances of the use of *arigá* include the unexpected result that the buzzard has become bald even though he used to have such luxuriant plumage [z83], the unheeded warning of

the stomachache that did not prevent the giant from overeating on poisonous beans [g61], and the astonishing ability of the wasp to defeat larger animals despite his diminutive size [o12].

3.2.2.4 Four adverblike conjunctions

Because four commonly used words have meanings that seem to be adverbial they deserve to be mentioned in this section. The four words are *aribiche* 'and then,' *echari* 'then,' *echirigá* 'in this way, thus,' and *echijiti* 'therefore, so, for this reason.' The glosses give senses of time precedence, manner and reason, suggesting at first glance that the expressions are lexical adverbs. Due to the consistent use of these four expressions as coordinating conjunctions to introduce sentences, however, these expressions should not be analyzed primarily as adverbs.

A closer examination of the positions in which these four expressions appear yields the information that two of them, *aribiché* 'and then,' and *echijiti* 'therefore, so,' invariably occur in sentence-initial position. These two expressions never occur in the texts in a position that would suggest that they are generated within a verb phrase, as they would be if they were adverbial adjuncts to a verb phrase. Thus, these two expressions should be analyzed strictly as coordinating conjunctions.

The other two expressions, however, appear both in sentence-initial introducer position and as adjuncts within verb phrases or even as specifiers within noun phrase adjuncts to verb phrases. These two expressions, *echirigá* 'in this manner' and *echari* 'then, at that time,' may, thus, be analyzed as appearing in two lexical classes, the class of coordinating conjunctions and the class of adverbs.

The class of coordinating conjunctions will be discussed in the next section, therefore, no examples of the introducer-function of these two double-function expressions need appear here.

Example (229), however, illustrates the adverbial use of the expression *echirigá*.

- (229) ¿Churigá **echirigá** *táa* *nii-sa* *ariga=mi*
 in what way? in this manner small be-PTCP nevertheless-2SG
- oméra-ma *echi* *o'hueli* *huási*. . .
 defeat-IRR DEF large cow
- 'How, being so small, will you be able to defeat large cows. . .?' [o10]

The expression *echirigá* in sentence (229) cannot be used as a coordinating conjunction because the larger clause already has a question word in the introducer position and the smaller clause, *táa níisa* 'being small,' is a dependent participial clause rather than a clause coordinate with the main clause *¿churigá ariga=mi omérama. . .?* The expression *echirigá* is better analyzed in this sentence as an adverb that functions as an adjunct of manner or extent within the adjective phrase headed by *táa* 'small.'

Similar examples of the expression *echari* can be found and similar arguments may be made for the adverbial status of *echari* in many Tarahumara sentences.

3.2.2.5 Summary of description of adverbs

The great semantic variety of Tarahumara adverbs matches the variety of positions in which these adverbs may be found. They modify verbs, adjectives, other adverbs, postpositional phrases and even some noun phrases, as will be discussed in greater depth in chapter 4. Tarahumara has an adverb of adversative function, *arigá*, that signals the presence of conflicting tendencies in a situation and sometimes fails to appear in English glosses of sentences containing it. Tarahumara also has two adverbs, *echirigá* 'so' and *echari* 'then,' that may double as sentence-introducers.

3.2.3 Nouns and their arguments and case-marking

After introducing the types of nouns found in the Tarahumara lexicon and noting the means of pluralizing nouns, this section addresses the constituents of the noun phrase that are required by nouns. The discussion touches upon predicate nominals but posits argument structure only for relational nouns and abstract nouns derived from verbs. The section concludes by describing the morphological or surface case-marking of nouns.

3.2.3.1 Types of nouns

Tarahumara nouns include common nouns, which may be lexical, derived or borrowed, and proper nouns.

Common nouns may be lexical nouns or nouns derived from verbs and lexicalized by common usage. Common nouns also include occasional loanwords from Spanish. An example of a lexical noun appears in (230).

- (230) *icósa-li* ***na'i*** *jiti*
 burn-PAST fire with
 'burned with fire' [g89]

In example (230) the lexical noun *na'i* 'fire' appears as complement of a postposition.

An example of a derived noun appears in (231).

- (231) *co'hua-li* ***co'huáami***
 eat-PAST food
 'ate food' [g34]

In example (231) the derived noun *co'huáami* has lexicalized from the verb *co'hua* 'to eat,' by addition of the nominalizing suffix *-ami* which appears on a number of other lexicalized nouns such as *pagótami* 'people' (from *pagó* 'to baptize') and *nacóhuami* 'fight, battle' (from *nacóo* 'fight').

An example of a common noun that is a loanword from Spanish appears in (232).

- (232) biré **martillo**
 INDEF hammer
 ‘a hammer’ [d3]
 < Spanish *martillo* ‘hammer’

Proper nouns in Tarahumara include personal names and place names. Personal names are hardly ever of Tarahumara origin; at the present time most personal names are borrowed from Spanish, although some nicknames are derived from Tarahumara words that express a characteristic attributed to the person. A personal name and a nickname appear in (233) and (234).

- (233) echi Pablo
 DEF Paul
 ‘Paul’ [t1]
- (234) echi oji Sayéri-ga ani-li
 DEF bear challenge-PTCP say-PAST
 ‘the bear called “Challenger”’ [o1]

Place names in the Tarahumara region are principally of Tarahumara origin and may denote some characteristic of the place by their form. An example of such a place name appears in (235).

- (235) Sama-chi-que
 be wet-LOC-EUPH
 ‘Samachique’/ ‘wet place’

Some analysts believe that the name of this town in the central Tarahumara region is derived from the verb *sa'mi*, meaning ‘be wet,’ ‘be soaked,’ ‘be saturated’ (Thord-Gray 1955: 393), combined with the locative and euphonic suffixes commonly found in Tarahumara place names.

3.2.3.2 Indication of number on nouns

Pluralization is not indicated morphologically on nouns, except for a small group of nouns referring to humans that form the plural by reduplication of part of the stem with modification of the

reduplicating consonant as described in Copeland 1993. Comparative forms for singular and plural pairs are shown for several of these nouns in (236), along with the sources of the data. Note that extensive phonological modification over time has resulted in forms that are no longer obviously reduplicative.

| | | | | | |
|-------|-----------------|----------|-------------------|-----------|----------------------|
| (236) | <i>tohui</i> | 'boy' | <i>cúrohui</i> | 'boys' | (Hilton 1975: 141) |
| | <i>tihué</i> | 'girl' | <i>ihué</i> | 'girls' | (Hilton 1975: 140) |
| | <i>muqui</i> | 'woman' | <i>umugui</i> | 'women' | (Copeland 1993: 318) |
| | <i>rijoy</i> | 'man' | <i>retéhowi</i> | 'men' | (Copeland 1993: 318) |
| | <i>kapitáne</i> | 'leader' | <i>i'kápitane</i> | 'leaders' | (Copeland 1993: 318) |

For nouns other than the reduplicating nouns in this group, plural number is understood from the particular quantifiers used with the head noun, from use of suppletive plural verb stems and plural subject agreement marking in the irrealis mode and the imperative mode, and from discourse context or shared knowledge of interlocutors.

3.2.3.3 Appearance of determiners with nouns

Nouns normally require a determiner in Tarahumara. This determiner may be a definite or indefinite article, a demonstrative, a quantifying adjective or even a specifier suffix. Even nouns intended as plural as well as most proper nouns require this determiner, as illustrated in examples (237), (238) and (239).

| | | | |
|-------|----------------------|----------------|---------------|
| (237) | <i>echi</i> | <i>suhuaba</i> | <i>si'oli</i> |
| | DEF | all | bee/wasp |
| | 'all the bees' [o18] | | |

| | | | | | | | | |
|-------|-------------------------------------|-------------|---------------|------------------|-------------|-------------|--------------|---------------|
| (238) | <i>Echi</i> | <i>bire</i> | <i>burito</i> | <i>acara-ma</i> | <i>echi</i> | <i>bire</i> | <i>clavo</i> | <i>yuhua.</i> |
| | DEF | one | donkey | put on shoes-IRR | DEF | one | nail | with |
| | 'Donkeys are shod with nails.' [d1] | | | | | | | |

- (239) echi Antonio Loera
 DEF [personal name]
 'Antonio Loera' [t52]

The specifier particle *-ra* or *-la* appears on definite, referential nouns and is found most often on the head noun of the genitive construction. This particle may co-occur with other determiners, as in example (240), where the phrase presents for the first time in this story a well-known character in a Tarahumara folktale about a family of giants.

- (240) echi bilé ono-rá
 DEF one father-SPCR
 'the father' [g4]

Nouns that do not require determiners include those that follow the verb *nihua* 'to have' as a complement of that verb, nouns that have a locative ending such as *-chi*, nouns that are used as predicate nominals or as adverbial adjuncts and nouns used in direct address. Example (241) illustrates the occurrence of a noun complement of the verb *nihua* 'to have' without a determiner.

- (241) echijite=ni nihua-Ø aná
 therefore-1SG have-PRES wing
 'this is why I have wings' [o6]

The complement in (241) may appear without the determiner because 'wings' is used in a general sense, as in 'this is what wings are for,' not in the specific sense of 'this is why I have my wings.'

3.2.3.4 Nouns and argument structure

Predicate nominals in Tarahumara do not have argument structure, but three other types of nouns do require complements, even though these complements may be non-overt. These other types of nouns are relational nouns in genitive constructions, certain locational nouns and abstract nouns derived from verbs.

3.2.3.4.1 Predicate nominals

Nouns used as predicate nominals, that is, as constituents of the predicate associated with a copula, are not analyzed as having argument structure in this study. The copula itself is considered rather to have argument structure and to take the predicate nominal as its internal argument. Example (242) contains a predicate nominal.

- (242) mapalí nijé pe táa tohúi níi-li
 when 1SG small small boy be-PAST
 ‘when I was a small boy’ [I3]

In example (242) the copula *niili* has two arguments, the external subject argument *nijé*, which is the first person singular pronoun, and the internal argument *pe táa tohúi*, the predicate nominal. The noun phrase *pe táa tohúi* is not considered to have argument structure.

Although predicate nominals have no argument structure, three other types of nouns in Tarahumara do show argument structure of a simple kind. These are genitive nouns, certain locative nouns and abstract nouns derived from verbs.

3.2.3.4.2 Relational nouns in the genitive construction

Relational nouns such as those indicating kinship and social relationship may be considered to take arguments in the complement position within the noun phrase. The noun phrase filling this complement position is in some way associated with the head noun, often in a possessive or genitive relationship. An example of a relational noun in the genitive construction is provided in (243).

- (243) nijé ‘huéna-ra
 1SG parent-SPCR
 ‘my parents’ [v2]

investigated here because some languages, such as Latin, Russian and Finnish, evidence a rich system of surface case-marking that is useful in identifying syntactic relationships between nouns and other sentence constituents (for example, whether a noun is the subject, direct object or indirect object of a verb). Many other languages, such as English, lack a complex system of morphological case-marking for nouns and indicate syntactic relationships between constituents in sentences by other strategies such as prepositions and word order (Crystal 1991: 47-48).

A study of the morphological cases apparent on nouns in languages having a complex case-marking system, cases such as nominative, vocative, accusative, genitive, dative and ablative, contributes toward understanding abstract case assignment, a separate area of investigation in the language (Crystal 1991: 47-48). Morphological case often relates to theta grids of verbs as well. For example, in a nominative-accusative case-marking system, external arguments of verbs often evidence nominative case, internal arguments having a PATIENT theta role evidence accusative case, internal arguments having a BENEFACTIVE theta role evidence dative case, and so forth. Certain verbs and adpositions may assign inherent case to noun phrases that they theta-mark, and this inherent case will appear in the morphological case of the noun phrase, as with the dative case complement of the verb *helfen* 'to help' in German (Haegeman 1994: 177).

The expectation for Tarahumara, given its limited number of postpositions and highly variable word order, is that a well-developed surface case-marking system will be found to indicate the syntactic relationships among sentence constituents. This prediction falls flat, however, because Tarahumara evidences no system for marking surface case. This section will show that no surface case is marked for nominative, accusative or dative in Tarahumara, and that possessive or genitive relationship is indicated only by parataxis, without any case-marking suffix. Locative, instrumental, ablative, associative and other such semantic concepts are indicated with regard to noun phrases by

postpositions and suffixes rather than by morphological case-marking. While Tarahumara demonstrates no surface case-marking, it must have a system for abstract case-marking, as required for all languages. A section in chapter 4 deals with the syntactic conditions that allow noun phrases to receive abstract case and, thus, be properly licensed to appear in their surface structure positions in the sentence.

3.2.3.5.1 Nominative case

No special morphology appears on nouns to mark nominative case; neither subjects of various types of active sentences nor noun phrase complements of stative verbs have any uniform suffix. Nominative case, therefore, is not marked in Tarahumara.

No overt nominative marking appears on *echi biré tohuí*, the AGENT subject of the volitional intransitive verb in example (250).

(250) *echi biré tohuí maja-ga, si'huina 'ma-ri*
 DEF one boy be afraid-PTCP other part run-PAST
 'that boy, being afraid, ran a distance away' [v28]

No overt nominative marking appears on *biré toro*, the AGENT subject of the volitional transitive verb in example (251).

(251) *biré toro hue aparú-ami tamí chi'ibu-ri*
 INDEF bull very fierce 1SG.ACC gore-PAST
 'a fierce bull gored me with his horns' [Hilton 1975: 42]

Note that sentence (251) contains an active, volitional agent, a strongly affected patient and a past tense verb, conditions that should trigger ergative case marking on *toro* if there were any in Tarahumara, but no special morphological case marking appears in this sentence.

No overt nominative case-marking appears on *echi noquela*, the THEME-role subject of the passive verb *nihuarihua* in sentence (252).

- (252) echi **noquela** ayena cho echi uleque cho nihua-rihua
 DEF curving sides also DEF ash also be made-PASS
 'the curving sides (for a violin) are also made from ash wood' [u9]

No overt nominative case-marking appears on *bilé rijoy*, the THEME-role subject of the intransitive verb *bitéali* in example (253), nor on the noun phrase complement *ne o'hueli rijoy* of the copula *niiri* in the relative clause.

- (253) bilé **rijoy** cúchu-ami bitéa-li
 one many have children-AJZR live(singular)-PAST
 echi mapu ne o'hueli **rijoy** nii-ri
 DEF COMP very large man be-PAST
 'there lived a man who had children, who was a giant' [g3]

No overt nominative case-marking appears on *echi rijoy*, the EXPERIENCER-role subject of the non-volitional intransitive verb *muculi* in example (254).

- (254) echi **rijoy** echoná mucu-li
 DEF man there die(singular)-PAST
 'the man died right there' [g69]

Because the subjects of these different types of verbs have no common case-marking, nor any indication of a distinct system of case-marking such as active-inactive or ergative-absolutive, Tarahumara may be assumed to be a nominative-accusative case-marking language that uses no special morphological marking for nominative case.

3.2.3.5.2 Accusative and dative cases

No uniform markings appear on noun phrases that are internal arguments of verbs or postpositions that assign the noun phrases PATIENT or BENEFACTIVE roles. Thus, the accusative and dative cases are not morphologically marked in Tarahumara.

In examples (255) and (256), the PATIENT-role noun phrases *sa'pá* and *echi táa namuti* show no special accusative or absolutive case-marking.

(255) ne hualú sa'pá co'hua-li
 very much meat eat-PAST
 'he ate a lot of meat' [g29]

(256) echari rocogo=te basa-gá
 then night-1PL.NOM throw stones-PTCP

mea-ri echi táa namuti
 drive away-PAST DEF small animal
 'in the darkness we threw stones at the small animal to drive it away' [t58]

Tokens of DATIVE case do not abound in Tarahumara but those examples that can be found evidence no overt case-marking. In the texts available for examination, only two examples of sentences have a full THEME-role noun phrase as well as a full BENEFACTIVE-role noun phrase, although many sentences demonstrate pronominal, non-overt and even clausal indirect objects. Sentence (257) has a BENEFACTIVE-role noun phrase, *chabochi*, that appears in sentence-final position and has no special case-marking.

(257) Hue carúmati ayá asa-ri nijé, chabochi
 very various things give-PTCP be-PAST 1SG.NOM Mexican
 'I was just giving away our things to the Mexicans' [16.44]

The verb 'to give' is the most prototypical of verbs that require one of their arguments to be DATIVE case, and yet even in this example the BENEFACTIVE indirect object is not overtly marked for DATIVE case.

Example (258) uses the same noun phrase *chabochi* that appears in the sentence (257) in a BENEFACTIVE-role as a complement of the verb *rarinéaruhua* 'selling.'

(258) mapujiti echi quiyochi huichi-ra hue natiguí-Ø
 because DEF fox pelt-SPCR very be worth-PRES

rarinéa-ruhua, jami paniami **chabóchi** omi
 sell-it is said here inhabitants Mexicans there
 'those fox skins are worth a great deal, selling them to the Mexicans there' [32.60]

No overt DATIVE case-marking appears on the noun *chabochi*. Thus, it is safe to conclude that DATIVE case-marking, like NOMINATIVE and ACCUSATIVE, is not morphologically marked in Tarahumara.

3.2.3.5.3 Genitive case

The genitive construction for noun phrases is discussed in more detail in the section on noun phrases in chapter 4. It suffices to remark here that the genitive or possessive relationship between noun phrases in a genitive construction is indicated by mere adjacent positioning or **parataxis** of the two noun phrases, with the possessor noun phrase preceding the noun phrase that is a possession. The specifier suffix *-ra* appears, not as a genitive case-marker on the word referring to the entity that is the possessor, but rather on the immediately following word, the head noun, that refers to the thing possessed.

Examples (259) and (260) illustrate the parataxis of full noun phrases indicating possessor and possession and show the specifier suffix *-ra* attached to the second noun, which is the head noun of the genitive construction.

(259) echi cahue-que **cupa-ra**
 DEF horse-EUPH hair-SPCR
 'horse hair' [u12]

(260) echi Antonio **huiye-ra**
 DEF personal name mother-SPCR
 'Antonio's mother' [t60]

In example (259) the specifier suffix appears on the second noun, the head noun, *cupa-ra*, referring to the hair that is a part of the horse; this suffix could be a genitive case marker only if it appeared

attached to the first noun, *cahueque*, which refers to the horse that is the whole entity of which the hair is a part.³ In example (260) the specifier suffix also appears on the second noun, the head noun, *huiyera*, the kinship term for the woman who is related to ‘Antonio’ as his mother, rather than on the first noun, *Antonio*. In both examples, the simple placement one after the other of possessor and possession is sufficient to indicate that this is a genitive construction, with the aid of the specifier suffix that indicates the definiteness and referentiality of the head noun. No genitive case-marking appears in these examples or in any other genitive constructions found in the texts.

3.2.3.5.4 Locative case

Many nouns in Tarahumara that function as adjuncts within verb phrases demonstrate locative semantics. A general locative concept is indicated by locative suffixes, while specific locative meanings are achieved by the addition of postpositions. Although many locative suffixes exist, the two most common suffixes are *-chi* and *-rari* (or its phonological variant *-rali*), illustrated in (261) and (262).

(261) Na’i **cahui-chí** **ocó-rari** ayena huicabé nirú churuguí.
 here mountain-LOC pine tree-LOC also many exist-Ø bird
 ‘Here on the mountain among the pines there are a lot of birds.’ [b1]

(262) Mapalí pe alii **chona-chi** raícha-li
 when small late darkness-LOC speak-PAST

mapali echoná **na’i-rali** socuali-ya asa-li
 when there fire-LOC warm oneself at the fire-PTCP sit-PAST
 ‘they told (the stories) in the nighttime, sitting next to the fire’ [15]

³The comment that the *-ra* suffix could be a genitive case marker only if attached to the possessor noun assumes that Tarahumara is a dependent-marking language, as defined in Whaley (1997: 141). If further research reveals that Tarahumara is actually a head-marking language then it would be no surprise to find a genitive case marker attached to the head (or “possessee”) noun.

The suffix *-chi* attaches to nouns the semantics of which includes an environment spreading widely enough to contain other entities within it, as exemplified by the ‘mountain’ in (261) and the ‘darkness’ in (262). The suffix *-rari* attaches to nouns the semantics of which includes a shape sufficiently regular and non-absorbent as to require other entities to be positioned only near or at one part of it, as is the case with ‘pine trees’ in (261) and ‘fire’ in (262). Certain nouns such as ‘water’ *ba’hui*, may take either suffix depending on the position of the entity with relation to them--contained within it or stationed at one part of it.

Objects of locative postpositions may receive locative meaning through the combination of a general locative suffix and the locative postposition, which provides specific locative information. These postpositions provide particular types of locative semantics for the noun phrase that is their complement. In example (263), the postposition *pacháami* provides the specific locative idea of ‘inside, within.’

(263) hualú riso-chí pacháami
 large cave-LOC inside
 ‘inside a large cave’ [g6]

Note that the locative noun *risó* ‘cave’ bears the locative suffix *-chi* as well as being accompanied by a specific locative postposition *pacháami*.

Thus, locative concepts are expressed in Tarahumara by a combination of suffixes and postpositions, and no locative case is marked.⁴

⁴This paper has treated locative suffixes and locative postpositions as distinct because of the orthographical convention for Tarahumara, because the locative suffixes are phonologically bound to their head noun and sometimes carry stress for the head noun, because of the general semantics of the locative suffixes as compared to the more specific semantics of the locative postpositions, and because nouns bearing locative suffixes may occasionally appear together with postpositions or as subjects or direct objects of sentences. It would also be possible to analyze locative suffixes and locative postpositions as essentially similar in form and function, because both types appear in final position in locative phrases and cannot normally be separated from the noun by other constituents, except, perhaps, other suffixes such as the specifier suffix *-ra*.

3.2.3.5.5 Ablative case

Ablative semantics is signaled by the presence of the postpositions *jonsa* or *ocuá*, meaning ‘from’ or ‘out of,’ immediately following the noun that is its complement. The noun may also bear a locative suffix, as does *ba’hui-chí* ‘water’ in example (264).

- (264) ¡Cu machina-ga echo’ná ba’hui-chí **jonsa!**
 again come out-PTCP there water-LOC from
 ‘Come out of the water!’ [z68]

Thus, postpositions express concepts of ‘out of’ or ‘out from’ and no ablative case is marked morphologically in Tarahumara.

3.2.3.5.6 Instrumental case

Instrumental concepts are expressed by the postpositions *jiti* or *yuhua*, meaning ‘by means of,’ ‘with’ or ‘using,’ and appearing immediately after the instrumental noun phrase. Examples (265) and (266) illustrate the instrumental semantics received by *martillo* and *na’i* as marked by the postpositions *yuhua* and *jiti*.

- (265) michóna-ma biré martillo **yuhua**
 nail-IRR one hammer by means of
 ‘(the horseshoe) will be nailed on with a hammer’ [d3]
- (266) icósa-li na’i **jiti**
 burn-PAST fire by means of
 ‘they burned it with fire’ [g89]

In examples (265) and (266), as in most other examples of instrumental expressions, no overt case-marking appears on the noun phrases *martillo* and *na’i*. Sometimes, however, the absolutive *-kV* marking does appear on instrumental noun phrases, as mentioned in the discussion of absolutive case in section 3.2.3.5.8.

3.2.3.5.7 Associative case

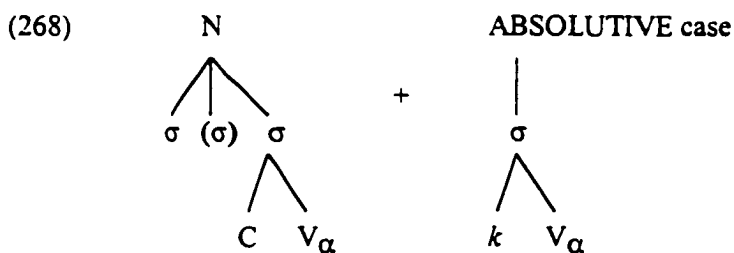
Associative concepts are expressed by the appearance of the postposition *yuhua*, meaning 'with' or 'accompanied by,' immediately following the noun phrase. Example (267) typifies this use of the postposition *yuhua*.

- (267) echi táa tohúí yuhua
 DEF small boy with
 'along with her small boy' [g71]

No overt case-marking appears on the noun *tohúí* in example (267) nor on other nouns used in an associative role in the texts examined for this study.

3.2.3.5.8 Absolutive case

When nouns appear alone or in final or near-final position in a sentence, they receive a reduplicative suffix that functions, according to Hilton, for euphony or emphasis (1975: ix). This suffix consists of a syllable the onset of which is the sound [k] followed by a nucleus that is a copy of the last vowel of the stem noun or optionally another vowel carrying the same value for backness. The rule is shown in (268).



Note that in the orthography used in this work, the sound [k] is transcribed as <c> before <a>, <o> and <u> but transcribed as <qu> before <e> and <i>.

Examples (269) through (273) showing reduplicating suffixes with various harmonizing vowels.

| | | | | |
|-------|---------|--------------|------|---------------------|
| (269) | rojuá | 'oak tree' | ---> | rojua- ca |
| (270) | ocó | 'pine tree' | ---> | oco- co |
| (271) | sunú | 'corn' | ---> | sunu- cu |
| (272) | cahué | 'horse' | ---> | cahue- que |
| (273) | Samachí | name of town | ---> | Samachi- que |

Sentence (274) illustrates the use of the absolutive or euphonic suffix on nouns.

| | | | | | | | |
|-------|--|---------|--------------------|-------------|--------|---------------|----------|
| (274) | ne | huabé | jihuéra-ga | bo'na-li | | | |
| | very | greatly | have strength-PTCP | uproot-PAST | | | |
| | echi | o'hueli | rojua-ca | echi | cúuchi | oco-co | ayénacho |
| | DEF | large | oak-EUPH | DEF | small | pine-EUPH | also |
| | 'by main strength he uprooted the great oaks and the little pine trees' [g42-43] | | | | | | |

As both of these nouns having the euphonic suffix are PATIENT-role internal arguments of the verb and neither is in sentence-final position nor appearing singly, it is unlikely that the suffix marks a case that is separate from accusative. Nor is it likely that the suffix is the accusative marker because it appears on subjects of sentences as well as on objects, as in examples (275) and (276).

| | | | | | |
|-------|--|------------|----------------|---------------|--------------------|
| (275) | huilibé | huasara-ma | huasa-ca | | |
| | afterward | dig-IRR | dig-PTCP | | |
| | mapurigá | huicabé | sunu-co | ichi-mea | |
| | in order that | much | corn-EUPH | happen-IRR | |
| | 'then I'll plow a lot of land so we can grow plenty of corn' [z27] | | | | |
| (276) | Huamí | ripá | biré | amo-co | chucú-Ø! |
| | there | above | one | honeycomb | to be hanging-PRES |
| | 'There's a honeycomb up there!' [v23] | | | | |

From these examples it may be concluded that the absolutive suffix appears simply to provide euphony in final or near-final position in sentences. Another possible analysis is that the absolutive

suffix is used optionally to mark PATIENT-role noun phrases used as objects and THEME-role noun phrases used as subjects.⁵

3.2.3.5.9 Summary of study of surface case

From this investigation of surface case-marking in Tarahumara the conclusion may be drawn that no morphological case-marking occurs in the language. Nominative, accusative and dative cases are not specially marked. Postpositions appear frequently to provide the semantics usually supplied by locative, ablative, temporal, instrumental and associative cases. Suffixes, which behave in a manner similar to postpositions except that they are phonologically bound to their stems, provide additional locative semantics without actually case-marking the stem word. The absolutive suffix *-kV* is analyzed here as having no semantic content or case-marking function but only as serving to provide euphony in sentence-final or near-final position. Simple parataxis, with the aid of a specifier suffix, is sufficient to form genitive constructions. Thus, no morphological case is evidenced in Tarahumara.

3.2.3.6 Summary of Tarahumara nouns

This description of nouns has noted the major types of nouns appearing in Tarahumara, including common, proper, lexical, verbally-derived and borrowed nouns. Nouns are found not to be pluralized for the most part, except for a few reduplicative plural forms, so that number of nouns is recovered from discourse context and shared knowledge of the world. Determiners are required with

⁵PATIENT-role objects and THEME-role subjects are actually candidates for absolutive marking in ergative-absolutive systems. Additional research could profitably be done on this topic to determine whether Tarahumara has a split case-marking system with some NOMINATIVE-ACCUSATIVE case-marking and some ERGATIVE-ABSOLUTIVE case-marking.

most nouns, even plural and proper nouns. Relational nouns and certain locational nouns are found to require overt noun-phrase complements, while abstract nouns derived from verbs take implicit complements. Nouns are not marked with morphological case in Tarahumara, the semantics of the various cases being supplied by understanding of verbal argument structure and by postpositions, suffixes and parataxis.

3.2.4 Pronouns

The pronoun system in Tarahumara shows evidence of being a nominative-accusative case-marking system because different forms exist for pronouns occurring as subjects (termed “nominative”) and those occurring as objects (termed “accusative”). Clitic pronouns also frequently occur in addition to or in place of the nominative case pronouns. Three types of genitive pronouns as well as reciprocal, reflexive, indefinite, demonstrative, interrogative and relative pronouns also occur.

3.2.4.1 Nominative case pronouns

The nominative case pronoun paradigm is shown in table 8.

Table 8. Nominative case pronouns

| | Singular | Plural |
|---------------|----------|--------|
| First person | nijé | tamujé |
| Second person | mujé | 'yemi |
| Third person | binoy | aboni |

Nominative case pronouns are used as the subject of the sentence, as in example (277).

- (277) **aboni** **pe táa** **nutu-gué** **'yéna-ri**
 3PL.NOM small amount carry food-PTCP go about (pl)-PAST
 'they had hardly any food with them' [v18]

Example (277) illustrates the use of the third person plural pronoun *aboni* as the external argument of the verb *'yenari* 'went about.'

Nominative case pronouns also appear as subjects of embedded clauses, as in (278).

- (278) **tamujé** **quetasi** **naquí-Ø**
 1PL.NOM NEG want-PRES
- mapu 'yemi** **suhuaba** **suhui-mea**
 COMP 2PL.NOM all die(plural)-IRR
 'we don't want you all to die' g79-80

In sentence (278) the second person plural pronoun *'yemi* functions as the external argument of the verb *suhuimea* 'may die' within the complement clause.

3.2.4.2 Clitic pronouns

In addition to full-form nominative case pronouns, clitic pronouns are freely sprinkled throughout Tarahumara utterances. These clitic pronouns are reduced, phonologically-bound forms of free nominative case pronouns and are used only in the nominative case. A table of suffixal pronouns is provided in table 9.

Table 9. Clitic pronouns (nominative case)

| | Singular | Plural |
|---------------|----------|----------|
| First person | =ni | =te, =ta |
| Second person | =mi | =tamo |
| Third person | --- | --- |

Hilton (1975: vii) terms these forms “suffixal pronouns” and notes that they are used more widely than the full, independent pronominal forms and are affixed at the outermost level of the word, following all other suffixes. Hilton also states that no “suffixal pronouns” exist for the third person, third person topical referents being normally understood from context and not overtly expressed (1975: vii).

Burgess terms these pronominal forms “subject pronoun suffixes” and notes the use of these forms along with two other types of “pronoun copies” in Western Tarahumara. He observes that they can appear together (in the same clause) with explicit subjects, providing an example of the occurrence of such a subject pronoun suffix attached to a main verb in the emphatic form and immediately followed by the corresponding unreduced, independent pronoun that is the subject of that verb and that also has an emphatic suffix (1984: 12).

Langacker terms these pronominal forms “pronoun copies” and writes that the “copying of nominal constituents in pronominal form” characterizes all Uto-Aztecan languages. In calling the forms “copy pronouns” he explains that he does not refer to free pronominal forms nor to presumptive or resumptive pronouns but only to bound forms and clitics that are “copied” for “specific grammatical purposes,” which he believes to be related to topicalization and in need of further research. The grammatical constructions in which Langacker finds evidence of pronoun copying involve possessives, postpositions, object agreement on the verb and subject agreement on the verb (1977: 27). Of these four constructions, only subject agreement is a relevant use of these bound pronominal forms in Tarahumara, and that not always on the verb as will be shown in the discussion.

Langacker explains what is meant by copying in the following way:

When the pronominal element is itself sufficient to identify the referent, the antecedent can be omitted, in which case we do not have a pronoun ‘copy’ in the

strictest sense of the term. Languages may however permit the antecedent to appear even when uniquely identified by the pronoun, and multiple copies are also sometimes possible (1977: 27).

He illustrates the copying process with an example from Cupeño in which the subject pronoun is copied as a clitic on the independent subject pronoun in the main clause. Then, in the same sentence, the subject pronoun is copied again as a clitic on the clause introducer and as a verb prefix in the subordinate clause, in which the corresponding independent pronoun also appears (1977: 27).

While further investigation of the function of these clitic pronouns in Tarahumara is needed, the analysis put forth in this work is that they play two roles. In the first place, in sentences in which no other indication of subject agreement is provided (as by noun phrases, independent pronouns or verbal inflection for number), clitic pronouns supply identification of the referent of the null subject argument while at the same time observing the principle of economy, which prefers concise forms to unreduced forms if the relevant argument must be made explicit at all. In the second place, in sentences in which other forms of subject agreement co-occur with the clitic pronoun, this bound form serves to provide emphasis for this subject argument and sometimes to provide “filler” for hesitation points in the discourse, as evidenced in audio recordings of texts.

Clitic pronouns appear attached to full-form nominative case pronouns, adverbials, postpositions, sentence introducers, conjunctions, negatives, participial verbs and their complements, copulas and inflected verbs. An example of each constituent that may have a clitic pronoun attached follows, together with an identification of the syntactic roles of most of the constituents to which they are attached.

Attached to full-form nominative case pronouns (subjects):

- (279) **tamuje=te** huabé risi-ri echo'ná buhue-chí
 1PL.NOM-1PL.NOM much rest-PAST there road-LOC
 ‘we rested a great deal along the way’ [t5]

Attached to adverbials (adjuncts):

- (280) **echo'na=ta** chi'réba-ri
 there-1PL.NOM spend the night-PAST
 'there we spent the night' [t7]

Attached to postpositions (postpositional phrase):

- (281) jena'í **jónsa=te** séba-ri echo'ná bo'onate
 here from-1PL.NOM reach-PAST there other ridge
 'from here we reached the other ridge' [t6]

Attached to sentence-introducers :

- (282) **Arí biché=ta** 'machína-ri
 and then-1PL.NOM leave-PAST
 'and then we left' [v9]

Attached to coordinating conjunctions and negatives:

- (283) **chópi=te** tamujé **quetási=te**
 but-1PL.NOM 1PL.NOM NEG-1PL.NOM

 huenomí-a 'yéna-ri ma
 have money-PTCP go about(plural)-PAST already
 'but we had no money left' [t39]

Attached to subordinating conjunctions:

- (284) **mapali=mi** ma uche-sa echi meque
 when-2SG.NOM already put on/anoint-PASTPTCP DEF cactus
 'when you have put that cactus foam salve on your head' [z56]

Attached to participial-complement nominals and participial verbs (verb phrase):

- (285) **echari=te** **fóco=te** **raji-ga=te**
 then-1PL.NOM flashlight-1PL.NOM light (fire)-PTCP-1PL.NOM

 'ne-ri echi táa namuti
 see-PAST DEF small animal
 'then turning on a flashlight we saw the small animal' [t54]

Attached to copulas (verb phrase):

- (286) mapari nijé pe táa **niiri=ni**
 when 1SG.NOM small be-PAST-1SG.NOM
 'when I was small' [17.1]

Attached to inflected verbs (verb phrase):

- (287) **Bajima=ni** biré sodá
 drink-IRR-1SG.NOM one soda
 'I'll have a soda.' [t64]
- (288) echo'ná comi-chi **simiri=ni**
 there brook-LOC go-PAST-1SG.NOM
 'I went down to the brook' [17.4]

Clitic pronouns may appear, therefore, attached to any clausal constituent except the object of the clause for which the clitic pronoun represents the subject or the object of a postposition, perhaps because the complement position within a verb phrase or postpositional phrase is a barrier to percolation of the features of INFL. As will be argued in chapter 4, clitic pronouns are a manifestation of subject-verb agreement and may appear suffixed to any terminal node dominated by INFL (with the exception of complements), because INFL contains the subject-verb agreement information for the entire clause.

The reasons for the attachment of a clitic pronoun to a particular constituent in a sentence rather than to other possible constituents are unclear. A study of information structure, which is beyond the scope of this thesis, might be able to account for the positioning of clitic pronouns in sentences.

3.2.4.3 Accusative case pronouns

The accusative case pronoun paradigm is shown in table 10. Note from table 10 that no accusative case pronouns exist for third person. Following Hilton's generalization (1975: vii)

mentioned in the preceding section, no examples of third person accusative case pronouns are found in the texts examined for this study. Third person patients, themes and benefactives seem to be considered either sufficiently topical to be omitted, remaining a null object pronoun *pro*, or deserving of full noun phrase mention for purposes of emphasis or clarity. A third-person non-human object seems to be best expressed in Tarahumara as a full noun phrase or as the null object *pro*; no personal pronoun like the English “it” exists for non-human or inanimate referents.

Table 10. Accusative case pronouns

| | Singular | Plural |
|---------------|----------|---------------------|
| First person | tami | tamujé tami, tamujé |
| Second person | mi | 'yemi mi |
| Third person | --- | --- |

The accusative case pronoun may be used as the direct object of the sentence. In example (289), the first person singular accusative case pronoun *tami* is the THEME-role internal argument of the verb *naqui* ‘want.’

(289) ayénami **tami** naqui-saga
 also-2SG 1SG.ACC want-COND
 ‘if you want me’ [z19]

As in example (289), object pronouns are found in the neutral position for complements of verb phrases, preceding the verb. Object pronouns are not moved to sentence-final position in the same way that full noun-phrase objects may be moved. Most likely object pronouns are not postposed because they are not as phonologically long or as syntactically complex as full noun phrases that are

postposed as a result of the tendency to shift “heavy” noun phrases to the right of the verb for easier cognitive processing.

The accusative case pronoun may also be used as the internal argument of the verb that could be identified as the indirect object of the sentence. In (290), the first person singular accusative case pronoun *tamí* is one of two internal arguments of the three-argument verb *binera* ‘teach.’

- (290) mapu=mi mujé **tamí** binéra-ma rochí siru-ya
 COMP-2SG 2SG.NOM 1SG-ACC teach-IRR fish catch-PTCP
 ‘that you teach me how to fish’ [z29]

Pronouns functioning as objects or complements of postpositions are morphologically identical with pronouns in the accusative case shown. This unity of form with the accusative case holds even though the theta role that the pronouns are receiving from the postposition may actually be associative, instrumental, locative, ablative or manner. In example (291) the first person pronoun *tamí* receives the theta-role of PATIENT from the postposition *yuhua*.

- (291) ¿A jaré namuti **tamí** yuhua nahuama?
 Perhaps some animal 1SG.ACC with reach-IRR
 ‘Would some animal seize me there along the way?’ [v3]

In sentence (292) an apparently nominative case form for the first person plural pronoun *tamujé* is used as the complement of the postposition *yuhua* which gives the pronoun an ASSOCIATIVE theta-role.

- (292) tamujé naquí-Ø sinibí nocha-ma **tamujé** yuhua
 1PL.NOM want-PRES always work-IRR 1PL with
 ‘we want you to always work with us’ [g81]

Although in sentence (292) the forms of the nominative case subject pronoun and the associative case object pronoun are identical, the object pronoun form *tamujé* is most likely a truncation of the accusative form *tamujé tamí* rather than a use of a nominative case pronoun as the object of the postposition.

3.2.4.4 Genitive case pronouns

Genitive or possessive pronouns occur in three different constructions, one being a construction dedicated to pronouns and the other two constructions being parallel to the genitive construction for full noun phrases. In each type of construction the genitive pronoun serves as an argument within a noun phrase.

The first type of genitive case pronouns appears infrequently preceding only a few types of nouns, usually kinship terms (Hilton 1975: viii). Table 11 provides a paradigm of these possessive pronouns. Note from table 11 that no second person plural possessive pronoun of this type has been identified for Samachique Tarahumara.

Table 11. Genitive/possessive case pronouns

| | Singular | Plural |
|---------------|----------|--------|
| First person | queni | queta |
| Second person | quemi | --- |
| Third person | quepu | quepu |

These possessive pronouns are concise, compared to the forms yet to be described. They are easy to parse and most likely are used in non-focus positions in the sentence. In sentence (293) this concise form of the genitive pronoun is used within the SOURCE-role internal argument noun phrase of a sentence that seems not to be emphasizing this argument.

(293) Hue chuhué simí-ri=ni, .
 very heedlessly go-PAST-1SG.NOM

que risensia ta-sa **queni** onó
 NEG permission ask-PASTPTCP 1SG.POSS father
 'I went without asking my father's permission' [17.19]

Sentence (293) emphasizes the manner in which the action was carried out, *heedlessly* and *without asking permission*. It is possible that the most concise form of the first person singular pronominal genitive construction, *queni*, is chosen for economy in the non-focused part of the sentence.

A more common form of construction of the genitive pronoun is the normal genitive construction using a combination of parataxis and the appearance of the specifier suffix *-ra* on the word expressing the possessed entity or the part of the whole. In this paratactic construction a personal pronoun having a form identical to the nominative case personal pronoun immediately precedes the head noun with its specifier suffix. Table 12 provides a paradigm of genitive pronouns participating in paratactic genitive constructions.

Table 12. Genitive case pronouns using the genitive construction

| | Singular | Plural |
|---------------|---------------------------|----------------------------|
| First person | <i>nijé + noun + -ra</i> | <i>tamujé + noun + -ra</i> |
| Second person | <i>mujé + noun + -ra</i> | <i>'yemi + noun + -ra</i> |
| Third person | <i>binoy + noun + -ra</i> | <i>aboni + noun + -ra</i> |

The type of genitive pronoun found in table 12 may express a part of the whole, such as a part of one's body, or it may express kinship, ownership or possession. Example (294) illustrates the use of this type of genitive pronoun.

- (294) **binoy** bité-ra-chi
 3SG.NOM dwelling-SPCR-LOC
 'his home' [g49]

Note that in this construction the suffix *-ra* cannot be a genitive case marker because in this example as in all others found in the texts the suffix appears attached to the head noun rather than to the pronominal that indicates the possessor, where a genitive case marker would be expected to appear if there were any.

A third type of genitive construction involving pronouns uses a reduced relative clause containing a form of the verb *nihua*, meaning 'to own or possess,' together with one of the nominative case personal pronouns. Table 13 displays the reduced relative clauses corresponding to each possessive pronominal person and number.

Table 13. Genitive case pronouns in reduced relative clause construction

| | Singular | Plural |
|---------------|---------------|----------------|
| First person | nijé nihuara | tamujé nihuara |
| Second person | mujé nihuara | 'yemi nihuara |
| Third person | binoy nihuara | aboni nihuara |

The texts examined for this study contain no examples of this construction; therefore, examples (295) and (296) are taken from Gathings 1972 and Thord-Gray 1953.

- (295) **mujé** **niwara (nihuara)** onó
 2SG.NOM belongs to father
 'your father' [Gathings 1972: 46]

- (296) **binoi (binoy)** **-niwara (nihuara)** eye
 3SG.NOM have mother
 'their mother' [Thord-Gray 1953: 33]

Because of the verbal nature of the element *nihuara* these examples are best understood as being head nouns preceded by a relative clause that lacks a relative pronoun, in the sense of 'the father that belongs to you' or 'the you-belonging father.' The relative clause contains a pronoun indicating the possessor and a verbal form denoting possession, while the head of the clause refers to the entity that is possessed or related to the embedded pronoun.

3.2.4.5 Emphatic pronouns

A pronoun identical with the third person nominative case pronoun sometimes follows another pronoun or a noun phrase to concentrate or distribute agentivity with respect to that immediately preceding referent. A form identical to the third person singular nominative pronoun appears with emphasized singular pronouns or noun phrases, while a form identical to the third person plural nominative pronoun appears with emphasized plural pronouns or noun phrases. The third person singular form, *binoy*, appears in the example in (297).

- (297) **nijé** **binoy** 'nata-sa simi-ri-ni
 1SG.NOM 3SG.NOM think-PASTPTCP go-PAST-1SG.NOM

 echo'ná biréana bacochi
 there one part river
 'I myself, having thought about it, went to a certain place by the river' [17.1]

The word *binoy* in (297), used at the beginning of a story, functions to emphasize that it was the narrator himself who took responsibility for the actions reported in the story; he did these activities alone and without advice from or knowledge of others. The word appears to concentrate the action upon the person referred to. The plural form, *aboni*, occurs in example (298) and serves to distribute action diffusely among the persons referred to.

- (298) cu to-boa tamuje **aboni** piré-ra-chi
 again bring-IRR 1PL.NOM 3PL.NOM dwell(pl)-SPCR-LOC
 'bring (the cheese) back to our own homes' [t69]

The word *aboni* in (298), used in the conclusion of a story, stresses that the persons involved intended their purchases to be distributed each in his or her own direction and to their own families; they did not intend these purchases to be shared as other food items were during the course of this story.

3.2.4.6 Reflexive pronouns

The word *binoy* appears not only as a third person singular nominative case pronoun and as a singular emphatic pronoun as has been described; *binoy* also appears as a reflexive pronoun indicating that the subject of a transitive verb performs the action upon himself or herself, so that the external and internal arguments of the verb refer to the same person. Sentence (299) illustrates the use of *binoy* as a reflexive pronoun.

- (299) ne hualubé cohuáami basú-nara=te
 very great food cook-DESID-1PL.NOM
- mapurigá gará bosa-ma **binoy** echi hualubé rijoy
 in order that well fill(singular)-IRR RFLX DEF large man
 'we tried to cook a great deal of food so that the giant could eat his fill'
 (i.e. 'could fill himself') [g37]

In example (299) a VOS ordering occurs, focusing the sentence upon the giant who performs the activity upon himself--he fills himself with food. The reflexive pronoun *binoy* is the object of the sentence and follows the verb, while the subject of the sentence, *echi hualubé rijoy*, appears in salient sentence-final position.

Tarahumara employs intransitive rather than reflexive verbs to express many ideas that require reflexive verbs and reflexive pronouns in other languages such as Spanish. A simple subject

noun phrase or subject pronoun is the only argument required by these verbs; no reflexive pronoun is needed. Sentences (300) and (301) from Hilton 1975 (no such examples occur in the texts examined for this study) exemplify such intransitive verbs that appear to have a semantic reflexive element because the subject of the verb also experiences the action of the verb.

(300) nije=ni **coba-ri** cori co'-ya
 1SG.NOM-1SG.NOM have reaction to pepper-PAST pepper eat-PTCP
 'I burned my mouth eating peppers.' [Hilton 1975: 30]

(301) ;∅ Hue ochoré-ami ju=mi;
 pro very be dirty-AJZR be-PRES-2SG.NOM

 ∅ gará **basigó-∅!**
 pro well wash the face-IMPV
 'You're very dirty; wash your face well!' [Hilton 1975: 15]

Although two morphemes appear in the subject of example (300), the independent pronoun *nijé* and the clitic pronoun =*ni*, these should not be analyzed as two separate arguments of the verb *cobá* but rather as a single emphatic argument. Example (301) demonstrates that far from requiring two overt arguments as a reflexive verb might be expected to do, the verb *basigó* may occur without any overt arguments. Thus, verbs like *cobá* 'have a reaction to pepper' and *basigó* 'wash one's face' may have reflexive semantics but do not require reflexive pronouns in Tarahumara.

3.2.4.7 Reciprocal pronouns

No reciprocal pronouns have been found in Tarahumara to date, either in the texts examined for this study or in the investigations reported by others. The only possible candidate for the status of a reciprocal pronoun is the expression *nimi* 'I to you' which is analyzed in a different way in chapter 4 as two independent pronouns that are phonologically bound. The first pronoun, *ni=*, is considered to be a first person singular nominative case pronoun while the second pronoun, =*mi*, is

considered to be a second person singular accusative case pronoun. According to this analysis, *nimi* consists of two personal pronouns rather than of a single reciprocal pronoun.

Reciprocity may be expressed in Tarahumara by an adverb rather than by a pronominal expression. Hilton 1975 lists an adverb *a'nagupi* as meaning 'one to another' or 'mutually.' This usage is an extension of the primary meaning of *a'nagupi* as 'on both sides' as exemplified in (302).

- (302) *nije=ni* *oseri* *a'nagú* *cuhuana*
 1SG.NOM-1SG.NOM paint-PAST on both sides on the other side
 'I painted it on both sides.' (Hilton 1975: 5, 125)

The expression *a'nagupi* may also include the notion of distribution of agentivity mentioned in section 3.2.4.5 with respect to emphatic pronouns. The adverb may indicate the manner of action of a verb, in distributing the action diffusely among several referents (Burquest, 1998, personal communication). No examples are available in texts examined for this study to test this hypothesis.

3.2.4.8 Indefinite pronouns

Tarahumara exhibits a wide variety of indefinite pronouns that represent both identified and unidentified referents as well as non-referential noun phrases. One indefinite pronoun of each type will be exemplified and others of the same type will be listed with the example.

Two indefinite pronouns that represent previously-identified referents are the pronouns *nahuena* and *ocuánica*, both of which mean 'the two.' Example (303) illustrates the use of *nahuena* in combination with a suffixal personal pronoun.

- (303) *Arí biche=ta* *nahuena* *chapi-sáa*
 then-1PL.NOM the two catch-PASTPTCP
 'Then the two of us, having caught it, . . .' [v33]

The pronoun *nahuena* does not name or otherwise specify the referents, nor does it have person that would make it a dual personal pronoun such as ‘we two,’ yet its use assumes that the listeners know the precise identity of the referents. Perhaps *nahuena* should be called a ‘definite pronoun.’

Many pronouns fit into the category of pronouns that represent previously unspecified yet referential entities. The most common is the pronoun *jaré*, meaning ‘some’ or ‘several.’ This expression also appears as a quantifying adjective, also meaning ‘some’ or ‘several.’ The pronominal use of *jaré* is exemplified in (304).

- (304) *jaré* *rosorába-ma* *machi rojuá-rari*
 some make a nest-IRR outside oak-LOC
 ‘some make their nests outside, in the oak trees’ [b15]

In sentence (304) the pronominal expression *jaré* replaces the full noun-phrase expression *jaré churugui*, meaning ‘some birds.’

Other pronouns that represent indefinite yet referential entities are the following:

auché jaré ‘some others,’ *biré* ‘one,’ *huaminabi huarubé* ‘many,’ *auché* ‘others,’ *pe ocuá* ‘a few,’ *ibiri* ‘each one,’ *birétari* ‘someone,’ and *mapuyiripi* ‘whichever.’ Depending on the context, when the speaker does not have a particular entity in mind, these indefinite pronouns may also be used non-referentially.

Tarahumara also has indefinite pronouns that assert the non-existence or non-participation of entities that are non-referential; these pronouns do not refer to particular entities in the world of discourse. Sentence (305) exemplifies the use of one of these non-referential indefinite pronouns, *quetasi namuti* ‘nothing.’

- (305) *echi* *pagótami* *jeane-li* *mapu quetasi maja-si*
 DEF people say-PAST COMP NEG be afraid-IMPV

mapu **quetasi** **namuti** iqui-mea
 COMP NEG thing happen-IRR
 'the people said not to be afraid because nothing would happen' [g73-75]

The two-word phrase *quetasi namuti* forms a pronominal expression that asserts non-existence of referents in the world of discourse. Other indefinite, non-referential pronominal expressions like *quetasi namuti* are *que namuti* 'nothing,' *que huesi* 'nobody,' 'none,' *tasi biyiri* 'nothing,' and *tarapé biré* 'not even one,' 'none.'

Thus, indefinite pronouns in Tarahumara include those referring to entities known to both speaker and listener, such as *nahuena*, those referring to entities known to the speaker but not to the listener, such as *jaré*, and those referring to entities unknown to both speaker and listener or non-existent in their world of discourse, such as *quetasi namuti*.

3.2.4.9 Demonstrative pronouns

Tarahumara has two levels of deictics, the proximal and the distal, and the words used to indicate these distances from the speaker often function as demonstrative pronouns. The proximal deictic is *je'ná*, *je-* being a morpheme that indicates proximity in many words, and the distal deictic is *echi*, a word that doubles as the definite article. Both *jená* and *echi* may also be used as demonstrative adjectives but the examples in (306) and (307) have been chosen to illustrate their use as demonstrative pronouns that represent full noun phrases.

(306) **Je'ná** huási á-ami ju.
 PROX cow seek-AJZR be-PRES
 'These are cow-seeking ones'/
 'These are ones who are searching for cows' [v14]

(307) Hue gará ane-ma **echi** maparí ma simé-Ø
 very good sound-IRR DIST when already play-PRES
 'That (violin) will sound very good when they play it.' [u15]

In the kind of usage of *echi* seen in sentence (307) the distal meaning may be in the process of being bleached from the pronoun *echi* so that *echi* is becoming a simple third person pronoun as well as a deictic and a definite article.

While both *je'ná* and *echi* may refer to either singular or plural noun phrases, two specific expressions specifying number also are in use, combining the distal pronoun with *biré* or *jaré*. The expression *echi biré* signifies 'that one,' a singular demonstrative pronoun, while the expression *echi jaré* signifies 'those,' a plural demonstrative pronoun.

3.2.4.10 Interrogative pronouns

Interrogative pronouns such as *chu* and *piri*, both meaning 'what?,' *chigá*, meaning 'who?' and *chu yiri*, meaning 'which one?' are encompassed in the discussion of questions in chapter 4 and will, therefore, not be further addressed in this section.

3.2.4.11 Relative pronouns

The complementizer *mapu* may be functioning as a relative pronoun in many complement clauses, as in example (308).

(308) ari pol-ma echo'ná **mapu** nihua-ma echi rabélica
 then cover-IRR there COMP make-IRR DEF violin
 'then the one who is making the violin will cover it there' [u6]

Because the complementizer *mapu* is not inflected for nominative or accusative case as a relative pronoun might be, however, it is more likely that *mapu* is simply used as a relativizer in relative clauses, rather than as a relative pronoun. Although *mapu* functions as a relativizer in the clause *mapu nihuama echi rabélica* in (308), *mapu* is not limited to the relativizer role. Appearing singly or in combination with a variety of other morphemes that modulate the meaning precisely, the

complementizer *mapu* introduces many types of relative, complementizer and subordinate adverbial clauses. These functions are addressed in the section on conjunctions in this chapter, section 3.2.5.2, as well as in the section on complementizer phrases in chapter 4, section 4.8.

3.2.4.12 Summary of discussion of pronouns

Tarahumara demonstrates many types of pronouns, including personal pronouns in both nominative and accusative case forms, possessive pronouns, emphatic pronouns, a reflexive pronoun, indefinite pronouns, demonstrative pronouns, interrogative pronouns and a relative pronoun. The distinctive members of the Tarahumara pronoun inventory are the paradigm of clitic pronouns, which may co-occur with or substitute for independent nominative case pronouns, and the three different paradigms of possessive or genitive case pronouns, each used in a slightly different discourse context.

3.2.5 Conjunctions

This section describes coordinating and subordinating conjunctions that join clauses, and also mentions the lower-level conjunction *ayénacho* that joins words and phrases.

3.2.5.1 Coordinating conjunctions

Tarahumara uses coordinating conjunctions to join main clauses that are equal with and independent of each other, in the sense that these clauses have their own fully inflected verbs and are not dependent on the verb of another clause for their full inflection or meaning.

The coordinating conjunctions found in the texts examined for this study are listed in (309).

| | | |
|-------|-----------------|--|
| (309) | <i>echijiti</i> | ‘for this reason,’ ‘therefore’ |
| | <i>echirigá</i> | ‘thus,’ ‘and so,’ ‘therefore,’ ‘in this way’ |
| | <i>ayénacho</i> | ‘and,’ ‘also’ |

| | |
|-----------------|-------------------------------------|
| <i>chopi</i> | 'but,' 'however,' 'and,' 'moreover' |
| <i>echari</i> | 'and then,' 'then' |
| <i>ari</i> | 'then,' 'later,' 'after that,' |
| <i>aribiche</i> | 'and then' |

The sequence of coordinate clauses in example (310) illustrates the use of three of these conjunctions to signal that the clauses they join are of equal rank.

| | | | | | | | |
|-------|--------------------------------|----------------|------------------|----------------------------|-------------------|-------------------|---------------------|
| (310) | [Aríbiche | <i>echi</i> | <i>huarubé</i> | <i>rijoy</i> | <i>hue</i> | <i>ohuí-la=te</i> | <i>nochá-nala</i>] |
| | and then | DEF | great | man | very | invite-?-1PL | work-DESID |
| | [echirigá | ∅ | ∅ | <i>hue</i> | <i>nócha-ga</i> | <i>co'hua-li</i> | <i>co'huáami</i>] |
| | thus | <i>pro</i> | <i>PRO</i> | very | work-PTCP | eat-PAST | food |
| | [chopi [mapalí | <i>echi</i> | <i>rijoy</i> | <i>hue</i> | <i>nócha-li</i>] | | |
| | but when | DEF | man | very | work-PAST | | |
| | <i>ne</i> | <i>hualubé</i> | <i>co'huáami</i> | <i>basú-nara=te. . .</i>] | | | |
| | very great | food | cook-DESID-1PL | | | | |

'When the people invited the giant to work, they paid him with food, but they had to prepare a large amount. . .' [g33-36]

The introduction of the first three clauses in the example (310) by the expressions *aribiche* 'and then,' *echirigá* 'thus,' and *chopi* 'but' indicates that none of these clauses are dependent on another clause but that all are of equal, independent status.

The last clause of example (311), *mapalí echi rijoy hue nóchali* 'when that man worked hard,' is introduced by *mapalí*, a subordinating conjunction meaning 'when.' The next section, section 3.2.5.2, addresses the expression *mapalí* and other conjunctions that specify in what way the clause they introduce modifies the main clause on which they depend for their full verbal inflection and interpretation.

3.2.5.2 Subordinating conjunctions

Tarahumara uses a number of subordinating conjunctions to introduce adverbial clauses. Some of these subordinating conjunctions are listed in (312), with their English glosses. Notice that some subordinating conjunctions may be used in more than one way.

| | | |
|-------|-----------------|---|
| (312) | <i>mapu</i> | 'in order that,' 'because' |
| | <i>mapo 'ná</i> | 'wherever' |
| | <i>mapari</i> | 'when,' 'until' |
| | <i>mapuyena</i> | 'until' (backward or forward time boundary) |
| | <i>mapujiti</i> | 'because' |
| | <i>mapurigá</i> | 'in order that,' 'because' |

As will be discussed in greater detail in the section on adverbial clauses in chapter 4, subordinate clauses like those introduced by these conjunctions provide information about time, place, purpose, manner, reason or result with regard to the action of the verb in the main clause. The subordinating conjunction not only signals the dependence of the clause it introduces upon a higher clause but also specifies the type of adverbial information that the lower clause will provide.

It is interesting that all the subordinating conjunctions begin with *map-* or *mapu*, which seems to be an all-purpose embedded-clause introducer. Used on its own as a free word, the conjunction *mapu* may stand alone as a subordinating conjunction meaning 'in order that,' and may also introduce relative clauses and complementizer clauses as discussed in the sections on adjective phrases, section 4.5.4, and noun phrases, sections 4.4.3 and 4.4.4, in chapter 4.

In addition to *mapu*, two other expressions that have been listed have functions other than that of a subordinating conjunction. These are the expressions *mapuyena* and *mapurigá*. The expression *mapuyena*, besides being a subordinating conjunction that expresses a time boundary when the action of the independent clause took place, also occurs, without a verb, preceding noun

phrases in a role somewhat like a preposition that means 'until.'⁶ The expression *mapurigá* has at least three other uses. It may introduce relative clauses as a relative pronoun; it may appear as specifier in a postpositional phrase with *niráa* 'in the manner of' and have the sense of 'as' or 'like;' and it may occur as a question word meaning 'how?' in indirect questions that follow cognitive verbs.

3.2.5.3 The lower-level conjunction *ayénacho*

An expression previously mentioned as having the function of introducing independent clauses, the coordinating conjunction *ayénacho* which means 'and' or 'also,' has a parallel function at a lower-than-clause level. The expression *ayénacho* may also conjoin two verb phrases, two noun phrases and possibly other kinds of phrases, as long as the pair of phrases conjoined have the same type of heads and are both of equal rank. Example (313) illustrates the use of *ayénacho* to conjoin two verb phrases of equal rank.

- (313) hue naráca-ma **ayénacho** hue júmasa-ma
 very cry-IRR also very run-IRR
 'they cry and run' [o7]

Although in example (313) the conjunction *ayénacho* appears between the conjoined verb phrases *hue narácama* and *hue júmasama*, in example (314) it appears following the second of two conjoined noun phrases.

- (314) echi hualú rijoy upi-la echi rana-la **ayénacho**
 DEF large man wife-SPCR DEF son-SPCR also
 'the giant's wife and son' [g91-92]

⁶The prepositionlike use of *mapuyena* 'until' preceding temporal noun phrases to which it is closely related deserves further investigation because Tarahumara, as a head-final language using postpositions, is unlikely also to employ prepositions. It is possible that a non-overt copula is used with the expression in such clauses and that *mapuyena* continues to function uniformly as a subordinating conjunction.

The position of the expression *ayénacho* may indicate the degree of complexity of the constituents it conjoins. When it conjoins entire clauses as a coordinating conjunction, it precedes the clause it introduces, and might be understood as coming between the preceding main clause and the current main clause as two units of equal rank. When it conjoins verb phrases, which are less complex than clauses but more complex than noun phrases, *ayénacho* appears between the verb phrases. When it conjoins simple noun phrases, *ayénacho* appears in final position.

3.2.5.4 Summary of description of conjunctions

This section, section 3.2.5, has described two kinds of conjunctions: those that connect clauses, and one that connects phrases within a clause. The same expression that conjoins lower-level phrases that are of equal rank is also used as one of the sentence-introducers that conjoins independent clauses of equal rank: this is the expression *ayénacho*. Sentence-introducers that join independent or coordinate clauses may easily be distinguished from sentence-introducers that embed subordinate clauses within higher clauses by noting whether the expression begins with the morpheme *mapu*. This morpheme forms the first part of all subordinating conjunctions but does not appear in any coordinating conjunctions.

3.2.6 Interjections

Only four interjections appeared in the texts examined for this study. These were an exclamation of emotion, an attention-getting command, a greeting and a farewell. Each of these interjections is described briefly.

The exclamation of emotion is the expression *¡Baji!*, illustrated in (315).

- (315) ¡Bají! ¡Hue sihue-li echi huilú!
 INTERJ very be sad/discouraged-PAST DEF buzzard
 ‘Oh, how sad the buzzard felt!’ [z48]

In example (315) and in the other instance in the texts of the use of ¡*Bají*!, the tone is one of sudden displeasure and deflation of spirits.

The attention-getting command is the expression ¡*Japa!*, illustrated in (316).

- (316) Japa mujé tihué huachó. . .
 Listen! 2SG.NOM young girl heron
 ‘Listen, Miss Heron, . . .’ [z17]

While the expression ¡*Japa!* does have clear semantic content as a command to listen, it appears to function at the same time like the expression ‘Hey!’ in English does, to ask for attention and take the conversation in a new direction.

The greeting and farewell are ¡*Cuirabá!* ‘Hello!’ and ¡*Ariósiba!* ‘Goodbye.’ The greeting ¡*Cuirabá!* is illustrated in example (317).

- (317) Cuirabá mujé tihué huachó.
 Hello! 2SG.NOM young girl heron
 ‘Hello, Miss Heron.’ [z4]

Both the greeting and the farewell are derived from Spanish expressions. The greeting ¡*Cuirabá!* is most likely derived from the Spanish verb *cuidar* ‘look after, care for’ and often appears in the full Tarahumara expression *Riosi cuiraba* ‘God preserve you’ (Thord-Gray 1955: 229). The Tarahumara farewell ¡*Ariósiba!* is adapted from the Spanish farewell *adiós* ‘goodbye.’

These four interjections appear in initial position in the utterance as expected of such expressions, which are more like actions or gestures performed vocally in conventionalized form than words with semantic content that fit within syntactic structures and require linguistic interpretation.

3.3 Conclusion for lexical classes

This chapter has dealt with the eight lexical classes of Tarahumara, listing representative members from texts of each open class and attempting to mention most of the members of the closed classes of postpositions, pronouns and conjunctions. Verbs and postpositions were found to have argument and thematic structure in that they require noun phrase arguments (or other types of phrases as arguments) and assign thematic roles to these arguments. Some nouns were also found to have argument structure in a limited fashion, often taking only implicit arguments. Nouns resembled pronouns, adjectives, adverbs, conjunctions and interjections in having little or no argument structure and were, therefore, described with these lexical classes in the second part of this chapter.

CHAPTER 4

PHRASE STRUCTURE

Chapter 4 describes the phrase structure of Tarahumara in light of the module of Government and Binding theory that is called X' or X-Bar theory. Phrase structure accounts for the patterns by which the lexical items described in chapter 3, "Lexical Classes," are first projected in syntactic structures, before any of the transformations addressed in chapter 5, "Movement," have taken place.

4.1 Phrase structure within the Government and Binding perspective

The module of X-bar theory within the Government and Binding framework has to do with the hierarchical nature of phrase and sentence structure in language. X-bar theory attempts to represent phrase structure in simple and aesthetically-pleasing graphic configurations that demonstrate by their binary branching the limited number of choices that child language learners must make in their task of language acquisition. X-bar theory also shows how phrase structure of languages around the world can be accounted for by just a few *principles*, and suggests that the tremendous amount of cross-linguistic variation can still be explained by these principles, given the limited number of options available as "*parameter settings*" within the bounds of each of these principles. Thus, children learning language for the first time as well as second-language learners are endowed with a knowledge of the principles of language and a few "switches" to set for each of the possible parameters as part of their inherent language faculty. They need only to hear a limited

amount of language data to correctly set these parameters for that language and begin creating well-formed sentences according to the universal principles of phrase structure.

4.1.1 Basic tenets of X-bar theory

The basic premise of X-bar theory is that every phrase, from the sentence as a whole to the various smaller phrases that constitute the sentence, is formed in a similar fashion. Every phrase contains a *head*, which is of highest functional or semantic importance in the phrase, and may also contain a *specifier*, a *complement* and *adjuncts*. Specifiers delimit the range of applicability of the head in some way and are found at the first, highest branching node in the structure of the phrase. Complements are required by the theta structure of the head and bear a close relationship to the head, appearing at the last, lowest branching node above the terminal node from which the head itself depends. Complements are, therefore, usually adjacent to the head in the linear order of the phrase. Adjuncts are optional elements in the phrase that are more loosely related to the head and, therefore, appear in the medial, potentially-recursive section of the hierarchy, at the branching nodes intermediate between the specifier and the complement. Adjuncts also exhibit more freedom in their linear ordering within the phrase and may surface at various positions. The claim is that all phrases are structured in this hierarchical manner, so that language learners begin with a set of X' rules as in (318) already set in place in readiness for their use.

- (318) XP --> Spec; X'
 X' --> X'; YP
 X' --> X; ZP

The set of X' rules given in (318) is believed to adequately account for the hierarchical structure of any phrase XP, sometimes called X'', whether a sentence, a dependent clause, a verb

phrase or even a deeply embedded adpositional or adjectival phrase. At the highest level the phrase XP consists of a specifier and a phrase X'. The phrase X' in turn consists of another phrase X' and an adjunct, represented by the phrase YP; this level may be recursive. The lowest X' in the hierarchy consists of a head, represented by X, and a complement, represented by ZP. The semi-colon means that the order of the phrasal constituents is not fixed; the rule in universal grammar makes no claim as to which constituent will precede which other constituent. The tendency for heads to appear in a particular order preceding or following other phrasal constituents is, however, one of the parameter settings learners must fix for each language, and particular phrasal constituents such as specifiers and complements often appear in rigidly-fixed patterns of linear precedence relative to their heads. This parameter appears in (319).

(319) Parameter to be set: Heads (precede / follow) other phrasal constituents.

Accompanying the set of principles appearing in (318) to account for the way speakers build utterances according to hierarchical structure is another important parameter each speaker must set correctly for the language. This parameter appears in (320).

(320) Parameter to be set: Specifiers (precede / follow) heads.

For the most part, specifiers either precede or follow heads in a particular language, and speakers must choose the correct setting for their language. A speaker who combines this parameter setting with the principles of hierarchical phrase structure is equipped to form grammatical utterances in that language.

4.1.2 Purpose and organization of this chapter

This chapter aims to apply the principles of X-bar theory to Tarahumara and determine parameter settings specific to Tarahumara. It will be shown that although the Tarahumara language

displays a great deal of freedom in sentence and phrasal orders, careful study of its phrase structure does reveal adherence to the principles laid out in section 4.1.1 rather than requiring a non-configurational explanation for its structures. Tarahumara phrases fit neatly into hierarchical configurations and do not need “flat” representations to account for their structure. As for the parameter of linear precedence, Tarahumara exhibits a tendency toward head-final orderings and indeed realizes this setting quite rigidly in some types of phrases.

This chapter will first address the structures of seven types of Tarahumara phrases. The seven types of phrases to be discussed in the first section include inflectional phrases (sentences), verb phrases, noun phrases, postpositional phrases, adjective phrases, adverbial phrases and complementizer phrases. The final two sections of this chapter make further applications of the structural patterns discovered in the study to the hierarchical configurations of Tarahumara interrogative and negative sentences and to the hierarchical configurations that allow noun phrases to receive abstract case-marking.

4.2 Inflectional phrases in Tarahumara

The simplest way of representing the major constituents of Tarahumara sentences and their order relative to one another appears in (321).

(321) S --> NP VP Aux

The syntax shown in (321) indicates the generalization that a Tarahumara sentence has a noun phrase subject which is followed by a verb phrase and concluded with an auxiliary verb or other inflectional material. Example (322) illustrates the presence and ordering of these three constituents.

(322) Alibiche echi huilu echona nahua-li.
 then DEF buzzard there arrive-PAST
 ‘Then the buzzard came to that spot.’ [z4]

In (322) the noun phrase *echi huilu* ‘the buzzard’ is the subject of the sentence. The subject is followed by the verb phrase *echona nahua-* ‘arrive there.’ The sentence concludes with the inflectional suffix attached to the main verb, in this case the past tense inflection *-li*. The past-tense suffix *-li* realizes the “Aux” function required by the rule in (321) and is lowered onto the main verb by a morphological rule.

Sentence (322) also illustrates the typical Tarahumara use of the sentence-introducing adverbial *alibiche*, which is not included in the sentence rule stated earlier despite its pervasiveness, but which will be discussed in chapter 6 because of its discourse functions. This and other coordinating conjunctions connect sentences by means of a general, non-binary rule that is usually not stated but that is mentioned in (323) for the sake of completeness.

(323) XP ---> XP and XP

The rule in (323) states that coordinate units of any size (XP), including entire sentences, may be joined by a coordinating conjunction (represented by the expression “and” in the rule).

In Government and Binding theory the sentence is thought of as a type of phrase: an *inflectional phrase*, abbreviated “*IP*.” The inflectional material of the sentence, whether realized as inflection on the verb or by verbal auxiliaries or present only in the abstract sense, is considered to be the head of the sentence. This inflectional head, called “Aux” in the simple representation in (321), is called *INFL* in the Government and Binding theory. Tarahumara *INFL* indicates such information as tense, aspect, voice, mode, person and number. *INFL* in Tarahumara is most often realized as the past tense suffixes *-li* or *-ri* or the irrealis mode suffixes *-ma/-bo/-mea/-boa* which attach to the main verbs in sentences. The fact that this inflectional material is realized by suffixes rather than prefixes and appears on verbs which normally appear in sentence-final position upholds the claim for a head-final tendency in Tarahumara inflectional phrases, or *IPs*.

4.2.1 The subject as specifier for an inflectional phrase

The specifier for an inflectional phrase is the noun phrase subject of the sentence. Although not every type of phrase must have a specifier, inflectional phrases must have specifiers because of the Extended Projection Principle which states that every sentence must have a subject. Tarahumara sentences, thus, all have subjects in deep structure, although not every sentence surfaces with an overt subject at the end of the derivation. Tarahumara is a *pro-drop language*, which means that null subjects are preferred to overt subjects in surface structure of sentences when the subject referent can be recovered from topic continuity in the discourse, from participants' knowledge of the real world or from subject agreement on the verb. The preference for non-overt subjects results from the *principle of economy* in language, which describes speakers' tendencies to avoid the effort of expressing unnecessary information and to choose concise forms over lengthy forms (Haegeman 1994:18-25). This pro-drop parameter is one of the settings that the Tarahumara child may make after exposure to only a few sentences lacking overt subjects.

Sentence (324) illustrates the absence of an overt subject in a Tarahumara sentence:

- (324) Ø Echo'na ripa iyena-ri.
 pro there above walk around-PAST
 'There up above us it [the small animal] was walking around.' [t55]

In sentence (324) the subject is non-overt because the referent, *echi taa namuti* 'the small animal,' can easily be recovered from its mention in the previous sentence and from the singular verb stem used in the sentence: *iyena* is the singular stem meaning 'walk around,' while *yena* is the plural stem with the same meaning. The null subject in sentences like (324) is called *pro* or "small pro" in the Government and Binding theory, and it occupies the Specifier position of the IP in tree representations.

As is usually the case in other types of Tarahumara phrases, the Specifier precedes the INFL head in linear ordering in inflectional phrases.¹ In X-bar syntax, the noun phrase subject of the sentence is written as [Spec, IP] because this kind of noun phrase fills the specifier position of the inflectional phrase, or sentence. The X-bar syntax rule written for the highest branching node of the inflectional phrase is $IP \rightarrow NP\ I'$, indicating that an inflectional phrase in Tarahumara consists of a noun phrase subject followed by additional material that can be further separated into phrasal constituents.

4.2.2 Verbal inflection as the head of the inflectional phrase

In inflectional phrases, the verb phrase is the other required constituent besides the subject/specifier; thus, the verb phrase might be thought of as the complement of the inflectional phrase. Verb phrases in Tarahumara sentences generally follow subjects and precede the INFL head. The constituents of the I' node, next down in the branching structure under IP, are represented with the following rule: $I' \rightarrow VP\ I$. This information allows a set of X' rules for Tarahumara inflectional phrases to be written as in (325).

- (325) $IP \rightarrow NP\ I'$
 $I' \rightarrow VP\ I$

¹ From a functional point of view, this ordering is reasonable because of the natural arrangement of sentences so that Topic is stated first, followed by Comment; the sentence Topic is the noun phrase subject and the Comment is usually the verb phrase.

The hierarchical configuration that the X-bar rules show in (325) gives rise to a graphic representation of the example sentence in (322) like the “tree” in figure 2.

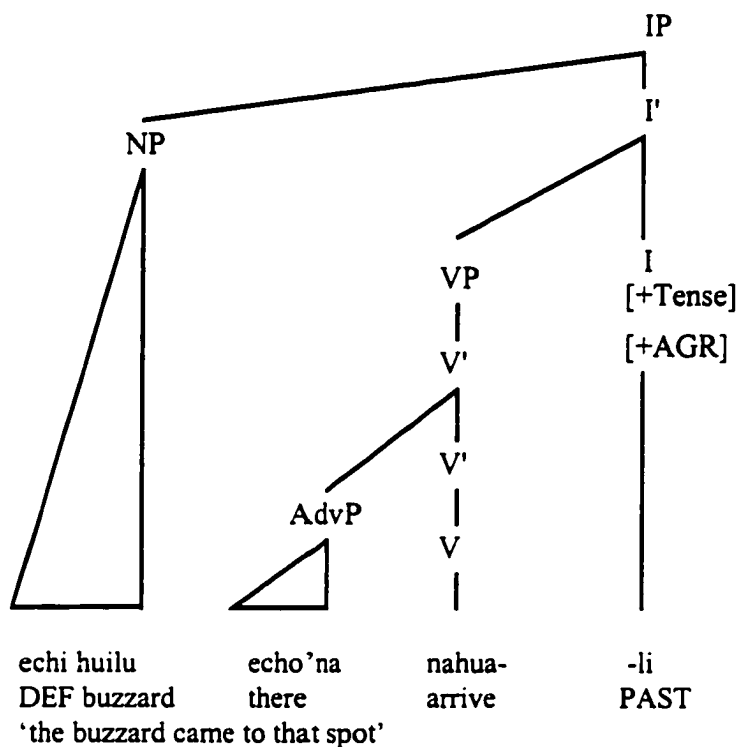


Figure 2. Tree representation of example (322).

4.2.2.1 Verbal inflectional suffixes as INFL

Before going farther in the discussion of INFL, it is necessary to explain the terms “fully inflected” and “less completely inflected” with reference to Tarahumara verbs. The completeness of inflection in Tarahumara is measured according to the hierarchy of inflectional suffixes in table 14, from most completely inflected at the top to least fully inflected at the bottom (Herring, 1997, personal communication). The description of the tense, voice or mode appears on the left and the most typical suffix of each type appears to the right.

Table 14. Inflection of verbs

| | | |
|--------------------------------|-------------------------------------|------------------------|
| Finite types of inflection | past tense | <i>-ri</i> |
| | irrealis | <i>-ma</i> |
| | present tense or progressive aspect | \emptyset |
| | past tense, passive voice | <i>-rati</i> |
| | general passive voice | <i>-rihua</i> |
| | desiderative | <i>-nara</i> |
| | conditional | <i>-saga</i> |
| Non-finite types of inflection | past participle | <i>-sáa</i> |
| | singular participle | <i>-mia</i> (singular) |
| | plural participle | <i>-bia</i> (plural) |
| | general participle | <i>-ga</i> |
| | infinitive | \emptyset |
| | adjectivized | <i>-ami</i> |
| | nominalized | <i>-ami</i> |

Note that only the types of inflection appearing in the texts examined for this study appear in table 14. This hierarchy of inflectional completeness will be relevant to the upcoming discussion.

The projections of INFL form a closed class, as functional rather than lexical heads. A *closed class* is a group of a relatively small number of elements to which new elements may not be added. Lexical heads such as nouns and verbs, in contrast, belong to *open classes*. Open classes include a large number of elements to which new elements are constantly being added (Haegeman 1994:115).

4.2.2.2 Auxiliaries as INFL

At this point one might ask whether only inflectional suffixes function as the “Aux” or INFL in Tarahumara sentences, or whether auxiliary verbs that stand alone as free words also manifest INFL in clause-final position. The discussion of auxiliaries in chapter 3 concluded that the

most likely candidates for the status of auxiliaries in Tarahumara are copulas that occur together with verbs that are either equally inflected or less fully inflected than the copula, but never more fully inflected than the copula. In these instances the copula follows the main verb and the full inflection of the copula takes the clause-final position as illustrated in example (326).

- (326) quetasi=ni naquí mápu=ni hue **lochéa-ma** **niima**
 NEG-1SG want-Ø COMP-1SG very be hungry-IRR be-IRR
 'I don't want to go hungry' [z75]

Both the main verb *lochéama* and the copula *niima* have irrealis mode inflection, which according to the hierarchy arrayed in table 14, is second only to past tense in inflectional completeness. In order to qualify as an auxiliary, *niima* must not be exceeded by *lochema* in completeness of inflection, and indeed it is not. Thus, if *niima* has the role of an auxiliary in this sentence, this is an example of an auxiliary that appears in clause-final position, to the right of the main verb. The structural predictions regarding the relative position of the verb phrase and INFL continue to hold.

4.2.2.3 Challenges to head-final position of INFL

A related question may arise: do instances of verb sequences in which the inflection of the first verb exceeds the inflection of the second verb challenge the claim that INFL is the head of the sentence and appears in final position? An example of such a sentence appears in (327).

- (327) ibili niraá **simi-li** **ohui-bia** aboni apanerua-la
 each one as go-PAST invite-PTCP 3PL companion-SPCR
 'each of them went to invite his companions' [o15]

According to the hierarchy of inflectional completeness in table 14, the first verb in (327), *simili*, a past tense verb, is more completely inflected than the second verb, *ohuibia*, a plural participle. No difficulty for the claim that INFL is clause-final appears here if *simili* is analyzed not as an auxiliary but rather as a main verb that takes an embedded clause as its complement. The embedded clause

complement for *simili* is then the string *ohuibia aboni apanéruala* 'to invite their companions.' The verb of the higher clause has clause-final, fully inflected INFL demonstrated by the past tense suffix *-ri*, and the verb of the complement clause also has clause-final, less complete INFL demonstrated by the plural participial suffix *-bia*. Thus, *simili* in example (327), like other fully-inflected verbs appearing to the left of less-fully inflected verbs, is not a free standing auxiliary and poses no difficulty for the claim that INFL is clause-final.

As is immediately evident in example (327), the high degree of word order variability in Tarahumara may present a difficulty for the X-bar rules suggested in (325) and repeated here in (328) for convenience.

(328) IP --> NP I'
 I' --> VP I

Example (327) demonstrates two verbs, the suffixes of which are claimed to manifest INFL, that do NOT appear in clause-final position as predicted by these rules. The non-clause-final positions of these verbs can be accounted for unproblematically by appeal to the frequently-used processes of movement in Tarahumara. These processes move the embedded clause *ohuibia aboni apanéruala* from a position preceding the verb *simili* to a position following it. These processes also move the noun phrase *aboni apanéruala* from a position preceding the verb *ohuibia* to a position following it. Such movement transformations are addressed in chapter 5.

Variability in the position of subjects of sentences may also seem to pose a difficulty for the rules for IP displayed in (328). The first of these rules specifically states that noun phrase subjects precede the remainder of the sentence, and, therefore, the verb phrase. Many subjects follow inflected verbs in Tarahumara, however, apparently countering the claim for the first rule in (328), that specifiers precede heads. An example of a sentence-final subject appears in (329).

- (329) Hue sihue-li echi huilu!
 very become sad-PAST DEF buzzard
 'How sad the buzzard became!' [z48]

In chapter 5 it will be argued that VS orders like the one in (329) are also a result of movement transformations that postpose subjects, placing them to the right of the verb. The tree representation in figure 3 indicates the original position of the noun phrase subject as a specifier of a clause that precedes the INFL head of the clause, and also indicates the new position of the subject at the end of the sentence following movement.

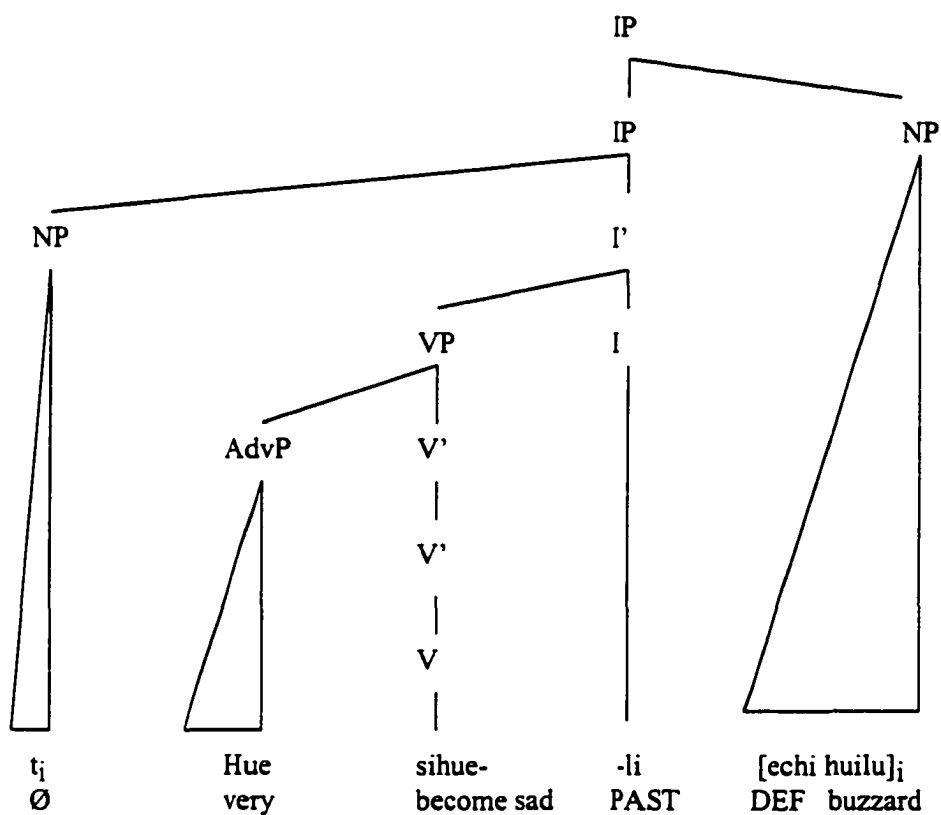


Figure 3. Tree representation of example (329).

With such an explanation readily available, sentence orders in which subjects follow verbs do not pose a problem for the claim of head-final ordering in the Tarahumara inflectional phrase.

4.2.3 Summary of X-bar rules for IP

The X-bar rules for inflectional phrases may be summarized as in (330).

(330) IP --> NP I'
 I' --> VP I

The rules in (330) indicate that an inflectional phrase consists of a noun phrase specifier followed by a further projection of INFL. This further projection of INFL consists of a verb phrase followed by the INFL head.

4.2.4 The role of INFL in bringing about agreement

Another important function of INFL to be dealt with at this point is its role in bringing about subject-verb agreement and other kinds of agreement. Beginning with subject-verb agreement, it should be noted that in all languages verbs must agree abstractly with their subjects in person and number, and in Tarahumara this agreement is realized contrastively at the word level in a limited fashion through suffixes that appear on certain forms of verbs. Certain imperatives and participles may take a plural suffix, although not mandatorily so whenever the subject is plural, and all first and second person plural forms of the irrealis mode take a suffix that is different from the singular forms and the third person plural form.

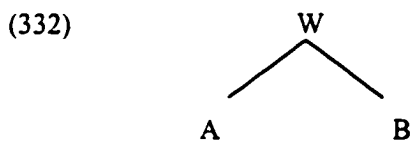
4.2.4.1 Definition of theoretical concepts relevant to agreement

In order to explain the outworking of subject-verb agreement and other types of agreement in Tarahumara, it is necessary to define four relevant configurational terms used in the Government and Binding theory: these are the concepts of headship, c-command, m-command and most importantly, government. Government is a structural tie that allows certain constituents to be associated with each other at certain positions in strings but not in other positions. This structural tie may be conceptualized as a shapes-in-space configuration according to conditions laid forth in Haegeman (1994: 160) and reproduced in (331).

- (331) A governs B if and only if
- 1) A is a governor
 - 2) A m-commands B
 - 3) no barrier intervenes between A and B
- where Governors are the lexical heads (V, N, P, A) and tensed I
Maximal projections are barriers

Headship is a configuration in which several constituents belong together in a group but one constituent, the head, is more nuclear, more closely tied to the essence of the group, than the other constituents, which are more marginal.

The second concept, **c-command**, or constituent command, is defined as a configuration in which constituents are associated in a relationship of mutual influence as “sisters” under the same dominating node. Thus, in the hierarchical structure in (332)



constituent A c-commands constituent B and constituent B also c-commands constituent A. Node W is said to **dominate** both constituent A and constituent B (Haegeman 1994:134-135).

The third concept, *m-command*, is a structural relation that is a particular type of c-command in which the node dominating the two related items is a *maximal projection*, defined as the highest projection of a head (Haegeman 1994:90). In the relation of m-command the conditions listed in (333) apply (Haegeman 1994: 137).

- (333) A m-commands B if and only if
- 1) A does not dominate B and
 - 2) every maximal projection that dominates A also dominates B

The fourth concept, government, may be described in terms of the other concepts just defined. The confluence of m-command and headship yields the configuration called *government* in which the constituent that is a head constrains which constituents may appear in the more marginal “sister” position and influences these sister constituents in other ways as well, as will be detailed in later discussion.

4.2.4.2 Subject-verb agreement

In Government and Binding theory person and number information is considered to be contained in the INFL head of the sentence through the relationship of c-command. The INFL head c-commands and governs the specifier of the inflectional phrase, resulting in the type of agreement known as *Specifier-Head agreement* in which all specifiers must agree with their heads. By the convention known as “*feature percolation*,” the features that characterize the head of a phrase are understood to characterize the entire phrase. Thus, the features of person and number that characterize the noun head of the noun phrase subject will characterize the entire noun phrase. The features characterizing the noun phrase then spread by Specifier-Head Agreement to characterize the INFL head of the sentence and are lowered from INFL onto the verb phrase. The statement of a “well-formedness condition” provided in (334), which is not a rule of syntax but a filter that checks

grammatical sentences as they are produced for proper presentation, records the type of agreement that is found between INFL and noun phrase subjects in Tarahumara.

| | | | | |
|-------|------------------------------|-----|-----------------|-----------------|
| (334) | Structural Description (SD): | [NP | X | INFL]IP |
| | | [| α person |] |
| | | [| β plural |] |
| | Structural Index (SI): | 1 | 2 | 3 |
| | Structural Change (SC): | 1 | 2 | 3 |
| | | | | [|
| | | | | α person |
| | | | | β plural |
| | | | |] |

The rule in (334) states that the verb must agree with the noun phrase subject in person and number; thus, the verb manifests features of not only [Tense] but also of [Agreement]. Whatever features of [Agreement] appear on the subject noun phrase, these features are added to the features of INFL and then are affixed to the verb. The effect on the verb need not be described here because it is accounted for in the lexicon (Burquest 1996:23-24).

Sentence (335) exemplifies agreement for person and number between a plural, first person subject and the verb:

| | | | | |
|-------|-------------|----------------------------------|-------|------------------|
| (335) | \emptyset | Terico= ta | cu | si- boa . |
| | <i>pro</i> | in a while-1PL | again | go-1PL.IRR |
| | | ‘We’ll be back in a while.’ [v9] | | |

Evidence of the person and number of the null subject is found in the clitic pronoun *-ta* that appears in the first person plural form affixed to the adverbial at the beginning of the sentence. Agreement in person and number is shown overtly on the irrealis verb which has the first or second person plural ending *-boa* in contrast to the singular and third person plural ending *-mea* that would be used for this verb stem in the irrealis mode if the noun phrase subject were other than first or second person plural.

It is important to stress here that while the well-formedness condition presented in (334) is useful as a check on the explicit surface facts, the principle of Specifier-Head agreement would

insist upon agreement in person and number between the subject and verb in any case. Thus, even in sentences where no overt morphological agreement is apparent, as for example when a verb that has no distinct stems for singular and plural appears in the past tense, which is manifested by the suffix *-ri* for all persons and numbers, the principle is still at work and the subject of the sentence is considered to be in agreement, abstractly, with the INFL head of the sentence.

The relationships of c-command and government between INFL and the noun phrase specifier may be seen in figure 4 as a tree representation of example (335) (the moved adverbial *terico* is not shown).

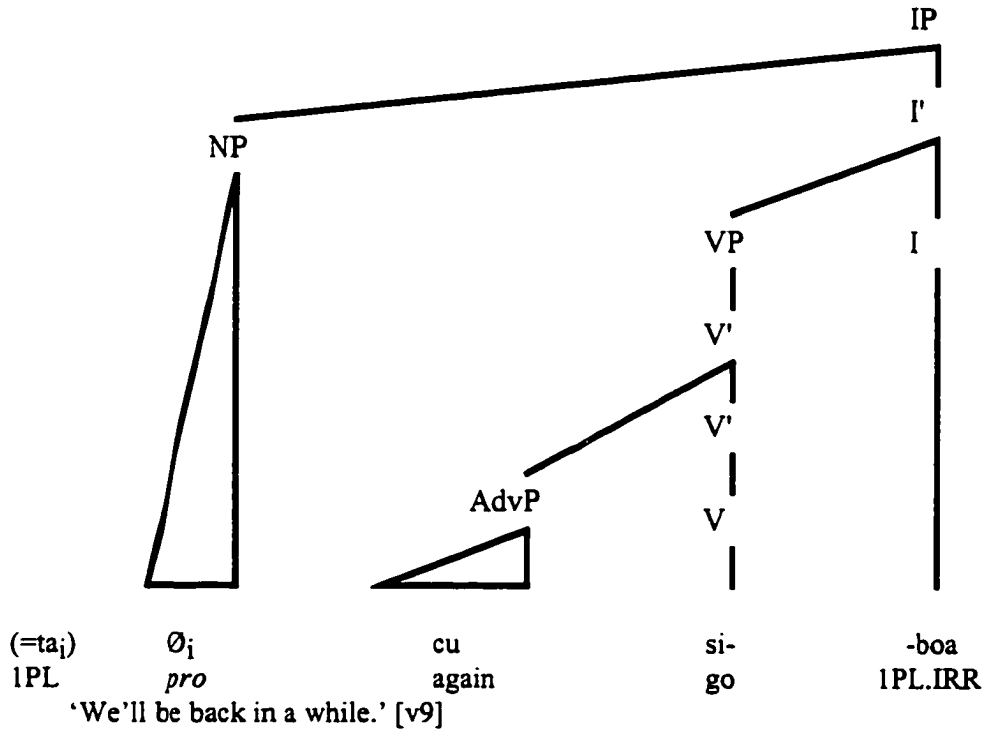


Figure 4. Tree representation of example (335).

The rule in (337) states that a clitic pronoun must agree with the noun phrase subject in person and number no matter where it is manifested in the sentence (Burquest 1996:29).

4.2.4.4 Subject-complement agreement

Another major type of agreement that needs to be dealt with in this section on inflectional phrases in Tarahumara is the type in which attributive, assertive and equative statements are made using copulas. In addition to a noun phrase subject, these stative sentences have as their verb phrase an adjectival phrase or a noun phrase plus a copula in place of an active verb phrase. An example of such a sentence is given in (338).

- (338) je'na **caposi** hue **mucuhuami** ju
 PROX chilicote seeds very die(sg)-AJZR be-PRES
 'these chilicote seeds are very poisonous' [g58]

It is impossible to tell from (338) whether there is agreement between *caposi* 'chilicote seeds,' which is known to be plural from context, although not from form, and *mucuhuami* 'poisonous,' because it is not known whether the adjectivized form *mucuhuami* is a frozen form with a strictly adjectival meaning or whether, if it could change to *suhuibami* using the plural stem *suhui* 'to die,' this change would be conditioned by plurality of the causative poisonous seeds or by plurality of the victims that might eat them. Because in most cases Tarahumara nouns and adjectives do not manifest plurality morphologically, the texts examined for this study do not afford any clear examples of agreement for number between a noun phrase subject and its adjectival or nominal complement.

Nor do the texts provide examples of agreement for number between the noun phrase subject and the copula. Each tense, aspect and mode has only one form of the copula, used for both singular and plural subjects, except for the irrealis mode, in which there is a singular form, *niima*

'will be,' and a plural form, *niibo* 'will be.' When the irrealis mode appears in the texts, only the singular form is used, accompanied by singular subjects; thus, no examples of Subject-Complement Agreement can be supplied.

The existence of the plural form *niibo* in the irrealis mode suggests, however, that there is subject-complement agreement. This predicted agreement may be stated according to the well-formedness condition in (339).

| | | | |
|-------|--|-----------------|-----------------|
| (339) | <u>Subject-Complement Agreement</u> (obligatory) | | |
| | Structural Description: | [NP | NP/AP COP]IP |
| | | α plural | |
| | Structural Index: | 1 | 2 3 |
| | Structural Change: | 1 | 2 3 |
| | | α plural | α plural |

The rule in (339) states that in stative clauses the subject noun phrase, the noun phrase or adjectival phrase complement and the copula must all carry the same specification for the feature [plural], whether or not this specification has any overt contrastive realization. Whatever the specification of the feature [plural] on the subject noun phrase, it is spread also to the complement and the copula, and the exact results will be accounted for in the lexicon. It may not be the subject noun phrase itself which influences this pattern but rather the features of INFL, which are transferred to INFL from the subject noun phrase by the transformation of Subject-Verb Agreement discussed in section 4.2.4.2 (Burquest 1996: 24-25).

Note that the agreement of the subject and the copula is a special case of Subject-Verb Agreement already discussed and that the portion of the rule in (339) that deals with the copula is merely a restatement of the transformational rule in (334). The portion of the rule in (339) that deals with the nominal or adjectival complement of the copula is distinctive.

Subject-verb agreement is, thus, apparent in Tarahumara in limited contexts, as in the case of suppletive singular and plural verb stems or in the case of irrealis verbs with distinct singular and plural inflections for first and second person. In other cases subject-verb agreement is understood to apply even though no overt morphological agreement appears. No other type of agreement involving the verb is found. There is no agreement between the verb and the direct object nor between the verb and the indirect object.

4.3 Verb phrases in Tarahumara

Like inflectional phrases, verb phrases in Tarahumara consist of a verbal head, a specifier, a complement, and an additional element not noted in inflectional phrases--the adjunct. The only obligatory elements in a verb phrase are the verbal head and the noun phrase complement if required by the argument structure of the particular verb; verbal specifiers and adjuncts are optional. Rules will be discussed first for required elements and then for optional elements.

4.3.1 Complements for verb phrases

As noted in chapter 3, the argument structure of some verbs does not require any internal argument. Thus, without any complement and when no verbal specifiers or adjuncts appear, the verb phrase projection is non-branching, as in the tree representation of example (340) given in figure 5.

(340) *bile* *rijoy* [Ø *cuchu-ami*] *bite-ali*
 one man PRO have children-AJZR live-PAST
 ‘There lived a man who had a child.’ [g3]

The verb phrase in sentence (340) has the only required constituent for this lexical class of verbs, the head verb *biteali* ‘lived.’ No verbal specifiers, adjuncts or complements appear in this sentence; therefore, the projection of V is non-branching in the tree representation in figure 5.

- (342) t_j **auchecho huaru** **rite** **pasa-ri** [echi auche bire tohui]_j.
trace other big stone throw-PAST DEF other one boy
 'the other boy threw another big stone' [v33]

Sentence (342) exhibits an OVS order, in which the noun phrase direct object and complement of the verb, *auchecho huaru rite* 'another big stone,' precedes the verb *pasari* 'threw,' and the noun phrase subject *echi auche bire tohui* 'the other boy' has been postposed by a process of Wh-movement to be described in chapter 5. Because of the hierarchical configuration of sentences in a binary branching pattern with the verb phrase lower in the "tree" than the branching node for specifier, the ordering of subject and verb does not relate to the ordering of object and verb. This latter OV ordering is shown in the tree representation of the verb phrase in figure 6.

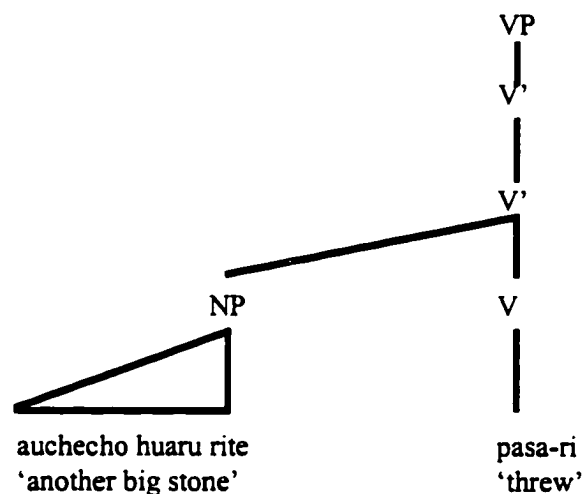


Figure 6. Tree representation of example (342).

The representation in figure 6 demonstrates that the verb phrase VP dominates the head, which is the verb *pasari* 'threw,' as well as the noun phrase complement *auchecho huaru rite*. The verb *pasari* also c-commands and governs the remainder of the verb phrase, *auchecho huaru rite*.

The tree representation in figure 7 shows that the postpositional phrase *tami yuhua* ‘with me’ is the complement of the verb *upenali* ‘wanted to marry’ which is the head of the verb phrase and governs the remainder of the verb phrase.

Variant orderings also frequently appear for verb phrases in which a postpositional phrase is the complement of the verb. The postpositional phrase may appear to the right of the verb as in sentence (344).

- (344) ¡Cu machina-ga echo’na **ba’hui-chi** **jonsa!**
 again come out-IMPV there water-LOC from
 ‘Come out of the water there!’ [z68]

In sentence (344) the postpositional phrase *echo’na ba’huichi jonsa* ‘out of the water there’ is the complement of the verb *machina* ‘come out.’ The postpositional phrase appears to the right of the verb by a process of Wh-movement that will be described in chapter 5.

Tarahumara also has three-argument verbs that pose a problem for binarity in branching in the hierarchical configuration because of their double internal arguments. Rather than add another branching node in the tree and imply that one of the arguments is less closely related to the verb and more like an adjunct, the analysis chosen for this study, following a number of other analysts using the Government and Binding approach, prefers to sacrifice binarity and allow an n-ary structure for the representation of verb phrases with double complements. In this way both complements of the verb are allowed to be “sisters” to the verbal head of the phrase. These verb phrases usually show that one of the complements has been moved to a post-verbal position by the process of Wh-movement to be discussed in chapter 5. One example sentence is provided in (345) to demonstrate that one complement precedes the verb and one complement follows the verb.

- (345) **nije echi cali uche echona nije mo'o-la-chi**
 1SG DEF lime anoint-Ø there 1SG head-SPCR-LOC
 'I put lime on top of my head' [z14]

The analysis proposed in this work is that both complements are generated in a pre-verbal position in the deep structure but because of processing problems in interpreting three contiguous noun phrases (if the noun phrase subject also occurs pre-verbally), one of the internal arguments is moved to a position following the verb. The movement will be discussed in chapter 5, but for now, a tree representation is shown in figure 8 for the deep structure of the verb phrase in (345).

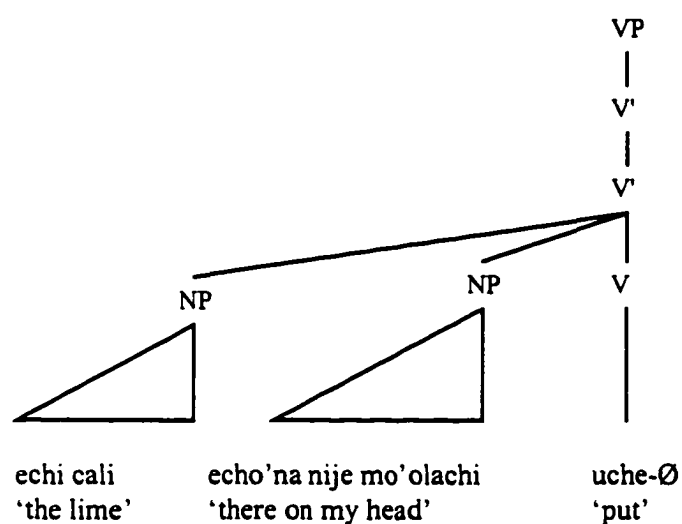


Figure 8. Tree representation of example (345).

It is expected that the deep structure of other three-argument verbs would also have such a representation, so that verbs of speech, placement and giving would position both of their noun phrase or postpositional phrase complements preceding the verb and as sisters to the verb, as the representation in figure 8 suggests.

Strings other than noun phrases and postpositional phrases may function as verbal complements. Non-finite clauses may appear as complements of other verbs, as illustrated in (346).

- (346) *nije* *quetasi machi-Ø*
 1SG NEG know-PRES
- [Ø [Ø *ba'hui-chi* *aque-ca*] *iyena-Ø*]
 PRO PRO water-LOC enter-PTCP go about (singular)-INFV
 'I don't know how to swim' [z31]

In sentence (346) the complement of the verb *machi* 'know' is a non-finite clause with the infinitival verb *iyena* 'to go about.' Within that non-finite clause is embedded another non-finite clause *ba'huichi aqueca* 'entering the water.'

Not only may non-finite clauses function as complements to other verbs, but finite clauses may also function as nominal complements of verbs such as *maye* 'suppose,' *machi* 'know,' and *naqui* 'want.' Sentence (347) exemplifies the use of a finite clausal complement with the verb *maye*.

- (347) *maye=ni* [*mapu muje echona ba'hui-chi hue si'li-ma*]
 suppose-1SG that 2SG.NOM there water-LOC very drown-IRR
 'I think that if you go in the water you will drown' [z44]

In sentence (347) the entire clause *mapu muje echona ba'huichi hue si'lima* is the complement of the verb *maye* in the higher clause. This embedded clause is fully finite, as evidenced by the irrealis mode inflectional suffix *-ma* appearing on the verb *si'lima*. The use of clausal complements, mentioned only briefly here, will be dealt with in greater detail in the section on complementizer phrases later in this chapter.

4.3.2 Adjuncts of verb phrases

Adjuncts are those parts of the verb phrase that provide information that modifies the action of the verb but are not required by the argument structure of the verb; the sentence would remain grammatical if the adjuncts were omitted. Adjuncts in Tarahumara verb phrases are typically adverbial phrases but may also be noun phrases, postpositional phrases, medial verb phrases that are actually non-finite clauses, and reduced or fully-finite subordinate clauses. In keeping with the head-final pattern of Tarahumara phrases these adjuncts normally precede the verb, and because of their more distant relation to the verb also precede the complement of the verb. Other orders frequently occur, however, as a result of movement. The next part of the discussion will deal with the five types of adjuncts just mentioned and will illustrate the basic and alternative orderings of adjuncts and heads.

4.3.2.1 Adverbial phrases and noun phrases as adjuncts

Adverbial phrases and noun phrases are the most common adjuncts in Tarahumara verb phrases. Both of these types of phrases will be discussed as to their internal structure; here it suffices to provide examples of their basic and alternative orderings with respect to the verb. In (348) the temporal noun phrase *sinibi rahue* 'every day,' the locative noun phrase *echona bacochi* 'there in the river,' and the intensifying adverb *hue* 'very' all precede the head verb in an exemplification of adjunct-verb ordering in a neutral sentence.

- (348) Nije sinibi rahue echona bacochi hue ubamani
 1SG always day there river-LOC very bathe-IRR-1SG
 'I take a bath in the river every day.' [z11]

Example (348), incidentally, illustrates a typical relative ordering of types of adjuncts, in which adjuncts of time precede adjuncts of place and both of these precede adverbial intensifiers of

the verb itself. Example (348) also indicates that adjuncts, occurring in the intermediate levels of the hierarchical configuration of the phrase, may be recursive. Regarding the relative position of adjuncts and verbs, example (348) also indicates that adjuncts precede the verb in a basic ordering of the verb phrase.

A tree representation of sentence (348) is given in figure 9 to show the recursion possible at the V' level as adjuncts are added at successively greater distances from the head verb.

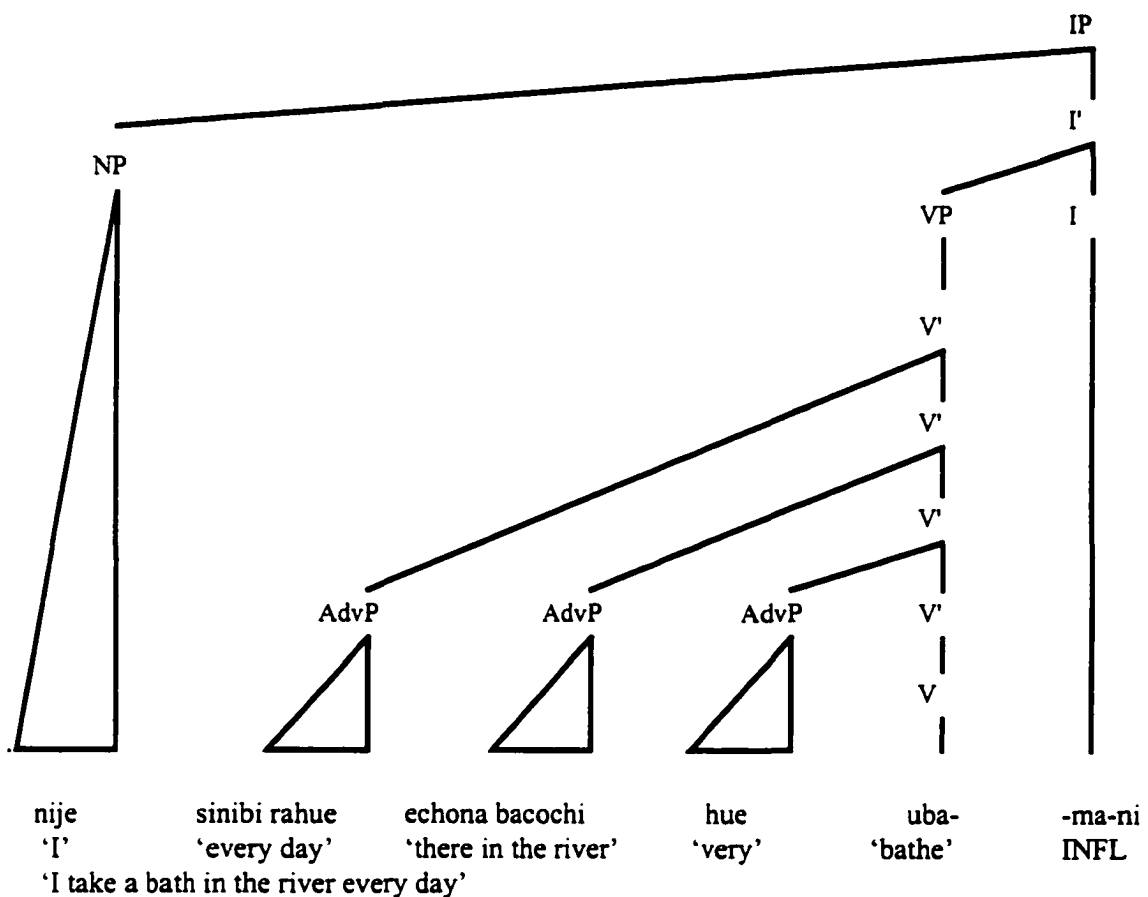


Figure 9. Tree representation of example (348).

In sentence (349), however, the adjuncts follow the verb as a result of movement for special pragmatic purposes.

- (349) Ari biche tu comi-chi sima-ra-ri,
 then below creek-LOC go-?-PAST
- huamina tuu tuqui huaminabi.
 farther down down more
 ‘Then we went along down below along the creek, farther down,
 very far down.’ [v10]

In sentence (349) two of the adverbial adjuncts, *huamina tuu* ‘farther down’ and *tuqui huaminabi* ‘very far down’ follow the head verb *simarari* ‘went.’ These adjuncts have been moved by Wh-movement to a sentence-final position to receive special emphasis, as will be discussed in chapters 5 and 6.

4.3.2.2 Postpositional phrases as adjuncts

Another common kind of adjunct is the postpositional phrase that functions to modify a verb without being required by the verbal argument structure. Sentence (350) illustrates the use of a postpositional phrase preceding the verb to indicate the associativity of the action of the verb, that is, the phrase indicates with whom the action was performed.

- (350) ari biche=ta echo’na cori muchi-ca,
 then-1PL there other side stand-PTCP
- echi nije apanerahua-ra yuhua
 DEF 1SG companion-SPCR with
- rihua-ri=te echi bire amoco...
 find-PAST-1PL DEF one beehive
 ‘Then, we standing there on the other side, I with that companion of mine,
 we found a beehive. . .’ [v23]

In example (350) the postpositional phrase *echi nije apanerahuara yuhua* ‘with that companion of mine’ is not required by the argument structure of the verb *rihua* ‘to find’ nor by that of *muchi* ‘to stand, be located in.’ This postpositional phrase simply tells with whom the subject was associated when the action of finding took place. In sentence (350) the basic order of adjunct followed by head is preserved, but sentences in which the postpositional phrase follows the verb also occur.

4.3.2.3 Medial verb phrases as adjuncts

Another common type of adjunct in Tarahumara is the medial verb phrase, consisting of participial verbs with their objects that precede fully-inflected main verbs in chaining constructions. While these medial verbs might also be analyzed as adjectival clauses modifying the subject of the sentence or as adverb phrases derived from verbs, it is preferable to analyze the majority of them as embedded non-finite clauses.² These adverbial clauses are full clauses in their own right, having a subject, a verb and sometimes an object. The subjects of these embedded clauses are always non-overt, unless reflected by a copy pronoun appearing suffixed to the participle, and are always understood to be co-referential with the subject of the main verb of the higher clause.³ The objects of these participial verbs, if present, are required by the argument structure of particular verbs and always precede the participle. A sentence having a medial verb adjunct appears in (351).

²Although the principal analysis given here deals with non-finite, participial clauses embedded within the verb phrases and having an adverblike function in modifying verbs, a few sentences evidence participial clauses that seem more adjectivelike in their function, modifying the subject of the sentence rather than the verb, as in instances of appositives or when preceding an overt subject.

³The participial suffix attached to these medial verbs may function as a same-subject marker in Tarahumara, although different subject markers have not been found to date and would not be expected because all medial verbs in the texts examined for this study have a subject co-referential with the subject of the main clause. Participial suffixes may also be a manifestation of the subject-agreement feature of INFL appearing even on less-fully inflected verbs; this is especially likely to be true of the singular participial suffix *-mia* and the plural participial suffix *-bia*.

- (351) Ari biche nije_i [\emptyset _i rite_k u-sa] \emptyset _k basa-ri.
 then 1SG PRO stone catch up-PASTPTCP *pro* throw-PAST
 'Then I, having caught up a stone, threw it.' [v24]

Sentence (351) shows a participial verb with a preposed object, *rite usa* 'stone having caught up,' intervening between a noun phrase subject and a main verb in the expected sentence order.

The tree representation in figure 10 illustrates the embedding of the adverbial clause as an adjunct within a verb phrase of the main sentence. Although the participle of the embedded clause has past tense inflection, the degree of inflection for this type of participle is apparently still very nearly incomplete as evidenced by its use in typical medial verb position in a chaining construction (as opposed to the sentence-initial or sentence-final position common to finite subordinate clauses), by its lack of an overt subject and by its lack of a subordinating conjunction. The embedded clause is dependent on the higher IP for its full inflection because of its own low degree of inflection, in accordance with the low position accorded to such participles on the scale of finiteness in table 14 earlier in this chapter.

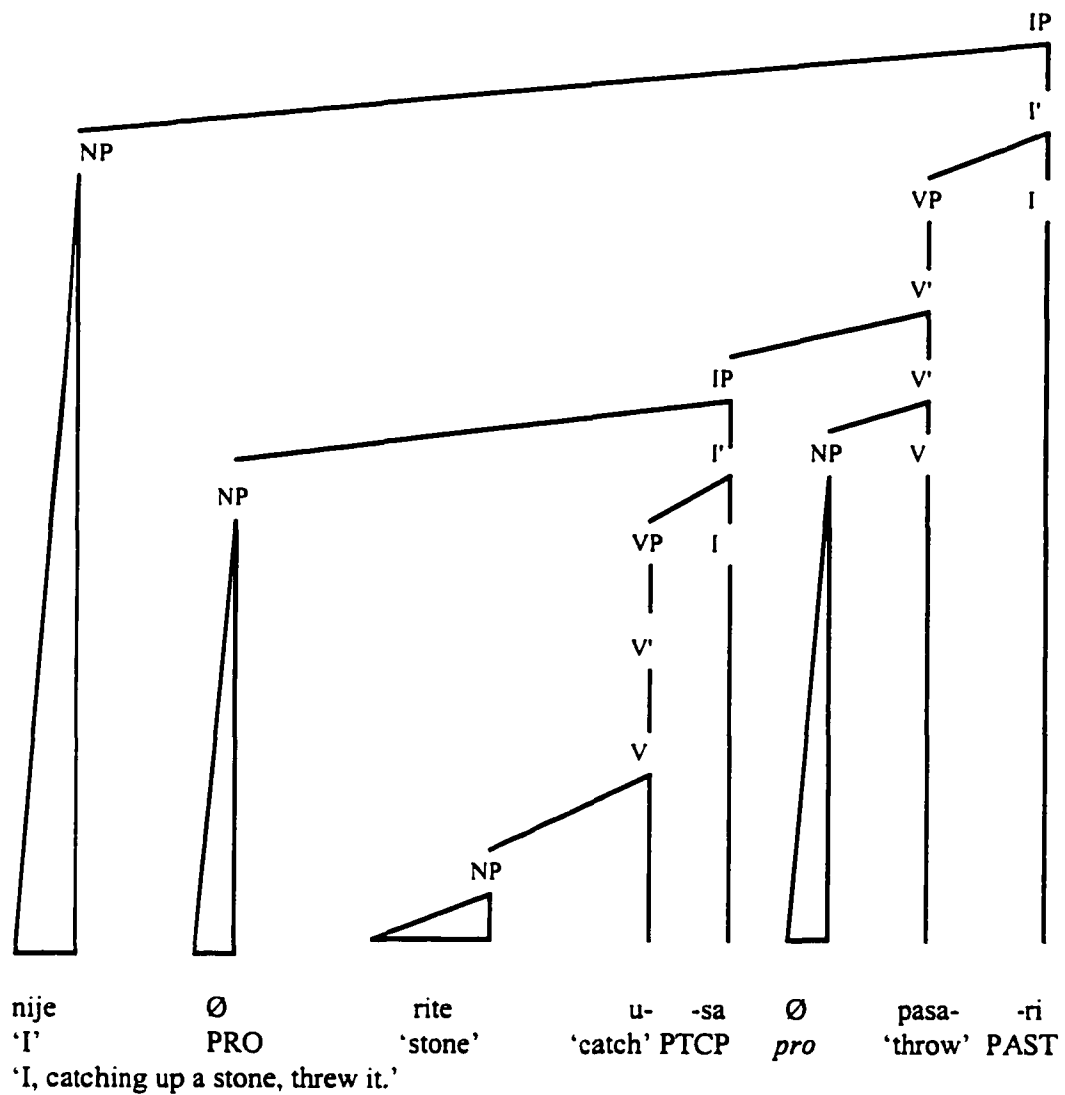


Figure 10. Tree representation of example (351).

Sentence (351) contains only one participial verb, but texts also show sentences that have two or more participles preceding the main, fully-inflected verb. Sentence (352) contains three participial verbs, each with its own complement or adjunct, preceding and modifying the final, past-tense verb.

- (352) \emptyset_i [\emptyset_i echi curuhui_j hue 'huii-sa]
pro PRO DEF little ones very snatch-PASTPTCP
- [\emptyset_i echona risochi \emptyset_j pa-sa]
 PRO there cave-LOC *pro* bring-PASTPTCP
- [\emptyset_i hue \emptyset_j co'hui-saa]
 PRO very *pro* kill-PASTPTCP
- echona hualu sicoli-chi \emptyset_j basu-li
 there large pot-LOC *pro* cook-PAST
 'Having snatched the little ones, having brought them to the cave and
 having killed them, [he] cooked them in a large pot.' [g23-24]

The subject of the main verb, *basuli* 'cooked,' is non-overt and refers to the giant who is topical in this passage of the discourse. The subject of each of the medial verbs '*huiisa* 'having snatched,' *pasa* 'having brought,' and *co'huisaa* 'having killed' is also non-overt but is co-indexed by means of the participial suffixes *-sa* and *-saa* with the non-overt subject of the main clause and its referent. Note that the three medial verb phrases (or, more properly speaking, non-finite clauses) precede the final verb in the typical, neutral position for adjuncts, and that each of the medial verbs also displays a head-final pattern within its own clause, being preceded by its own complement or adjuncts. Interestingly, the complements of *pasa* and *co'huisaa* are also non-overt; these null objects refer to the overt noun-phrase complement *echi curuhui* 'the little ones' of the first participle in the string, '*huiisa*.

Participial phrases used as adjuncts within verb phrases may also be postposed; they do not always appear in the normal adjunct position just before the main inflected verb. In (353) the medial verb phrase *echi huaasi aa* 'looking for the cows' occurs in a sentence-final position.

- (353) \emptyset_i ripa=ta_j rabo simiba-ri
pro up-1PL to the mountain go-PAST
- [\emptyset_i auchecho echo'na cori 'yena-rai=ta_j]
 PRO again there other side walk(plural)-PROG-1PL

[\emptyset_i echi huaasi a-a]
 PRO DEF cow look for-PTCP
 'Up the mountain we went, walking once again along the other side,
 looking for the cows' [v22]

In sentence (353) the main verb is *simibari*, which has the full past tense inflection but appears towards the beginning of the sentence. A less fully inflected verb, '*yenarai* 'walking,' with its accompanying adverbial adjuncts follows the main verb, then a participial verb *aa* together with its direct object *echi huaasi* concludes the sentence. These two occurrences of less fully inflected verbs following the main verb constitute evidence of Wh-movement, which will be discussed in chapter 5.

4.3.2.4 Subordinate clauses as adjuncts

In addition to adverbial phrases, noun phrases, postpositional phrases and participial medial verbs, subordinate adverbial clauses may also function as adjuncts within verb phrases in Tarahumara. These subordinate adverbial clauses may be reduced clauses or full clauses, and both of these types will be discussed.

4.3.2.4.1 Reduced subordinate clauses

Reduced subordinate adverbial clauses have a subject, a partially inflected verb and sometimes an object, as required by the verb. No subordinating conjunction appears. The most commonly occurring reduced clause is the conditional clause formed with conditional morphology on the verb, as in (354).

(354) [\emptyset_j [nije_i bine-saga [\emptyset_i rochi siru-ya]],
 1SG.NOM learn-COND PRO fish catch-PTCP
 \emptyset_j [\emptyset_j echona ba'hui-chi iyena-ga] quetasi loche-bo
 pro PRO there water-LOC go about-PCTP NEG be hungry-IRR.PL
 'If I learn to fish and swim, we will never go hungry. . .' [z35z36]

In sentence (354) the verb *bine* ‘learn’ occurs in the subordinate, adverbial clause and has the conditional suffix *-saga* that can be roughly glossed ‘if’ in free translation. This suffix occurs about midway on the scale of completeness of inflection, having sufficient inflection to fulfill its case-marking role (discussed in the last section of this chapter) but insufficient inflection to stand on its own as an independent or coordinate clause.

In example (354) no subordinate conjunction introduces the reduced clause but the reduced clause does have an overt subject, the first person singular pronoun *nije*. The reduced clause also has a verbal complement, the non-finite clause *rochi siruya* ‘catching fish.’ The conditional clause remains in its deep-structure position preceding the main verb, as expected for a head-final language.

4.3.2.4.2 Full adverbial subordinate clauses

Unlike reduced adverbial clauses which have no subordinating conjunction, full adverbial clauses generally have a subordinating conjunction, a subject, a fully inflected verb and sometimes an object. Such clauses do not usually appear, however, in the neutral position for verb phrase adjuncts between the subject and verb of the main clause. Instead, because of their length, these clauses are moved to the beginning of the sentence, preceding the subject, or to the end of the sentence, following the main verb. Sentence (355) exemplifies the use of a postposed adverbial clause with a fully-inflected verb; this clause is used as an adjunct of purpose for the main verb in the higher clause.

| | | | | | | | | |
|-------|----------------------------|-----------------|-----------------------|------------------------|---------------------------|------------------|--------------------------|----------------------|
| (355) | echirigá thus | ∅ <i>pro</i> | bilé one | ne very | huabé very | hualubé great | nacóhua-mi fight-NMZR | nihua-bo have-IRR |
| | [mapurigá in order that | ne very | suniami everywhere | huichimóbachí earth | peré-ami live(pl)-AJZR | | | |

Ø machi-mea]
 pro know-IRR
 'Thus we will have a great battle in order that all who live on earth may know
 (whether large animals or stinging insects are stronger)' [o14]

In sentence (355) the adverbial clause is *mapuriga ne suniami huichimobachi pereami machimea* 'that all who live on earth may know.' This clause is introduced by the subordinating conjunction *mapurigá* 'in order that' and has a full noun phrase subject *ne suniami huichimobachi pereami* 'all who live on earth.' The subordinate clause also has a fully inflected irrealis mode verb, *machimea* 'may know,' as well as a non-overt object corresponding to the information that is known. The clause is dependent for its interpretation (although not for its inflection) on the main clause *echiriga bile ne huabe hualube nacohuami nihuabo* 'thus, we will have a great battle,' and serves as an adverbial adjunct to the head verb *nihuabo* 'we will have.' In deep structure the adverbial clause adjunct appears preceding the verbal complement *ne huabe hualube nacohuami* because of its less intimate relation to the verb *nihuabo*, but because of processing problems discussed in chapters 5 and 6 the embedded clause moves to the end of the sentence.

Adverbial clauses may also precede the main clause, an ordering that is especially common in the introductory sentences of Tarahumara texts. Sentence (356) illustrates the use of two adverbial phrases along with an adverbial clause to begin an introductory sentence in the text about the giant Canó.

- (356) Chabe qui'ya bamibali, mapuyena ne choquichi
 before in antiquity years until very beginning
- [mapali nihua-lati je'na huichimoba],
 when make-PASTPASS PROX earth
- bile rijoy [Ø cuchu-ami] bite-ali. . .
 one man PRO have children-AJZR live-PAST
 'Long, long ago, in the very beginning when the world first was, there
 lived a man who had a child.' [g1-3]

In (356) the adverbial clause *mapali nihualati je'na huichimoba* 'when the world first was' precedes the main clause *bile rijoy cuchuami biteali* 'there lived a man who had a child.' This adjunct clause is introduced by the subordinating conjunction *mapali* 'when' and contributes time information regarding the main verb *biteali* 'lived.' The suffix *-lati* on the verb in the subordinate clause is a past tense passive voice suffix, and is, therefore, somewhat less fully inflected than the past tense verb of the main clause, although still capable of assigning case. This is not unexpected, that a verb in a subordinate clause should be less fully inflected than the verb of the higher clause.

4.3.3 Specifiers for verb phrases

In addition to heads, complements and adjuncts, verb phrases may also have specifiers. The specifier of a verb phrase, unlike the specifier of an inflectional phrase (sentence), is not a required constituent and, thus, is not always generated at deep structure. In Tarahumara the specifier of a verb phrase is most often the adjective *suhuaba* 'all' which is used as a quantifying adjective in the position of an adjunct in noun phrases elsewhere and which appears in verb phrases preceding the head verb to delimit the range of action. An example of the use of the verbal specifier *suhuaba* is provided in (357).

- (357) tamuje quetasi naqui-Ø
 1PL.NOM NEG want-PRES
- [mapu 'yemi **suhuaba** suhui-mea]
 that 2PL.NOM all die (pl)-IRR.PL
 'we don't want that you should all die' [g79g80]

In sentence (357) the specifier *suhuaba* 'all' precedes the head verb and refers to the scope of action of the verb upon its experiencer subjects. The specifier emphasizes the effect of the action, death, on the complete range of people referred to by the subject of the verb. But *suhuaba* is not the subject of

this sentence, as shown by the fact that the embedded clause in (357) in which *suhuaba* occurs already has an overt subject, the second person plural pronoun 'yemi.'

The specifier of a verb phrase appears at the topmost branching node of the verb phrase in a hierarchical representation, higher in the tree than the verbal adjuncts. This node is not recursive. The tree representation of the clause in (357) in which *suhuaba* occurs appears in figure 11 to illustrate this specifier node. There the adjective *suhuaba* 'all' occupies the specifier position of the verb phrase *suhuaba suhuimea* by its dependency from the top branching node of the verb phrase.

From the representation in figure 11 the X-bar syntax in (358) relating a verb phrase and its specifier may be posited.

(358) VP --> NP V'

Rule (358) states that a verb phrase at the highest level consists of a noun phrase specifier and a V-bar, which of course may be composed of other constituents as already discussed.

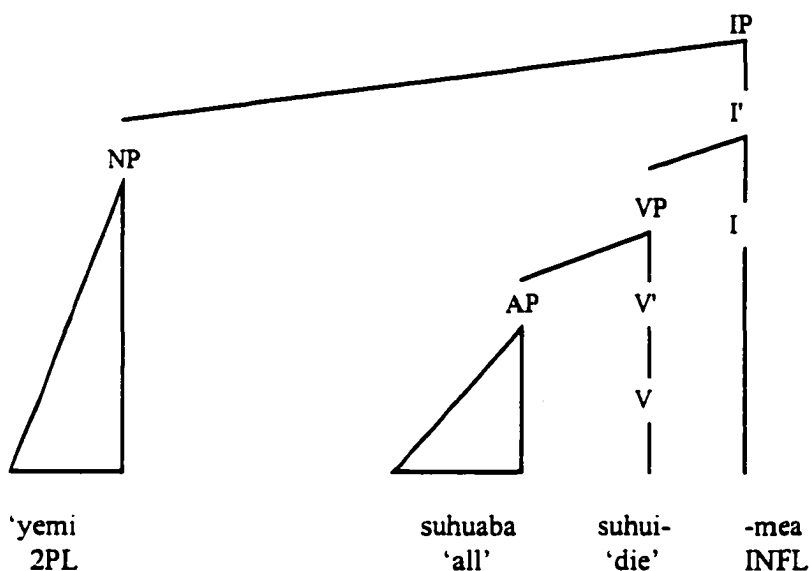


Figure 11. Tree representation of example (357).

4.3.4 Stative verbs and their nominal and adjectival complements

The foregoing discussion of verb phrases concerns the X-bar syntax that determines the structure of verb phrases headed by active verbs. Tarahumara also has many verb phrases headed by stative verbs such as copulas and semi-bleached verbs of position and locomotion. These verb phrases have adjectival or nominal complements but no examples appear in which such verb phrases include an adjunct or a specifier. This section addresses the structure of verb phrases headed by stative verbs.

4.3.4.1 Position of adjectival complements

Stative verb phrases with adjectival complements usually display the ordering Adjective Phrase--Copula. An example of an adjectival phrase appears in (359), illustrating its position as complement of the copula.

- (359) Echi huacho [Ø hue simate ba'yo-ami] niili.
 DEF heron PRO very pretty be pretty-AJZR be-PAST
 'The heron was very beautiful.' [z3]

The subject of the sentence, *echi huacho* 'the heron,' is immediately followed by the adjectival phrase *hue simate ba'yoami* 'very beautiful' which is the complement of the copula *niili* in sentence-final position and functions in an adjectival manner to describe the noun phrase subject, as is appropriately marked by the adjectivized form of the verb *ba'yóami* which forms the head of the adjective phrase. A tree representation of this attributive sentence is provided in figure 12.

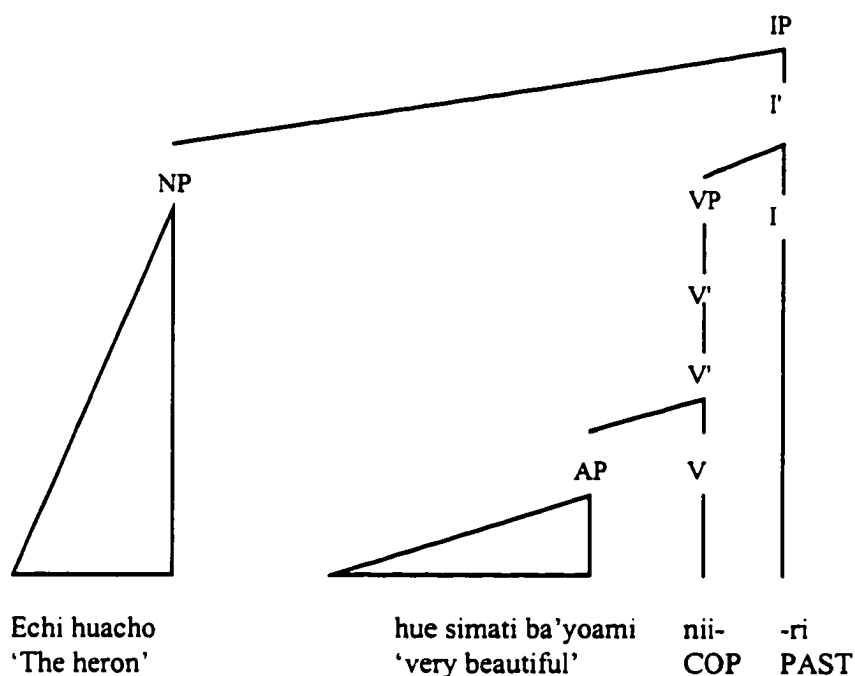


Figure 12. Tree representation of example (359).

The X-bar syntax for the verb phrase of sentence (359) is given in (360).

(360) $V' \rightarrow AP \text{ COP}$

Rule (360) indicates that the verb phrase of the sentence is composed of an adjective phrase followed by a copula. This syntax is a special case of the more general rule for verb phrases $V' \rightarrow ZP \text{ V}$, and adds nothing new to the analysis of the verb phrase except a particular instantiation of theta roles of the complement-taking verb, in this case, a copula.

This basic ordering of adjective phrase followed by copula holds even when the constituents are more complex and the copula is in another tense, as in example (361).

(361) \emptyset [muje_i mapuriga t_i ra'icha- \emptyset]
 pro 2SG REL e speak-PRES

hue gara simate ba'yoami ju
 very good pretty pretty be-PRES
 'Your words are (what you say is) very nice and pretty' [z39]

In sentence (361) the subject, *muje mapuriga raicha* 'what you say,' is a headless relative clause with a preposed subject, a relative pronoun and an active verb. The adjectival complement contains three adjective phrases, *hue gara* 'very good,' *simate* 'pretty,' and *ba'yoami* 'pretty.' The copula *ju*, still in sentence-final position, manifests present tense.

4.3.4.2 Position of nominal complements

Stative verbs with nominal complements display a similar ordering; the nominal complement precedes the copula in the verb phrase. These nominal complements may be lexical nouns or nominals derived from verbs by use of the suffix *-ami*. Sentence (362) illustrates the use of a lexical noun as complement while sentence (363) illustrates the use of a derived nominal.

(362) mapali nije pe taa tohui niili
 when 1SG small boy be-PAST
 'when I was a little boy' [i3]

(363) Je'na huaasi aami ju.
 PROX cow look for-NMZR be-PRES
 'These are (lost-) cow-seekers.' [v14]

In sentences (362) and (363), the order of constituents is subject, nominal complement, then copula. A tree representation of sentence (362) is given in figure 13 showing the nominal complement within the verb phrase.

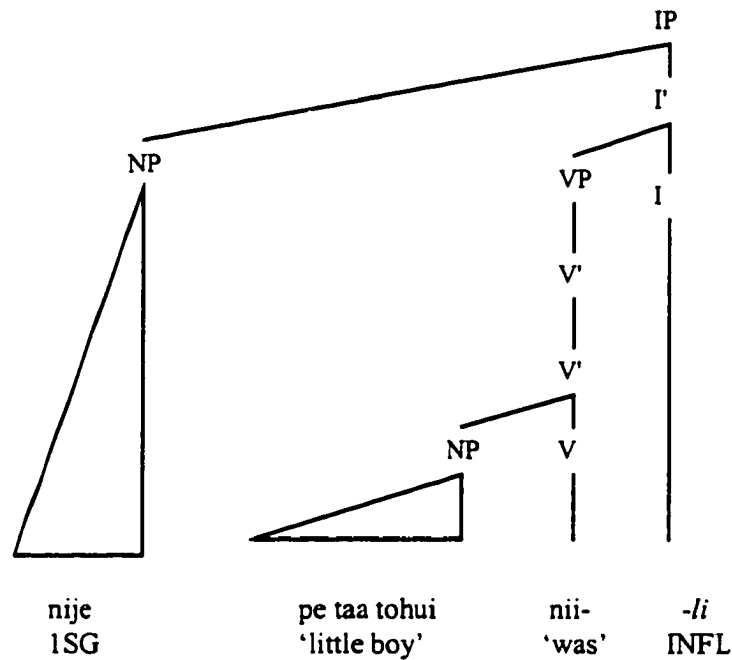


Figure 13. Tree representation of example (362) except for *mapali*.

Based on the tree representation in figure 13, the X-bar rules for stative verb phrases with nominal complements is parallel to the rule for those with adjectival complements and is shown in (364).

(364) $V' \rightarrow NP \text{ COP}$

Like the rule in (360) for adjectival complements, the rule in (364) adds nothing new to the syntax of the verb phrase. The rule in (364) is simply a special case of the more general rule for verb phrases, $V' \rightarrow ZP \text{ V}$.

Sentences having nominal complements derived from verbs have an inflectional phrase (IP) embedded in the position of the noun phrase (NP) shown in the VP rule in (358). Thus, a tree representation for sentence (363) with its derived nominal is as given in figure 14.

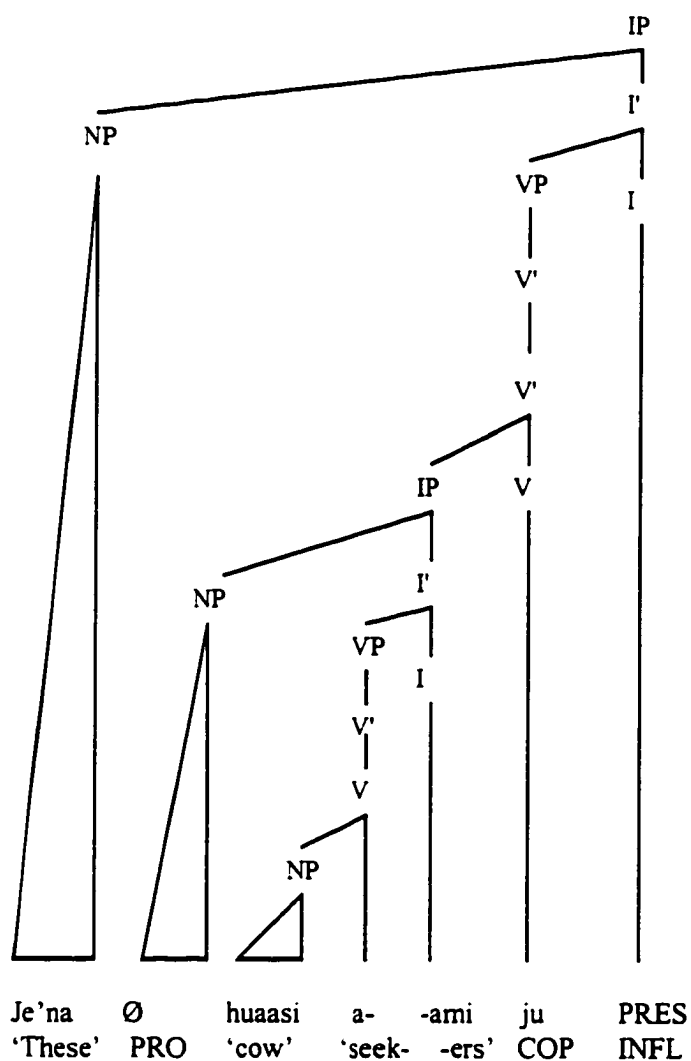


Figure 14. Tree representation of example (363).

Figure 14 demonstrates that a non-finite clause with a nominalized verb appears in the position of the noun phrase complement of the equative verb *ju*, the copula. Most nominal complements of copula verbs have the nominalizing suffix *-ami*, which not surprisingly is also the adjectivizing suffix that appears most often in adjectival complements already discussed.

4.3.4.4 Variations in structure of stative verb phrases

Other interesting variations in stative sentence structure include the omission of the subject argument and the splitting of an adjectival complement by the copula, so that an adverb modifying the adjective appears after the copula while the adjective itself appears before the copula. Both of these variations as well as the omission of the copula appear in sentence (368).

- (368) \emptyset **Chocami** juco **pee,**
pro black be-PRES-EUPH slightly
- \emptyset tasi 'me huarinami \emptyset .
pro NEG very light COP
 'They (nighthawks) are kind of dark, not very light in color.' [b8]

In the first clause of sentence (368) the subject argument is lacking, being understood to be continuous from the previous sentence where *ocohui* 'nighthawks' were overtly mentioned. The adjectival complement, *pee chocami* 'slightly dark,' is split by the copula *juco* in the sense that its adverb of degree, *pee* 'slightly,' is extracted from the adjective phrase and moved for pragmatic purposes to a position following the copula. The second clause of sentence (368) manifests neither subject argument nor copula, both of these being presumably carried over from the previous clauses. This second clause is composed only of an adjectival complement phrase and serves as an appositive or afterthought, paraphrasing the first clause by negation of its opposite.

4.3.4.5 Position of complements with partially-bleached stative verbs

Before concluding this discussion of stative sentences, the use of verbs of position or locomotion with adjectival complements is mentioned as an interesting variant. In example (369), a

verb of posture, *asá* 'sit,' functions as a semantically-bleached copula and occurs together with a non-finite complement clause containing a participial rather than an adjectivized verb.

- (369) mapali echi muqui echi taa tohui
 until DEF woman DEF small boy
- ma [Ø gala pola-ta] asa-li
 already PRO well cover-PTCP sit-PAST
 'until the woman and the little boy were well covered' [g87-88]

In sentence (369) the subject argument is *echi muqui echi taa tohui* 'the woman and the little boy.' The adjectival complement is *gala polata* 'already well covered,' and the adverb *ma* 'already' serves as an adjunct. The postural verb *asali*, meaning 'to sit' in the past tense, functions as a copula. Perhaps it is appropriate that a postural verb that is not completely bleached semantically should be accompanied by a participial medial verb as its complement in the pattern of a chaining construction rather than by an adjectivized verb such as normally accompanies a completely bleached copula.

Example (370) illustrates the use of a verb of locomotion with an adjectival complement derived from a verb by the adjectivizing suffix:

- (370) Chure muje hue yo-ami asisa-li jipe?
 why? 2SG very angry arise-PAST today
 'Why are you so irritable today?' [o4]

Sentence (370) has a subject argument *muje* 'you,' an adjectival complement *hue yoami* 'very angry,' two adverbial adjuncts *chure* 'why' and *jipe* 'today,' and a past tense verb of locomotion, *asisali* 'arose.' The verb *asisa*, although it also functions as an active verb in other contexts, is used here as a copula with some loss of the specific meaning of 'arise.' In both this sentence and sentence (369), the basic order for stative sentences is followed, that of Subject--Complement--

Copula. Thus, even for this type of verb phrase involving verbs of posture or locomotion, the X-bar rule remains as in (371).

$$(371) \quad V' \quad \rightarrow \quad \left[\begin{array}{c} AP \\ NP \end{array} \right] \quad COP$$

4.3.5 Summary of X-bar rules for verb phrases

A summary of the X-bar rules for verb phrases concludes this section on Tarahumara verb phrases, providing a synopsis of the constituents and the ordering that characterize their structure.

First, the constituents that fill the various positions of the verb phrase are as follows:

Head of VP is V or COP, an active or a stative verb

Complement of VP is NP, PP, AP or IP

Active verbs (V) have NP, PP or IP complements

Stative verbs (COP) have NP, AP or IP complements

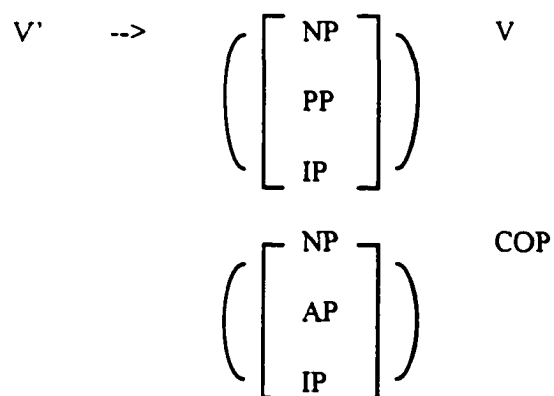
Adjunct of VP is PP, NP, AdvP, or IP, a postpositional or noun or adverbial phrase
or a clause

Specifier of VP is AP, the adjective *suhuaba* 'all'

Second, the ordering and branching within VP is as follows:

$$VP \quad \rightarrow \quad (NP) \quad V'$$

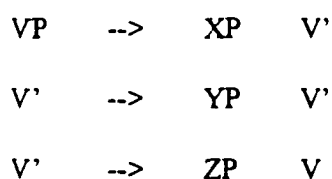
$$V' \quad \rightarrow \quad \left(\left[\begin{array}{c} PP \\ NP \\ AdvP \\ IP \end{array} \right] \right) \quad V' \quad \text{This level may be recursive.}$$



A parameter that is set in verb phrases is the tendency for heads to appear in final position.

Other orderings are the result of movement, to be discussed in chapter 5.

Thus, as an overall scheme, the X-bar syntax for verb phrases is as predicted.



4.4 Noun phrases in Tarahumara

Tarahumara noun phrases exhibit most of the same constituent positions as other types of phrases and show head-final configurations also, with some interesting exceptions. Noun phrases have specifiers, adjuncts and heads, although complements are difficult to find in the texts examined for this study. The various noun phrase constituents and their hierarchical configurations will be dealt with in the upcoming discussion.

4.4.1 Heads of noun phrases

The simplest noun phrase consists of a single common noun, the head of the phrase. These simple nouns may be lexical nouns, nouns derived from verbs and lexicalized by common usage, or

nouns with some type of suffix, such as the locative *-chi*. Examples of each of these types of simple nouns were given in chapter 3.

Proper nouns such as personal names and place names may also be the head of a noun phrase, but these do not usually occur alone, being accompanied by a deictic in most instances. Examples of personal names and place names are given in (372) through (375).

- | | | | |
|-------|---|-------|--|
| (372) | echi Antonio DIST [personal name] 'Anthony' [t59] | (373) | je'na Dionicio PROX [personal name] 'Dionicio' [t18] |
| (374) | echo'na Monerachi there [place name] 'Monerachi' [t8] | (375) | jena'i Samachi here [place name] 'Samachique' [t20] |

Examples (372) through (375) demonstrate that proximal and distal deictics are often used together with proper nouns. While demonstrative adjectives are used with personal names, the deictics *echo'na* 'there' and *jena'i* 'here' are used with place names.

Pronouns are also often used in Tarahumara in the position of a full noun phrase. Nominative case full personal pronouns are used in this way, as well as accusative case pronouns, indefinite pronouns and other types of pronouns. Clitic pronouns, however, may not take the position of a full noun phrase. An example of several types of pronouns is given in order to show that the pronoun substitutes--or fails to substitute--for the entire noun phrase.

First, example (376) demonstrates the use of a nominative case full personal pronoun *nije* as subject of the sentence.

- (376) **nije** canira cochi-ri
1SG happy sleep-PAST
'I slept contentedly' [v3]

In example (377) the accusative case personal pronoun *tami* functions as the direct object of the sentence by taking the position of the complement of the verb *bayérari* 'called.'

- (377) *echi rijoy tami bayera-ri echo'na ri'rete Batopila*
 DIST man 1SG.ACC call-PAST there down Batopilas
 'that man took me down to Batopilas' [t1]

Finally, indefinite pronouns are used in sentence (378), showing that indefinite pronoun phrases as well as simple indefinite pronouns may take the positions of full noun phrases.

- (378) *Ari biche auche jare si-ga jeani-ri:*
 then other some come-PTCP say-PAST
 'Then some others, coming up to them, said,'

"Je'na huaasi aami ju."
 PROX cow seek-NMZR be-PRES
 "These are ones who are searching for cows." [v14]

In example the indefinite pronoun phrase *auche jare* 'some others' takes the position of noun phrase specifier or subject for the main clause, while the simple indefinite pronoun *je'na* 'this, these' takes the position of noun phrase specifier for the lower clause. As noted in chapter 3, other indefinite pronouns often used in noun phrase positions within sentences are *echi* 'that one, those,' *bire* 'one,' *echi bire* 'one,' *echi jare* 'some,' and *huaminabi huarube* 'more.'

Clitic pronouns, however, may NOT take the position of a full noun phrase. No examples are found in which the copy pronoun refers to the object of a verb or of a postposition, all clitic pronouns being co-indexed with the subject of the clause in which they appear. Thus, clitic pronouns are not expected to fill the position of noun phrase complements.

Clitic pronouns may not fill the position of the noun phrase specifier of the sentence either. The extreme variety of types of constituents to which clitic pronouns attach (see section 3.2.4 for the exact types of constituents to which clitic pronouns may attach) and the many syntactic structures in which these constituents are found in the sentence prohibits the clitic pronoun itself from being considered the terminal node for the noun phrase specifier of the sentence. This argument is developed in the upcoming discussion.

If all occurrences of clitic pronouns were similar to example (379), in which the clitic pronoun is affixed to the first word of a sentence in which a noun phrase specifier is absent, perhaps they could be considered to take the noun phrase specifier position for the sentence.

- (379) Echo'na=**ta** chi'rebari.
 there-1PL spend the night-PAST
 'There we spent the night.' [t7]

If the clitic pronoun only appeared in this and similar positions, movement could be posited to account for the small amount of variety in positioning (in the case of example (379), preposing of the verb phrase adjunct *echo'ná* 'there') and the clitic pronoun might be analyzed as noun phrase specifier for the clause.

Clitic pronouns often co-occur with full personal pronouns used as noun phrase specifiers, however, suffixed to the full pronoun as in (380), or suffixed to another constituent of the sentence in which the full personal pronoun appears.

- (380) **Tamuje_i=te_i** huabe risi-ri echo'na buhue-chi
 1PL.1PL much rest-PAST there road-LOC
 'we rested a great deal there along the road' [t5]

This double occurrence of co-indexed pronouns within a clause suggests that the full personal pronoun is the noun phrase specifier for the clause and that the clitic pronoun is not.

Furthermore, the fact that clitic pronouns may attach to constituents embedded within parts of the sentence other than the noun phrase specifier suggests that clitic pronouns are not themselves the noun phrase specifiers for the sentence. The appearance of the clitic pronoun =*te* attached to the intensifying adverb *hue* 'very' within the verb phrase in example (381) would prove a nearly-impossible challenge to movement as an explanatory mechanism, if the clitic pronoun were regarded as the noun phrase specifier of the sentence.

- (381) Choji tamuje hue=te 'huiba-ri echari rahue.
 But 1PL very-1PL bathe(past stem)-PAST then day
 'But we went swimming a great deal that day.' [t10]

Clitic pronouns, moreover, are considered to be lexically assigned inherent case, so that they need not appear in the [Spec, IP] position in order to receive NOMINATIVE case from the INFL of the clause as will be discussed in the last portion of this chapter. Having inherent case, they can appear in nearly any position in the sentence without the need to be governed by a local case assigner.

For these reasons, clitic pronouns are not analyzed as being able to fill the [Spec, IP] position. For clauses that have no expression of the subject of the sentence other than the clitic pronoun, the subject position is considered to be projected and filled by small *pro*, the null subject marker. The clitic pronoun in these clauses is merely a record of person and number subject agreement features of INFL that have spread by feature percolation to all nodes of the sentence dominated by INFL and that have become phonologically manifested on one or several of these constituents to aid in identification of the referent of the null subject. This overt manifestation of agreement features is optional; the clitic pronoun may be omitted from the sentence. According to this analysis the representation for example (382), in which a clitic pronoun is explicit even though the subject is non-overt, should include an indication of *small pro* co-indexed with the clitic pronoun as shown.

- (382) \emptyset_i Echo'na=ta_j chi'rebari.
pro there-1PL spend the night-PAST
 'There we spent the night.' [t7]

In the case of sentences that have, in addition to the clitic pronoun, some other constituent that fills the [Spec, IP] position, this other constituent is analyzed as the subject of the sentence. The

clitic pronoun, in the same way as just described, manifests agreement features of INFL on that constituent or on some other constituent for the purpose of emphasis on the subject referent.

Thus, except for clitic pronouns which are merely explicit reflections of subject agreement of INFL that may become manifest nearly anywhere in the sentence, pronouns may fill the position of a full noun phrase. Personal, indefinite, demonstrative, possessive, and interrogative pronouns may all substitute for noun phrases within the Tarahumara sentence.

4.4.2 Specifiers for noun phrases

The possibility of pronouns taking the form of phrases and of proper nouns having some other constituent preceding the main noun or pronoun brings the discussion to the specifier position in noun phrases. Words like *auche* 'other,' *echi* 'the, that, those,' and *bire* 'a, one' function as specifiers in indefinite pronoun phrases as well as in other kinds of noun phrases, in which they are commonly called *determiners*. These determiners usually occur first in any noun phrase and usually take the shape of the definite article *echi* or the indefinite article *bire* although they may also be numbers or indefinites as well as demonstratives. Words commonly used as determiners are the following: *echi*, the definite article and distal demonstrative, *je'na*, the proximal demonstrative, *echo'na*, the distal deictic, *je'nai*, the proximal deictic, *bire*, the indefinite article and numeral 'one,' *sine* 'one,' *jare* 'some,' *auche* 'other,' *suhuaba* 'all,' and *ne* 'indeed, very, exactly.'

Determiners are used with most noun phrases, as illustrated in (383).

- (383) **je'ná** caposi
 PROX seeds
 'these seeds' [g58]

A tree representation of (383) illustrates the configuration of the determiner-specifier position in a noun phrase in figure 15.

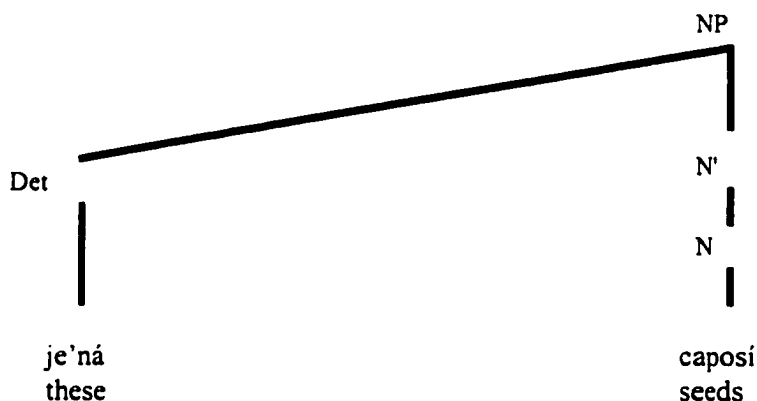


Figure 15. Tree representation of example (383).

The tree representation in figure 15 indicates that the maximal projection NP consists of a specifier position filled by the determiner *je'ná* 'this' and an N' with no adjuncts or complements but only a head, the noun *caposi* 'seeds.'

The only evidence for Specifier-Head Agreement lies in the occasional use of differing determiners to indicate the number of the head noun. The indefinite article and numeral 'one,' *bire*, is used as specifier with head nouns that are understood to be singular, while the indefinite pronoun and quantifying adjective *jare* 'some' is used as specifier with head nouns that are understood to be plural. Except for a few nouns with suppletive plural stems, the head noun shows no overt morphological indication of number.

In the matter of agreement, the features of the head of the noun phrase such as person, gender and number are considered to characterize the entire noun phrase by "percolating" upward to nodes dominating the noun head until the maximal projection (or topmost node) is reached (Burquest 1996: 45).

When noun phrases are used as adjuncts within the verb phrase, or as constituents of adjuncts, the word *ne*, used elsewhere as an adverbial intensifier for adjectives, may precede the head noun in the manner of a specifier. In example (384) *ne* serves as specifier for the noun phrase *ne bichihuali* 'truly,' which is an adjunct within a verb phrase.

(384) **ne** bichihuali
 very truth
 'true indeed' [z8]

In example (385) *ne* serves as specifier for the noun phrase *ne rijoy* 'a real man,' which is the complement of the postpositional phrase adjunct *mapurigá ne rijoy niráa* within a verb phrase.

(385) mapuriga **ne** rijoy niraa
 exactly like very man as
 'in the manner of a real man' [z59]

In (384) and (385) the word *ne* functions as a specifier to delimit the range of exactness of the head noun, *bichihuali* 'truth' in (384) and *rijoy* 'man' in (385). The word *ne* stresses the exact or essential nature of the noun used with it.

Noun phrases referring to places often take a specifier in the form of the word *echo'na* 'there' which precedes the locative head noun. Two examples appear in (386) and (387):

| | | | | | | |
|-------|---------------------|----------|-------|--------------------------|-------|-----------|
| (386) | echo'na | riso-chi | (387) | echo'na | hualu | bacochi |
| | there | cave-LOC | | there | big | river-LOC |
| | 'in the cave' [g65] | | | 'at the big river' [g27] | | |

Because of the prevalence of this construction and the lack of particular emphatic or deictic meaning attached to the word *echo'na*, the word as used in these constructions is taken simply to be a determiner selected by locative nouns.

4.4.3 Adjuncts for noun phrases

This section deals first with adjuncts to noun phrases that are lexical adjectives and commonly precede the noun head, then with adjuncts to noun phrases that are adjectives derived from verbs and full relative clauses, which commonly follow the noun head.

4.4.3.1. NP adjuncts that precede the head noun

Some noun phrases with full noun heads, like the one in (388), contain several words from the list of determiners given previously.

- (388) *echi* *auché* *jaré* pagótami
 DEF other some people
 'those other people' [g45]

Rather than interpret all three words *echi*, *auché* and *jaré* as determiners in this sentence, the phrase should be understood as having only one constituent realizing the specifier position, the determiner *echi* which appears in first position. The words *auché* and *jaré* in this sentence are best analyzed as adjectives functioning as adjuncts in the noun phrase, *auché* being a qualifying adjective and *jaré* being a quantifying adjective. Many other quantifying words also appear in this position, following the determiner but preceding the head noun, as in (389) and (390).

- (389) *echi* *sinéami* pagótami
 DEF all people
 'all the people' [g53]

- (390) *echi* *suhuaba* si'oli
 DEF all flying, stinging insect
 'all the flying, stinging insects' [o17]

Words like *sinéami* 'all' and *suhuaba* 'all,' used in this way, are quantifying adjectives serving as adjuncts and appearing at an intermediate N' projection in the hierarchical representation shown in figure 16.

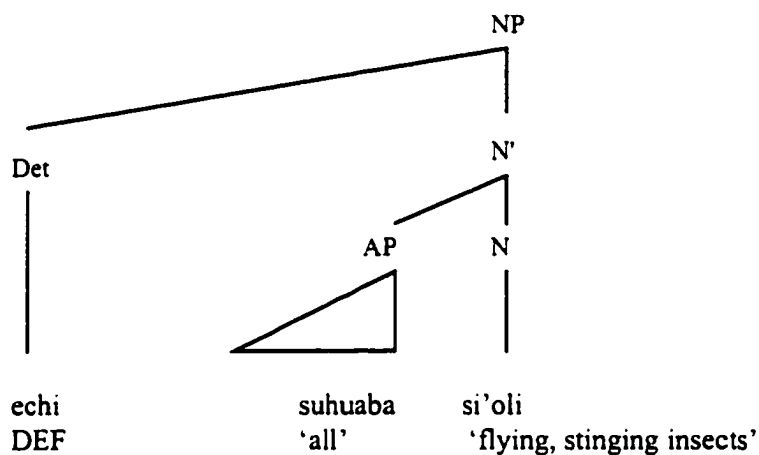


Figure 16. Tree representation of example (390).

Figure 16 shows both a specifier and an adjunct appearing in the noun phrase, but specifiers are not obligatory in noun phrases. Some noun phrases have only an adjunct adjective phrase with the head noun, and lack a specifier, as does example (391).

- (391) **huicá** namuti
 many thing
 'many things' [r23]

The noun phrase of (391) is represented in figure 17, which demonstrates that NP has no Specifier node but does have a node for an adjunct at the intermediate N' projection, and that the adjective phrase *huicá* 'many' fills this adjunct position.

Sometimes a quantifying adjective phrase fills the adjunct position before the head noun as in (392).

- (392) **ne hualú** sa'pá
 very much meat
 'a lot of meat' [g29]

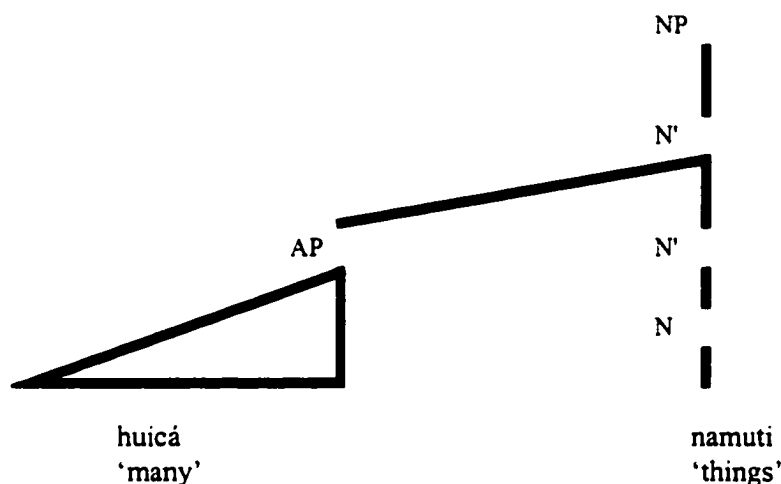


Figure 17. Tree representation of example (391).

In addition to the appearance of quantifying adjectives in the adjunct position preceding the head noun, qualifying or descriptive adjectives or adjective phrases may also appear in this adjunct position. Lexical adjectives telling some attribute of the head noun most commonly appear here, as in (393) and (394).

(393) echi **taa** tohui
 DEF little boy
 'the little boy' [g71]

(394) echi **o'hueli** rojuaca
 DEF great oak trees
 'the great oaks' [g43]

4.4.3.2 NP adjuncts that usually follow the head noun

Thus far, in description of noun phrases, the head-final tendency of Tarahumara is upheld, as specifiers and adjuncts precede head nouns in noun phrases, although this tendency of adjuncts to precede heads seems not to extend to relative clauses when these act as noun phrase adjuncts.

4.4.3.2.1 A derived adjective that precedes the head noun

The adjuncts given in section 4.4.3.1 were lexical adjectives; but when adjectives are derived from verbs by the use of the adjectivizing suffix *-ami* they only rarely precede noun heads, as in the uncommon example (395).

| | | | | |
|-------|---------------|---|-----------------|--------|
| (395) | [\emptyset | echona cahui-chi | niru-ami | namuti |
| | <i>pro</i> | there mountain-LOC | exist-AJZR | thing |
| | | 'animals existing there on the mountain' [g7] | | |

In (395) the adjective *niruami* is derived from the verb *niru* 'exist' by addition of the adjectivizing suffix *-ami*, and may have become a frozen form over time so as to be a lexicalized adjective in current use. The noun phrase in (395), however, seems not simply to evidence a head noun modified by a simple lexicalized adjective but rather by a reduced relative clause *echona cahuichi niruami* 'that existed there on the mountain.' This string may be considered a relative clause because of the presence of an adverbial adjunct of place *echona cahuichi* that modifies the verb-derived *niruami* more directly than it modifies the head noun *namuti*. Perhaps this reduced relative clause remains in its base position preceding the head noun (rather than moving to an adjoined position following the head noun as will be described in chapter 5) because at ten syllables it is still of a phonological length "light" enough to remain in a centrally-embedded position without causing too great a burden for cognitive processing.

4.4.3.2.2 Relative clauses as NP adjuncts

4.4.3.2.2.1 Syntax of relative clauses

Sentence (395) is the only example encountered in the texts in which a derived adjective precedes its noun head. Far more common is the ordering in which the derived adjective with its

various phrasal constituents forms a full relative clause and follows the noun head, as in the typical sentence (396).

(396) *nije huicabe rochi [∅ hue sape-ami] siruma*
 1SG many fish *pro* very be fat-AJZR catch-IRR
 'I will catch many fat fish' [z37]

While a quantifying adjective phrase adjunct *huicabe* 'many' appears in normal pre-head position in (396), the derived adjective *sapeami* 'fat,' which is derived from the verb *sape* 'to be fat,' along with its adverbial intensifier, appears in a position following the noun head *rochi* 'fish.' While the phrase *hue sapeami* at five syllables is phonologically quite small and reduced for a relative clause, it appears in exactly the same position in which most other relative clauses appear, following the head of the noun phrase, perhaps because of its syntactic complexity as an embedded clause.

The appearance of relative clauses following the head noun in Tarahumara may be another instance of the tendency for constituents to be moved out of their position preceding the head of the phrase as a result of phonological or syntactic complexity, to ease the processing burden of the sentence. In any event, the headedness parameter relates most directly to the relative position of heads and their complements; adjuncts often show the same ordering relationship with respect to the head but not as consistently as complements do (Burquest, 1998, personal communication).

A tree representation of sentence (396) is provided in figure 18 to show the recursion of adjuncts at the intermediate N' projections and the position of the verb-derived adjective in deep structure before it is moved to a position following the noun.

The adjectives *nacohuami* and *que ba'yoami* used in these noun phrases are derived from the verbs *nacoo* 'to fight' and *ba'yora* 'to look beautiful' respectively. Because of the verbal origin of these adjectives and their similarity of position to full relative clauses, following the head noun, these adjective phrases are considered to be reduced relative clauses.

It is apparent, therefore, that most relative clauses follow their heads in Tarahumara even though other noun phrase adjuncts precede their heads. This tendency results from a peripheral rule in Tarahumara that states that IP or CP adjuncts of NP, if present, follow the head, as indicated in (399).

$$(399) \quad N' \quad \text{--->} \quad N \left(\begin{array}{c} \boxed{IP} \\ \boxed{CP} \end{array} \right)$$

This rule is not unlike the rule for English noun phrases, which also separates noun phrase adjuncts into two types, perhaps on the basis of syntactic complexity, and positions them differently with regard to the head of the noun phrase. English adjectives precede nouns, while English prepositional phrases and relative clauses follow their noun heads. This postposing of the "heavy" clausal adjunct of noun phrases in both Tarahumara and English may improve the intelligibility of such a complex constituent (Burquest, 1998, personal communication).

4.4.3.2.2 Predictions regarding form of the noun phrase head of a relative clause

Certain predictions may be made concerning the implicational ordering of the types of noun phrases that may have relative clauses as their adjuncts. One prediction deals with the form of the noun phrase head--whether it is a full noun phrase, a pronoun or a non-overt argument. The other prediction deals with the syntactic role of the noun phrase head--whether it is a subject, a

complement or an oblique. Both of these implicational orderings are addressed here to discern whether their predictions hold true for Tarahumara.

With regard to the form of the noun phrase that has a relative clause as its adjunct, the prediction is that if the more reduced forms of noun phrases may take relative clauses in a language, then the more fully expressed forms of noun phrases will certainly take relative clauses. This expectation holds true for Tarahumara in that even non-overt arguments may be relativized, and, therefore, pronouns, bare noun heads and full noun phrases may also be relativized.

The Tarahumara noun heads for which relative clauses are adjuncts may be nouns, indefinite pronouns or simply null arguments. One example of each is given. First, in example (400), a relative clause follows a full noun phrase, the head of that phrase being also the head of the relative clause.

- (400) echi taa namuti [mapu churu pasochi niraa ju]
 DEF little animal REL size skunk as be-PRES
 'the little animal that was the size of a skunk' [t57]

In the noun phrase given in (400), the noun head is *namuti* 'animal,' and the relative clause that follows it is *mapu churu pasochi niraa ju* 'that was the size of a skunk.'

In example (401) a relative clause follows a head that is not a full noun head but is an indefinite pronoun.

- (401) **jare** [mapu huabe rijoraami juco]
 some REL very endure-AJZR be-PRES
 'some who are very persevering' [r17]

In the noun phrase in (401) the head is the indefinite pronoun *jare* 'some,' and the relative clause that modifies it is the string *mapu huabe rijoraami juco* 'who are very persevering.' As in example (400), the relative clause follows the head of the noun phrase. Relative clauses may also function as adjuncts for demonstrative pronouns such as the distal *echi* 'that one.'

In example (402) a relative clause has no head noun; it stands alone in the position of the noun head. The clause itself functions as the head of the noun phrase, and in fact as the entire noun phrase since no other constituents appear with it.

- (402) Ø [Ø Quetasi rijoraami] bacha bitibari.
pro pro NEG endure-AJZR first lie down-PAST
 'Those who cannot endure fall out first.' [r18]

In sentence (402) the relative clause *quetasi rijoraami* 'not enduring ones' occurs without any overt head or any other noun phrase constituents, and is, therefore, called a headless relative clause. The relative clause *quetasi rijoraami* functions as the subject noun phrase for the sentence. Notice that the relativizer *mapu* does not appear in this headless, reduced relative clause.

4.4.3.2.3 Predictions regarding syntactic role of the noun phrase head of a relative clause

With regard to the syntactic role of the noun phrase within the relative clause that is co-indexed with the head noun for which the relative clause serves as an adjunct, Keenan and Comrie (1977: 69) have predicted in their discussion of the *noun phrase accessibility hierarchy* that "if a language can relativize any position on the accessibility hierarchy, then it can relativize any higher position either directly or by promoting it to a position that can be relativized directly." Keenan and Comrie (1977: 66) provides the implicational ordering of the syntactic roles of noun phrases that is given in (403).

- (403) subject > direct object > indirect object > oblique > genitive > object of comparison

When relative clauses in the texts are investigated for adherence to this implicational ordering it is found that the lowest point on the hierarchy that may be relativized is the oblique, and that above that point, direct objects and subjects may also be relativized. The texts examined for this study include no examples of genitive noun phrases or objects of comparison that are relativized;

thus, no conclusions may be drawn at this point about whether noun phrases in these syntactic roles may be relativized.

Keenan and Comrie assert that subject noun phrases may be relativized in every language (1977: 67) and indeed it is comparatively easy to identify relativized subjects in Tarahumara. Example (404) illustrates a relative clause that is built on the subject noun phrase of the relative clause.

- (404) Huicá namuti me-ri echi [mapu t_i ni'úra-ri].
 many things earn-PAST DIST REL trace win-PAST
 'Those who won the race won all kinds of things.' [r23]

In (404) the relative clause *mapu Ø ni'úrari* 'who won the race' is relativizing the subject of the verb *ni'úrari* 'won.' This subject noun phrase is co-indexed with the demonstrative pronoun *echi* in the matrix clause.

Direct objects may also be relativized in Tarahumara, as illustrated by example (405).

- (405) Jena'í nirú baquia tara-ca ra'ichá-lu-ami
 here exist three recount-PTCP speak-PASS-NMZR
 [nije=ni t_i nama-li echi nijé apalocha-la]
 1SG.NOM-1SG trace hear-PAST DEF 1SG grandfather-SPCF
 'Here are three stories that I heard from my grandparents' [i2]

In (405) one of the internal arguments of the verb *namali* 'heard' in the relative clause is the argument that is relativized. This argument is co-indexed with the nominalized verb *ra'icháluami* 'spoken things' of the matrix clause.

Clear examples of obliques that may be relativized are difficult to locate in Tarahumara. A possible case of a relativized oblique is shown in example (406).

- (406) mapujiti=ni hue arigá si-mea
 because-1SG very nevertheless go-IRR

[mapo'na=ni_j t_i t_j naquí Ø nijé_i]
 wherever-1SG trace trace want [go] 1SG.NOM
 'because in any case I am going to go wherever I want [to go]' [o6]

If the clause *mapo'nani naqui nijé* 'wherever I want [to go]' is understood to be a relative clause in example (406), it may be analyzed as relativizing the oblique position held by the trace *t_j* indicated in (406), an adjunct of the verb sequence *naquí Ø* 'want [to go]' in the relative clause. Examination of a larger corpus of texts than the fourteen texts studied for this work might reveal clearer cases of relativized obliques, but this is not certain.

According to Keenan and Comrie (1977: 67), the ability of a language to form relative clauses should apply to a continuous portion of the hierarchy shown in (403). Therefore, indirect object noun phrases, because of their ordering in the accessibility hierarchy between direct objects which can be relativized in Tarahumara, and obliques, which have uncertain relativization status, may also be able to be relativized, at least by means of promotion to a position that can be relativized. Examination of the fourteen texts available for this study yields no examples of relativized indirect objects, however. When it is taken into account that overt indirect objects are comparatively infrequent in the language this should not be surprising. Most likely examination of additional texts would yield examples of indirect object noun phrases that are relativized, at least by means of promotion to subject or direct object position from where they could be relativized directly.

4.4.3.2.2.4 Variations in arrangement of relative clauses and their head nouns

Occasionally Tarahumara shows interesting variations of the arrangement of relative clauses with relation to the noun phrases of which they are a part. Relative clauses may appear separated from their noun phrase heads by constituents of other phrases, or more than one relative clause may modify a single head. In example (407) a relative clause is separated from its head by a postposition.

- (407) echi auche bire yuhua [mapu nije apanerahuara niiri]
 DEF other one with REL 1SG companion-SPCR be-PAST
 'with that other one who was my companion' [v8]

In sentence (407) the relative clause *mapu nije apanerahuara niiri* is part of the noun phrase object of the postposition *yuhua* 'with,' yet it is not adjacent to the head of the noun phrase, *bire*, an indefinite pronoun. The postposition intervenes between the head and the relative clause. Perhaps, as occurs with certain relative clauses in English also, the phonological length or syntactic complexity of the relative clause has caused it to be extraposed. The new position taken by the relative clause in example (407) is an adjoined position created especially for it as an additional PP node above the original PP, as will be explained in the account of Wh-movement by adjunction in chapter 5.

The ordering of the various types of noun phrase adjuncts with respect to the noun head leads to a hypothesis of cognitive processing problems for interlocutors when phonologically-long or syntactically-complex strings of adjunct material precede heads. Positioning these longer adjuncts following the head (despite the head-final tendency of the language) and sometimes even following other essential constituents of the sentence, reduces the processing load and prevents difficulties of construal and interpretation. The process of heavy-NP movement will be explained in chapter 5.

4.4.4 Complements for noun phrases

This section on noun phrases has so far addressed the nouns and other constituents that act as heads, the determiners that act as specifiers and the adjectives and clauses that act as adjuncts. Now before concluding, the section deals briefly with the complements that are found in noun phrases. A common complement of noun phrases is other noun phrases that are in the genitive case

and form a genitive construction together with the following head noun. Complements of noun phrases other than genitives are very rare, and examination of the texts has yielded only one example, which will also be discussed.

Genitive noun phrases appear in the complement position immediately preceding the head noun, as in (408) and (409).

(408) echi **ripura** cusí-ra
 DEF axe handle-SPCF
 'the axe handle' [h4]

(409) echi **basachi** huichi-ra
 DEF coyote skin-SPCF
 'the coyote skin' [c5]

Note especially that in each of these phrases (408) and (409), as in all genitive constructions in Tarahumara, it is the head noun that has a suffix, the specifier suffix *-ra*. In other dependent-marking languages of the world, if a genitive relationship between nouns is marked overtly, the genitive marking appears on the noun phrase that is the complement and represents the possessor. Thus, the appearance of the marker *-ra* on the head noun, representing the thing possessed, is so unexpected as to lead to doubt as to whether this marker can be the genitive marker.⁴ As will be discussed in section 4.12.6.1, the genitive construction is best analyzed as formed primarily by the parataxis of the two related noun phrases. Then the suffix *-ra* on the head noun may be interpreted as indicating the definiteness and referentiality of the head noun in the genitive construction as it does elsewhere, without being a genitive case marker in this construction.

⁴As mentioned previously in section 3.2.3.5.3, if Tarahumara were to be re-analyzed as a head-marking language, the appearance of a genitive case marker on the head noun ("possessee") would not be at all surprising.

As in examples (408) and (409), the relationship between the genitive noun and the head noun is not always a relationship of possessor and thing possessed. The complement may be a noun to which the head noun is closely related by being an essential part of the entity to which the preceding noun refers. The relationship may be a kinship or personal tie. The use of the genitive constructions to express kinship is illustrated in (410) and (411).

(410) *echi hualu rijoy upi-la*
 DEF great man wife-SPCF
 'the giant's wife' [g91]

(411) *echi nije huena-ra*
 DEF 1SG parent-SPCF
 'my parents' [v2]

These examples demonstrate that both full noun phrases and pronouns may serve as complements to the head noun in a genitive construction. Example (410) shows a head noun with specifier suffix *upila* preceded by a full noun phrase, *hualu rijoy*, indicating the person to whom the head noun is related. Example (411) shows a similar kinship relationship, that of parents and child, but evidences only a personal pronoun *nije* to refer to one of the related parties. In sentences of this type the determiner *echi* is construed with the head noun rather than with the preceding genitive noun because in no other examples is a determiner used with a personal pronoun as it would have to be in examples like (411) if the determiner were to be construed with the genitive. This construal implies that the head noun is then doubly marked as definite and referential, once by the determiner *echi* and again by the specifier suffix *-ra*.

In the texts examined for this study, genitive constructions are frequently found, but only one other complement of a noun phrase can be identified. This rare complement is a postpositional phrase that completes the argument structure of a noun that is related to a two-argument verb. This sentence with its postpositional phrase complement appears in (412).

- (412) Jipe ma nihua-bo bile **nacohua-mi**
 now already have-IRR.PL one fight-NMZR
- ne sineami huicabe namuti 'yena-mi yuhua
 very all many animal go about-AJZR with
- mapuriga gala machi-boa chiga niyura-ma.
 in order that well know-IRR.1PL who? win-IRR
 'Now let us have a fight among all the animals in order to see who will win.' [o13]

In (412) the head noun *nacohuami* 'fight' is related to the verb *nacoo* 'to fight' and is derived from it by the addition of the nominalizing suffix *-ami*. The verb *nacoo* requires both an external argument AGENT and an internal argument PATIENT, thus, it is not surprising that the related noun should require a complement expressing the same information as the internal argument of the original verb, namely, those with whom the subject fights. In (412), the complement takes the form of the postpositional phrase *ne sineami huicabe namuti 'yenamí yuhua* 'among all the animals.'

The postpositional phrase complement follows the noun head *nacohuami* rather than preceding it in another reversal of the head-final order posited for Tarahumara. Most likely, as in the case of adjuncts, in deep structure the complement precedes the noun head but because of its length and the processing problems that such length entails, the complement has been moved by adjunction to a position following the noun head. This postposing movement will be discussed in detail in chapter 5. Thus, it will suffice here to provide in figure 19 a tree representation of the deep structure of the noun phrase in (412).

The tree representation in figure 19 indicates that in deep structure the noun phrase has a specifier node at its topmost or maximal projection in addition to a branching node for the postpositional phrase complement at the lowest node of the projection of N. No adjuncts are present at the intermediate level of projection of N'.

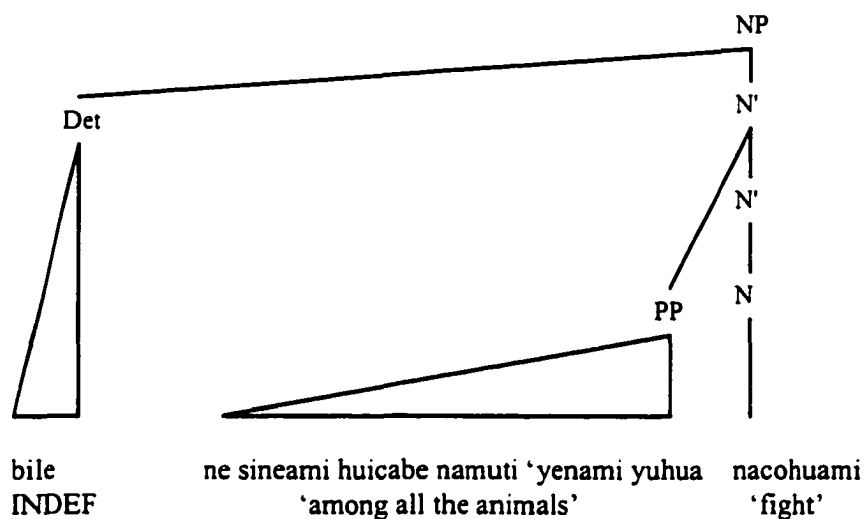


Figure 19. Tree representation of example (412).

Presumably if other complements to head nouns were discovered in Tarahumara they would also take the form of postpositional phrases and they would also be positioned in surface structure following the head noun by heavy-NP movement.

4.4.5 Summary of X-bar rules for noun phrases

At the conclusion of this discussion of noun phrase constituents and their orderings, the X-bar rules for noun phrases are gathered in one place and the parameters that have been set for constituents of NP are reviewed. The rules will be given first, then prose statements of the constituency and ordering follow.

Rules of X-bar syntax for noun phrases

$$\begin{array}{lcl}
 \text{NP} & \text{-->} & \text{Det} \quad \text{N}' \\
 \text{N}' & \text{-->} & \left[\begin{array}{l} (\text{AP}) \quad \text{N}' \\ \text{N}' \quad (\text{CP}) \end{array} \right.
 \end{array}$$

$$N' \quad \rightarrow \quad \left(\begin{array}{c} \left[\begin{array}{c} PP \\ NP \\ IP \end{array} \right] \\ N \end{array} \right)$$

Prose statements of X-bar syntax for noun phrases

Specifiers for NP are determiners and they precede the remainder of the projection of N.

Adjuncts for NP are adjective phrases or adjectival clauses (relative clauses) and they precede the remainder of the projection of N, although longer phrases of verbal origin and relative clauses may be positioned at surface structure following the head N by means of a peripheral rule.

Complements for NP are postpositional phrases and they precede the head nouns to which they are sisters, although because of their length and complexity they are commonly positioned following the head N at surface structure.

Heads for NP are nouns, pronouns, headless relative clauses and zero anaphors.

Thus, except for the appearance of relative clauses following their NP heads, the constituents of noun phrases uphold the general predictions for X-bar syntax of a head-final language like Tarahumara. These generalizations are shown in (413).

$$\begin{array}{lclcl}
 (413) & NP & \rightarrow & Det & N' \\
 & N' & \rightarrow & XP & N' \\
 & N' & \rightarrow & YP & N
 \end{array}$$

4.5 Adjective phrases

Having dealt with sentences and with verb phrases and noun phrases, the discussion of phrase structure turns now to address adjective phrases. These phrases also show evidence of

layering, in that three levels of projection may be distinguished. Specifiers, adjuncts and heads constitute adjective phrases in Tarahumara, and each of these may be represented at a different level of hierarchical configuration.

4.5.1 Specifiers for adjective phrases

Specifiers in adjectival phrases are realized by adverbial intensifiers. Three common intensifiers include *hue*, *ne* and *pe*; less common is the special-use intensifier *'me*. These intensifiers may all be roughly glossed as 'very' but they are used in different ways. The word *hue* is used with verbs and other words of verbal origin such as adjectival participles and adjectives derived from verbs by the use of the suffix *-ami*. The use of *hue* with derived adjectives is illustrated in (414) and (415).

(414) **hue** hualin-ami
 very be quick-AJZR
 'very fleet-footed' [g11]

(415) **hue** mucuhua-mi
 very die (singular)-AJZR
 'very poisonous' [g58]

In the adjective phrases (414) and (415) *hue* precedes the adjectives *hualinami* 'fleet-footed' and *mucuhuami* 'poisonous' adjectives that are derived from the verbs *hualina* 'to be quick' and *mucu* 'to die' respectively. Rarely, *hue* may occur with a lexical adjective as in (416).

(416) **hue** taa
 very small
 'very small' [o8]

With regard to (416), note that the intensifier that occurs with *taa* is usually *pe*, discussed later in this section, not *hue*.

Before discussing the next intensifier, a tree representation is provided to illustrate the position of these intensifiers as specifiers in the adjective phrase. The adjective phrase in (414) is shown in the tree representation in figure 20.

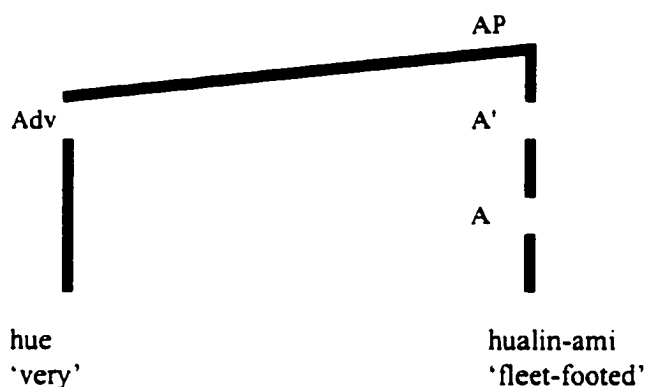


Figure 20. Tree representation of example (414).

In figure 20 the intensifier *hue* appears in the specifier position at the topmost branching node of the projection of A'. No branching nodes appear at the intermediate or lowest projections of A', and only an adjective head *hualinami* appears at the terminal node of A.

The intensifier *ne* is used with various words of non-verbal origin: descriptive adjectives, quantifiers, nouns, pronouns and lexical (rather than participial) adverbs. Examples (417) through (420) illustrate some of the kinds of words that *ne* intensifies.

(417) **ne** choquichi
 very beginning
 'in the very beginning' [g1]

(418) **ne** o'hueli rijoy
 very large man
 'real giant' [g3]

- (419) **ne** hualu sa'pa
 very much meat
 'a lot of meat' [g29]
- (420) **ne** huabe jihuera-ga
 very extremely have strength-PTCP
 'being extremely strong' [g42]

Other words that are intensified by *ne* include *hualube* 'great,' *suhuaba* 'all,' *mo'ochi* 'head,' *huicabe* 'many,' *suniami* 'everywhere,' and *rijoy* 'man' [z59]. Note that nouns modified by *ne* are always used in an adverbial manner, as adjuncts to the verb phrase. Nouns used as arguments are not modified by *ne*.

The third intensifier, *pe*, is used to intensify not greatness or strength but rather littleness or delicacy. Some common uses of the word *pe* are given in (421) through (424).

- (421) **pe** teeli
 very small time, while
 'after a short time' [z64]
- (422) **pe** taa tohui
 very small little boy
 'a very little boy' [i3]
- (423) **pe** alii chonachi
 very small late darkness
 'in the evenings' [i4]
- (424) **pe** quilii nira
 very small silence as
 'little by little, gradually' [g76]

In these examples *pe* is used, largely in frozen forms (all except *pe taa tohui* 'a very little boy'), to emphasize the shortness of the time, the youth of the child, the earliness of the hour at night, and the gradualness of action. The word *pe* intensifies slightness rather than force.

A less common intensifier is the word '*me*, which is used to mean 'very much' in questions and negative statements (Hilton 1975: 75). In the texts examined for this study '*me* appears in

negative statements following a negative word. Two examples of the use of *'me* appear in (425) and (426).

(425) Chocami juco pee, tasi *'me* huarinami.
 black be-PRES slightly NEG very light/nimble
 'They are kind of dark-colored and not very agile.' [b8]

(426) Ari quetasi *'me* anachari jare.
 then NEG very endure-PAST some
 'Some don't last very long (in the race).' [r15]

4.5.2 Heads of adjective phrases

Heads of adjective phrases are adjectives, whether lexical adjectives, adjectives derived from verbs or words that are noun phrases elsewhere but that are occasionally recruited to function as adjectives.

While adjective heads may stand alone, most adjectives do occur together with a specifier, unless they are simply quantifying adjectives, as in (427).

(427) **huicabe** cahue
 many horse
 'many horses' [z26]

In the noun phrase in (427), *huicabe cahue*, the head adjective *huicabe* 'many' stands alone as an adjective phrase without any other constituents. A few adjective phrases involving descriptive adjectives that are not emphasized in the sentence but function merely to identify may also be composed merely of the adjective head without any specifier or other constituents, as in (428) and (429).

(428) echi **o'hueli** curuhui
 DEF big children
 'the older children' [g19]

- (429) echo'na **hualu** sicolichi
 there large cooking pot-LOC
 'in a large cooking pot' [g24]

In noun phrases like (428) and (429) the determiner is considered to be part of the noun phrase, as discussed earlier, and, therefore, not an adjective. A tree representation of these noun phrases shows that the adjective phrase adjunct contains only an adjective head, without specifiers, complements or adjuncts. Such a tree representation is given in figure 21.

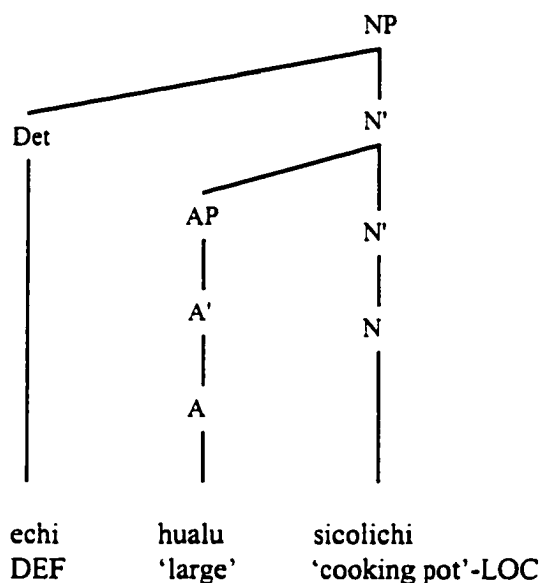


Figure 21. Tree representation of example (429).

4.5.3 Adjuncts for adjective phrases

In addition to specifiers and heads, adjective phrases may include adjuncts which are usually realized by adverb phrases or other adjective phrases. In example (430) an adjective phrase appears as an adjunct to the head adjective *ba'yoami*.

- (430) **hue simate ba'yoami**
 very pretty good-looking
 'very beautiful' [z3]

The adjective phrase *hue simate* consisting of a specifier and a head functions as an adjunct within the larger adjective phrase *hue simate ba'yoami*, which is the adjectival complement of the copula in this stative sentence. While *hue simate* and *ba'yoami* might also be analyzed as two independent adjective phrases, because of their semantic similarity and their use together to form an adjectival complement in an attributive sentence, the two phrases are better analyzed as hierarchically arranged constituents of a single adjectival phrase.

Example (431) illustrates the use of an adverb phrase as an adjunct within an adjective phrase.

- (431) [**hue gala rataba-mi**] niili
 very well shine-AJZR be-PAST
 '(the heron's plumage) was very nicely shiny' [z3]

In (431) the adverb phrase *hue gala* 'very well' functions as an adjunct with the head of the adjective phrase, the derived adjective *ratabami* 'shiny.' The expression *ratabami* is taken as an adjective head in this sentence, functioning as an adjective phrase complement of the copula *niili* 'was' rather than as a non-finite verb within a reduced, embedded clause.

The configuration of the adverbial phrase, the adjective phrase and the verb phrase is illustrated by the tree representation of (431) given in figure 22. In this tree representation, the adjective phrase is shown as the complement of the copula verb phrase, while the adverb phrase is shown as the adjunct of the adjective phrase.

Example (432) illustrates the use of a slightly different adverbial phrase used as an adjunct within an adjective phrase.

- (432) bile ne huabe hualube nacohuami
 one very extremely great fight
 'an extremely great war' [o14]

In (432) the adverbial phrase *ne huabe* 'very extremely' functions as an adjunct in the adjective phrase *ne huabe hualube* 'extremely great.'

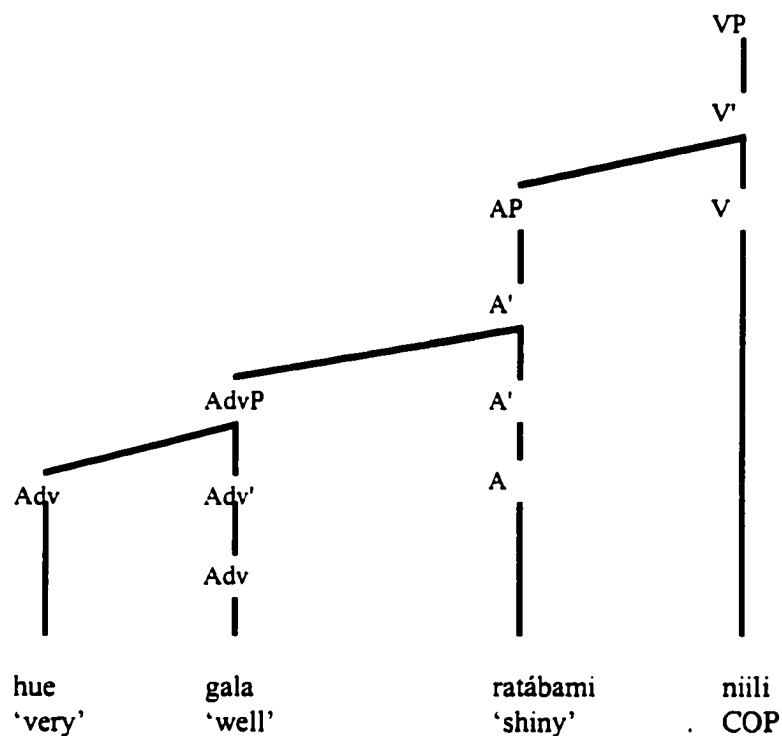


Figure 22. Tree representation of example (431).

4.5.4 Summary of X-bar rules for adjective phrases

In concluding this section on adjective phrases the X-bar rules for this type of phrase are gathered in one place and the parameters found to hold regarding the ordering of their constituents

are summarized. The X-bar syntax for AP is given first, followed by a prose statement of constituents and ordering.

X-bar syntax for adjective phrases

| | | | |
|----|-----|-------|----|
| AP | --> | (Adv) | A' |
| A' | --> | AdvP | A |
| A | --> | A | |

Prose statement of X-bar rules for adjective phrases

Specifier for AP is an adverbial intensifier or a negative morpheme.

Specifiers precede the remainder of the A' projection.

Relative clauses may function as adjective phrases.

Adjunct for AP is an adverbial phrase.

Adjuncts precede the head of the adjective phrase.

No complements for AP are encountered in the texts examined.

Head for AP is an adjective.

Thus the predictions of X-bar theory for a head-final language like Tarahumara are upheld in the constituent ordering of adjective phrases, as shown in the general X-bar rules for AP shown in (433).

| | | | | |
|-------|----|-----|------|----|
| (433) | AP | --> | Spec | A' |
| | A' | --> | XP | A' |

4.6 Postpositional phrases in Tarahumara

The argument structure of Tarahumara postpositions has been addressed in chapter 3 and earlier sections in this chapter have dealt with the functions of postpositional phrases as

complements and adjuncts of verb phrases and as complements of noun phrases. Therefore the discussion in this section will be limited to the internal constituents and ordering of postpositional phrases.

Because only complements and heads can be shown with assurance to occur in postpositional phrases in Tarahumara, it is difficult to build a case for layering or hierarchy in this type of phrase. Nevertheless, based on the layering found in other types of phrases, the hierarchical configuration will be assumed to apply in postpositional phrases as well and tree representations will be drawn to demonstrate the forms taken.

4.6.1 Syntax found with the representative postposition *jonsa*

One representative postposition is employed here to demonstrate the constituents and ordering of postpositional phrases. This is the postposition *jonsa* which has the sense of 'from' or 'out of' or 'since.' This postposition serves as head of the postpositional phrase in combination with a noun phrase complement as illustrated in sentence (434).

(434) Cu machina-ga echo'na ba'huichi jonsa
 again come out-PTCP there water-LOC out of
 'Come out of the water' [z68]

In (434) the entire postpositional phrase is *echo'na ba'huichi jonsa* 'out of the water.' The complement is the noun phrase *echo'na bahuichi* 'the water' and it precedes its head, the postposition *jonsa*.

The tree representation in figure 23 illustrates the head-final configuration of this phrase. Although the layering evident in this postpositional phrase is merely flat, with the noun phrase complement being a sister of the postpositional head and no other constituents appearing, the higher

nodes are shown in the representation on the assumption that they are also projected as are other multi-level projections in the language.

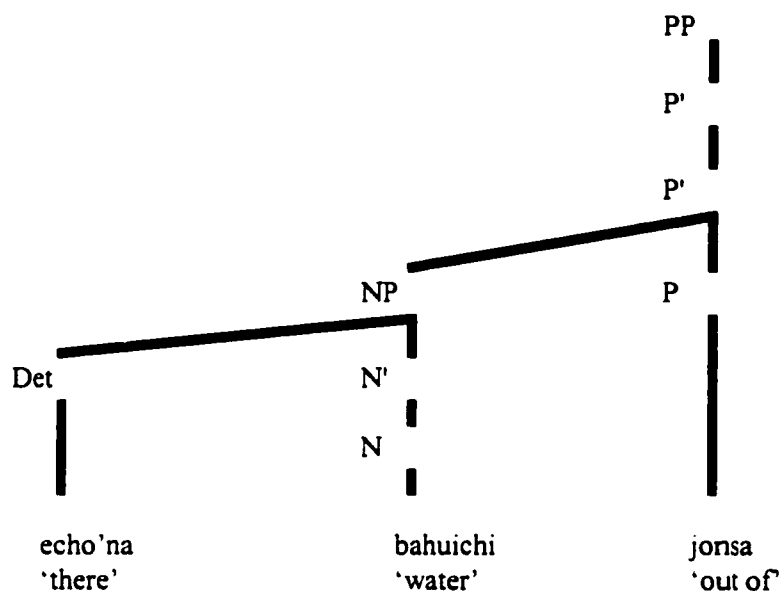


Figure 23. Tree representation of example (434).

4.6.2 An apparent difficulty in representation of a complement of the postposition *yuhua*

While a simple noun phrase complement as in example (434) is easy to represent within a postpositional phrase, directional complements such as *nimi* in sentence (435) may appear to pose difficulties for syntactic representation.

- (435) *nije naqui nimi yuhua upema*
 1SG want 1SG-2SG with marry-IRR
 'I want to marry you' [z19]

In (435) the postpositional phrase is *nimi yuhua* 'I with you,' in which *yuhua* is the postpositional head and *-mi* 'you' is the pronoun complement, while *ni-* 'I' is the pronoun subject of the verb *upema* 'marry.'

The fact that only part of the word *nimi* in (435) is the complement of the postposition *yuhua* poses no problem for syntactic representation if the two parts of the word are considered to be only phonologically and orthographically bound but syntactically separate. Thus the first morpheme, *ni-*, may be considered to be the first person clitic pronoun co-indexed with the subject of the sentence, *nijé*, and appearing here prefixed to *-mi* or perhaps suffixed to *naqui*. The second morpheme, *-mi*, is considered the second person accusative case pronoun generated as the complement of the postposition in the tree.

4.6.3 A possible specifier occurring with the postposition *niraa*

The last postposition to be discussed here is *niraa*, which has the sense of 'in the manner of' or 'as' or 'like.' Often *nilaa* is not even translated directly into English, as shown in sentence (436).

(436) echi huilu iyena-li echona ripabe **nilaa**
 DEF buzzard go about-PAST there very high in the manner of
 'the buzzard was flying about in the sky' [z1]

In sentence (436) the postpositional phrase is *echona ripabe nilaa* 'up there very high;' this postpositional phrase serves as an adjunct to the verb phrase headed by the verb *iyenali*, 'went about.' The postpositional head *nilaa* follows the noun phrase complement *echona ripabe*, 'there very high.'

This strange postposition shows the only evidence in the texts of having a specifier that provides evidence of hierarchy in the configuration of postpositional phrases. Postpositional phrases

using *niraa* sometimes begin with the adverbial expression *mapuriga*, used elsewhere as a conjunction meaning ‘in order that’ but seeming to have a redundant meaning of ‘as’ or ‘like’ similar to the postposition *niraa* when used in this context. Sentence (437) illustrates this usage, found in the fourteen texts examined for this study only here and in one other text ([g55]), where the construction and function are parallel.

(437) hue anacha-ga ola-Ø *mapuriga* ne rijoy **niraa**
 very endure-PTCP do-IMPV as very man as
 ‘you must put up with it in a manly way’ [z58-59]

There is no evidence here that *mapuriga* serves as a subordinating conjunction having its other possible sense of ‘in order that’ unless *niraa* is also serving as a verb, which is possible given its copular origin as discussed in chapter 3 (from the existential verb *niru*). In that case the sentence would be translated ‘in order that you may be a man,’ a gloss that differs from the gloss provided with the text. In contexts in which *mapuriga* is not present, *niraa* does not seem to function as a verb and it would be preferable to analyze *niraa* uniformly as a postposition whenever it occurs. Therefore if *mapuriga* is taken to be a specifier for the postpositional phrase *mapuriga ne rijoy niraa* ‘in the manner of a man,’ we may project a multi-layered structure for the phrase as shown in figure 24.

In the tree representation in figure 24 *mapuriga* is a specifier having the sense of ‘exactly like’ or ‘something like’ and appears at the topmost node of the projection of P. No adjuncts appear, and the complement *ne rijoy* is a noun phrase appearing as a left sister of the postposition *niraa*.

Some might propose that the expression *mapuriga* in example (437) is a preposition, appearing before the noun phrase complement and having the sense of ‘as,’ ‘like’ or ‘in the manner of.’ This analysis is unlikely because a language will probably not be found having both prepositions and postpositions, especially not in the same phrase.

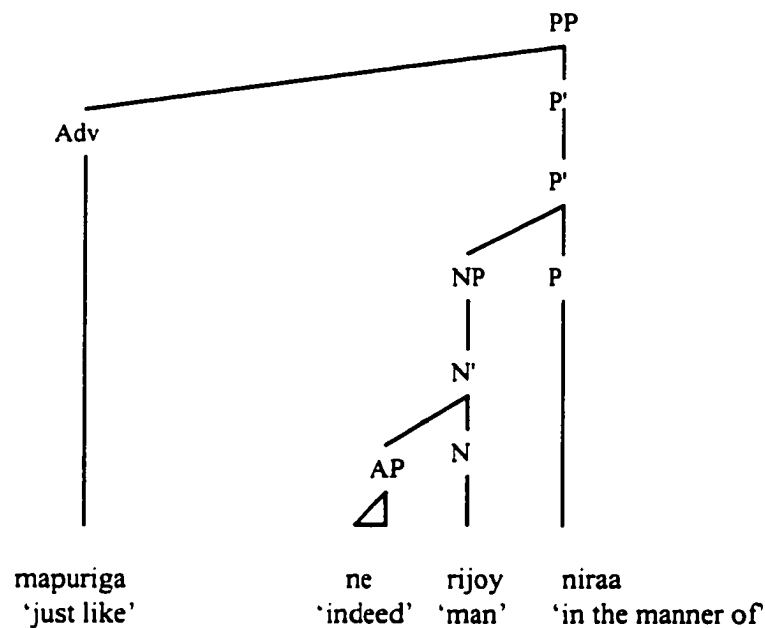


Figure 24. Tree representation of example (437).

If *niraa* in (437) is to be analyzed as other than a postposition so that *mapuriga* can be analyzed as a preposition in this type of phrase, then some other plausible analysis of *niraa* must be found. One hypothesis is that the construction *mapuriga* + *NP* + *niraa* is a circumpositional structure, requiring an adposition at both the beginning and the end of the phrase. Then this would be the only circumpositional structure in Tarahumara, an otherwise head-final language. Because of the difficulties of these alternative analyses and the likelihood of discovering a layered hierarchy even in the postpositional phrase in Tarahumara, it is preferable to analyze the adverbial expression *mapuriga* as a specifier for the postpositional phrase.

4.6.4 Summary of X-bar rules for postpositional phrases

In concluding this section on postpositional phrases the X-bar rules for this type of phrase are gathered in one place and the parameters found to hold regarding the ordering of its constituents are summarized. The X-bar syntax for postpositional phrases is given first, followed by a prose statement of constituents and ordering.

X-bar syntax for postpositional phrases

$$\begin{array}{l} \text{PP} \quad \rightarrow \quad \text{AdvP} \quad \text{P}' \\ \text{P}' \quad \rightarrow \quad \text{NP} \quad \text{P} \end{array}$$

Prose statement of rules for postpositional phrases

Specifier for PP is the adverbial expression *mapuriga*.

This specifier precedes the remainder of the P' projection and occurs optionally only with the postposition *niraa*.

No adjuncts for PP are encountered in the texts examined.

Complements for PP are noun phrases.

These noun phrase complements precede the head postposition.

Head for PP is a postposition.

Thus findings regarding the constituents and ordering of postpositional phrases uphold the general predictions of X-bar theory that the parameters regarding specifier and head and other constituents and head will result in uniform phrasal configurations. As in other types of phrases, the postpositional phrase in Tarahumara displays a specifier-first, head-last ordering.

4.7 Adverb phrases in Tarahumara

Because the types and uses of adverbial phrases have already been discussed at length in this chapter in an earlier section on adjuncts of verb phrases, this section will deal primarily with the internal structure of adverbial phrases. The discussion will center around constituents and their ordering within each type of adverbial phrase except for adverbial clauses, which are addressed elsewhere.

The constituents of adverbial phrases in Tarahumara are specifiers, adjuncts and heads, and as in other phrases, heads follow the other constituents of the phrase. No complements are found in the adverbial phrases used in the texts examined for this study.

4.7.1 Specifiers in adverb phrases

The adverb phrase specifiers found in these texts are the intensifying adverbs *hue*, *ne* and *pe*. The first of these, the adverb *hue*, need not always function as a specifier within a larger adverb phrase. The intensifier *hue* may appear as a full adverbial phrase in its own right, modifying a verb without being embedded in another adverbial phrase, as in (438).

(438) echi huacho hue sinacha-li
 DEF heron very shout-PAST
 'the heron shouted loudly' [z65]

In (438) *hue* 'very' is an adverb phrase serving as an adjunct for the verb phrase *sinachali* 'shouted.' No other constituents appear in this adverb phrase besides the head, which has an intensifying meaning that could be glossed in context 'loudly.'

But most commonly the adverb *hue* appears, as mentioned earlier, before adjectives to intensify their meaning, and as illustrated in (439), as an adverb phrase specifier preceding other adverbs, also with intensificatory function.

- (439) **hue** **gala** **bihuimea**
 very well become clean-IRR
 ‘become very clean’ [z13]

In (439) *hue* is a one-word adverb phrase that functions as a specifier for the larger adverb phrase *hue gala* ‘very well,’ which is headed by the adverb *gala* ‘well’ and is embedded within the verb phrase headed by *bihuimea* ‘become clean.’

The recruited adjective *ne*, which also serves as a specifier in adjective phrases and noun phrases, functions as a specifier with intensificatory meaning in many adverb phrases, such as (440).

- (440) **ne** **hualube** **quipamea**
 indeed greatly snow-IRR
 ‘it would snow a great deal’ [g77]

In (440) the adverb phrase *ne hualube* ‘a great deal, very greatly’ is composed of the specifier *ne*, an intensifier, followed by the adverb head *hualube* ‘greatly, a lot.’ Thus in both these examples an adverbial phrase specifier increases the degree of intensity of another adverb, and together they form adverbial phrase adjuncts that modify verbs. Tree representations of (439) and (440) are given in figure 25.

The tree representations in figure 25 illustrate the embedding of one adverb phrase within another adverb phrase as a specifier to the larger adverb phrase. This pattern is followed also in the use of *pe*, the Tarahumara intensifier of smallness or slightness, as a specifier in adverbial phrases, as in example (441).

- (441) **pe** **teli-co** **ni-mi** **ane-ma**
 small while-EUPH 1SG-2SG tell-IRR
 ‘then right away I will tell you. . .’ [z47]

Example (441) illustrates the use of *pe* as an adverbial adjunct intensifying the head adverb *telico* and forming the two-word expression glossed ‘right away,’ which functions as an adverb phrase to tell the time when the action of the verb will take place.

adverblike manner to modify verbs, but these types of phrases and clauses are not adverbs and should be analyzed according to their own lexical heads, as will be argued. This section will address adverb heads and each of these other adverblike constituents in turn.

A great variety of lexical adverbs are used as heads of adverb phrases in Tarahumara, usually in regard to the action of the verb, to tell time, frequency, order of precedence, repetitiveness, manner, extent, intensity, distance or place. These lexical adverbs were listed in section 3.2.2 of chapter 3.

Adverb phrases, of which these lexical adverbs are heads, precede the verb in the overwhelming majority of sentences, with the exceptions mainly being adverbs of distance and place which may precede or follow the verb, as in example (443).

- (443) echari echi rjoy tami bayera-ri echo'na ri'rete
 then DEF man 1SG.ACC call-PAST there down
- Batopila huamina tu baco-chi**
 to Batopilas farther down canyon-LOC
 'then this man took me down to Batopilas, farther down in the canyon.' [t1]

Example (443) illustrates the use of a coordinating conjunction at the beginning of the clause, followed by the subject, object and verb, then a string of place and distance adverbs to conclude the sentence. In the deep structure all the adverbs are generated within the verb phrase at recursive intermediate adjunct nodes but for reasons of cognitive processing and pragmatics they are moved to initial and final positions in the sentence as will be discussed in chapter 5.

While only lexical adverbs may be heads of adverbial phrases in Tarahumara, forming true adverb phrases, adjective phrases and noun phrases also function in an adverblike manner to tell time, place, manner, and so forth with regard to a verb. As an example of an adjective phrase that provides manner information with regard to the action of the verb see (444), in which the adjective

phrase *hue ba'yoami* serves as an adjunct to the verb *nihuabo* 'we will make.' Here the adjective phrase may be translated 'beautifully.'

- (444) **hue** **ba'yoami** **nihua-bo** **bile** **omahuali**
 very pretty make-IRR one party
 'will have a beautiful wedding' [z21]

The tree representation in figure 27 of (444) shows that the adjective phrase *hue ba'yoami* consists of an adjunct, the adverbial intensifier *hue*, and a head position filled by an adjective, *ba'yoami*. This adjective phrase is in the adjunct position within the verb phrase headed by the verb *nihuabo* 'we will make.'

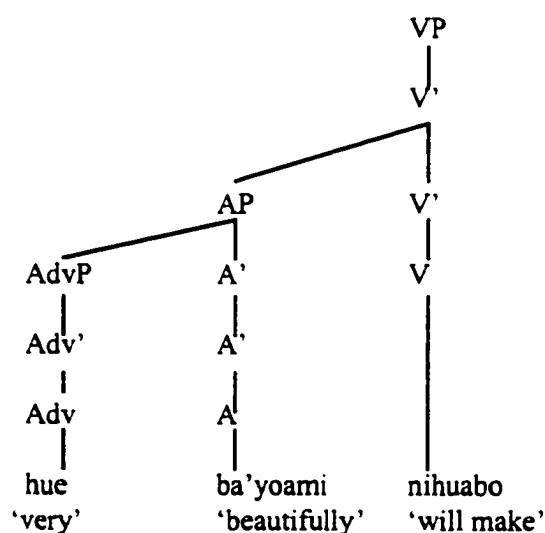


Figure 27. Tree representation of example (444).

As in (444), other adjectives derived from verbs by the attachment of the suffix *-ami* may also function as adjective phrases within verb phrases. Some further instances of this include the recruitment of *amaruami* 'whole, entire' to serve as an adjective-phrase adjunct in the verb phrase 'roast them whole,' referring to the giant's cooking procedures in [g17], and the recruitment of

jobatami 'fierce, vicious' to serve as an adjective phrase adjunct in the verb phrase 'sting them fiercely,' referring to the wasp's method of battle in [o17].

Noun phrases may also function in an adverblike manner to modify verbs in Tarahumara, yet they maintain their status as noun phrases. Expressions such as *sine rahue* 'one day' are noun phrases that have an adverblike function within the verb phrase because they provide temporal information with regard to the action of the verb. Many locative expressions are also clearly noun phrases, yet they also are used within the verb phrase to provide locative information with regard to the action. Examples (445) and (446) illustrate locative nouns that are used as adverb phrases within a verb phrase.

(445) **echona** **buhui-chi** natepa-li
 there road-LOC met-PAST
 'met along the road' [o1]

(446) **bile** **rochi** **siruma** rihuea-li **echona** **ba'hui-rali**
 one fish catch-IRR be about to happen-PAST there water-LOC
 'a fish-catching was about to happen there by the water' [z2]

Examples (445) and (446) demonstrate that these noun phrases providing locative information often are headed by nouns that have the locative suffixes *-chi* or *-rali*. But sometimes the noun that heads the noun phrase providing the locative information for the verb has no special locative suffix, as in *rájamo* in example (447).

(447) **rájamo** **atí-ami**
 rock sit-AJZR
 'sitting on a rock' [z2]

Not only may noun phrases providing locational information to serve in an adverblike manner within a verb phrase; other types of nouns may also function in this way. As shown in example (448), a noun phrase may provide manner information with regard to the action of the verb.

(448) ma ari:hue-bo **quili**
 already/now leave-IMPV silence
 'Now leave us in peace!' [o21]

This adverblike function of the noun phrase indicates not so much the location of the action as the manner of the action or the condition resulting from the action. Although found in final position in order to emphasize the idea of 'silence,' the noun phrase *quili* in (448) was generated in normal preverbal adjunct position, where the same noun phrase is found a few lines later in the same passage of the text.

Not only may adjective phrases and noun phrases function in an adverblike manner without being analyzed as adverb heads; even clauses may function as adjuncts within larger verb phrases. These embedded clauses with an adverblike role include full adverbial subordinate clauses as well as the non-finite participial clauses that figure so prominently in Tarahumara chaining constructions. Because both of these types of adverbial clauses have been addressed in detail in the section on adjuncts within verb phrases earlier in this chapter, here they are mentioned only to emphasize that even though they may provide information of manner, time, location, purpose, result, or reason with regard to the action of the verb that heads the verb phrase in which they appear as adjuncts, these clauses maintain their status as IP and are not re-labeled as AdvP.

4.7.4 Summary of X-bar rules for adverb phrases

Before the discussion moves on to the structure of complementizer phrases, the rules for formation of adverb phrases are gathered in one place. First the rules will be provided in X-Bar syntax, then in prose statements.

X-Bar syntax for adverb phrases

| | | |
|--------------|------|--------------------|
| AdvP | ---> | (Adv) Adv' |
| Adv' | ---> | (AdvP) Adv |
| Adv | ---> | Adv |
| [Spec, AdvP] | ---> | Adv |
| [Adj, AdvP] | ---> | AdvP |
| [Comp, AdvP] | ---> | none found to date |
| [Head, AdvP] | ---> | Adv |

Prose statement of rules for adverb phrases

Adverb phrases may consist of a specifier, an adjunct (with recursion possible at this level) and a head.

Specifiers for adverb phrases are the adverb phrases *hue*, *ne* and *pe*.

Adjuncts for adverb phrases are embedded adverb phrases.

No complement has been found to date for adverb phrases.

Heads for adverb phrases include lexical adverbs only.

Thus general predictions about ordering of constituents based on the parameters set for Tarahumara are upheld in the syntax of adverb phrases. The specifier appears first in the phrase, and the head appears last, as indicated in the general X-bar rules for adverb phrases shown in (449).

| | | | | |
|-------|------|-----|------|------|
| (449) | AdvP | --> | Spec | Adv' |
| | Adv' | --> | Adv | |

4.8 Complementizer phrases in Tarahumara

This section deals with clauses embedded in Tarahumara sentences by use of the configuration of a complementizer phrase within the hierarchy of the inflectional phrase. Most of the clauses dealt with here are introduced by complementizers such as *mapu* but a few of the clauses have no overt complementizer in the complementizer position. Information and yes-no questions, which are formed in Tarahumara by Wh-movement of a question word to the specifier position of the complementizer phrase, will be addressed in section 4.11.

Complementizer phrases are embedded clauses that constitute the complement of a verb head. These clauses commonly contain a noun phrase subject and a fully-inflected verb, as well as whatever noun phrase complements or adverbial adjuncts are selected to complete the verb phrase in this embedded clause. These noun clauses are usually introduced by one of the four complementizers, *mapu* 'that,' *mapurigá* 'how,' *acha* 'whether,' or *mapu churigá* 'how,' although some noun clauses appear without an overt complementizer.

Relative clauses and subordinate adverbial clauses are also types of complementizer phrases, depending from the CP node in a tree representation. These two types of clauses have been discussed in detail in previous sections and will not be addressed further here. Only dependent clauses that are complements of verbs are dealt with in this section, although the structure of the complementizer phrase applies to all three types of dependent clauses.

Complementizer phrases do not follow the head-final tendency of Tarahumara in two ways. In the first place, the complementizer, which is the head of the complementizer phrase, appears consistently at the beginning of the phrase preceding other material rather than in a final position as expected of a structural head in this language. This is probably not a result of movement but is simply one of those inconsistencies in the X-bar rules of the language like the English rule for

adjectives, which states that adjectives precede their head nouns even though English is basically a head-initial language. In the second place, complementizer phrases also vary from the expected ordering tendency of the language in that they invariably follow the verb head of which they form the complement, although complements generally precede verb heads within verb phrases. This postposing of complementizer clauses may be a result of movement to avoid processing problems because complement clauses are phonologically long and syntactically complex.

Two general types of complementizer phrases occur in Tarahumara, classified according to the type of verb that requires a complementizer phrase as its complement; these are verbs of cognition or volition and verbs of communication. Both of these categories of complementizer phrases will be discussed.

4.8.1 Verbs of cognition and their complement clauses

Verbs of cognition, awareness and other mental or volitional activity often take a clausal complement in Tarahumara. These verbs include *machi* 'know,' *rihuá* 'see,' *mayé* 'suppose,' *nata* 'think' or 'intend,' *naqui* 'want' or 'resolve,' and *nacarehua* 'to agree.'

4.8.1.1 Knowing/seeing verbs

In example (450) the verb *machi* 'to know' is used with the complementizer *mapu* introducing the complementizer phrase.

(450) tarapé **machi-mea** [mápu=ni echoná ochápa-ga chucú-Ø]
 NEG know-IRR that-1SG there hit?-PTCP stand-PRES
 'he doesn't even realize that I am there' [o8]

In (450) the complementizer *mapu* has a [-WH] status and may be glossed 'that.' The use of *mapu* implies that the clause following it is fact.

In example (451) the same verb *machi* is used with a different complementizer, *acha*, which has a [+WH] status and may be glossed ‘whether.’

- (451) nijé quetasi **machi-Ø** [acha=ni hue yó-ami asísa-li]
 1SG NEG know-PRES whether-1SG very angry arise-PAST
 ‘I don’t know whether I got up in a bad mood today’ [o5]

The use of *acha* implies that the complement clause following it is not necessarily fact; its truth value may be questioned. Given this [+WH] status, the complementizer *acha* not surprisingly appears in yes-no questions as well as in declarative complementizer phrases. This use of *acha* will be discussed in the section on interrogative sentences.

In example (452) the verb *rihuá* ‘see’ is used with the complementizer *mapu*.

- (452) Hue **rihua-li** [mapu ne huabé si’l-ia bu’huíra-li]
 very find-PAST that very big drown-PTCP lie down-PAST
 ‘She saw that he was drowning’ [z69]

The use of the verb *rihuá* as well as the selection of the factual complementizer *mapu* imply that the information given in the complement clause is very likely to be true.

In example (453) the verb *machi* is used without any overt complementizer to introduce the complementizer clause.

- (453) Ø_i Tarapé machi-li [Ø Ø_i ba’hui-chi iyena-Ø]
pro NEG know-PAST COMP PRO water-LOC go about-INV
 ‘He didn’t know how to swim’ [z49]

Perhaps the complementizer is not needed for clarity in (453) and is dispensed with as a result of the application of the economy principle. No overt subject is possible in the embedded clause because the verb used in the embedded clause is non-finite, the infinitive *iyena-Ø*. The subject of the non-finite complementizer clause is, therefore, the empty category termed *big PRO* in the technical language and defined as a non-overt noun phrase argument that can only occur in positions where it

is not governed and cannot receive case. This non-overt subject of the embedded clause is co-indexed with the subject of the higher clause, which also happens to be non-overt.

4.8.1.2. Thinking/supposing verbs

The verb *mayé* means ‘suppose’ or ‘think something may be true.’ This verb is used with the complementizer *mapu* in example (454).

- (454) maye-Ø=ni [mapu mujé echoná ba’hui-chi hue si’li-ma]
 suppose-PRES-1SG that 2SG there water-LOC very drown-IRR
 ‘Probably you will drown’ [z44]

Even though the status of *mapu* is [-WH], the truth value of the information in the complementizer phrase is not automatically taken to be factual because of the selection of the verb *mayé*, which implies that the following information may or may not be true. In (454) the supposition made by the speaker was correct; the listener did begin to drown when he went into deep water. But in example (455), the supposition made by the speaker did not correspond with reality; the noises heard by the narrator were made by a small animal rather than a large one.

- (455) nije=ni maye-ri [Ø huarú namuti iyéna-ri]
 1SG-1SG think-PAST COMP large animal go about-PAST
 ‘I thought some large animal was walking about’ [t53]

In (455) no complementizer is used. The lack of a complementizer is probably related more to a preference for phonological brevity than to a correspondence between use of *mapu* and positive truth value of the following clause.

In (456) the verb ‘*nata* ‘think, wonder’ appears followed by the complementizer *mapu churigá* which introduces the first in a series of question-like complements. This complementizer, meaning ‘how’ or ‘in what manner,’ has a [+WH] status that is related to the use of the preceding

verb in its semantic sense of ‘to wonder’ and to the as-yet-unrealized character of the narrator’s speculations about the events of the following day.

- (456) náta-ga [mapuchuriga=ni Ø ora-ma ba’arinara rahué]:
 think-PTCP how-1SG *pro* do-IRR the next day
- [¿ácha=ni Ø rihui-mea echi huáasi?]
 whether-1SG *pro* find-IRR DEF cow
- [¿Ácha tamí jaré carúmati co’-mea?
 whether 1SG.ACC some animals eat-IRR
 ‘thinking how I would do things the next day: Would I be the one
 to find the cows? Would some animal eat me?’ [v3]

The two uses of *acha* in (456) need not be assigned to a strictly complementizer use as opposed to a yes-no question introducer function because, as will be seen, many clauses are used in such a way as to blur distinctions between direct and indirect questions, and between direct and indirect quotations. The significant fact to note is that *acha*, due to its [+WH] status, is used for both complement clauses of declared wonderment and for yes-no questions.

Another example of the use of both of the [+WH] complementizers *acha* and *mapu churigá* appears in example (457).

- (457) rihui-mea
 show-IRR
- [ácha=mi_i Ø_i machi-yá
 whether-2SG *pro* know-PTCP
- [mapu churiga=mi_i uba-Ø mujé]]
 how-2SG bathe-PRES 2SG.NOM
 ‘show whether you know how to swim’ [z4 1-42]

Although examples (456) and (457) show combinations of *acha* and *mapu churigá*, the two complementizers are actually being used independently. In example (457) *acha* is the [+WH] complementizer that heads the complementizer phrase *áchami machiyá mapu churigami uba mujé*

as a complement for the verb *rihuimea* 'show.' Embedded within that complementizer phrase is another complementizer phrase, headed by the [+WH] complementizer *mapu churigá* and consisting of the string *-mi uba mujé*; this complementizer phrase is required as a complement for the verb *machiyá*.

Figure 28 provides tree representation of the verb phrase in example (457). The tree representation demonstrates that each of the complementizer phrases is a clausal complement for a verb. Note that the verb phrase represented in the tree is embedded within an IP, an inflectional phrase.

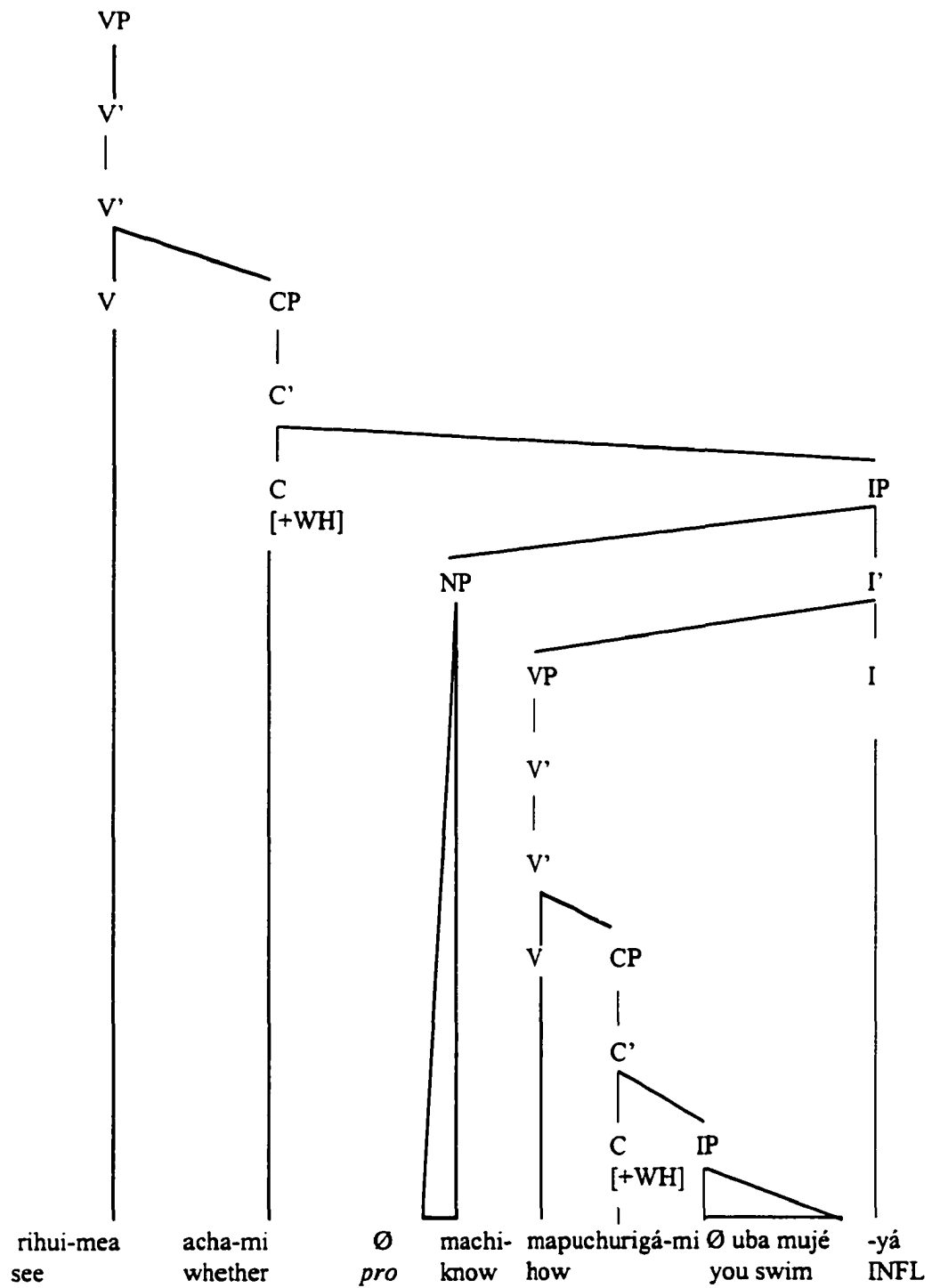


Figure 28. Tree representation of example (457).

4.8.1.3 Wanting verbs

The Tarahumara verb for 'want,' *naqui*, commonly takes a clause as its complement. Complementizer clauses for *naqui* are introduced by the complementizer *mapu* throughout the texts examined for this study. In example (458) the complementizer *mapu* is used in an affirmative sentence, although it may be used in negative sentences involving 'not wanting' as well.

(458) Nijé naqui
1SG want

[**mapu**=mi mujé tamí binerama rochi siruya]
that-2SG 2SG 1SG.ACC teach-IRR fish catch-PTCP
'I want you to teach me to fish' [z29]

Note that the verb in the complementizer phrase is in the irrealis form, suggesting that despite the [-WH] status of the complementizer *mapu* the information given in the embedded clause has not yet become reality at the time of speaking.

In (458), the subject of the higher clause is different from the subject of the embedded clauses. But in example (459), the complementizer *mapu* continues to be used even though the subject of the embedded clause is the same as the subject of the higher clause. Thus non-use of the complementizer does not correlate with co-referentiality of the subjects of the two clauses.

(459) hue naqui-li
very want-PAST

[**mapu** Ø miná chaquena sima-ma]
that *pro* a little farther to one side go-IRR
'she wanted to leave that place' [g72]

Whereas English uses a reduced complement clause involving an infinitive for sentences in which the subjects of the embedded and higher clauses are the same, Tarahumara usually uses a full clause for the embedded information, with the possibility of a fully-inflected verb within the complementizer phrase.

4.8.1.4 Agreeing/resolving/intending verbs

Verbs involving volitional actions often take complementizer phrases as complements in Tarahumara. The verbs *nacarehua* ‘agree, decide together’ and *naquí* ‘resolve, determine’ take complementizer phrases headed by the complementizer *mapu*. But in sentence (460), the verb ‘*nata*’ in its volitional sense of ‘plan, intend’ takes a complement clause headed by a different complementizer from the more usual *mapu*. The complementizer used here is *mapurigá*, which like *mapu*, has a [-WH] status.

| | | | | | | |
|-------|-------------------|------------|--------------------|-----------|------------------|--|
| (460) | Echi | nijé | ‘huénar-a | ayena cho | ‘ <u>nata-ri</u> | |
| | DEF | 1SG | parents-SPCR | also | think-PAST | |
| | [mapurigá | ∅ | ba’arínara rahué | tamí | jura-ma | |
| | how | <i>pro</i> | the next day | 1SG.ACC | send-IRR | |
| | ∅ | echo’ná | huáasi á-nara | | | |
| | <i>pro</i> | there | cow look for-DESID | | | |

‘My parents were also thinking how on the following day they were going to send me to look for the cows.’ [v2]

The complementizer *mapurigá* may emphasize the manner or process of the action to be taken in the complement clause, or it may simply give a more colloquial flavor to the story than *mapu* does, as in the English use of ‘how’ as a complementizer. Alternatively, the expression *mapurigá* may be a variant form of *mapu* that is preferred by some speakers.

4.8.1.5 Summary of verbs of cognition

Thus verbs of cognition include verbs of knowing or seeing, verbs of thinking or supposing, verbs of wanting and verbs of agreeing, resolving or intending. The argument structure of these verbs often requires a clausal complement, which in Tarahumara begins with a complementizer such

as *mapu* or *acha* that precedes the remainder of the complement phrase even though it is the head of the phrase.

4.8.2 Verbs of communication

This section addresses the communication verbs dealing with asking and telling, because these verbs usually also require a clausal complement.

4.8.2.1 Telling/asking verbs

Verbs of communication used in the texts examined for this study were *rucué* 'ask,' *jeané* 'say, tell,' and *ané* 'say, tell.' The complementizer *mapu* is commonly used to introduce the quotation. Example (461) uses the verb of asking, *rucué*, and demonstrates the difficulty of distinguishing between direct and indirect questions.

(461) pe huabé huilibeco ruque-li
 small great afterward ask-PAST

[*mapu* ¿Churigá Ø bach.i ola-ma?]
 that how *pro* first do-IRR

'finally he asked, "What shall I do before I go into the water?"' [253]

The presence of the complementizer does not help to distinguish direct from indirect questions since it may be present or absent in either case. When texts are available in written form as these are, punctuation is also not helpful because the capitalization of the first word and presence of question marks or quotation marks characterize indirect quotations and questions as well as direct ones in the Tarahumara orthography found in the written texts. The only method of distinguishing direct from indirect quotations and questions is analysis of the person of pronouns and the person and tense of verbs, and because these are often indeterminate in Tarahumara, the distinction is likewise blurred. In (461), no overt pronouns appear in the question ¿*Churigá bachá olama?*, nor does the verb

ending *-ma* indicate whether the person is first or third, or whether the tense is past or future. Perhaps Tarahumara interlocutors regard the distinction as insignificant.

Example (462) uses the speech verb *jeané* followed by two complementizer phrases, both introduced by the complementizer *mapu* and presumably independent and equal in rank to one another, in that the second is not embedded within the first. These two complement clauses are both quotations, and the first may be a direct quotation as suggested by the use of an imperative suffix *-si* on the verb *majasi* ‘don’t be frightened,’ implying that the words were spoken in the second person, as expected in a direct quotation, rather than in the third person, as expected in an indirect quotation.

(462) echi pagótami jeane-li [mapu Ø quetasi maja-si]
 DEF people say-PAST that *pro* NEG fear-PL.IMPV

[mapu quetasi namuti iqui-mea]
 that NEG thing happen-IRR
 ‘the people told them not to be frightened, that nothing would happen to them’ [g73-75]

Sentence (463) with the verb *jeané* clearly contains a direct quotation for its complement clause.

(463) Ari bicheta ‘machína-ri jeani-sáa:
 then-1PL leave-PAST say-PASTPTCP

[Ø Ø Terico=ta cu si-boa].
 COMP *pro* in a while-1PL again come-IRR.PL
 ‘Then we left, saying, “We’ll be back in a while.”’ [v9]

Although no overt complementizer appears in the sentence, the complement clause contains both a first person plural clitic pronoun *-ta* co-indexed with the subject of the clause as well as a first person plural irrealis ending *-boa* on the verb *siboa*. Such indications that the quotation is being made in the first person serve as evidence that the quotation is a direct one.

Analysis of personal pronouns and verb inflection provides more assurance of a distinction between direct and indirect quotations than does presence or absence of the complementizer or of special punctuation. Example (464) illustrates the usefulness of pronoun inspection for making this distinction.

- (464) jeane-li [mapu tamujé quetasi naqui-Ø
 say-PAST that 1PL NEG want-PRES
- [mapu 'yemi suhuaba suhui-mea]]
 that 2PL all die(plural stem)-IRR
- [mapu tamujé naqui-Ø
 that 1PL want-PRES
- [Ø Ø sinibi nocha-ma tamujé yuhua]]
 COMP pro always work-IRR 1PL with
 '(the people) told them, "We don't want you all to die because we
 want you to stay and keep on working with us" [g79-81]

Example (464) is a direct quotation, despite the presence of the complementizer *mapu* and despite the lack of capitalization or quotation marks to indicate that it is direct. Inspection of the pronouns is the means of discovering that it is direct, in that this reveals not third person pronouns as would be expected in the case of an indirect quotation but rather first and second person plural pronouns such as *tamujé* (first person plural nominative case) and *'yemi* (second person plural nominative case). First and second person pronouns are hallmarks of direct quotations.

Although examples of indirect quotations in which a pronoun in the quotation could refer either to the subject of the speech verb or to a different referent would be relevant to the discussion at this point, no instances of such pronouns in indirect quotations have been found in the texts examined for this study.

4.8.3. Summary of facts concerning complementizer phrases

Two broad classes of verbs that take complement clauses in Tarahumara are verbs of cognition or volition and verbs of communication. Complement clauses are head-initial and commonly begin either with the [-WH] complementizers *mapu* and *mapurigá* or with the [+WH] complementizers *acha* and *mapu churigá*. Complementizers need not be overt in every complementizer phrase; the complementizer phrase may consist only of the inflectional phrase that is a sister to the null complementizer. Within this embedded inflectional phrase, noun phrase subjects are commonly non-overt when they are the same as the subject of the higher clause.

Before leaving this section on complementizer phrases, all the X-bar rules for this type of phrase are gathered and listed first in the formal X-bar syntax and then in prose statements.

X-Bar syntax for complementizer phrases

$$\begin{array}{lcl}
 \text{CP} & \text{-->} & \text{C}' \\
 \text{C}' & \text{-->} & \left[\begin{array}{ll} \text{C} & \text{IP} \\ [+WH] & \\ \text{C} & \text{IP} \\ [-WH] & \end{array} \right]
 \end{array}$$

Prose statement of rules for complementizer phrases

No specifiers are found for complementizer phrases; later it will be shown that question words are moved to this position to form questions.

No adjuncts are found for complementizer phrases.

Complement for complementizer phrases is the inflectional phrase that is required by the verb of the higher clause.

Head for complementizer phrases is the complementizer which may be non-overt.

Complementizer phrases are head-initial, with complementizers preceding the inflectional phrase complement.

Four complementizers are found, including two [-WH] complementizers *acha* and *mapuchurigá*, and two [+WH] complementizers *mapu* and *mapurigá*; the verb of the main clause determines whether a [-WH] or a [+WH] complementizer will be selected.

The syntax for complementizer phrases, thus, upholds the parameter for the ordering of specifier and head in Tarahumara, in that the specifier precedes the head. But the parameter for the ordering of a head and the remainder of the constituents of the phrase is not upheld, in that the complementizer itself precedes the other constituents in a head-initial ordering. The general X-bar syntax for complementizer phrases is shown in (465).

(465) CP --> Spec C'
 C' --> C IP

4.9 Collapsing of X-bar structures and statements

The discussion of all types of syntactic phrases that may appear in a sentence is now complete, but before treating three special topics related to X-bar structure, this chapter includes a section that compares the various parameters developed for each type of syntactic phrase and attempts to collapse them into a single set of parameters (Burquest 1996:46-47).

4.9.1 Formal syntax for all phrases

While the syntax for specific structures was stated in terms of IP, VP, NP, PP, AP, AdvP, and CP, the syntax for the Tarahumara language in general may be stated in terms of XP, in which X represents a generic head that predicts the tendencies in syntax for most of the specific structures. Such a general statement appears in (466).

- (466) XP --> WP X'
 X' --> YP X'
 X' --> ZP X

4.9.2 Prose statements for all phrases

For all categories, Spec precedes X'

Spec for IP is NP subject: Spec precedes I'

Spec for VP is AP *suhuaba* : Spec precedes V'

Spec for NP is Det: Spec precedes N'

Spec for PP is AdvP *mapuriga* (only with postposition *niráa*): Spec precedes P'

Spec for AP is AdvP *hue/ne/pe/me*: Spec precedes A'

Spec for AdvP is AdvP *hue/ne/pe*: Spec precedes Adv'

Spec for CP is question word: Spec precedes C'

To a very large extent, all categories are head-final, although relative clauses, complementizer clauses and subordinating adverbial clauses are head-first (relative pronouns, complementizers and subordinating conjunctions precede other material in embedded clauses).

Complements for each type of phrase are often NP but may also be CP, IP, VP, PP, AdvP.

Comp for IP is VP

Comp for VP is NP direct object and sometimes PP postpositional
phrase or CP complement clause

Comp for NP is genitive NP and PP

Comp for PP is NP object of postposition

Comp for AP is PP

no Comp found to date for AdvP

Comp for CP is IP sentence

Adjuncts are often AP and AdvP but may also be PP, NP, IP and CP.

no Adjunct found to date for IP

Adjunct for VP is AdvP, NP, AP, PP, IP

Adjunct for NP is AP, CP

no Adjunct found for PP to date

Adjunct for AP is AdvP

Adjunct for AdvP is AdvP

no Adjunct found to date for CP

4.9.3 Chart of X-bar theory positions and constituents in various types of phrases

Table 15 displays the seven types of structures analyzed in chapter 4 and lists the types of phrases that fill syntactic positions within each of these seven types of structures.

Table 15. Structures and their constituents

| Type of Phrase | Specifier | Adjunct | Complement | Head |
|----------------|-----------------------------------|-------------------------|---------------------|-----------------------|
| IP | NP | none | VP | I (INFL) |
| VP | NP | AdvP, PP, NP, AP, IP | NP, PP, AdvP, CP | V (verb) |
| NP | Det | AP, CP | PP | N(noun) |
| PP | AdvP | none | NP | P (postposition) |
| AP | AdvP | AdvP | none | A (adjective) |
| AdvP | none | AdvP | none | Adv (adverb) |
| CP | question word (after movement) | none | IP | C (complementizer) |

Now that the discussion of the syntax of the seven types of phrases used in Tarahumara sentences is complete, the last portion of this chapter, sections 4.10, 4.11 and 4.12, addresses three special topics closely related by X-bar theory to the syntax of the various sentence constituents already described. The special topics investigated here are negation of verbs, adjectives and adverbs, formation of interrogative sentences and abstract case assignment of noun phrases. Each topic is examined in turn.

4.10 Negation in Tarahumara

Negation in Tarahumara is marked by the presence of one of several negative morphemes positioned directly preceding the phrase containing the element to be negated, whether a verb, an

adjective or an adverb. The most common negative morpheme is *quetasi*, while the three remaining negative morphemes are *tarapé*, *que*, and *tasi*. Uses of these varying negative morphemes will be included in the discussion of negation of verbs, of adjectives and of adverbs.

The presence of these negative morphemes preceding any of the three types of phrases, whether verb, adjective or adverb phrases, may be accounted for by the process of adjunction of an inserted element. This inserted element is not present in the deep structure as first generated by the X-bar syntax. Although the pattern of adjunction is governed by universal grammar, the insertion transformation comes about by a peripheral rule that is not considered to be part of universal grammar. This peripheral rule causes the negative morpheme to be adjoined as a left sister to the phrase.

4.10.1 Negation of verbs

Verbs are most commonly negated by insertion of the negative morpheme *quetasi* directly preceding the verb phrase. Example (467) illustrates this transformation by showing first the affirmative verb in two positions, one with a complement and one with an adjunct, then by showing the negative form with *quetasi* inserted just before the verb and with an adverbial adjunct following the verb.

| | | | | |
|-------|--|------------------|---------|-----------------------|
| (467) | Mapali | <u>tu-li</u> | | ba'hui |
| | when | bring water-PAST | | water |
| | echoná | hualú | bacochi | jonsa <u>tu-li</u> |
| | there | large | river | from bring water-PAST |
| | quetasi | <u>tu-li</u> | | echon'a |
| | NEG | bring water-PAST | | there |
| | | | | comichi |
| | | | | brook |
| | 'To have water they had to go to the river to bring it up, not to a small stream' [g27-28] | | | |

In (467) the first clause, a subordinating adverbial clause, the affirmative form of the verb *tuli* 'brought water' appears, followed by a noun phrase complement, *ba'hui* 'water.' In the second clause the affirmative form of the verb *tuli* appears again, preceded by a postpositional phrase adjunct, *echoná hualú bacochoi jonsa* 'from a large river.' In the third clause the negative form of the verb appears, with the negative morpheme *quetasi* preceding the verb *tuli* and another adverbial adjunct following the verb, the adverbial phrase *echoná comichi* 'from a brook.'

Tree representations of the two main clauses found in example (467) illustrate the insertion process for negatives by showing the surface structure after insertion and movement transformations. The tree representation of the affirmative clause is provided in figure 29 while the tree representation of the negative clause is provided in figure 30.

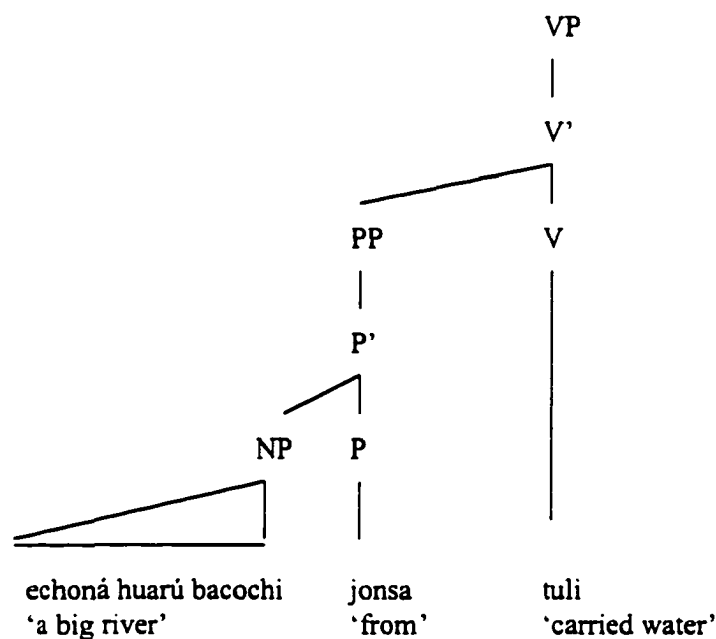


Figure 29. Tree representation of the affirmative clause in example (467).

The tree representation in figure 30 indicates that the negative word *quetasi* has been inserted by a peripheral rule of adjunction as a left sister of the verb phrase. The representation in figure 30 also indicates that the adjunct *echoná comichi* has moved from its normal position preceding the verb to a sentence-final position, probably as a result of the insertion of the negative word in pre-verbal position. Negative insertion precipitates movement of complements as well as of adjuncts as may be seen in other instances in the texts.

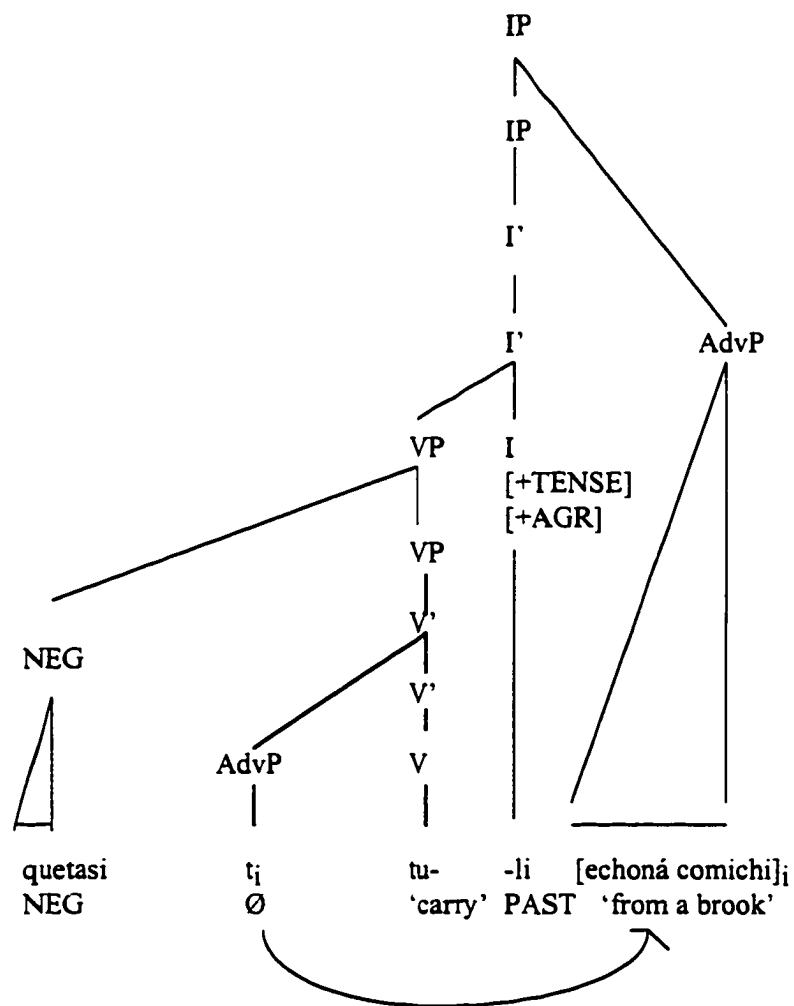


Figure 30. Tree representation of the negative clause in example (467).

When adjuncts or complements within the verb phrase are phonologically brief, a well-formedness condition allows them to remain in their normal position preceding the verb head and following the negative morpheme which has been adjoined immediately preceding the verb phrase. When the complement or adjunct is phonologically long, however, the well-formedness condition requires movement to some other salient position in the sentence, such as the initial or final position.

4.10.1.1 Negative insertion causes postposing of the complement

Movement of the complement conditioned by insertion of the negative is evidenced in example (468), in which an direct object, *echi táa namuti* ‘the little animal,’ is moved to the end of the sentence from its normal position preceding the verb. As will be argued later, contrastively emphasized, newly topical or reinstated direct objects are the complements that often move to the right of the verb, but in this passage the noun phrase *echi táa namuti* is already topical and not emphasized. Thus the insertion of the negative is likely to be the reason for movement of the complement, because otherwise the negative morpheme would separate the noun phrase complement from the verb that is the head of the verb phrase.

(468) Echi Esther echi Adán **quetasi** rihua-ri *echi táa namuti*.
 DEF Esther DEF Don NEG see-PAST DEF small animal
 ‘Esther and Don didn’t see the little animal’ [t59]

4.10.1.2 Negative insertion causes preposing of the complement

The insertion of the negative can also occasion movement of the complement to the beginning of the sentence, allowing the negative to appear in a position immediately preceding the

verb head. In example (469), the noun phrase complement *echi o'hueli rijoy* has been moved to a sentence-initial position. The noun phrase subject is non-overt in this sentence.

- (469) *echi o'hueli rijoy*_i \emptyset **quetasi** _{t_i} co'ya-li
 DEF large man *pro* NEG *trace* kill-PAST
 '(the giant) didn't kill adults' [g26]

As a result of this movement in (469), the negative *quetasi* appears as a left sister of the verb phrase *co'yali*, while the remaining element of the verb phrase, the complement *echi o'hueli rijoy* 'the large adults' moves to sentence-initial position and leaves only a non-overt trace in its former position immediately preceding the verb head. A tree representation of (469) is provided in figure 31.

Most likely the complement in (469) moves to the beginning rather than the end of the sentence for discourse purposes, particularly to provide it with contrastive focus by placing it in the most salient position in the Tarahumara sentence--the beginning. In this passage, this noun phrase complement is in contrast to the noun phrase direct object that has been topical during the previous few sentences of the legend, giving the sense of, "The giants ate children, but adults they did not eat."

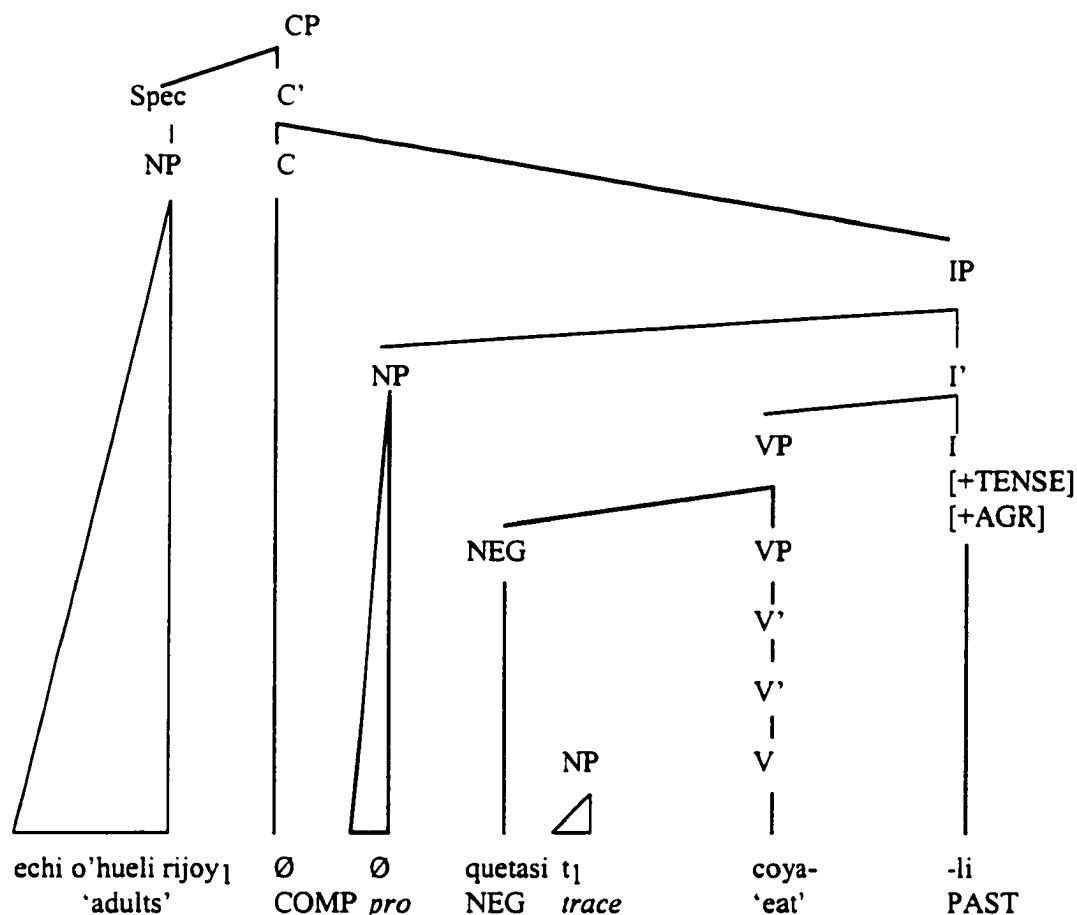


Figure 31. Tree representation of example (469).

4.10.1.3. Negative insertion with intervening adverb

The negative must be understood as being adjoined to the verb phrase as a whole and not merely as an adjunct within the verb phrase or as a sister to the head of the verb phrase because of the existence of sentences like the one in (470), in which adverbial adjuncts intervene between the negative and the verb. In (470) the adverb *cu* 'again' comes between the negative *tarapé* and the verb *machinali* 'came out.'

- (470) pe téeli arigá tarapé cu machína-li
 small time ADVERS NEG again come out-PAST
 'time passed and he didn't come back out' [z64]

The verb phrase in (470) is best understood as being *cu machinali* with the negative marker being adjoined as a left sister to the verb phrase. A discrepancy appears here in that the adverb *cu* is allowed to remain in normal adjunct position while another adjunct, *echo'ná comichi* in example (467), is moved to a sentence-final position. This difference in ordering may be explained by the fact that *cu* is phonologically brief and is, therefore, not touched by the well-formedness condition that moves phonologically "heavy" material to final position in Tarahumara sentences.

4.10.1.4 Negative insertion with complement-taking verbs

When a verb that requires another verb as its complement must be negated, the negative marker precedes the entire verb phrase, as in example (471).

- (471) Ø quetasi omé-ra-li
 pro NEG be able-PAST
- [Ø echoná risochí binoy bité-la-chi cu simiyá]
 PRO there cave 3SG live-SPCR-LOC again go-PTCP
 'he could not go back to his cave' [g64-65]

In (471) the fully-inflected verb *omérali* 'could' takes a non-finite clause as its complement, the clause *echoná risochí binoy bitélachi cu simiyá* 'return to his home in the cave.' To negate this construction the negative expression *quetasi* is inserted immediately preceding the entire larger verb phrase, that is, to the left of the first, fully-inflected verb *omérali*.

4.10.1.5 Negative insertion with clitic pronoun

Throughout section 4.10.1 it is claimed that the negative is inserted as a left sister of the verb phrase within the inflectional phrase; does this leave room for noun phrase specifiers that are subjects of the larger inflectional phrase to intervene between the negative marker and the verb? It should not. Yet this is precisely what appears to be happening in sentence (472).

(472) \emptyset_i ma quetási=ta naquí- \emptyset naco-bo
 pro already NEG-1 PL want fight-IRR
 ‘we don’t want any more war’ [o21]

In (472) the clitic pronoun *-ta*, which is the first person plural subject of the entire sentence, appears as a suffix on the negative marker *quetasi*, intervening between the negative and the verb. But if the negative is adjoined as a left sister of the verb phrase, the specifier for the inflectional phrase should not intervene between the negative and the verb phrase.

To resolve this difficulty, the key is to recognize that this phenomenon occurs only with clitic pronouns, not with full pronoun subjects or full noun phrase subjects of sentences. Clitic pronouns enjoy special status as phonologically-overt inflectional feature composites that may “percolate” to any terminal node dominated by INFL; therefore, clitic pronouns may appear suffixed to almost any word in the clause. While the appearance of a clitic pronoun may be essential for listeners to decode sentences that lack overt subjects, the clitic pronoun should not be considered in itself the manifestation of the noun phrase specifier of the sentence. Thus in example (472), the noun phrase specifier for the sentence is actually non-overt; it is the null subject called *small pro* which would appear to the left of the negative markers in a tree representation. The clitic pronoun *-ta* which appears suffixed to the negative marker is simply a discourse-helpful manifestation of some of the features of INFL that have “percolated” down to the negative markers and happened to appear there with overt phonological material.

4.10.1.6 Negative insertion of *tarapé* with verbs

The negative morpheme *tarapé* may be used as a more emphatic alternative to the usual negative morpheme *quetasi*. Example (473) illustrates the use of *tarapé* with the verb *machi*, although in other instances *quetasi* is used with the same verb.

- (473) \emptyset **Tarapé** machi-li [\emptyset \emptyset ba'hui-chí iyena- \emptyset]
 pro NEG know-PAST COMP PRO water-LOC go about-INV
- \emptyset **tarapé** machi-li
 pro NEG know-PAST
- [mapu churigá ruye-ma echi huachó]
 how give message-IRR DEF heron
 '(the buzzard) didn't know how to swim and he didn't know what to
 say to the heron' [z49-50]

The use of the emphatic negative *tarapé* in sentence (473) intensifies the dilemma of the buzzard in the passage by giving greater strength to the denial of his ability to swim and to his dismay in lacking a suitable response to the heron who was urging him to go into the water.

4.10.2 Negation of adjectives

Negatives of adjectives are formed in two ways in Tarahumara: by a lexical process that derives adjectives opposite in meaning from adjectives that have been derived from verbs, and by a syntactic process that adjoins the negative marker as a left sister to the adjective phrase in the same way as for negatives of verbs described in the preceding sections. The first process, being lexical, was treated in chapter 3 and is not addressed in this discussion.

For the second type, negative morphemes may be inserted preceding adjectives in a syntactic operation of insertion that negates the meaning of the adjective without deriving a new expression. This operation proceeds in the manner of adjunction already described, in which the

negative morpheme is adjoined by a peripheral rule as a left sister to the adjective phrase. Any of the three negative morphemes *tarapé*, *quetasi* or *tasi* may be used for the process. The negative morpheme may precede an adjective head as illustrated in (474).

- (474) ¡**Tarapé** rehuél-ami
 NEG ashame-AJZR
- echi o'hueli huicabé namuti hue nala-ca!
 DEF large many animal very cry-PTCP
 'What a shame, for such big animals to be crying!' [o23]

The negative morpheme may also precede an adjective phrase with its own specifier, as in example (475).

- (475) Ø **tasi** 'me huarín-ami Ø.
 pro NEG slightly light-colored COP
 'They are kind of dark, not very light.' [b8]

In (475) the adjective phrase '*me huarínami*' consists of an adjectival head, *huarínami*, and a specifier, the word '*me*', discussed earlier. The negative morpheme *tasi* precedes both of these when it is adjoined to the adjective phrase as a left sister.'

4.10.3 Negation of adverbs

As described in chapter 3, two negative adverbs are formed in Tarahumara by inserting a negative morpheme to the left of an adverb in a derivational process. These are the adverbs *que siné* 'never' and *quetasi cho* 'not yet.' Because this is a lexical process rather than a syntactic one, the process is not further described here except to note that even the lexical process inserts the negative to the left of the stem, in the same ordering that is used by the syntactic process to form negative left sisters.

4.10.4 Summary of facts about negation

Negatives of verb phrases and some adjective phrases are formed by a rule peripheral to universal grammar that adjoins the negative expression to the phrase as a left sister, so that the negative expression appears immediately preceding the phrase to be negated. When verb phrases are negated, the insertion of the negative conditions movement of phonologically-long adjuncts or complements within the verb phrases to another position within the sentence. Certain negative adjective phrases, other than those formed by a lexical process addressed in chapter 3, are also formed by the syntactic operation of left-sister adjunction of a negative morpheme directly preceding the adjective or adjective phrase.

4.11 Questions in Tarahumara

Questions in Government and Binding theory are semantically interrogative sentences, represented as complementizer phrases that have a [+WH] status of the COMP head. The configuration needed to represent them is shown in figure 32 (Burquest 1996:60-61, Haegeman 1994:118).

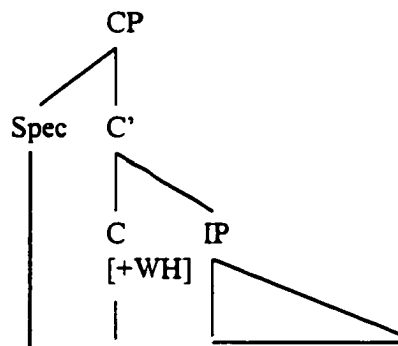


Figure 32. Configuration needed to represent interrogative sentences.

Both yes-no questions and information questions in Tarahumara are formed by the strategy of movement of question words to the [Spec, CP] position from the position in deep structure of the sentence where the answer would normally appear. The semantic component can interpret the sentence as a question when it recognizes that movement has occurred (Burquest 1996:60). This section first discusses the strategy Tarahumara uses to form yes-no questions, then deals with the way Tarahumara forms information questions. Indirect questions will not be discussed because they have already been addressed in the section on complementizer phrases.

4.11.1 Yes-no questions

Tarahumara forms yes-no questions by placing the question words *¿quecha?* or *¿acha?* directly preceding the statement being questioned. The expression *¿quecha?* is a negative question word, having the sense of ‘Is is not so that. . .?’ or ‘Aren’t. . .?’ or ‘Don’t. . .?’ or ‘Won’t. . .?’ and may imply that the person uttering the question expects a negative answer. The expression *¿acha?* is an affirmative question word, having the sense of ‘Is it so that. . .?’ or ‘Is. . .?’ or ‘Do. . .?’ or ‘Will. . .?’ and may imply that the person uttering the question expects an affirmative answer. The first two examples (476) and (477) illustrate the use of *¿quecha?* in negative questions.

- (476) *¿Quécha=mi* \emptyset *tamí* *ba’yora- \emptyset ?*
 NEG.INTERROG-2SG *pro* 1SG.ACC seem good-looking-PRES
 ‘Don’t you think I’m good-looking?’ [z6]
- (477) *¿Quécha=mi* \emptyset *rijoy hue* *upénal-ami* *ju?*
 NEG.INTERROG-2SG *pro* man very seek a wife-AJZR be-PRES
 ‘Are you not the man who was so in love?’ [z72]

The next pair of examples (478) and (479) illustrate the use of *¿acha?* in affirmative questions.

- (478) *¿ácha=ni* \emptyset *rihui-mea* *echi huáasi?*
 perhaps/COMP-1SG *pro* find-IRR DEF cow
 ‘Would I be the one to find the cows?’ [v3]

- (479) *¿Ácha* *tami* *jaré* *carúmati* *co'-mea?*
 perhaps/COMP 1SG.ACC some animals eat-IRR
 'Would some animal eat me?' [v3]

In order to postulate a single structure for both indirect questions as discussed in the section on complementizer phrases and for yes-no questions discussed here, the analysis preferred here is that the question words *¿quecha?* and *¿acha?* are generated directly in the complementizer position within the complementizer phrase, that is, in [C, CP].

The analysis of question words being generated directly within the complementizer position of the complementizer phrase does create a difficulty for the analysis of clitic pronouns as being manifestations of INFL that may appear on nearly any constituent of the clause dominated by INFL. Examples (476), (477) and (478) demonstrate the attachment of clitic pronouns directly to the question word, which as head of the CP, is not dominated by the INFL head of the IP that is a complement to the head of CP. In (476) and (477) the second person singular copy pronoun *-mi* is suffixed to *¿quecha?* to form *¿quéchami?* while in (478) the first person singular copy pronoun *-ni* is suffixed to *¿acha?* to form *¿áchani?*. One way to resolve this difficulty is to propose that the question words are generated as heads of adverb phrases that serve as adjuncts to the verb in the inflectional phrase and are then moved to the [C, CP] position by Head-to-Head movement. Using this analysis it could be suggested that clitic pronouns are attached to the relevant question words BEFORE the question word moves out of the domain of IP to the C position in the complementizer phrase.

4.11.2 Information questions

Tarahumara forms information questions by moving the question word from the position within IP where its answer would normally be generated to the specifier position for the

complementizer phrase. In this section the formation of questions dealing with ‘what action/event?’, ‘where?’, ‘what thing?’, ‘who?’/ ‘whom?’, ‘why?’ and ‘how?’ / ‘in what way?’ is considered.

The question ‘What event?’ is formed by use of the noun phrase question word *¿Chu?* which moves from its position as specifier of the IP to its question word position as specifier of the complementizer phrase. The use of *¿chu?* is illustrated in example (480).

- (480) *¿Chu_i*= \emptyset *t_i* =*mi* *iqui-li?*
 what? COMP \emptyset 2SG.ACC happen-PAST
 ‘What happened to you?’ [z67]

The movement of *¿Chu?* from [Spec, IP] to [Spec, CP] is represented in figure 33. The movement in example (480) is vacuous; it cannot be perceived because the element which moves to initial position in the CP had already been in initial position in the IP. Furthermore, in (480) the element *-mi* which appears suffixed to the question word is not a clitic pronoun but an accusative case pronoun that functions in the sentence as complement to the verb. Because it is not a clitic pronoun the apparent suffixation should be considered to be merely orthographic; in reality this accusative case pronoun remains in its normal complement position preceding the verb.

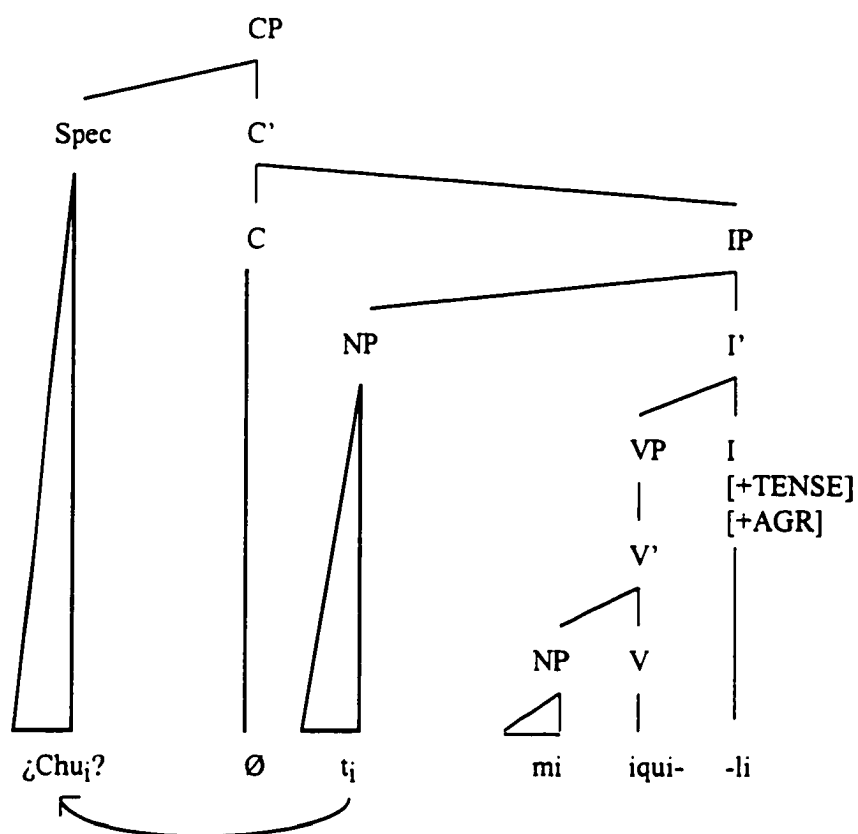


Figure 33. Tree representation of example (480).

Tarahumara forms the question 'What thing?' by moving the noun phrase question word *¿piri?* from its noun phrase position within the inflectional phrase to the specifier position of the complementizer phrase. In example (481) the noun phrase question word *¿piri?* has moved from the position of specifier of the IP to the position of specifier of CP, a movement that cannot be perceived because the question word happened to be in initial position before the movement occurred.

- (481) *¿Piriᵢ* ∅ *tᵢ* *anini-∅?*
 what? COMP ∅ make sound-PRES
 'What is making that noise?' [t52]

The next example of the use of *¿piri?* occurs within an indirect question in (482). The verb of the higher clause selects an interrogative complement. The noun phrase question word *¿Piri?* has moved from its position as specifier of the (stative) inflectional phrase with the verb *niiro* to the position of specifier of the complementizer phrase that functions as complement clause to the verb *machiri*.

- (482) *nijé* *quetasi* *machi-ri* *piri* \emptyset t_i *niiro*
 1SG NEG know-PAST what? COMP \emptyset be-IMPF
 'I didn't know what it was.' [t47]

Although in both (481) and (482) in which *¿piri?* is used, this noun phrase question word moved from a specifier position within the inflectional phrase, *¿piri?* could presumably also originate in the noun phrase position of complement of a verb phrase or complement of a postpositional phrase. Examples of such positions for *¿piri?* do not occur in the texts examined, however.

Tarahumara forms questions of 'who?' or 'whom?' by generating the noun phrase question word *¿chigá?* in some A-position (a position which can be taken by the argument of a verb) in the inflectional phrase and then moving this noun phrase question word to the specifier position of the complementizer phrase. Example (483) involves movement of *¿chigá?* from a position of noun phrase specifier of the embedded inflectional phrase to a position of specifier for the complement clause.

- (483) *mapurigá* \emptyset *galá* *machi-boa*
 in order that *pro* well know-IRR

chigá \emptyset t_i *niyúra-ma*
 who? COMP \emptyset win-IRR
 'in order that all may know who the winner is' [o13]

The noun phrase question word *¿chigá?* may originate not only in the subject position of the IP as exemplified in (483); this question word may originate in other noun phrase positions as well, such as in the position of complement to a postposition as in example (484).

| | | | | | | |
|-------|---|----------------------|---------|--------|----------------|-----------|
| (484) | echi | o'hueli | huicabé | namuti | quetasi | machi-li |
| | DEF | large | many | animal | NEG | know-PAST |
| | [[chigá | | | Ø | t _i | naco-ma] |
| | who? | yuhua] _i | | pro | Ø | fight-IRR |
| | 'the large animals did not know whom to fight with' [o20] | | | | | |

In (484), which also contains an interrogative complement of the verb *machili*, the question word *¿chigá?* originates as the object of the postposition *yuhua* within the verb phrase of the embedded IP and moves, together with its postposition, to the position of complementizer of the CP that is the complement of *machili*. After the movement a trace is left in the empty position formerly occupied by the postpositional phrase within the verb phrase headed by *niyúrama*.

The question words originate in complement positions within the inflectional phrase, but Tarahumara also uses question words that are generated in adjunct positions within the inflectional phrase. The first question word that questions an adjunct and that is found in the texts is the adverbial question word *¿cumi?* which may be translated 'where?'. This question word is often used together with the verb *simi* 'go' as in example (485).

| | | | | | |
|-------|-----------------------------|------|----------------|------|-------|
| (485) | ¿Cumi _i | Ø | t _i | simí | mujé? |
| | where? | COMP | Ø | go-Ø | 2SG |
| | 'Where are you going?' [o2] | | | | |

In (485) the question word *¿cumi?* originates in normal position for adjuncts within the verb phrase, in the same position where an adverbial answer would occur. After Wh-movement the question word appears in the specifier position of the complementizer phrase, leaving a trace in its original position.

The tree representation in figure 34 shows the result of this movement. Figure 34 indicates that the question word *¿cumi?* has moved from the position of an adjunct adverbial phrase within the verb phrase of IP to the position of specifier for the complementizer phrase. This is a common position for topicalized elements cross linguistically (Burquest, 1998, personal communication) and in this example the question word *¿cumi?* 'where?' is effectively topicalized by movement to this sentence-initial position in correspondence with the highlighting of this oblique as the main point of the question.

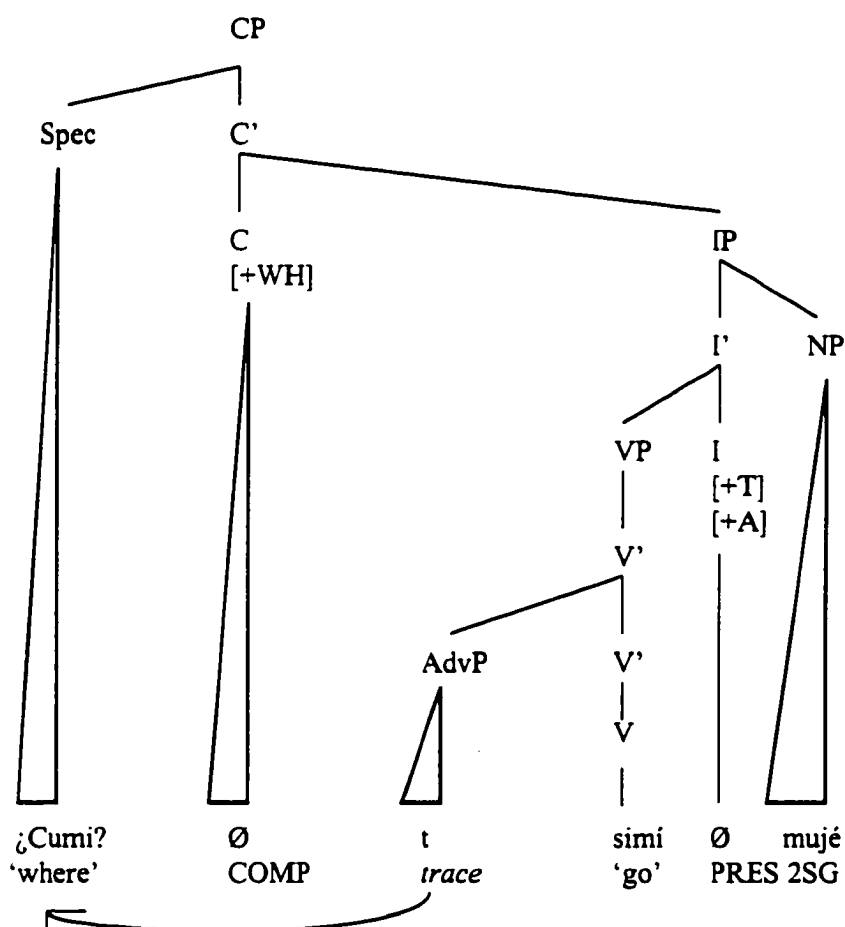


Figure 34. Tree representation of example (485).

Another adverbial question word is the expression *¿churé?* ‘why?’ which, like *¿cumi?*, originates in the position for adjuncts within the verb phrase in IP but moves to the position of specifier of the complementizer phrase. Example (486) illustrates the use of *¿churé?* to ask for a reason that would serve as an adjunct to the verb *asísali* ‘arose.’

- (486) *¿Churé;* mujé t_i hue yó-ami asísa-li jipe?
 why? 2SG Ø very be angry-AJZR arise-PAST today
 ‘Why are you in such a bad mood today?’ [o6]

In the deep structure of (486), the verb *asísali* has three adjuncts: the question word *¿churé?*, the participial verb phrase *hue yóami*, and the time adverb *jipe*. All of these adjuncts are generated in normal adjunct position preceding the verb head *asísali*. But to form the question so that it can be interpreted interrogatively by the semantic component, the question word *¿churé?* moves to the position of specifier of the complementizer phrase in a sentence-initial position, leaving a trace in its original position.

One final adverbial question word, *¿churigá?* appears in Tarahumara texts, having various English glosses such as ‘why?’, ‘how?’ and ‘what?’ The expression itself seems to mean ‘in what way?’ and like the other adverbial question words discussed in this section, it originates in a position of adjunct to the verb phrase in the IP. During Wh-movement the expression takes a sentence-initial position as specifier of the complementizer phrase, as found in example (487).

- (487) *¿churigá;* Ø Ø t_i bachá ola-ma?
 in what way? COMP *pro* Ø first do-IRR
 ‘What shall I do first?’ [z53]

In (487) the subject is non-overt and the complement of the verb *olama* ‘do’ is included in the meaning of the verb. Movement of the question word *¿churigá?* cannot be perceived because no re-ordering of explicit sentence constituents has occurred.

As if to challenge the claim that the adverbial question word *¿churigá?* moves to sentence-initial position as specifier of the complementizer phrase, example (488) appears in which the noun phrase specifier of the inflectional phrase embedded within the complementizer phrase occurs in sentence-initial position immediately preceding the question word *¿churigá?*. Example (488) shows that the second person singular pronoun *mujé*, the subject of the sentence, may precede the supposedly sentence-initial question word.

| | | | | | | |
|-------|---|-----------------|----------------|----------------|----------------|----------------|
| (488) | <i>¿Mujéj</i> | <i>churigáj</i> | ∅ | ∅ _j | t _i | <i>naquigá</i> |
| | 2SG | in what way | COMP | <i>pro</i> | ∅ | want-PTCP |
| | <i>tami</i> | <i>rucue-li</i> | <i>cúmi=ni</i> | <i>simió</i> | <i>nijé?</i> | |
| | 1SG.ACC | ask-PAST | where?-1SG | go-? | 1SG.NOM | |
| | 'Why do <u>you</u> need to know where I am going?' [o3] | | | | | |

Example (488) does not disprove the claim that the question word moves to position as specifier of the complementizer phrase if it is observed that the subject of this sentence has undergone a movement to initial position for discourse purposes. In the passage, after the bear has innocently asked the wasp about his destination, the wasp refuses to answer and turns the conversation to focus on what right the bear has to ask the wasp this question; thus, the new topic is the bear himself, whom the wasp is addressing. In order to give emphasis to this new topic, the subject of the sentence, *mujé* 'you,' is moved to the most salient position in the sentence, initial position, after Wh-movement has already taken place to create the interrogative interpretation. This new initial position is formed by adjoining a new CP node above the original CP node. The subject of the IP, *mujé*, is then moved to the specifier position of the newly-created, highest complementizer phrase node.

4.11.3 Summary of question formation in Tarahumara

In concluding this discussion of the ways Tarahumara forms questions, it should be reiterated that the strategy used is very similar to the way Tarahumara forms complement clauses. Both yes-no questions and information questions move a question word from a position within the IP to a position within CP, whether the specifier position or the complementizer position.

To form yes-no questions, Tarahumara moves a yes-no question word from adverb position in the verb phrase of the IP to the complementizer position higher in the structure, so that the question word becomes the head of the complementizer phrase in which the sentence is included.

To form information questions, Tarahumara moves an information question word from its normal deep structure position within the verb phrase of the IP to the position of specifier of the higher complementizer phrase. In the case of noun phrase information question words such as 'what?' and 'who?' the question word moves from an A-position, such as the position of subject, direct object or object of postposition within the inflectional phrase, to the position of specifier of the complementizer phrase. In the case of adverbial information question words such as 'where?', 'why?' and 'how?' the question word moves from an A'-position, usually the position of adjunct to the verb phrase, within the inflectional phrase to the position of specifier of the complementizer phrase.

The result of these two processes of Wh-movement is that the Tarahumara question word usually surfaces in sentence-initial position unless additional movement has occurred for discourse purposes.

4.12 Abstract case assignment in Tarahumara

4.12.1 Purpose of this section

While a previous section (3.2.3.4) dealt with morphological or surface case and concluded that case is not marked overtly in Tarahumara, this section deals with abstract case, which is distinct from morphological or surface case. Government and Binding theory asserts the operation in all languages of the world of a *case filter* (Haegeman 1994: 167), which requires that all overt noun phrases must receive abstract case, whether or not they are morphologically marked for case. This section explains the syntactic conditions that allow overt noun phrases in Tarahumara to receive abstract case and, thus, be *licensed* to appear in their surface structure positions.

The noun phrases that must receive case are often arguments of the predicate or of other constituents that have argument structure. Some noun phrases in Tarahumara, however, are obliques; they function as adjuncts within verb phrases and, thus, are not required by the argument structure of any constituent. These noun phrases must also receive abstract case in order to be properly licensed to appear in the sentence.

Abstract case-marking is part of universal grammar and every language, including Tarahumara, has a complete system of abstract case even though not every case may be overtly realized by means of morphology (Haegeman 1994: 158). Abstract case includes both structural case (marked according to syntactic configuration) and inherent case (marked lexically) (Haegeman 1994:159, 176-177). The principles by which abstract case is marked follow directly from the syntactic configurations described earlier in this chapter and are, therefore, discussed here at the conclusion of this chapter.

4.12.2 ACCUSATIVE case assignment

Transitive verbs and postpositions in Tarahumara assign ACCUSATIVE case to their noun phrase complements through their configuration of government over those noun phrases. In each situation, the lexical head, V or P, is a governor and m-commands the noun phrase to be case-marked. As defined previously, *m-command* is a structural relation that is a particular type of c-command, in which the node dominating the two related items is a *maximal projection*, defined as the highest projection of a head (Haegeman 1994:90). In the relation of m-command the conditions listed once again in (489) apply.

(489) *M-command*

A m-commands B if and only if A does not dominate B and every maximal projection that dominates A also dominates B (Haegeman 1994:137).

Besides the requirement that the structural case assigner V or P m-command the noun phrase to be assigned case, further requirements are that no maximal projections intervene as barriers between the head and the noun phrase to be case-marked (Haegeman 1994:159-160) and that government of the noun phrase must be by the head.

The conditions described for structural case assignment are illustrated in example (490) in which the transitive verb *meri* assigns ACCUSATIVE case to the noun phrase *carúmati* which is its complement.

(490) Ø **carúmati** meri
 pro various things earn-PAST
 'they won all sorts of things' [r22]

The tree representation in figure 35 demonstrates that the verb *meri* governs and m-commands the noun phrase *carúmati* and that no maximal projections intervene as barriers between the governing verb, *meri*, and the noun phrase to be case-marked, *carúmati*.

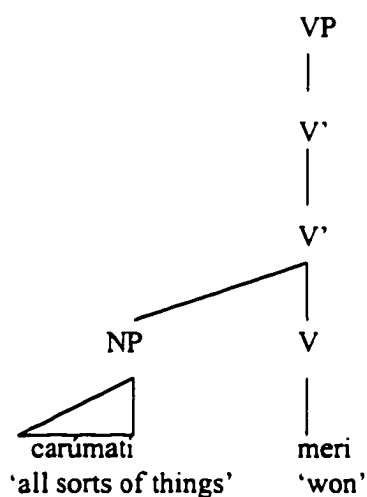


Figure 35. Tree representation of example (490).

In example (491) the postposition *pacháami* 'inside' assigns ACCUSATIVE case to the noun phrase *biléana hualú risochi* 'a certain large cave' that is its complement.

- (491) **biléana** **hualú risochi** **pacháami**
 one part large cave-LOC inside
 'inside a certain large cave' [g6]

The tree representation of (491) in figure 36 demonstrates that the postpositional head *pacháami* governs and m-commands the noun phrase *biléana hualú risochi*.

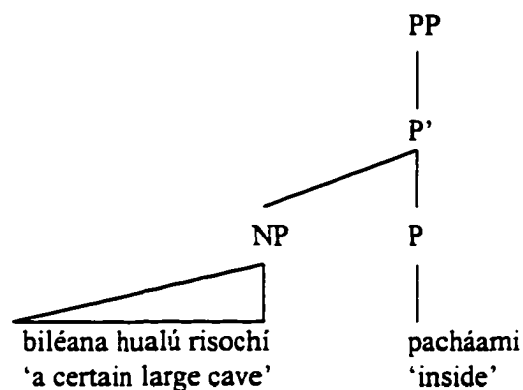


Figure 36. Tree representation of example (491).

If a transitive verb and a postposition are in such a configuration that both govern a particular noun phrase, that is, the object of the postposition, the *minimality condition* of government comes into play so that only the lexical head that is closer and that intervenes between the farther distant head, which is the verb, and the noun phrase, that is, the lexical head which is postposition P, may case-mark the noun phrase complement of the postposition (Haegeman 1994:161-164).

Example (492) demonstrates such a configuration; both a verb and a postposition compete to case-mark the same noun phrase *bacochi*.

(492) **bacochi** jonsa tu-li
 river-LOC from carry water-PAST
 ‘carried water from the river’ [g27]

The tree representation in figure 37 shows that although both the verb *tuli* and the postposition *jonsa* govern and m-command the noun phrase, the postposition *jonsa* is nearer and succeeds in case-marking the noun phrase because of the minimality condition.

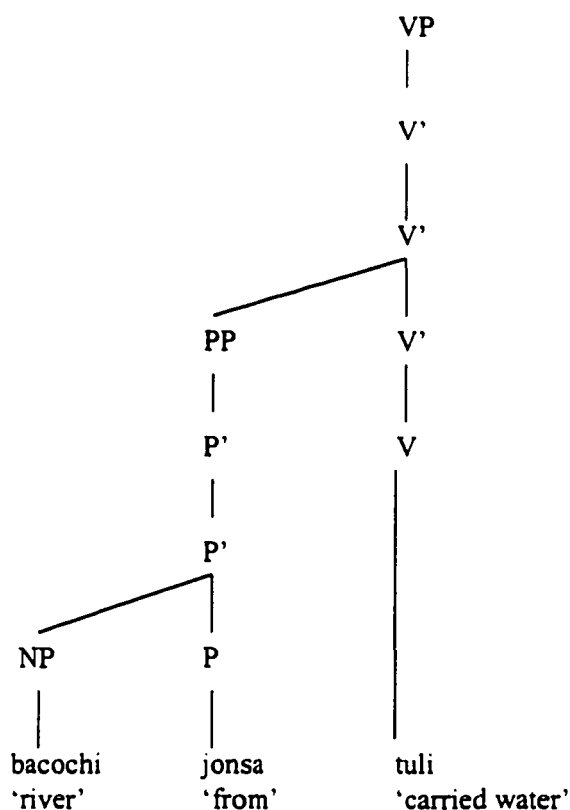


Figure 37. Tree representation of example (492).

4.12.3 NOMINATIVE case assignment

Finite INFL assigns NOMINATIVE case to the subject of a finite clause. This assignment, according to Haegeman (1994: 164-165), may be a result of government by finite INFL through the relationship of m-command or it may be a result of specifier-head agreement of INFL with the subject noun phrase. Non-finite INFL is unable to assign abstract case; thus, because the texts show evidence of verbs that have both finite and non-finite INFL, it is necessary to identify the types of inflection that are sufficiently complete to assign case to noun phrase specifiers which they govern and with which they are in agreement. The table of types of verbal inflection provided in section

4.2.2.1 is reproduced here as table 16 with indications of the probable point on the continuum between finite and non-finite inflection below which the INFL on the verb becomes unable to assign abstract NOMINATIVE case to an external argument.

Table 16. Inflections that are sufficiently complete to assign abstract case

| Inflections sufficiently complete to assign abstract NOMINATIVE case | |
|--|------------------------|
| past tense | <i>-ri</i> |
| irrealis | <i>-ma</i> |
| present tense or progressive aspect | \emptyset |
| past tense, passive voice | <i>-rati</i> |
| general passive voice | <i>-rihua</i> |
| desiderative | <i>-nara</i> |
| conditional | <i>-saga</i> |
| Inflections insufficiently complete to assign abstract NOMINATIVE case | |
| past participle | <i>-saa</i> |
| singular participle | <i>-mia</i> (singular) |
| plural participle | <i>-bia</i> (plural) |
| general participle | <i>-ga</i> |
| infinitive | \emptyset |
| adjectivized | <i>-ami</i> |
| nominalized | <i>-ami</i> |

Table 16 indicates that the INFL associated with past tense, irrealis, present tense, passive voice, desiderative mode and conditional tense verbs is sufficiently finite to assign NOMINATIVE case to an external argument of these verbs. Table 16 also indicates that the INFL associated with participles, infinitives and adjectivized and nominalized verbs is insufficiently finite to assign NOMINATIVE case to a noun phrase external argument. These forms of verbal inflection are the ones that are never accompanied, within their own clause, by an explicit noun phrase subject in the

texts examined for this study. Therefore, the syntactically active empty category **big *PRO***, a non-overt NP that appears only in positions where it cannot be governed and cannot receive abstract case (Haegeman 1994:262-264), is the subject posited for such non-finite verbs in the examples cited in this study. This non-overt NP, big *PRO*, is co-indexed with and controlled by the noun phrase subject of the higher clause in which the non-finite verb is embedded. The exemplifications of NOMINATIVE case assignment in this section address first the abstract case received by subjects of finite verbs, and, secondly, the lack of NOMINATIVE case-assignment in non-finite clauses.

In the first example the completely inflected INFL of a past tense verb is able to assign abstract case to the external argument of the verb. Example (493), in conjunction with figure 38, typifies the NOMINATIVE case assignment received by a noun phrase subject, here *echi huilú* ‘the buzzard,’ from the finite INFL on the fully-inflected verb, here *nahuali* ‘arrived.’

(493) *echi huilú echoná nahua-li*
 DEF buzzardthere arrive-PAST
 ‘the buzzard arrived there’ [z4]

The tree representation in figure 38 shows that both government and m-command by the finite INFL apply to the noun phrase subject if it is to be case-marked in this manner, while specifier-head agreement between *echi huilú* and finite INFL also applies if the noun phrase subject is rather to be case-marked in this manner.

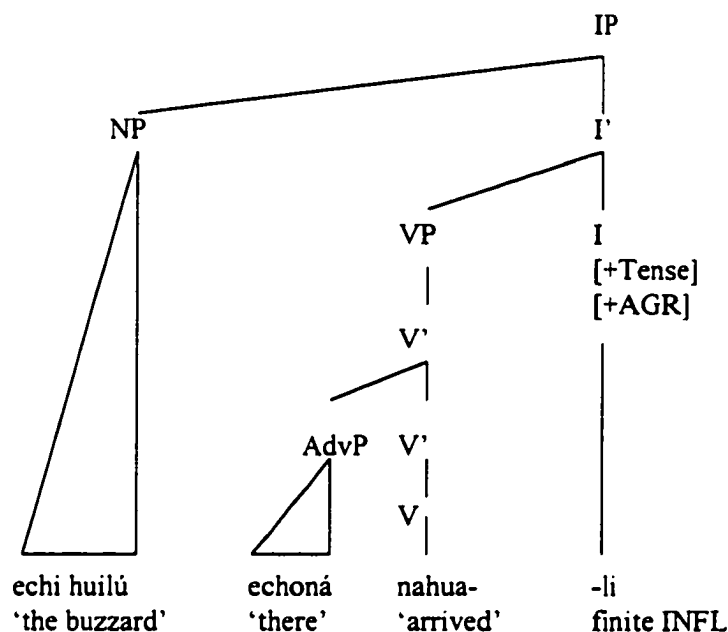


Figure 38. Tree representation of example (493).

Any overt noun phrase subjects of clauses with non-finite INFL would also have to be case-marked as required by the case filter which states that abstract case must be assigned to all overt noun phrases. Example (494) illustrates a non-finite clause that remains grammatical by projecting no overt subject; the non-overt subject, big *PRO*, by definition, cannot receive abstract case assignment (Haegeman 1994:166-167). This non-overt subject, big *PRO*, is interpreted by the module of Control Theory within this theoretical framework.

(494) echi biré tohuí_i [Ø_i maja-ga] si'huina ma-ri
 DEF one boy PRO be afraid-PTCP other part run-PAST
 'that boy, being afraid, ran a distance away' [v28]

No overt subject appears for the non-finite clause \emptyset *maja-ga* in example (494). The non-finite participial verb *maja-ga* cannot assign abstract case, but this is not problematic because only overt noun phrases need to be case-marked.

4.12.4 ACCUSATIVE case assignment by non-finite verbs

While the external argument of non-finite verbs may not appear overtly, the internal argument of non-finite verbs often appears overtly and, therefore, needs to receive abstract case. The non-finite verb retains its capability of assigning ACCUSATIVE case to its noun phrase complement, which it governs and theta-marks despite its lack of complete inflection. Thus *echi rochi* ‘the fish’ in example (495) receives ACCUSATIVE case from the participial verb *saya* ‘smelling’ that governs and m-commands *echi rochi*.

- (495) *echijiti* [Ø **echi** **rochí** sa-ya],
 therefore PRO DEF fish smell-PTCP
- echirigá* *nahua-ri* *echi* *taa* *namuti*
 in this manner come-PAST DEF small animal
 ‘Because of smelling the fish the little animal came’ [t48]

4.12.5 Exceptional case marking

Infinitival IP is not a barrier for government from outside because non-finite INFL is “weak;” therefore, its projection IP is unable to block government and case-assignment from outside itself (Haegeman 1994:168-169). In example (496), the verb *rihuali* governs into the embedded clause with *atiami* and case-marks the noun phrase *bilé huachó*.

- (496) Ø rihua-li [**bilé** **huachó** *echoná* *comi-chi*
pro see-PAST INDEF heron there creek-LOC
- ripabé* *rajamó* *atí-ami*]
 very high up large rock sit-AJZR
 ‘he saw a heron there in the creek, sitting high up on top of a large rock’ [z2]

The adjectivized non-finite verb *atiami* within the embedded clause is unable to assign NOMINATIVE case to *bilé huachó*, but this is not problematic for the case filter because the verb of the

higher clause, *rihuali*, governs into its complement clause and assigns ACCUSATIVE case to *bilé huachó*. Verbs like *rihua* ‘see’ which take non-finite clauses as their complements and are able to govern into those non-finite clauses and assign abstract case to an overt noun phrase subject associated with a non-finite verb, are called *exceptional case-marking*, or *ECM*, verbs (Haegeman 1994: 169-170).

CP, however, is a barrier for government, and prevents finite INFL in the higher clause from governing into the lower clause and assigning case to the subject noun phrase of the infinitival IP (Haegeman 1994:168-169). In example (497) the verb *rihuali* ‘saw’ cannot govern into the complementizer phrase beginning with the complementizer *mapu*, and this might seem to violate the case filter since the non-finite verb *si’lia* ‘drowning’ of the lower clause is unable to assign nominative case to its subject.

- (497) \emptyset Hue rihua-li
 pro very see-PAST
- [*mapu* \emptyset ne huabé si’l-ia bu’hui-rali]
 COMP PRO very greatly drown-PTCP water-LOC
 ‘She saw him drowning in the water’ [z69]

In (497), despite the inability of *rihuali* to assign case to a subject of a complementizer clause that serves as its complement, no overt noun phrase subject appears in the lower clause that would need to receive case. Thus the case filter, which applies only to overt noun phrases, is satisfied.

The next example demonstrates a further implication of the inability of exceptional case-marking verbs to govern into complementizer phrases. In example (498) the verb of the higher clause, *mayé* ‘think,’ is unable to govern into the CP and assign ACCUSATIVE case to the subject of the embedded IP. The IP within the CP has a finite INFL, however, and is able to assign

NOMINATIVE case to its noun phrase subject, as can be seen from the nominative case form of the second person singular pronoun *mujé*.

(498) \emptyset maye- \emptyset =ni
 pro suppose-PRES-1SG.NOM

[*mapu mujé* *echoná ba'hui-chí* *hue* *si'li-ma*]
 COMP 2SG.NOM there water-LOC very drown-IRR
 'I suppose that you will drown if you go into the water' [z44]

Thus, even though *mayé* 'suppose' is an exceptional case-marking verb, it cannot govern into a complementizer phrase to assign case to the subject of the lower clause. The maximal projection CP is a barrier to government and case-marking from outside the CP. Exceptional case-marking verbs like *rihuá* 'see,' *mayé* 'suppose,' and *machi* 'think' may only govern into the projection IP when it is headed by a "weak," non-finite INFL. Thus no complementizer may appear with the IP that is the complement of the exceptional case-marking verb, and the INFL that heads that IP must be non-finite in order for the exceptional case-marking verb to assign ACCUSATIVE case to the noun phrase subject of the lower clause (Haegeman 1994:169-171).

4.12.6 Inherent case assignment

The case assignment discussed in sections 4.12.2 through 4.12.5 is structural case assignment which is a function of the government configuration only. Another type of case assignment, inherent case assignment, comes into play in certain situations when not only government but also theta role assignment function in case-marking. For example, nouns and adjectives are unable to assign structural case to their complements, but nouns and adjectives do assign inherent GENITIVE case to their complements which they both govern and theta-mark. (Haegeman 1994: 173).

Aside from the genitive noun phrases addressed in the next section, no examples of such inherent GENITIVE case-marking were found in the texts examined for this study.

4.12.6.1 Inherent case assignment in genitive constructions

GENITIVE case assignment to nouns that precede other nouns in standard genitive constructions receive their GENITIVE case marking from an element POSS in the specifier position of the noun phrase (Haegeman 1994:174). Thus in example (499), the noun *basachi* ‘coyote’ receives GENITIVE case from POSS which co-occurs with the definite article *echi* in the specifier position of the noun phrase.

(499) hue quiri catehuama **echi** **basachi** **huichi-ra**
 very little by little be prepared-IRR DEF coyote/POSS skin-GEN
 ‘little by little you work over the coyote skin’ [c5]

A tree representation of the genitive construction in (499) appears in figure 39. The head of this genitive construction is *huichi* ‘skin,’ and a specifier marking *-ra* appears on this head, forming the expression *huichi-ra*. This specifier marking *-ra* is unlikely to be a surface genitive case-marking because it appears on the head noun rather than on the preceding noun *basachi* which refers to the ‘coyote’ that is the possessor or larger entity of which the ‘skin’ is a part and is, therefore, the genitive case noun in the construction. Surface genitive case is achieved simply by the placement of the two noun phrases next to one another, with the possessor noun phrase preceding the head noun in a paratactic genitive construction.

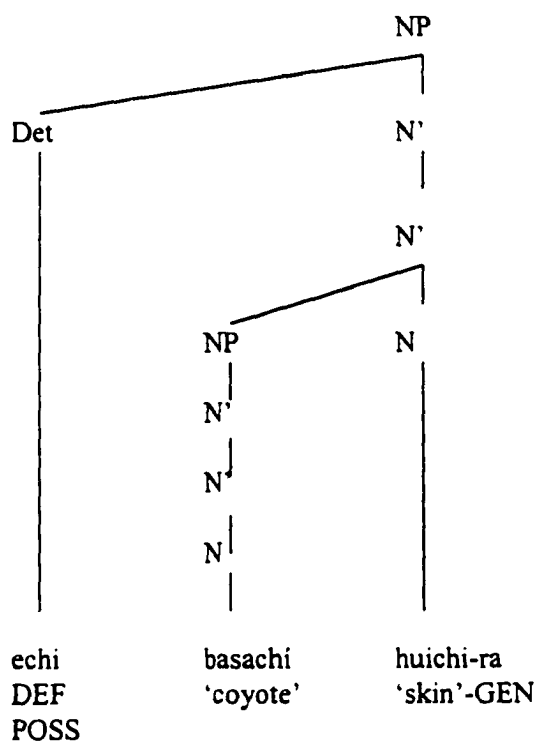


Figure 39. Tree representation of example (499).

An alternative explanation for the assignment of GENITIVE case to the noun phrase *basachi* 'coyote' is as follows: The head noun *huichira* 'skin' assigns a thematic role of POSSESSOR to the genitive noun that is its complement, *basachi* 'coyote.' The head noun also governs this complement from its position of head of the larger noun phrase. Through the configuration in which the head noun both governs and theta-marks the genitive noun complement, this genitive noun receives inherent or lexically assigned GENITIVE case. Perhaps this explanation is preferable because it need not posit an element POSS that would co-occur with the determiner in the specifier position of the noun phrase, violating the principle of structure preservation, which prohibits positions from being doubly filled.

Example (500) illustrates another genitive construction in which the element POSS co-occurs with a different specifier, the pronoun *suhuaba* 'all,' likewise causing the specifier position of the noun phrase to be doubly filled.

(500) suhuaba binoy bo'hua-la
 all 3SG plumage
 POSS
 'all her plumage' [z3]

In (500), however, no overt determiner appears with the noun phrase to compete with the element POSS for the specifier position of the noun phrase.

(500) Ø Antonio rijima-ra
 POSS [personal name]brother-GEN
 'Anthony's brother' [t61]

More investigation into the process of inherent case assignment of GENITIVE is needed for Tarahumara genitive constructions.

4.12.6.2 Inherent case assignment with noun phrase obliques

Some languages may assign inherent case, including GENITIVE and DATIVE cases, extensively as a lexical function of the verbs, adjectives, nouns and adpositions that take internal arguments and, thus, theta-mark these complements (Haegeman 1994:176-178).

In the case of Tarahumara, inherent case is assigned to the noun phrases that appear as adjuncts to verb phrases. Even though these noun phrases are not complements of the verb—they are not required by the argument structure of the verb—the syntax simply licenses noun phrases to appear in the adjunct position of verb phrases, that is, at the upper V' level in the tree representation in a verb phrase.

These noun phrases are ordinarily nouns that have locative and temporal meanings. It could be proposed that locative suffixes such as *-chi* and *-rari* assign case to such obliques. For example, in (501) the locative noun phrase oblique *echo 'ná buhuechi* 'along the road' could receive its case-marking from the locative suffix *-chi* that appears on *bu 'huechi*.

- (501) tamuje=te huabé risi-ri **echo'ná** **buhue-chí**
 1PL.NOM-1PL.NOM very rest-PAST there road-LOC
 'we rested a great deal there along the road' [t5]

It is preferable, however, to consider the case of noun phrase obliques to be lexically assigned in order to have a single explanation for abstract case assignment of all noun phrase obliques. A number of noun phrase obliques appear within verb phrases without locative suffixes, as in example (502) which contains a temporal oblique *echari rocogó* 'on that night.'

- (502) **echari rocogó** nahua-ri biré táa namuti
 at that night come-PAST INDEF small animal
 'on that night a small animal came' [t46]

Not only temporal obliques but also locative obliques may appear as noun phrases without suffixes as in the case of *huaquitari* 'dead tree' in example (503).

- (503) echo'na bité **huaquitari**
 there live(singular)-Ø dead tree
 'those (birds) live there in a dead tree' [b12]

Thus rather than positing structural abstract case assignment for some noun phrase obliques through government by a locative suffix and inherent abstract case assignment for other noun phrase obliques through the lexicon, this study proposes a single strategy of inherent (lexical) case assignment and licensing of all noun phrase adjuncts appearing within verb phrases.

4.12.7 Adjacency as a condition for case assignment

A further condition on structural case-assignment is that of adjacency, which stipulates that the governing head that assigns case and the noun phrase that receives case must be adjacent to one another rather than separated by intervening material (Haegeman 1994:178-179). In example (504) the verb *meri* is adjacent to its complement noun phrase *huicá namuti*.

- (504) **huicá namuti me-ri**
 many thing earn-PAST
 'they won all kinds of things' [r23]

Assignment of NOMINATIVE case by finite INFL is not subject to the adjacency condition, however, perhaps because government still holds between finite INFL and the noun phrase and because case can be assigned in this situation through specifier-head agreement (Haegeman 1994:180). In example (505) the pronoun subject *aboni* still receives NOMINATIVE case-marking from the finite INFL with the verb '*yénari* even though the clause *pe táa nutugué* intervenes.

- (505) **aboni [pe táa nutu-gué] 'yéna-ri**
 3SG.NOM small amount carry food-PTCP go about(plural)-PAST
 'they were travelling with hardly any food' [v18]

Adjacency is not a linguistic universal, in that in many languages do allow case-assignment despite non-adjacency. Tarahumara does appear to require adjacency, however, except for the assignment of NOMINATIVE case to the noun phrase subject. Sentences showing variations in word order, like example (506), might seem to challenge the principle of adjacency.

- (506) ¿Acha **tamíj** jaré carúmati t_i co'mea?
 perhaps 1SG.ACC some animals trace eat-IRR
 'Would some animal eat me?' [v3]

It would appear that the third person singular pronoun *tamí* is not adjacent to the verb *co'mea* which takes *tamí* as its internal argument; yet the pronoun appears in the expected morphological

ACCUSATIVE case. Adjacency continues to hold in this example, however, because it is movement that has resulted in the separation of the ACCUSATIVE case pronoun complement from its governor and case assigner, the verb *co'mea*. Movement does not create a problem for adjacency in case assignment because the moved noun phrase is a member of a chain that has a co-indexed trace in the position governed by the case-assigning verb, and it is this trace that receives case.

4.12.8 Case assignment with passive verbs

The influence of lexical properties upon syntactic structure figures strongly in the principles that allow the noun phrases associated with passive verbs to be case-marked. Passive verbs fail to assign any external theta role to a noun phrase argument. The AGENT role for a passive verb is said to be "absorbed" by the verb's passive morphology. Passive verbs are also unable to assign ACCUSATIVE case to their objects because the passive morphology also "absorbs" structural case. Therefore the noun phrase complement associated with a passive verb receives case-marking by movement, so that the noun phrase receives its theta role from its D-structure position and receives abstract case from its S-structure position.

To allow theta-marking and case-assignment, movement results in the formation of a chain of the type $\langle NP_i, t_i \rangle$. The NP moves from the complement position in which it is generated within the verb phrase, leaving an empty position t . This NP moves to the subject position of the sentence where it can obtain NOMINATIVE case from finite INFL. Then, under the visibility requirement which allows only case-marked noun phrases to be recognized as receiving theta roles, the empty position can obtain its internal theta role from the passive verb as a result of the moved noun phrase (with which it is co-indexed) already having been case-marked by finite INFL (Haegeman 1994:180-192).

This process is illustrated in passive sentence (507), in which the passive verb *nihuarihua* shows the passive morphology *-rihua* which “absorbs” the AGENT role of the subject as well as the verb’s ability to assign ACCUSATIVE case. Thus a chain $\langle \textit{biré napórica}_i, t_i \rangle$ is formed in which *biré napórica* moves to subject position for the clause in order to receive NOMINATIVE case from finite INFL of the clause and the other member of the chain, co-indexed t_i , remains in the empty position where it can receive a PATIENT theta role from the passive verb.

- (507) [*biré napórica*]_i t_i *nihua-rihua* *hue* *semati*
 INDEF head-scarf *trace* make-PASS very pretty
 ‘A head scarf (like the Tarahumaras wear on their heads) is made very pretty.’ [p1]

4.12.9 Summary of abstract case assignment in Tarahumara

By way of these case-assigning mechanisms, noun phrases become “visible” and can be recognized as arguments in a sentence, and, thus, are properly “licensed” (term from Haegeman 1994:189) to appear in their surface structure positions in a sentence. Structural case assignment applies to noun phrase arguments of the Tarahumara sentence, in that these noun phrases receive abstract case through the configuration of government with the verb, inflected INFL or postposition that is the head of the phrase where they occur, or by exceptional case-marking from certain verbs. Inherent case assignment applies to noun phrases that are the complements of head nouns in genitive constructions and to noun phrases used as adjuncts of verb phrases, where they are licensed to appear by the X-bar syntax of the language.

CHAPTER 5

TRANSFORMATIONS

This chapter accounts for the movement transformations that ensure syntactic well-formedness of Tarahumara sentences and that produce the many pragmatically motivated variations in Tarahumara word order. After an introduction to the terminology and principles of movement fundamental to this theory, this chapter describes two types of movement common in Tarahumara.

5.1 Terminology and principles of movement in the theory

Movement is not an independent module of Government and Binding theory; rather, movement relates a number of modules which are seen to be interdependently at work on different levels of sentence derivations. This version of generative theory does not posit a number of ordered transformations that derive a surface representation from a deep structure but simply posits the rule *move α* , meaning “move something somewhere.” Then this general rule is constrained by placing conditions on the constituents that may be moved, the sites to which they may be moved and the distance that they may be moved (Burquest 1996:154).

Some of these conditions require description. The only constituents that may be moved are heads, such as N, V and I, and maximal projections--that is, complete phrases like NP, PP or IP (Haegeman 1994:306, Burquest 1996:154). The only landing sites for moved constituents are unoccupied positions, such as [Spec, CP], [C, CP] or [Spec, IP] if projected but not already

filled, or positions that are appropriately created by adjunction (Burquest 1996:154). The distance across which constituents may be moved is limited by the condition of *subjacency* within the Bounding Theory, a condition that asserts that no more than one bounding node may be crossed (Haegeman 1994:402). One bounding node for Tarahumara is known to be IP; no evidence appears in the texts examined for this study to posit an additional bounding node, such as NP or CP.

The *D-structure*, the level of syntactic structure at which constituents are base generated, is the level that “encodes the lexical properties of the constituents of the sentence” (Haegeman 1994:304) including basic thematic relations, so that external arguments of the verb, if any, are generated in the [Spec, IP] position, and internal arguments, if any, are generated within the VP and governed by the verb. Arguments of postpositions and certain nouns are generated within their respective phrases and governed by their heads at D-structure also. According to Haegeman (1994: 304-305), the *S-structure*, the level of representation in which constituents are seen in their derived order, is the level at which case is checked, so that all arguments must be properly case-marked by this point. The Extended Projection Principle holds at both the D-structure and the S-structure by requiring that a subject-position be projected, although in Tarahumara, because it is a *pro-drop* language, the subject position need not be filled with overt phonological material.

The principle of *Structure Preservation* applies during movement. Structure Preservation requires that all syntactic structures projected at D-structure must also be present at S-structure. No positions may be doubly-filled or obliterated, and no features or phrasal categories assigned at D-structure may be changed, although constituents of a given phrasal category may move to an unspecified phrasal category such as [Spec, CP]. Any new positions created at S-structure, such as

positions created by adjunction, must comply with the phrase structure of the language (Burquest 1996:154, Haegeman 1994:337-338).

Movement may be classified into four types: NP-movement, Wh-movement, Head to Head movement and peripheral movement. The first three types, NP-movement, Wh-movement and Head to Head movement, follow patterns common to most languages and are part of the core grammar. The first type of movement, *NP-movement*, occurs frequently in Tarahumara to allow arguments of passive verbs to become case-marked; NP-movement is case driven. The second type of movement, *Wh-movement*, also occurs frequently in Tarahumara to move relative pronouns to initial position in relative clauses and to move question words to initial position in questions and in [+WH] complementizer phrases. This type of movement, Wh-movement, also moves subjects, objects and adjuncts to initial or final position in sentences by the process of adjunction that accommodates syntactically-complex material and focused or topicalized material. These two types of movement frequently occur in Tarahumara and will be addressed in the upcoming sections.

The last two types of movement have yet to be identified as operative in Tarahumara. The third type of movement, *Head to Head movement*, moves a head from its position in a given type of phrase, to the [C, CP] position, as with the movement of English auxiliaries in questions, but Tarahumara auxiliaries do not move in this manner. The last type of movement, *peripheral movement*, allows for less frequent language specific situations outside of Universal Grammar and follows specific rules for each language. The Tarahumara texts examined for this study yield no examples of either of these types of movement.

Before turning to the topics of NP-movement and Wh-movement, the term *trace* must be defined. A trace is a null element that is essential to any discussion of movement. Constituents that

are moved leave a trace behind in the now-empty position; this trace is co-indexed with the overt element in its new position, called the *antecedent*, and forms a chain with the antecedent. The trace is syntactically active within its clause, retaining syntactic features such as person and number agreement.

In the case of a trace of NP-movement, the *NP-trace* operates in the same way that an anaphor operates, in that it must be bound within its governing category. The governing category for the trace is the minimal projection that contains the trace, a governor and a subject such as [Spec, IP], [Spec, NP] or the AGR features of INFL (Burquest 1996:107). The antecedent c-commands the trace; thus, constituents may only move to positions in which c-command of the trace will obtain (Burquest 1996:154).

Movement forms *chains* that link the original position of the constituent with its new, derived position. Chains formed by NP-movement are *A-chains*, linking A-positions. The antecedent is the head of the chain and is case-marked; the trace is the foot of the chain and receives a theta-role. The Theta Criterion and the Case Filter apply to the chain as a whole, in that NP's made visible by receiving case at the head of the chain must be theta-marked at the foot of the chain (Haegeman 1994:310, 314). Chains formed by Wh-movement are *A'-chains* because the landing site for movement is an A'-position. Traces of Wh-movement are governed, case-marked and theta-marked by the expected governors within their own locality, usually the verb or post-position; the antecedent of an A'-chain appears in a position in which no case can be assigned (Haegeman 1994:395-396).

Having laid a foundation with the terminology and principles of movement in the Government and Binding theory, the discussion moves on to describe NP-movement and Wh-movement

in Tarahumara. Salient examples mentioned in earlier discussion as showing evidence of movement will be used as the basis for description of each type of movement.

5.2 NP-movement

Tarahumara uses NP-movement to ensure that internal arguments of passive verbs are properly case-marked in order to pass the Case Filter, which requires that every overt NP be assigned abstract case (Haegeman 1994:167).

As mentioned previously in the discussion of case-marking, passive verb morphology is thought to “absorb” the ability of the verb to assign structural case and also to “absorb” the ability of the verb to assign an external theta role. Passive verbs have only an internal argument to which they assign a PATIENT, THEME or INSTRUMENT role. Because the passive verb has no external argument, the [Spec, IP] position for the sentence is empty at D-structure even though it has been projected as required by the Extended Projection Principle. The inability of the NP in this internal argument position to receive abstract case from the passive verb necessitates movement to a position where it can receive case.

In order to provide case for this NP, a movement transformation occurs in which the PATIENT-role NP leaves its internal argument position and comes to occupy the unoccupied [Spec, IP] position as the subject of the sentence. A chain is formed between the antecedent and the NP-trace in which the antecedent NP receives NOMINATIVE case from the finite INFL of the sentence and, therefore, becomes “visible” so that the empty position held by the NP-trace can be theta-marked as a PATIENT argument by the passive verb. This chain is known as an A-chain because the head of the chain, the antecedent, occupies an A-position, a position that could be filled by an argument. As a result of this movement, the Case Filter and the Theta Criterion are

satisfied, the PATIENT argument appears in subject position and a null element remains in the object position in the surface string.

5.2.1 NP-movement with a past tense, passive verb

Sentences in Tarahumara using three different types of passive verbs now illustrate this case-driven NP-movement. In sentence (508) a past tense passive verb *iquirati* 'was stung' fails to assign abstract case to its internal argument, the first person singular pronoun *nijé*.

- (508) Ari biche **nije** iqui-rati ne mo'o-chi.
 then 1SG.NOM sting-PASTPASS very head-LOC
 'Then I was stung right on my head . . .' [v35]

The D-structure for (508), omitting the conjunction, is given in (509) , showing that *nijé* is base-generated within the verb phrase and that the subject position for the sentence is empty.

- (509) [IP e [I' [VP [AdvP ne mo'ochi] [NP **nijé**] iquirati] *past*]] .

Movement then takes place, allowing the internal argument NP to fill the unoccupied subject position for the sentence and receive NOMINATIVE case from INFL of the finite sentence. The S-structure for (508) is given in (510), showing that *nijé* now occupies the [Spec, IP] position. The adverbial phrase has also undergone movement, but this process will be discussed in the next section.

- (510) [IP [IP **nijé_i** [I' [VP [NP **t_i**] iquirati] *past*]] [AdvP ne mo'ochi]] .

An A-chain < *nijé_i* , *t_i* > now holds the [Spec, IP] position that allows the head of the chain, *nijé*, to receive NOMINATIVE case from INFL and that allows the foot of the chain to be theta-marked by the passive verb with the PATIENT role. The tree representation in figure 40 demonstrates that the antecedent *nijé* c-commands the trace.

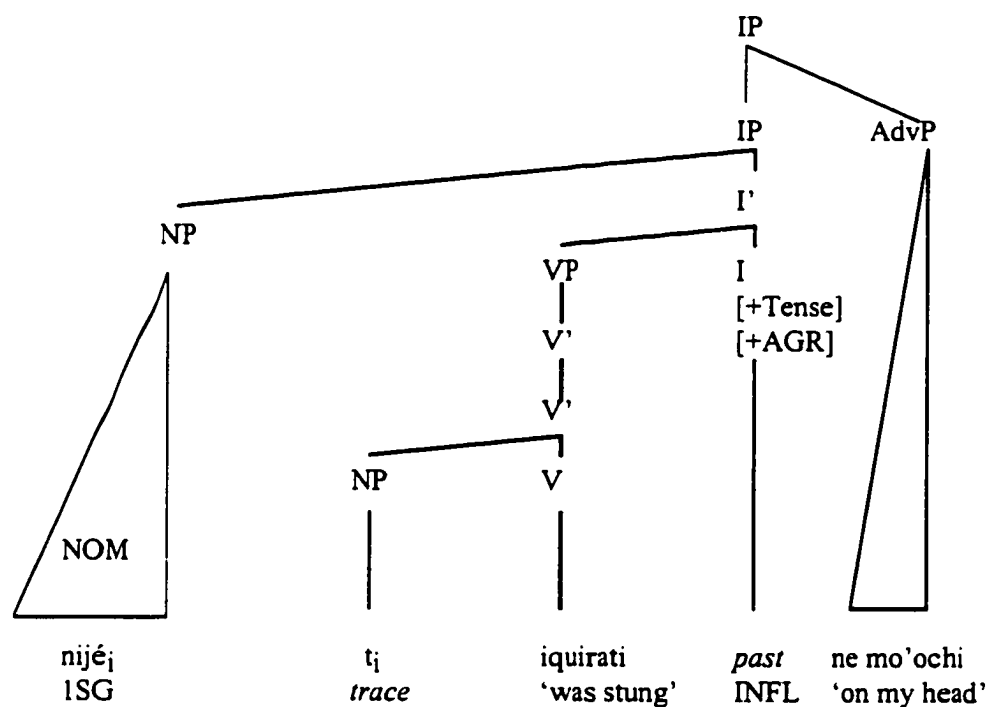


Figure 40. Tree representation of example (508).

5.2.2 NP-movement with a present-tense, passive verb

In example (511), the present tense, passive voice morphology *-rihua* absorbs the ability of the verb *nihua* to assign structural case and to assign an external argument. Thus, the internal argument of the verb *nihua* 'make,' the NP *mo'ora* 'head,' cannot receive abstract case and will have to move to the unoccupied subject position of the sentence in order to receive NOMINATIVE case from the INFL of this present tense sentence.

- (511) Ari **mo'ora** echi culubasi nihua-rihua.
 then head DEF arbutus make-PASS
 'Then the head (of the violin) is made of arbutus (wood).' [u5]

The D-structure for sentence (511) is given in (512), demonstrating that an empty position is available in [Spec, IP] and that *mo'ora* is the internal argument of the passive verb *nihua*.

(512) [IP e [I' [VP [NP echi culubasi] [NP mo'ora] nihua-rihua] present]].

In addition to the THEME-role internal argument *mo'ora*, this particular verb *nihua* has a second internal argument, *echi culubasi*. This phrase is a SOURCE-role argument and has inherent (lexically-assigned) SOURCE case.

Because *echi culubasi*, 'from arbutus wood,' already has inherent case it need not move, but *mo'ora*, 'the head,' must move to receive case and become visible for theta-marking. The S-structure shown in (513) demonstrates the movement of *mo'ora* to [Spec, IP] position in the sentence, leaving an NP-trace in the internal argument position.

(513) [IP mo'ora_i [I' [VP [NP echi culubasi] [NP t_i] nihuarihua] present]].

An A-chain has been formed, < *mo'ora_i*, *t_i* > in which the the head of the chain receives case-marking and the foot of the chain receives theta role assignment. A tree representation for (511) is shown in Figure 41.

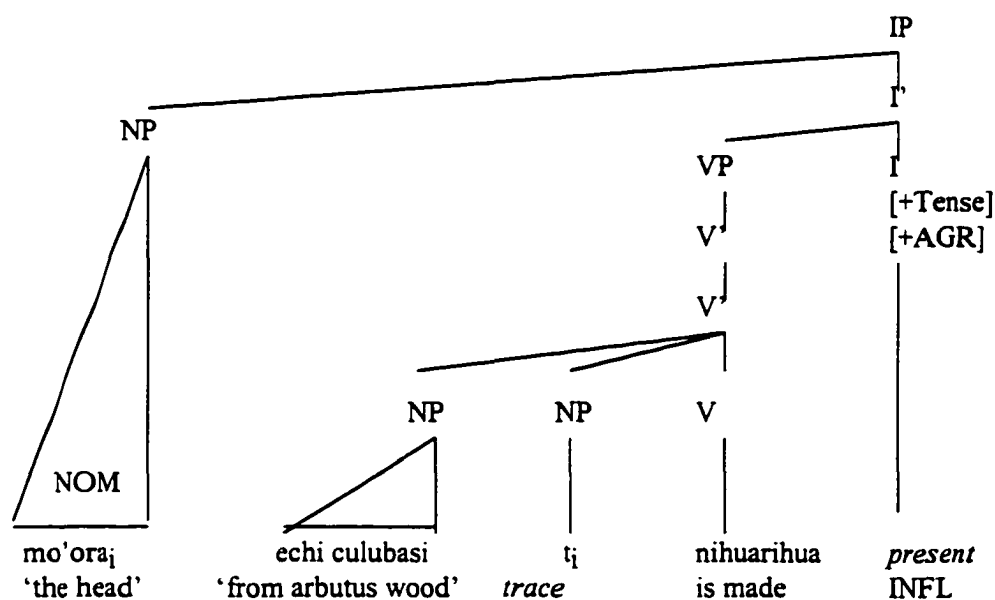


Figure 41. Tree representation of example (511).

The tree representation given in figure 41 confirms that the antecedent and head of the chain, *mo'ora*, appears in the configuration in the correct position to c-command the trace at the foot of the chain.

5.2.3 NP-movement with an impersonal passive verb

The movement associated with an impersonal passive verb, a construction that simply uses irrealis morphology in an impersonal, as-yet-unrealized sense, operates by the same process of NP-movement as already described for past tense and present tense passive verbs. As with the passive predicates in sections 5.2.1.1 and 5.2.1.2, the impersonal verb *acárama* in (514) lacks an external AGENT-role argument and takes only an internal argument having a PATIENT role.

- (514) **Echi biré burito** acára-ma echi biré clavo yuhua.
 DEF one donkey be shod-IRR DEF one nail with
 'You shoe a donkey using nails.' (impersonal sense of "you") [d1]

The D-structure representation in (515) shows that the NP *echi biré burito* is the internal argument of the verb *acárama*, the subject position for the sentence being base-generated but unoccupied.

- (515) [IP e [I' [VP [PP echi biré clavo yuhua] [NP **echi biré burito**] acarama] irrealis]]

In order to receive case and thereby become visible so that it can be theta-marked, the NP *echi biré burito* moves to the [Spec, IP] position in the second level of representation, shown in (516). Movement of the oblique postpositional phrase, *echi biré clavo yuhua* 'with a nail,' from its original D-structure position preceding the verb *acarama* has also occurred but this Wh-movement will not be addressed until later in this chapter; here the postpositional phrase continues to appear in its D-structure position.

- (516) [IP [IP **echi biré burito**_i [I' [VP [PP echi biré clavo yuhua] [NP **t_i**] acárama] irrealis]]]

The A-chain $\langle echi\ biré\ burito_i, t_i \rangle$ now allows the antecedent *echi biré burito* to receive NOMINATIVE case from finite INFL and thereby permit the NP-trace to receive a theta-marking of PATIENT from the impersonal passive verb *acárama*.

5.2.4 Summary of NP-movement with passive verbs

Various types of passive verbs, whether past passive, present passive or impersonal passive, occasion NP-movement in the same way. The internal arguments of these passive verbs must move to subject position to receive case, thereby becoming “visible” and allowing their NP-traces to be theta-marked with a PATIENT or THEME role. By means of this NP-movement, the Case Filter and the Theta Criterion are both satisfied for these passive sentences.

5.3 Wh-movement

The second type of movement, Wh-movement, occurs frequently in Tarahumara to produce syntactically well-formed sentences by moving question words to initial position in questions and in [+WH] complementizer phrases and by moving relative pronouns to initial position in relative clauses. This type of movement, Wh-movement, also occurs for pragmatic motivations to accommodate focused, topicalized or syntactically complex material in initial or final position.

The process of Wh-movement moves constituents to a landing site that is not assigned to any particular phrasal category and, in the case of adjunction, is not even projected at D-structure. The landing site is always a position in which neither case nor theta roles can be assigned; therefore, this type of movement is called A'-movement. The trace left in the original position following Wh-movement is c-commanded by the antecedent but continues to hold the case-marking and

theta-marking, if relevant, received from its local governor (Burquest 1996:156, Haegeman 1994:396).

This section addresses first the situations in which Wh-movement fulfills syntactic requirements by preposing question words and relative pronouns to the [Spec, CP] position. Then the discussion turns to Wh-movement that preposes and postposes constituents for pragmatic reasons by the process of adjunction.

5.3.1 Wh-movement to [Spec, CP]

The process of Wh-movement derives its name from the movement of English information question words, most of which begin with <wh> in the orthography, to sentence-initial position, leaving an null element in their base position. Tarahumara uses a similar procedure to prepose question words from yes-no questions, from information questions and from indirect questions to clause-initial position. The discussion will deal first with question words moved from underlying subject positions, then with those moved from object positions and finally with those moved from oblique positions. Before concluding, the discussion will briefly describe the movement of relative pronouns to [Spec, CP] position.

5.3.1.1 Question words moved from underlying subject positions

In the first instance a question word *piri* 'what?' is moved from [Spec,IP] position in the clause to the unassigned and unoccupied [Spec, CP] position at the beginning of the sentence. Movement not apparent because no material intervenes between the sentence-initial position and the verb, the next constituent of the sentence.

- (517) ¿Piri_i Ø t_i anini?
 what? COMP trace make sound-?
 'What is making that noise?' [t52]

The S-structure for sentence (517) is given in (518).

- (518) [CP [IP piri [I' [VP anini] present]]].

The D-structure for sentence (517) is given in (519).

- (519) [CP piri_i [C' [IP t_i [I' [VP anini] present]]]].

The surface structure tree representation for (517) given in figure 42 shows that the subject noun phrase, the question word *piri*, has moved into the specifier position of the complementizer phrase in which the sentence is embedded. The representation also records the derivational history of the sentence by showing the *wh*-trace left behind in the subject position and by indicating the movement with an arrow.

In the configuration shown in figure 42 the antecedent *piri_i* c-commands its *wh*-trace *t_i*. The finite INFL with the verb *anini* provides NOMINATIVE case-marking to the chain through its trace and the verb itself provides AGENT-role theta assignment to the *wh*-trace within the normal government relations of the IP, as the antecedent *piri* is now in a position where it cannot receive case or theta-marking. Because the *wh*-phrase fills a formerly unoccupied position, this movement is called *substitution* (Haegeman 1994:382).

Sentence (517) may not be a convincing example of movement of a question word out of subject position in the clause to the [Spec, CP] position because no overt material intervenes between the sentence-initial position of *piri* 'what?' and the verb *anini* 'make a sound.' No examples could be found in the fourteen texts that were closely examined nor in the twenty other texts available for this study of a question in which material such as a complementizer, an adjunct or a complement of the verb phrase intervenes between the subject-role question word and the

verb. Therefore, a non-movement analysis of subject-role question words is also possible, at least on the basis of the interrogative sentences found in these texts. The movement analysis is preferred, however, for the sake of consistency with the analysis of movement from adjunct positions proposed in section 5.3.1.3.

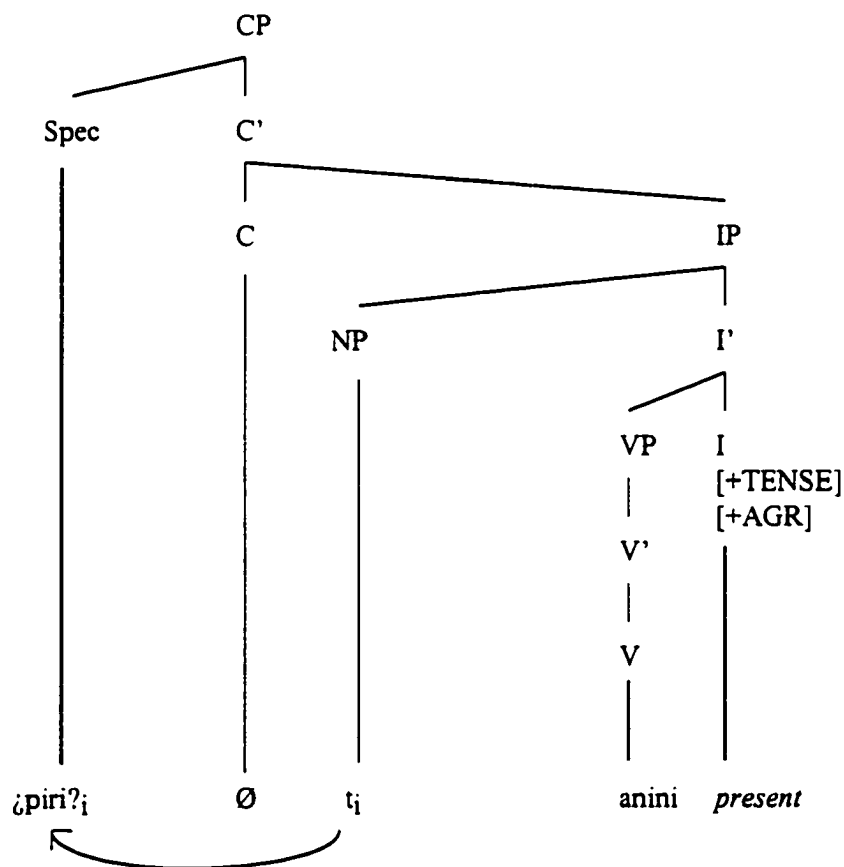


Figure 42. Tree representation of example (517).

5.3.1.2 Question words moved from underlying object position

The next instance of movement involves an embedded question that is the [+WH] complement of a verb in a higher clause. The irrealis verb *machiboa* 'may know' takes the CP *chigá niyurama* 'who will win' as its complement. As in the example of a subject-role question word in (517), movement of the object-role question word is not apparent in (520) because no overt material intervenes between the question word and the verb, such as a complementizer, a subject noun phrase or an oblique.

- (520) mapuriga Ø gala machi-boa [chigá_i Ø t_i niyura-ma].
 in order that *pro* well know-IRR.1PL who COMP *trace* win-IRR
 '[Now let us have a fight among all the animals] in order to see who will win.' [o13]

The D-structure for sentence (520) is given in (521).

- (521) [IP Ø [I' [VP [V' galá [V' [CP [C' [IP chigá [I' [VP niyurama] *irrealis*] machiboa]]]]] *irrealis*].

The result of Wh-movement of the question word *chigá* to [Spec, CP] is shown in the representation in (522).

- (522) [IP Ø [I' [VP [V' galá [V' [CP chigá_i [C' [IP t_i [I' [VP niyurama] *irrealis*] machiboa]]]]] *irrealis*].

Although a further movement will take place to postpose the complementizer phrase, the derivation just represented has formed an A'-chain that places the question word *chigá* in the correct position within an embedded question in Tarahumara. The head of the chain, the antecedent *chigá_i*, comes to reside in a non-argument position where it cannot receive case or a theta role, while the co-indexed *wh*-trace at the foot of the chain receives NOMINATIVE case from the finite INFL with *niyurama* and then can be theta-marked with the AGENT role by the verb *niyurama*.

Movement of question words out of object positions in the underlying structure does not occur frequently in the texts examined for this study. Example (523) illustrates the movement of a question word base-generated as the complement of a postposition. The question word *chigá*, ‘whom?’ moves to [Spec, CP].

- (523) echi o’hueli huicabé namuti quetasi machi-li
 DEF large many animal NEG know-PAST
- [**chigá**_i Ø Ø t_i yuhua nacoma]
 whom COMP *pro* with fight-IRR
 ‘the large animals did not know with whom to fight’ [o20]

As in (517) and (520), movement is non-apparent because there is no overt material between the clause-initial position and the postpositional phrase. Because the movement is non-apparent, there is no evidence to show whether the question word “ *pied-pipes*” the postposition *yuhua* with it to the higher position so that the postposition occurs in [C, CP] position, or whether the question word “*strands*” the postposition in its original position.

Examples (520) and (523) may not be convincing examples of movement because no material intervenes between the question word and the position from which it is claimed to have been moved. No examples of moved question words with material intervening between the question word and its supposed underlying position could be found in any of the texts available for this study. Therefore, a non-movement analysis could also be proposed for such interrogative sentences. The movement analysis is preferred here for the sake of consistency with the movement analysis proposed for adjunct-position question words in section 5.3.1.3.

5.3.1.3 Question words moved from underlying adjunct positions

Not only do question words in subject and complement positions in questions move to [Spec, CP] position; question words in oblique positions must also move to [Spec, CP]. The adverbial question words *acha* ‘is it so that?’ and *quecha* ‘is it not so that?’ used in yes-no questions as well as the adverbial question words *churé* ‘why?’ *churigá* ‘how?’ and many other like expressions used in information questions must move to specifier position in the higher complementizer phrase position.

Example (524) gives evidence of movement of the question word *churé* ‘why?’ from its underlying position as adjunct of the verb phrase to the sentence-initial position in that the subject argument, the second person singular nominative case pronoun *mujé* intervenes between the question word and the base position of the question word.

- (524) ¿Churé_i mujé t_i hue yóami asisa-li jipe?
 why 2SG.NOM trace very angry arise-PAST today
 ‘Why are you in such a bad mood today?’ [o4]

Example (525) is one of three interrogative sentences in a text about hunting a fox in which a negative morpheme intervenes between the question word and the adjunct position within the verb phrase that is the underlying position of the question word.

- (525) ¿Churécura=ni_i Ø que t_i t_j ‘ye-ri
 why-1SG pro NEG trace trace take-PAST
 [echi huichi-ra];?
 DEF skin-SPCF
 ‘Why didn’t I skin it [the dead fox]?’ [Hilton n.d. 32.60]

In (525) the negative morpheme *que* intervenes between the question word *churécura* ‘why?’ and the verb ‘*yeri* ‘took.’ This order provides evidence of movement of the question word because the negative morpheme, as described in section 4.10.1, is adjoined as a left sister to the entire verb

whether additional bounding nodes that Wh-elements may cross include NP or CP, nor about whether crossing a second bounding node would make the sentence ungrammatical.

5.3.2 Wh-movement of relative pronouns

This section briefly describes the movement of relative pronouns from their base-generated position as arguments of the relative clause to the [Spec, CP] position at the beginning of the relative clause. This movement, like the movement of question words described in section 5.3.1, is syntactically rather than pragmatically motivated and must occur in order for relative clauses to be grammatical. The movement occurs in connection with the *rule of predication*, which requires the movement in order for the semantic component to be able to interpret the relative pronoun as co-indexed with the head noun in the higher clause to which the relative pronoun refers.

The relative pronoun for Tarahumara is *mapu*, described earlier. This relative pronoun is base-generated in subject or object position--and sometimes as object of a postposition--within the relative clause. By the process of Wh-movement the relative pronoun *mapu* comes to occupy the [Spec, CP] position for the relative clause, leaving a co-indexed trace in its original position (Haegeman 1994:407-408). In the texts that were examined, Tarahumara does not employ resumptive pronouns to overtly occupy positions left open by the movement of the relative pronoun.

In example (528) a postposed verbal complement *echi táa namuti*, meaning ‘the little animal,’ is modified by the postposed relative clause *mapu churú pasochi niraá ju* ‘that was the size of a skunk.’

- (528) echi taa namuti **mapu**; **t_i** churu pasochi niraá ju
 DEF little animal REL *trace* size skunk as be-PRES
 ‘the little animal that was the size of a skunk’ [t57]

The relative pronoun *mapu* appears in D-structure as the subject of the embedded CP, a relative clause involving two noun phrases equated with the present-tense copula *ju*. The syntactic representation in (529) shows *mapu* to be the subject of the clause in D-structure.

- (529) [NP echi táa [CP [C' [IP **mapu** [I' [VP [PP [NP churú pasochi] [p niraa]] ju] *present*]]] namuti]

Following Wh-movement the relative pronoun *mapu* appears in [Spec, CP] position linked to a trace in the subject position, as indicated in the S-structure representation in (530).

- (530) [NP [CP **mapu_i** [C' [IP **t_i** [I' [VP [PP [NP churú pasochi] [p niraa]] ju] *present*]]]]]

By the point in the derivation in which the relative clause has reached S-structure, the relative clause has also been adjoined to IP in sentence-final position and no longer remains within NP. Yet the interpretation of the moved relative pronoun may still be made clear by co-indexation of that relative pronoun not only with its trace but also with the head noun, *namuti*, with which it is associated as an adjunct. This three-way co-indexation results from the rule of predication that allows the relative clause to be construed with the noun of which it is predicated (Haegeman 1996:408).

Tarahumara texts also show evidence of relative pronouns originating in object positions within the relative clause. The example in (531) illustrates the preposing process of a relative pronoun that was base-generated as a verbal complement in a postposed relative clause.

- (531) auché jaré huicabé namuti [**mapu_i** Ø
 other some many animal REL (it)
- iquí galá Ø oméra-li PRO **t_i** mi'a-yá]
 happened well (they) be able-PAST (they) (them) kill-PTC
 'other animals that it so happened that they could kill' [g8-9]

The relative pronoun *mapu* originates as the complement of the participial verb *mi'aya*, which itself is embedded within the verb phrase headed by the fully-inflected verb *omerali*. This verb phrase in turn is contained within an IP that is the complement of the verb *iqui* 'happen.' Thus, the relative pronoun crosses several bounding nodes on its way from its original position to the highest [Spec, CP]. The syntactic representation in (532) indicates how deeply embedded the relative pronoun was before movement and how it has moved in two cycles, first to [Spec, CP] of an intermediate complementizer phrase and then to [Spec, CP] to become the head of the relative clause.

(532) [NP [CP $mapu_i$ [C' [IP \emptyset [I' [VP [CP t_i [C' [IP \emptyset [I' [VP *galá* [IP PRO
[I' [VP [NP t_i] *mi'aya*] *non-finite*] *omerali*] *past*]]] *iqui*] *present*]]]] *namuti_i*]

As a result of this movement a three-member A'-chain has been formed, $\langle mapu_i, t'_i, t_i \rangle$. All the members of this chain are co-indexed with one another and with the head noun in the highest clause, *namuti*, of which this relative clause is predicated.

The tree representation in figure 43 records the same particular point in the derivational history of this relative clause that is represented in (532). By this point in the derivation the relative pronoun has moved but further postposing has not yet taken place. Figure 43 further indicates by means of arrows the two cycles of movement through which the relative pronoun proceeded on its way to the final [Spec, CP] position. The cyclic movement is posited to abide by the condition of Subjacency, which prevents a constituent from crossing more than one bounding node on any one cycle of movement.

On the first cycle of movement, the pronoun crosses IP to arrive in the lower [Spec, CP], which must be an unoccupied position, because if the [Spec, CP] position is already overtly occupied by a constituent and the pronoun also comes to occupy the same position, the sentence will become ungrammatical.

On the second cycle of movement, the pronoun crosses another IP in order to arrive in the higher [Spec, CP] position. Bounding nodes parametrized for Tarahumara are not clear, but as evidenced in this example, one may conclude that at least the bounding node IP can be crossed.

5.3.3 Wh-movement to adjoined positions

The Wh-movement described in sections 5.3.1 and 5.3.2 took place was required by the predication rule, in order for sentences to be semantically interpretable. The Wh-movement previously described was also always leftward movement. Now the discussion turns to Wh-movement that occurs for pragmatic reasons and usually moves constituents rightward, although it can also move them leftward. This kind of Wh-movement does not move constituents into a projected but unoccupied position such as [Spec, CP] but rather creates a new position for them that was not present at D-structure. The creation of a new position is called adjunction, and it is subject to the restrictions that the new position may only be “built onto” or adjoined to maximal projections that are not arguments (Chomsky 1986b cited in Haegeman 1994: 388).

The general configuration of the underlying position of the constituent, the maximal projection and the adjoined position in the derived structure is represented in figure 44, as adapted from Haegeman (1994: 386) for the phrase structure of Tarahumara.

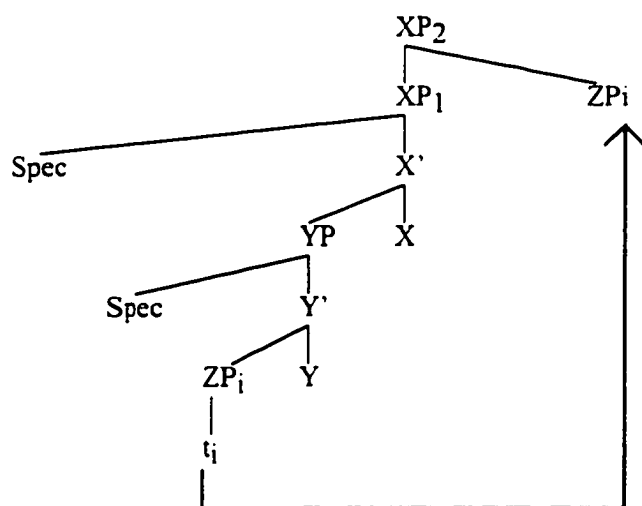


Figure 44. General tree representation of adjunction.

As a result of the adjunction process indicated in figure 44, two XP nodes now exist, the lower one, XP_1 , being the original maximal projection and the higher one, XP_2 , being the new maximal projection. This higher maximal projection, XP_2 , dominates the original or “base” maximal projection and also dominates the adjoined position ZP. The constituent that moves into the adjoined ZP position may be called the antecedent even though it appears to the right of its trace. This antecedent will also c-command and A'-bind its *wh*-trace in the original ZP position to the left of the antecedent (Haegeman 1994: 392-393).

5.3.3.1 Postposing of a subject for topicalization or focus

The postposing of a subject for purposes of topicalization or contrastive focus makes use of the adjunction process of Wh-movement. The sentence in (534) illustrates the postposition of the subject *echi tori* ‘the rooster’ to the end of the sentence.

- (533) Bi'ya rocogo cusu-ri echi tori.
 early in the morning sing-PAST DEF rooster
 'Early in the morning the rooster crowed.' [v6]

The tree representation in figure 45 shows the result of adjunction. Note the similarity of this configuration to the general adjunction pattern in figure 44.

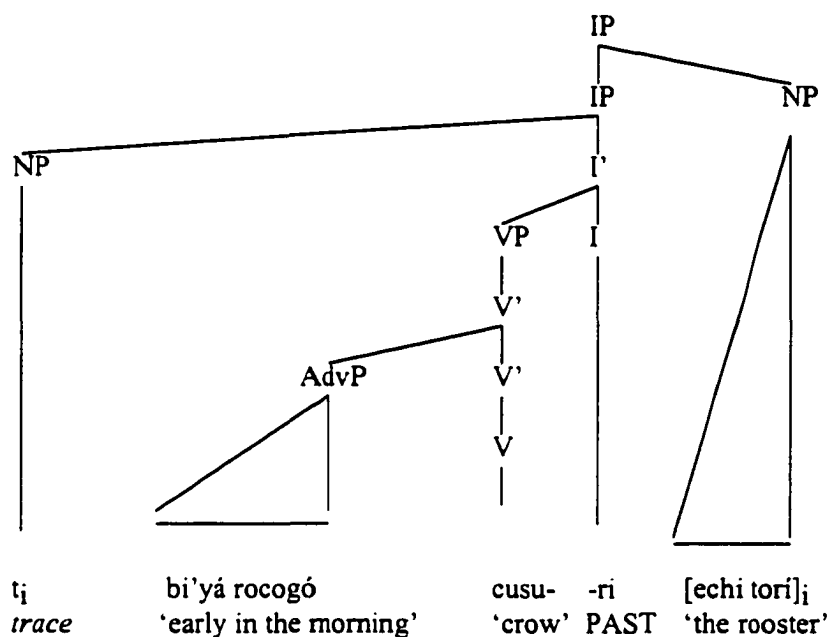


Figure 45. Tree representation of example (533).

While further research into the purposes of postposing subjects in sentences like (533) is needed, it may be that the subject *echi tori* 'the rooster' is postposed for stylistic reasons not yet clear in the study of Tarahumara discourse. Because this subject is not phonologically long at only three syllables, phonological weight is not a likely motivation for its movement, nor does this subject receive special focus or presentation as an important new topic in this context. It may be noted, however, that the verb *cusuri* 'crowed' is a member of the group of intransitive verbs, a

group that is significantly more likely to be associated with the postposing of a subject than is the group of transitive verbs, as discussed in chapter 3.

Pragmatic motivation for postposing of a subject is more clear in example (534) which illustrates the postposing of a subject, *echi auché biré tohui* ‘the other boy,’ in order to provide special focus for the object of the sentence, *auchecho huarú rité* ‘another big stone,’ by allowing the object to appear in prominent sentence-initial position.

- (534) t_i auchecho huarú rité pasa-ri [echi auche bire tohui] $_i$.
trace other big stone throw-PAST DEF other one boy
 ‘the other boy threw another big stone’ [v33]

5.3.3.2 Postposing of an object to provide focus or to reintroduce a topic

Using a different strategy to achieve a similar effect as in (534), example (535) preposes a direct object to provide it with additional focus in an OSV sentence.

- (535) ¿Acha **tamí $_i$** jaré carúmati t_i co'-mea?
 perhaps 1SG.ACC some animal *trace* eat-IRR
 ‘Would some animal eat me?’ [v3]

In this example the complement of the verb *co'mea* ‘will eat’ is the first person singular accusative case pronoun *tamí*, here placed in a position where it can receive special focus at the beginning of the sentence. In order to permit this preposing movement, an additional IP node above the existing IP node has been created so that the noun phrase *tamí* can be adjoined there to IP in sentence-initial position.

Example (536) illustrates the postposing of a direct object in order to re-introduce it as topical after an absence of several clauses.

- (536) Echari=te foco=te rajiga=te t_i ‘neri
 then-1PL flashlight-1PL light-PTCP-1PL *trace* see-PAST

echi taa namuti.
 DIST small animal
 'Then lighting a flashlight we saw that small animal.' [t54]

The noun phrase *echi taa namuti* 'the small animal' was previously topical in the discourse but after disturbance by other topics during the preceding several clauses it is brought to the forefront of the narrative again by movement to a prominent position at the end of this sentence.

5.3.3.3 Postposing of constituents by adjunction for ease of processing

Example (537) illustrates the postposing of an indirect object argument for ease of processing, leaving the direct object in normal pre-verbal position. This is a type of *heavy NP-shift*, in which phonologically long or syntactically complex noun phrases (those that are "heavy") are moved out of their complement position within the verb phrase to an adjoined position at the end of the sentence.

(537) *tj Hue carúmati tj a-yá asa-ri*
trace very thing trace give-PTCP sit-PAST

nijéj, chabochij.
 1SG Mexican
 'I was just giving away our things to the Mexicans.' [16.44]

In Tarahumara, shorter, simpler constituents are often ordered before longer, more complex constituents. Example (537) illustrates the postposing of an indirect object, the noun phrase beneficiary *chabochi* 'Mexicans,' not because this three-syllable noun phrase is phonologically long but because the presence of two noun phrase arguments in complement position within the verb phrase increases the complexity of the verb phrase. Thus, after the indirect object is postposed, only one argument, the direct object *carúmati* 'our things' remains in pre-verbal position, allowing a situation of easier cognitive processing.

A further example of heavy NP-shift is demonstrated in sentence (538) in which a syntactically complex direct object, the non-finite clause *rochi siruya* 'fish-catching,' is postposed, leaving a co-indexed trace as well as the indirect object beneficiary, the first person singular accusative case pronoun *tami*, in pre-verbal position.

(538) mapu=mi muje t_i tami binera-ma
 that-2SG 2SG trace 1SGACC teach-IRR

[*rochi siru-ya*]_i
 fish catch-GER
 'that you should teach me to catch fish. . .' [z29]

Nearly every sentence in the texts examined for this study shows evidence of postponing movement by adjunction. Besides the heavy-NP shift of indirect objects and direct objects illustrated in (537) and (538), adverbial adjuncts, non-finite clauses serving as adjuncts, finite subordinate clauses serving as adjuncts and relative clauses may all be postposed or preposed by the process of Wh-movement. Often this movement occurs to provide added salience for the moved constituent, while sometimes the movement seems merely to reduce the burden of cognitive processing by moving phonologically long or syntactically complex constituents out of the primary Subject-Verb area of the sentence on which the basic framework for interpretation of the sentence depends.

5.4 Summary of discussion of movement transformations

This discussion of movement in Tarahumara sentences demonstrates that Tarahumara syntax, even the patterns of variation in word order, remains in accordance with the basic principles of Government and Binding theory. The varied positions in which subjects of passive verbs as well as question words, relative pronouns, noun phrase arguments and obliques, finite clauses

and non-finite clauses appear can be accounted for by means of either NP-movement or Wh-movement. Unoccupied subject positions are the target of NP-movement, while [Spec, CP] and adjoined positions are targets for Wh-movement.

The texts examined for this study provide insufficient evidence to make a definitive statements about other types of movement or about bounding nodes, since no Head to Head movement or peripheral movement was found in the texts examined for this study. The bounding nodes restricting the distance across which constituents may be moved are not clear for Tarahumara, although there is evidence that IP may be crossed.

CHAPTER 6

TEXT ANALYSIS

This chapter presents a discourse analysis of a brief Tarahumara narrative text from a functional viewpoint flavored with some concepts from the Government and Binding theory. After a presentation of the glossed text itself and an overview of the organization of the text, the text is examined for its contributions to an understanding of the participant reference system, the verbal encoding system, and the motivations for variation in word order in Tarahumara.

6.1 Overview of the text

This portion of chapter 6 presents the text itself and then discusses the notional structure of the text as a basis for understanding the surface structure examination of the text in sections 6.2 and 6.3.

6.1.1 Presentation of the text

This narrative text was recorded by Dionicio Pérez of Samachique, a native speaker of Tarahumara, for Kenneth Hilton. Data are not available regarding the age of the speaker and the date and occasion upon which the text was recorded. Mr. Pérez is known, however, to be an adult native speaker of Tarahumara who on a number of occasions, at Mr. Hilton's invitation, recorded onto audiocassette various tales of the past and experiences of his own. The tale recounted in this text is likely to be well-known to the Tarahumara of the Samachique area. As an added bonus, the tale incorporates common activities in Tarahumara culture, such as the growing of corn and the

hunting of deer. The tale also alludes to a number of features of the mountainous environment in which the Tarahumara live, features such as creeks, canyons, rocks, precipices and pine forests.

The story contains implicit reference to a number of values that are significant in Tarahumara culture. These values include cooperation in achieving a goal, admiration for animals with outstanding qualities, delight in discoveries of useful natural resources, cleverness in conflict with nature, and thrift through minimizing the use of western material artifacts. These themes frequently appear in Tarahumara texts.

“How a Man Killed a Deer by Throwing His Sarape over its Antlers”

1. Je'ná auchecho biré ra'icha-ri ju. be.PRES
 PROX other INDEF speak-NMZR
 ‘This is another story.’

2. Chabé rahué biré rijoy huisarapi pas-ca
 before day INDEF man sarape throw-PTCP

 mi'ya-ri biré chumarí.
 kill-PAST INDEF deer
 ‘Some time ago a man killed a deer by throwing his sarape over its antlers.’

3. Echo'ná corite comichi bité-ami níiri.
 there on the other side creek live(sg)-AJZR be-PAST
 ‘The man lived on the other side in a creek valley.’

4. Echi rijoy inár-ami echo'ná buhue-chí
 DEF man walk-AJZR there road-LOC

 huaquiná cu simi-yá chopi
 toward here again go-PTCP moreover

 binoy ani-ri-ni <<Sunú apé-ma=ni cu ripáami>>
 3SG say-PAST-? corn carry-IRR-1SG.NOM again up there

 mapujiti aboni ma quetasi sunuhua-Ø muchi-ri.
 because 3PL already NEG have corn-PRES sit(pl)-PAST
 ‘Coming along the road in this direction, the man thought, “I’m going to bring corn from up there,” because they no longer had corn there where they were living.’

5. Chopi echarí bi'yá iná-ra-ri,
But at that time early walk-?-PAST
'And at that time, early, he walked along.'
6. echo'ná buhue-chí mabu-ri biré chumari,
there road-LOC burst forth leaping-PAST INDEF deer

huarú ohuira.
large male
'There onto the road burst forth leaping a deer, a large buck.'
7. Ari biché echi rijoy cochí buqué-ami níi-ri.
and then DEF man dog own animal-AJZR be-PAST
'Now the man had his dog with him.'
8. Ari biché echi cochí hue yati najáta-ri.
and then DEF dog very immediately follow-PAST
'Then the dog immediately followed the deer.'
9. Hue sirú-ami níi-ri echi cochí.
very hunt-AJZR be-PAST DEF dog
'It was a real hunting dog.'
10. Ari biché echi rijoy o'huari sinácha-ri binoy.
and then DEF man great shout-PAST 3SG
'Then the man shouted loudly.'
11. Echarí echi quiná ca'ó tabachi o comichi
then DIST this direction from above narrow place or creek canyon

birénapi mabu-ri echo'mí.
in just one part burst forth leaping-PAST there
'Then the deer went away leaping upwards in the canyon where it was very narrow.'
12. Hue 'yétachi níi-ri huamí auché jaréani
very closed place be-PAST from there other some parts
'The canyon was closed from there to other parts [there was no way out from above].'
13. Ari biché echo'ná birénapi cáari echi
and then there one part be dark-PAST DIST

mapo'ná simíra-ri echi chumari.
wherever pass-PAST DEF deer
'Then it was very dark there where the deer had to come out [coming back the other way].'

14. Ari biché echocué murubé cu aní-na-chi
and then right there very close again make sound-CONT-REIT
- echi cochi
DEF dog
- ari biché echi rijoy hue sapunú-Ø
and then DEF man very hurry greatly-PRES
- quiri capora-Ø asiba-ri echo'ná sito-chi
quiet make a ball-PRES sit(sg.)-PAST there elbow-LOC
- rité-teri sico-chi
stone-LOC corner-LOC
- mapujiti echo'ná simira-ri echi chumari cu moba.
because there pass-PAST DEF deer again above
'The dog was barking very close to the deer. Then the man hurried and crouched down there in a corner between the rocks because the deer had to pass by there almost overhead [in order to get out of the canyon].'
15. Ari biché echi rijoy echirigá quirí asa-gá
and then DEF man in this manner quiet sit-PTCP
- echo'ná huasarapi mutu-ca asa-ri.
there sarape hold-PTCP sit-PAST
'Then the man, sitting there very quietly and holding his sarape, remained there.'
16. Ari biché echo'ná simír-ami hue yaati huirí-saga
and then there pass-AJZR very quickly stand up-PAST.PTCP
- o'huari sinácha-ri echi huasarapi pasa-ri echo'ná mo'o-chí
great shout-PAST DEF sarape throw-PAST there head-LOC
'Then when the deer was passing by there, [the man], having very quickly stood up, shouted loudly and threw his sarape over the antlers of the deer.'
17. Ari biché echi huasarapi
and then DEF sarape
- echo'ná chumari mo'ó-ra-chi chucúba-ri
there deer head-SPCF-LOC remain-PAST
- mapujiti o'huéari ahué-ami níi-ri
because great have horns-AJZR be-PAST

echi chumari.

DEF deer

'Then the sarape stayed there on the head of the deer because it had large antlers.'

18. Ari biché cara chubita-ri mo'o-chí
and then completely be covered-PAST head-LOC

echi chumari mo'o-ra.

DEF deer head-SPCF

'Then the head of the deer was completely covered [it could see nothing].'

19. Ari biché arigá echirigá 'ma-ri echi chamari
and then nevertheless in this manner run(sg.)-PAST DEF deer

huabé huicanáami natába-ri echo'ná jaréana ocó-rari
greatly in many parts hit-PAST there some parts pines-LOC

jaré rité-rari ayena cho natago-pa bu'hui-ra-sa-ri.
some rocks-LOC also hit-PTCP fall to the ground-?-?-PAST

'Then in spite of this, in this manner the deer ran; he hit himself all over the place on the pine trees and rocks, and hitting himself he went along falling.'

20. Ari biché pe huiribeco arigá biréana coráachi
and then small while after nevertheless one part precipice

(hui)chi-ri, huabé ripabé coráachi.
fall-PAST great high precipice

'Then after a little while, nevertheless, he fell over a certain precipice, a great high precipice.'

21. Echirigá mucu-ri echi chamori.
in this manner die(sg.)-PAST DEF deer
'And so the deer died.'

22. Echirigá mi'ya-ri echi rijoy
in this manner kill-PAST DEF man

chopi echi rijoy quetasi cá-ami níi-ri
but DEF man NEG carry-AJZR be-PAST

tabiré carabino tabiré ripurá
NEG rifle NEG axe

- chopi huasarapi pas-ca mi'ya-ri.
but sarape throw-PTCP kill-PAST
'In this manner the man killed it; he wasn't carrying a gun or a knife, but by throwing his sarape over it he killed it.'
23. Ari biché echi rijoy echo'ná jonsa cu ro'hui-ri.
and then DEF man there from again turn back-PAST
'Then from there the man went back [to his dwelling].'
24. Quetasi nahua-ri echo'ná cu ripáami
NEG arrive-PAST there again high above

echo'ná sunú apé-miya
there corn carry-SG.PTCP

mapujiti chopi echi chumarí cu ape-a
because only DEF deer again carry-PTCP

simiri cu binoy bite-ra-chi echo'ná risochí.
go-PAST again 3SG home-SPCF-LOC there cave-LOC
'He didn't arrive there up above to bring the corn, because carrying only the body of the deer he went back to the cave where he was living.'
25. Auhechoco ba'arínari auché siné simi-ri sunú ape-miya.
other next day other time go-PAST corn carry-SG.PTCP
'And the next day he went out again bringing the corn.'

6.1.2 Notional structure of the text

According to Longacre's typology of discourse genre (1996), the text has in common with other narrative texts the two primary features [+ contingent succession], indicating that progress through time serves to organize the story, and [+ agent orientation], indicating that certain participants figure crucially in the described event. The text also displays the secondary features [- projected time] which separates past time stories like this one from prophecy, and [+ tension] which ensures that the text is not merely a collection of episodes without a climax.

The 25-sentence text is organized in paragraphs according to the scheme displayed in table 17.

Table 17. Scheme for organization of the text

| Sentence numbers | Surface structure | Notional structure | English summary of content |
|------------------|-------------------|---|---|
| S 1-2 | aperture | | This will be a story about a man who killed a deer with his sarape. |
| S 3-4 | stage | exposition | The man was from the other valley and was walking along the road up toward his cornfield to gather some needed corn. |
| S 5-10 | prepeak episode | inciting moment; developing conflict | As the man walked a deer burst onto the road. The man's hunting dog chased the deer and the man shouted loudly. |
| S 11-17 | peak episode | climax | The deer went leaping away up into the closed canyon but had to turn back toward the man. The man crouched waiting for the deer at the outlet while the dog drove the deer toward the man. When the deer passed overhead, the man threw his sarape over the deer so that its head was completely covered. |
| S 18-21 | peak' episode | denouement | The deer ran about blindly crashing into trees and stones, fell over a precipice and died in the fall. |
| S 22-25 | closure | conclusion | So the man killed the deer without gun or knife. He went back home without corn but with the deer and went out for corn again the next day. |

The remainder of this section explains the reasoning followed in organizing the story in the manner displayed in table 17. This rationale closely follows the surface and notional structure labels provided in Longacre (1996: 33-50) and cites textual signals likewise suggested in Longacre 1996 as indications for separating the story into these categories.

The first paragraph of the text, sentences 1 and 2, has the surface structure known as “aperture” because it provides a formulaic opening for the story. The aperture used in this story includes an adapted aperture, ‘This is another story’ which defines the speech situation as a storytelling performance, and a traditional aperture ‘Some time ago’ which is the standard formula for beginning a story in Tarahumara. The aperture also includes a preview of the content of the story: ‘a man killed a deer with his sarape.’ This aperture paragraph demonstrates surface structure features only; the plot has not yet begun to unfold.

The second paragraph of the text, sentences 3 and 4, has the the surface structure known as “stage” because it contains references to the main character of the story and the general time and location of the events to be recounted. Sentence 3 has the form of expository discourse because it identifies and describes the main character, while sentence 4 has the form of narrative discourse because it recounts the background activity of the main character when the events began to occur. This paragraph has the notional structure known as “exposition” because the main character and setting of the story is laid out here.

The third paragraph, sentences 5 to 10, has the surface structure of a prepeak episode in that narrative discourse is expressed by means of a succession of time horizons indicated by conjunctions such as *chopi echari* ‘and at that moment’ and *ari biché* ‘and then,’ but the surface structure features denoting the peak episode have not yet begun to appear. This paragraph has the notional structure of an “inciting moment” in which the action of the story begins to occur in sentences 5 and 6, and then a “developing conflict” in which various pressures are placed on the patient character in the story, the deer, in sentences 7 through 10.

The fourth paragraph, sentences 11 through 17, has the surface features of a peak episode. This paragraph is characterized by concentration of participants (the man, the dog, and the deer are

all involved), change of pace through shortening of clauses, especially in sentence 16, and heightened vividness through concentration of past tense eventline verbs and loss of overt subjects, particularly in sentence 16. The notional structure of this paragraph is that of climax, in which the action is “knotted up proper” by leading up to the moment of greatest tension in which the deer’s head is completely covered by the sarape so that it can no longer see to escape.

The fifth paragraph, sentences 18 to 21, has the surface structure of a peak’ (peak-prime) episode. It continues to demonstrate features characterizing peak, including particularly the rhetorical underlining created by repetition for emphasis and “slowing down” of the action of six full noun phrases referring to the deer. This paragraph has the notional structure of a denouement because the tension is loosened by the events of this episode: the deer stumbles about and finally falls over a precipice and dies, allowing resolution of the conflict portrayed in the preceding episode in which the deer is trapped but still alive and struggling.

The final paragraph of this text, sentences 22 to 25, has the surface structure of a “closure.” Narrative discourse continues in this paragraph, but the pace slows by a change to longer units and appearance of postposed subordinate clauses, vividness decreases through appearance of postposed participles and statements of irrealis (negatives), and the stage empties to show only the man and the inert body of the deer (the dog disappears from the stage). This paragraph has the notional structure of a conclusion because storyline events cease to occur, a summary of the action is provided (sentence 22) and the details of the story (dealing with the body of the deer and the forgotten corn) are wrapped up.

The six paragraphs of the text, thus, are characterized by surface features that indicate an aperture, a stage, a pre-peak episode, a peak episode, a peak’ episode and a closure, according to the categories described in Longacre 1996.

6.2 Formal features of the text and their interpretation

While the organization displayed in table 17 may be inferred intuitively from the notional or thematic structure of the narrative, a number of aspects of the formal surface structure of the text also indicate that the speaker organized the text in this manner. These aspects include use of conjunctions, use of temporal expressions and locative expressions, manner of participant reference and coding of verbs. The first three organizational features of surface form will be mentioned briefly in section 6.2.1. The remaining two organizational features will be discussed in detail in sections 6.2.2 and 6.2.3.

6.2.1 Simpler features of textual organization

This section explains the use of conjunctions, temporal expressions and locative expressions to formally indicate the author's thematic organization of this text.

6.2.1.1 Conjunctions

Conjunctions in Tarahumara play an important role in blocking together sections of the discourse that naturally adhere to one another but detach themselves from other sections. The coordinating conjunction *ari biché* 'and then' designates material as having coordinate eventline status and introduces thirteen main clauses in this text, many of which appear in the display in table 17 as English glosses denoting the primary storyline. The subordinating conjunctions *mapujiti* 'because' found in sentences 4, 14, 17 and 24, and *mapo'na* 'where' found in sentence 13, introduce embedded clauses that contain backgrounded explanatory material that is closely dependent on the preceding eventline material. The lack of a sentence-introducing conjunction in sentence 4 relates this sentence closely to sentence 3; likewise, the lack of a sentence-introducing conjunction in

sentences 6, 9 and 24 signifies that each of these sentences is closely related to the sentences immediately preceding them. A glance at table 17 will verify that sentences so related belong to the same paragraphs and are not separated by paragraph or episode boundaries.

6.2.1.2 Temporal expressions

Temporal expressions figure prominently in organizing the text into cohesive sections that differ from the preceding and following sections. The formulaic expression *chabé rahué* 'some time ago' provides the temporal setting for the story as it opens in sentence 2. The adverb *echari* 'at that time' introduces the pre-peak episode by appearing near the beginning of sentence 5 as well as introducing the peak episode, where it appears at the beginning of sentence 11. The temporal oblique *pe huiribeco* 'after a little while' in sentence 20 marks the closing stage in the temporal progression of events in which the deer dies, allowing resolution of the story. The temporal expression of the last sentence, *ba'arinari* 'the next day,' refers to the new time horizon that requires the closure of this particular story.

6.2.1.3 Locative expressions

Locative expressions that occur in sentence initial or near initial position contribute to text organization and cohesion. The expression *echo'ná corite comichi* 'there on the other side in a valley' in sentence 3 marks the beginning of the expository paragraph by telling where the main character lived. The expression *echo'ná buhuechi* 'there onto the road' in sentence 6 ties this sentence to the previous one by identifying the place where the man walked with the place where the deer appeared so that the new action affects the previously-begun backgrounded action.

Locative expressions that occur in sentence medial position aid the analyst more in identifying main events than in discovering textual organization. Locative expressions found in sentence medial position in sentences 4, 11, 13, 14, 19, 20, and 24 correspond to the changes in location that move the action of the story forward. Each mention of a new location ties in closely to an action which can only be accomplished at that place, thereby assisting the analyst in identifying foregrounded actions essential to the storyline.

The participant reference system and the verbal coding system work together with conjunctions and temporal and locative expressions to manifest the organization of the text. These two systems are discussed in greater detail in the upcoming sections.

6.2.2 Textual organization through the participant reference system

This section attempts to answer five questions with regard to the noun phrase arguments of the discourse: 1) who or what are the participants and props in the narrative? 2) what types of formal encoding are used for these participants in surface structure? 3) how is the referent of each noun phrase determined? 4) why is one type of encoding used in each instance in preference to some other type of encoding? and 5) how does the type of encoding assist in determining the organization of the text? (Burquest, 1995, course materials)

Four roles have been cast in this discourse: the man, the deer, the dog and the sarape. Concepts from Longacre and Levinsohn (1978: 106) assist in describing these participants in terms of their roles, their rank and their relation to the author of the text. The major participants are the man and the deer, and of these two, the man is the central character and the initiator, while the deer is the undergoer. The dog is a minor participant and takes the traditional role of "helper to the hero." The sarape, being an inanimate object that has no volition of its own but has only a manipulable

function in the hands of the man, is a prop. Ranking of participants in an unstated hierarchy applies in this story only in the sense that human agents are more active than non-human animate agents, and these are in turn more active than inanimate items. While the author does not clearly choose one participant over another for emotional identification or author empathy in the discourse, the author does take the vantage point of a third person participant, the man who outwits the deer. This vantage point may be inferred from the greater quantity of description of the origin, intentions and actions of the man in comparison with any of the other participants.

6.2.2.1 Forms of participant encoding

In the course of the narrative, the participants are referred to by means of full noun phrases, full and suffixal personal pronouns, demonstrative pronouns and the null marker. Each of these means of encoding is described in this section together with a frequency count for its use with each participant or other noun phrase in the discourse. Locative noun phrases are omitted from the discussion because they relate more to the setting of the action than to the initiators, undergoers or instruments of action which are the primary focus in a discussion of participant reference.

6.2.2.1.1 Referential expressions

Full noun phrases are called 'referential expressions' in Government and Binding theory. These expressions are not bound within their governing category (they do not have an antecedent within their own clause) nor yet within the discourse or deictic context. According to Principle C of the Binding Theory, these expressions are never c-commanded by their antecedent (Haegeman 1994: 227). They "refer" by themselves, thus, they are free everywhere. The referent of such

expressions can be retrieved without need for an antecedent. Such expressions include personal names and other full noun phrases.

Referential expressions in this text appear in definite, indefinite and bare forms. Table 18 shows the frequency of each type of coding for each participant and other significant noun phrases mentioned in the text.

Table 18. List of full noun phrases in the text

| Referent | Type of coding | Noun phrase | Gloss | Tokens | Sentence numbers |
|----------|---|----------------------------|----------------------------|--------|------------------------------|
| man | indefinite | biré rijoy | 'a man' | 1 | 2 |
| | definite | echi rijoy | 'the man' | 8 | 4, 7, 10, 14, 15, 22, 22, 23 |
| | bare | rijoy | 'man' | 0 | |
| deer | indefinite | biré chumari | 'a deer' | 1 | 2 |
| | definite | echi chumari | 'the deer' | 6 | 13, 14, 17, 19, 21, 24 |
| | appositive | biré chumari, huanú ohuira | 'a deer, a large buck' | 1 | 6 |
| | metonymic / reduced genitive construction | mo'ochi | 'head' | 2 | 16, 18 |
| | genitive | echi chumari mo'ora | 'the deer's head' | 1 | 18 |
| | genitive combined with locative | echo'ná chumari mo'orachi | 'there on the deer's head' | 1 | 17 |
| | bare | chumari | 'deer' | 0 | |
| dog | indefinite | biré cochi | 'a dog' | 0 | |
| | definite | echi cochi | 'the dog' | 3 | 8, 9, 14 |
| | bare | cochi | 'dog' | 1 | 7 |
| sarape | indefinite | biré huasarapi | 'a sarape' | 0 | |
| | definite | echi huasarapi | 'the sarape' | 2 | 16, 17 |
| | bare | huasarapi | 'sarape' | 3 | 2, 15, 22 |

Table 18--*Continued.*

| | | | | | |
|-------------------------|--------------|----------------------------|--------------------|----|----------|
| other noun phrases | indefinite | auchecho biré ra'ichari | 'another story' | 1 | 1 |
| | bare | sunú | 'corn' | 3 | 4, 24,25 |
| | non-existent | tabiré carabino | 'no rifle' | 1 | 22 |
| | non-existent | tabiré ripurá | 'no knife' | 1 | 22 |
| Total full noun phrases | | | | 36 | |

Table 18 indicates that, in addition to definite and indefinite marking of full noun phrases, the text encodes noun phrases as bare nouns, indefinite noun phrases further marked with appositives, full and reduced genitive constructions involving one of the participants, and nouns marked as non-existent. With regard to the three-way distinction in the commoner forms of marking among definite, indefinite and unmarked noun phrases, it is noteworthy that the two major characters 'man' and 'deer,' are encoded with definite and indefinite markings but do not appear as bare nouns. Meanwhile the minor character 'dog,' and the inanimate items 'sarape' and 'corn' do appear as bare nouns and two of them 'dog' and 'sarape,' also appear as definite noun phrases, but none of these three appears as an indefinite noun phrase.

These referring expressions take the positions of subjects and objects within their clauses, with the exception of the genitive constructions which function as locative obliques within their clauses.

6.2.2.1.2 Pronouns

According to Government and Binding theory, pronouns have the features [+ pronominal], [- anaphor]. Furthermore, according to Principle B of the Binding Theory, pronouns must be free in their governing category but must find their antecedents in the discourse context or immediate

deictic context (Haegeman 1994: 224-225). This means that the antecedent of the pronoun must not occur within the smallest maximal projection that also contains the pronoun, a subject or finite INFL and the governor of the pronoun that provides case-marking for the pronoun.

6.2.2.1.2.1 Personal pronouns (full and reduced)

Only four personal pronouns occur in this narrative. Three are full pronouns while one of them is a clitic pronoun that appears suffixed to the verb within a quotation. The four pronoun forms appear in table 19.

Table 19. List of personal pronouns in the text

| Referent | Type of encoding | Pronoun | Gloss | Tokens | Sentence numbers |
|-------------------------|------------------|---------|---------|--------|------------------|
| man | unreduced | binoy | 3SG.NOM | 2 | 4, 10 |
| man | clitic | =ni | 1SG.NOM | 1 | 4 |
| man's family | unreduced | aboni | 3PL.NOM | 1 | 4 |
| Total personal pronouns | | | | 4 | |

As predicted in chapter 3 where it was explained that Tarahumara pronouns generally do not refer to non-human or inanimate entities, the pronouns in table 19 all refer to the only human referent in the story. No personal pronouns are used of the animals or inanimate objects that appear in the text. The two unreduced forms are the subjects of their clauses, and the clitic is a manifestation of INFL that is in agreement with the null subject of its clause.

One of the uses of the third person singular pronoun is interesting because it co-occurs with a full noun phrase denoting the same referent and filling the same argument position. This instance is in sentence 10, provided again for convenience in (539).

- (539) Ari biché **echi** **rijoy** o'huari sinácha-ri **binoy**.
 and then DEF man great shout-PAST 3SG
 'Then the man shouted loudly.'

Both the full noun phrase *echi rijoy* 'the man' and the third person singular pronoun *binoy* function as subject for the clause and external argument for the verb *sináchari* 'shouted.' The noun phrase appears in normal pre-verbal position for subject, while the pronoun is postposed. Alternative analyses of the pronoun's function are not satisfactory. One could suggest that the pronoun is an intensive pronoun that is construed with *echi rijoy*, on the basis of identity of form of this pronoun with the intensive pronoun *binoy* used occasionally elsewhere. This analysis fails because the intensive pronoun normally follows its antecedent immediately in Tarahumara, whereas here the pronoun in question is separated by other material from its antecedent. Furthermore, the original gloss provided for the sentence indicates no intensive meaning, such as 'the man himself shouted loudly.' A reflexive analysis of the pronoun, giving a meaning like 'the man shouted loudly for himself' fails for exactly the same reasons that the intensive analysis fails.

One might also suggest that the third person singular pronoun *binoy* is actually in accusative case and refers not to the man but to the deer, so that the sentence means 'the man shouted loudly at it.' This analysis fails for several reasons, one being that Tarahumara rarely uses personal pronouns to refer to non-human entities as explained previously, preferring demonstrative pronouns such as *echi* 'that one' for this purpose, and another being that pronominal objects almost invariably precede the verb in Tarahumara, whereas this pronoun follows the verb. A further problem with this analysis is that the gloss provided for the sentence does not allow for such an interpretation of the sentence.

In favor of the original analysis, however, Givón (1983) and Langacker (1977) note the existence of reduplicative forms of the subject in related languages, Givón citing such forms in Ute and Langacker citing such forms throughout Uto-Aztecan. Givón calls such a construction the

“double-occurring subject” and defines it as the occurrence of a definite subject, either an independent pronoun or a full noun phrase, twice within the clause. This subject occurs both before and after the verb, giving an SVS ordering. Givón believes this construction to be a feature of an oral, loose style and a means of marking the subject (1983: 149).

Langacker (1977) also defines this construction as one in which free pronouns (not bound forms) copy nominal constituents. He calls such constructions “presumptive pronoun constructions” if the pronoun precedes the full noun phrase and “resumptive pronoun constructions” if the pronoun follows the full noun phrase. He further notes that these constructions may be “discontinuous” in the sense that other material intervenes between the pronoun and the nominal constituent that it copies (1977:28). Langacker believes that such constructions are related to topicalization “in some way that awaits detailed investigation” (1977: 27).

Because of the failure of alternative analyses and the plausibility of the double-subject hypothesis in light of its appearance in other Uto-Aztecan languages, it seems best to posit a reduplicative-subject analysis for this sentence.

6.2.2.1.2.2 Demonstrative pronouns

Three demonstrative pronouns encode realizations of NP (the noun phrase) in the text. These three demonstrative pronouns, including the pronoun that serves as head of a relative clause in sentence 13, appear as subjects of their respective clauses.

Table 20 indicates that the text contains one occurrence of the proximal deictic pronoun *je'ná* and two occurrences of the distal deictic pronoun *echi*.

Table 20. List of demonstrative pronouns in the text

| Referent | Encoding | Pronoun | Gloss | Tokens | Sentence numbers |
|------------------------------|----------|---|----------------|--------|------------------|
| story | proximal | je'ná | 'this' | 1 | 1 |
| deer | distal | echi | 'that one' | 1 | 11 |
| canyon | distal | echi [mapo'ná simirari echi chumari] | 'that (place)' | 1 | 13 |
| Total demonstrative pronouns | | | | 3 | |

6.2.2.1.2.3 Indefinite pronouns and interrogative pronouns

Indefinite and interrogative pronouns do not encode realizations of NP in this text.

6.2.2.1.3 Anaphors

No reflexives, reciprocals or intensive pronouns appear in this text. The one pronoun, *binoy* in sentence 10, that might be analyzed as a reflexive or intensive pronoun is better analyzed as a personal pronoun, as described in section 6.2.2.1.2.1.

6.2.2.1.4 Null markers (subject and object)

A zero anaphor is the most common encoding of NP arguments in the text. Non-overt subjects and objects refer to both major participants in the narrative, the man and the deer, as shown in table 21. Note that only one non-overt subject refers to a minor participant in the narrative, the "people" described as having run out of corn in sentence 4; this non-overt subject is construed with a non-finite verb that is embedded within a finite clause which does have an overt noun phrase referring to the same minor participant.

Null marking applies primarily to the major participants in this text. With the one exception of the null argument referring to the main character's household, minor participants and entities mentioned in the discourse receive overt markings.

Table 21. Null arguments in the text

| Referent | Type of syntactic position | Tokens | Sentence numbers |
|----------------------|--|--------|--|
| the man | null subject of finite verb (<i>small pro</i>) | 8 | 3, 5, 16, 16, 22, 24, 24, 25 |
| | null subject of non-finite verb (<i>big PRO</i>) | 14 | 2, 3, 4, 7, 14, 14, 15, 15, 16, 22, 22, 24, 24, 25 |
| | null object (<i>small pro</i>) | 0 | |
| the deer | null subject of finite verb (<i>small pro</i>) | 3 | 19, 19, 20 |
| | null subject of non-finite verb (<i>big PRO</i>) | 3 | 16, 17, 19, |
| | null object (<i>small pro</i>) | 5 | 8, 9, 14, 22, 22 |
| the people | | 1 | 4 |
| Total null arguments | | 34 | |

6.2.2.2 Determination of NP referents

Having listed the ways in which various realizations of NP are encoded in the text, the discussion now addresses the question of means by which the referent of each type of encoding may be retrieved. How is the antecedent of each noun phrase selected from among several possible antecedents? In general, the listener identifies the antecedent of a noun phrase by using deictic context, discourse context, semantics and knowledge of the world.

Referential expressions such as *echi rijoy* 'the man' are easily identified by their very referential nature. Once such expressions have been introduced to the discourse by means of

indefinite marking in an existential presentative construction such as *biré rijoy* 'a man' the listener associates such noun phrases with entities in the world of discourse. The listener may even use shared knowledge of the world to assume that entities not previously introduced exist by relation to other entities already mentioned in the discourse. Thus, without formal presentative introduction this narrative can mention such entities as *cochi* 'dog,' *huasarapi* 'sarape,' and *sunú* 'corn' as bare, unmodified forms, trusting the listener to access his or her knowledge of the world and thereby to assume that such entities are likely to exist in relation to or in possession of the previously-introduced participant, the man who is the main character in the story.

Antecedents of pronouns in this narrative are identified by deictic or discourse context, and to a lesser degree, by understanding of semantics and knowledge of the world. Table 22 summarizes the means of identification of antecedents of the seven pronouns in the text.

Table 22. Means of identification of antecedents of pronouns in the text

| Pronoun | Gloss | Referent | Means of identification | Form of last mention | Sentence numbers |
|---------|--------------|----------------------|--|---|------------------|
| je'ná | 'this' | upcoming story | immediate deictic context | none | 1 |
| echi | 'that one' | deer | topical until interrupted by two other intervening topics; use of distal rather than proximal deictic; semantics of verb; knowledge of the world | null object marker | 11 |
| echi | 'that which' | enclosed canyon area | immediately preceding topic; immediately following relative clause | full noun phrase | 13 |
| binoy | 3SG | man | immediately preceding topic | null subject marker; preceding that, full noun phrase | 4 |
| =ni | 1SG | man | immediately preceding topic | unreduced pronoun | 4 |

Table 22--*Continued.*

| | | | | | |
|-------|-----|--------------|--|-----------------------|----|
| aboni | 3PL | man's family | immediately preceding topic; knowledge of the world | suffixal copy pronoun | 4 |
| binoy | 3SG | man | chain with reduplicated subject, same as immediately preceding topic | full noun phrase | 10 |

The demonstrative pronoun *je'ná* that begins the story is understood through the deictic context of the speaker-listener situation: immediately following the use of this deictic pronoun, a story issues forth, a story that the listener may identify as the one to which the storyteller has just referred.

Discourse context is the most common means of determining the referents of pronouns and serves for identifying antecedents of five of the seven personal and demonstrative pronouns in this text. Four of these five pronouns refer to the immediately-preceding topic, whether that topic is a full noun phrase, another pronoun or a null marker. For example, the clitic pronoun *=ni* appearing in the quotation in sentence 4 refers to the unreduced third person pronoun *binoy* that functions as topic immediately preceding the quotation. This unreduced pronoun *binoy* in turn refers to the same entity as the null-marked topic of the immediately preceding clause, while that topic in turn refers to the entity that is topical in the immediately preceding clause as a full noun phrase, *echi rijoy* 'the man.' Thus, topic continuity is of primary importance in establishing the referents of pronouns.

Topic continuity functions in a more complex manner in identifying referents of certain pronouns, such as the demonstrative pronoun *echi* appearing in sentence 11. The antecedent of this pronoun is not the immediately preceding topic, 'the man,' nor yet the topic immediately preceding that one, 'the dog.' The antecedent is the topic preceding those two, 'the deer,' a noun phrase that has not been topical for four clauses. This re-introduction of a discontinuous topic is determined

from noting the choice of demonstrative pronoun for the re-introduction: not the proximal *je 'ná*, as would be expected if referring to the most recent topic, but the distal *echi*, indicating an entity farther removed in degree of topicality. The listener's knowledge of the world and understanding of semantics of the sentence also help to identify the referent of this pronoun as the deer rather than the dog (the other possible discontinuous topic), in that a deer is more likely than a dog to go leaping upwards into a canyon in response to a man's shout.

Shared knowledge of the world also assists the listener in determining the referent of one pronoun used in the discourse, the third person plural pronoun *aboni* in sentence 4, where the narrator notes 'they no longer had corn there.' No antecedent for this pronoun occurs in the discourse context, nor presumably in the deictic context of the storytelling situation, but listeners are able to assume, based on their understanding of society, that the main character already introduced in the narrative may have a family. Thus, listeners are likely to identify the referent of *aboni* with the family or household of the man; listeners infer that the entire group of which the man was a member has run out of corn.

It is also possible that the pronoun *aboni* in the last clause in sentence 4 may be used in an impersonal or impersonal passive sense, so that the clause might be glossed, 'because they had run out of corn' or 'because the people were out of corn' (Burquest, 1998, personal communication).

Antecedents of null subjects and null objects may be identified by the same methods as for pronouns: by discourse and deictic context, by semantics of the verb and by knowledge of the world. Discourse context figures most importantly for this task, particularly the immediate clausal context. Most commonly, null subjects appear in chaining constructions and are construed with medial, non-finite verbs that have the same subjects as the final, fully-inflected verb of the clause. In these cases the null subject is represented as *big PRO*, the syntactically-active category that cannot

be governed or case-marked and cannot appear overtly. The subjects of the main verbs are often phonologically overt; therefore, the non-overt external arguments of medial verbs may be retrieved by listening for the arguments of the final verb in the same sentence. Less often, null subjects, represented as *small pro*, occur with main verbs and may be identified as to their antecedent by topic continuity; normally the referent is the same as the last-mentioned explicit topic.

When the method of determination of antecedent by topic continuity fails, as it does for only one null subject in this text, in sentence 16, then the listener must fall back on an understanding of the semantics of the sentence and knowledge of the world that provides the listener with an expected script for the unfolding situation. In sentence 16, the surface structure peak of the narrative, only null subjects appear. The first null subject refers to the deer even though the immediately-preceding topic was 'the man' and the immediately-following null subjects also refer to 'the man.' The listener can easily identify the null subject, *big PRO*, of the adjectivized participle *simirami* 'going past' as the deer because the script of the unfolding ambush situation leads the listener to expect that at this point the deer will leap past the crouching hunter, giving the hunter the signal to stand up and throw his sarape over the deer. Thus, the semantics of the verb 'go past' and knowledge of the script of a hunting situation allow the listener to identify the referent of this null subject as 'the deer.'

Identification of referents of null objects, represented syntactically as *small pro*, is carried out by familiarity with the semantics of the complement-taking verb or postposition and by logical process of elimination of all the known participants in the narrative but one, the proper referent. For example, in sentence 8 only the subject, 'dog,' and the verb, 'followed,' are overt; the narrator does not explicitly state who or what the dog followed. The listener may use the principle of topic continuity--the topic previous to 'dog' was 'man,' and previous to 'man' the topic was 'deer'--

combined with logic and common sense and the semantics of the verb 'follow,' to assume that a hunting dog will chase a deer rather than its owner when the deer presents itself to the dog's owner.

Thus, referents of noun phrases may be determined from deictic context, from the principle of topic continuity in discourse context, from an understanding of the semantics of the sentence and from knowledge of the world that allows the listener to expect certain actors to play certain roles when a given script is invoked and to logically eliminate other possible actors from likelihood of taking such roles.

6.2.2.3 Selection of form of participant encoding

Following the discussion in sections 6.2.2.1 and 6.2.2.2 of forms of NP encoding and means of retrieval of noun phrase referents, this section seeks to motivate the appearance of each particular form of encoding at the point in the text where it appears, and to explain why each form is chosen in preference to some other form of encoding.

The principle driving the selection of noun phrase encodings in Tarahumara is what Haegeman calls the "general consideration of economy" (1994: 217). Speakers seek to conserve energy in communicating and, therefore, will not put forth effort to overtly express information that the listener can infer by other means. Thus, within the constraints on distribution of *pro* in the language, the null-marked noun-phrase argument is the preferred encoding and speakers will only choose an overt encoding when, to use Haegeman's explanation, "the added effort of overtly expressing them has some yield" (1994:217). When an overt encoding must be selected to avoid confusion or to provide desired emphasis, the most concise form of encoding that still secures the desired degree of clarity or emphasis will be selected. The hierarchy of conciseness in noun phrase

expression following in (540) suggests that speakers will choose the encoding as far toward the left end of the scale as can render the needed clarity.

(540) \emptyset > suffixal pronoun > unreduced pronoun > unmarked head noun > full noun phrase

The frequency of null subjects and objects in this text compared to the frequency of pronoun tokens upholds Chomsky's "Avoid Pronoun Principle," the concept that languages seek to limit overtly-expressed pronouns (Chomsky 1981a: 65, cited in Haegeman 1994:217). As noted earlier, this narrative contains thirty-five non-overt arguments as compared to only seven overt pronouns, a ratio of five to one in favor of non-overt arguments. Of these seven overt pronouns, the speaker uses three of them to avoid confusion with other possible participants: these are the third person plural *aboni* in sentence 4, the distal demonstrative *echi* in sentence 11 and the same distal demonstrative *echi* again in sentence 13. The speaker selects the other four overt pronouns to achieve a degree of emphasis, as is most evident in the case of the third person singular subject pronoun *binoy* in sentence 10 which reduplicates the full noun phrase subject used earlier in the same sentence.

If speakers choose concise encodings except where clarity or emphasis requires a longer form, then the latter considerations must play a vital role in this narrative, where full noun phrases outnumber null-marked arguments. No fewer than thirty-six explicit noun phrases, divided between nine unmarked head nouns and twenty-seven full noun phrases, must be accounted for in terms of avoidance of ambiguity or marking with special stress.

Introduction of new topics accounts for eight of these explicit noun phrases. Presentation of new topics almost always requires an explicit noun phrase. This narrative presents major characters using indefinite noun phrases but allows unmarked or negative-marked head nouns to suffice for less significant or non-participating entities. While the majority of the new topics--the story, the man, the sarape, the deer, the corn and the dog--are introduced by full noun phrases within the first

seven sentences of the text, two additional topics, the gun and the knife, appear much later, in sentence 22. In view of the speaker's presentation of these items as not needed by the hunter and, therefore, non-existent within the realm of this narrative, their late appearance is not surprising.

Reintroduction of previous topics after a period of non-topicality accounts for eighteen of the explicit noun phrases in the text. The number of intervening clauses since the last mention of the same topic ranges from one clause, in the fast interplay between the man and the deer during the peak episode in sentence 16, all the way to thirty-five clauses between the first mention of the corn that the man set out to gather (sentence 4) and the reintroduction of the corn (sentence 24) as a goal temporarily forgotten during the greater excitement of catching the deer.

Selection of overt noun phrases for the purpose of stress or focus accounts for eight of the explicit noun phrases in the text. An example is the use of the full noun phrase *echi cochi* 'the dog' in sentences 8 and 9 even though the dog remains topical since its introduction in sentence 7 without disturbance from other topics. The use of the full noun phrase, even though a null subject or a demonstrative pronoun like *echi* 'that one' would also be unambiguous, serves to highlight this particular dog as having outstanding qualities as a hunting dog. Admiration for the dog's initiative, persistence and speed in chasing the deer serves as the focal point of this passage. Likewise toward the end of the peak episode and continuing throughout the peak' episodes of the story, six full noun phrases referring to the deer in sentences 17 to 21 function as rhetorical underlining. The use of additional phonological material in these noun phrases, though not necessary for clarity, serves to prevent the tense moments during which the deer thrashes about in the forest from going by too quickly.

The purpose of providing paragraphing for text material accounts for the last two full noun phrases used in the text. The full noun phrase *echi rijoy* 'the man' is not necessary in sentence 4 or

sentence 23 for topic presentation, reintroduction or emphasis, but its use functions to confirm a continuing topic as the main topic of a paragraph that has recently begun. The use of *echi rijoy* to begin sentence 4 confirms 'the man' as the topic of the stage-setting paragraph that began in sentence 3 with non-overt references to 'the man.' Similarly, the use of *echi rijoy* near the beginning of sentence 23 confirms 'the man,' a topic continued from the previous sentence, as the topic of the concluding paragraph, sentences 22 to 25, that provides closure to the story.

Full noun phrases that are used for other purposes as previously discussed in this section may also double to fill this paragraphing role in the narrative. An example is the full noun phrase *echi chamari* 'the deer' in the second clause of sentence 19. This noun phrase not only provides emphasis and rhetorical underlining during the climax of the story but also confirms 'the deer' as the main topic of the paragraph that begins at sentence 18 and contains the peak' episode or denouement of the story.

Without counting any noun phrases twice, table 23 displays the distribution of the thirty-six full noun phrases according to their primary purposes in the narrative.

Table 23. Purposes for full noun phrase encoding

| Primary discourse purpose for full encoding | Tokens |
|--|--------|
| presentation of new topic | 8 |
| reintroduction of previous topic following discontinuity | 18 |
| emphasis or focus | 8 |
| paragraphing | 2 |
| Total full noun phrases | 36 |

6.2.2.4 Use of encodings to determine text organization

The foregoing discussion of the types of encodings found in the narrative, the means of determining referents and the motivations for selecting certain encodings has touched upon a number of strategies through which speakers employ noun phrases to organize their discourse. Speakers signal the presentation of new major participants by indefinite marking on full noun phrases and signal the introduction of new minor participants by using unmodified (bare) or negatively-marked head nouns. Speakers indicate close relation of clauses by avoiding overt noun phrases in preference for null markers, but indicate changes to new or reintroduced topics by selecting full definite noun phrases or pronouns. Speakers confirm paragraph topics by placing a full definite noun phrase close to the beginning of the paragraph, although they do not necessarily refer to this topic as a full noun phrase at first reference in the paragraph.

Speakers mark the peak and peak' episodes of a story by two contrasting strategies that involve noun phrase arguments. They may avoid overt noun phrases in preference for null markers in order to focus on action and increase the pace of the storyline, as seen in sentence 16 in the peak episode. They may also repeat a full noun phrase that is already topical a number of times within the space of a few sentences for the purpose of rhetorical underlining, to slow the pace and highlight the moment of tension, as seen in sentences 17 to 21 which conclude the peak episode and cover the entire peak' episode.

Having addressed various aspects of the participant reference system and their contribution to the organization of the text at hand, the discussion now turns to the relation of the verbal encoding system to textual organization.

6.2.3 Textual organization through the verbal encoding system

Categorization of verbs according to their inflection and according to their semantic domains yields many clues to the organization of a narrative. The discussion in this section investigates verbs appearing in this text in the light of Longacre's proposal (1989) that various bands of salience in a narrative may be distinguished on the basis of verbal tense, aspect and semantic domains, among other patterns. Following a brief adaptation of Longacre's hypothesis to the content of this text, the section addresses the inflection and the semantic domains of verbs in turn.

6.2.3.1 Longacre's spectrum approach adapted for this text

Longacre has suggested that at the thematic level each discourse contains a spectrum of kinds of information that may be separated into a number of "bands" or levels of prominence. These thematic "bands" are marked in surface structure by a variety of morphosyntactic devices (Longacre 1989: 413-460). The thematic "bands" posited by Longacre and existing in this Tarahumara text appear in figure 46 and are arranged in decreasing order of prominence.

Additional bands posited by Longacre that are not found in this text include a topmost pivotal storyline band, a secondary storyline band, a band for routine, predictable event sequences and a band for evaluations or author intrusions.

Given this adaptation of the salience spectrum, this section now approaches an important verbal device that Tarahumara uses to encode these bands. The type of verbal inflection is the principal means of identifying the band of salience on which a piece of information appears and is the only verbal encoding device discussed in this chapter, although it would also be possible to

examine the semantic domains from which verbs are taken for their relation to encoding of the salience spectrum.

| | |
|--------|--|
| Band 1 | primary storyline |
| Band 2 | backgrounded actions/events (script-predictable) |
| Band 3 | backgrounded activity (durative) |
| Band 4 | setting (exposition) |
| Band 5 | irrealis (negatives and modals) |
| Band 6 | cohesive (connecting material) |

Figure 46. Thematic bands adapted for this text from Longacre's spectrum approach.

6.2.3.2 Inflection and verbal encoding

The text being examined in this chapter contains verbs that may be classified according to the kinds of inflection, tense and aspect listed in table 24. The table is arranged so that more dynamic inflections appear toward the top and less dynamic inflections appear toward the bottom.

Table 24. Types of verbal encoding occurring in the text

| Inflection and tense | Aspect, if evident | Tokens |
|-----------------------------|------------------------------------|--------|
| past tense | perfective aspect | 26 |
| unmarked | continuative + reiterative aspects | 1 |
| present tense | imperfective aspect | 3 |
| general present participle | punctiliar aspect | 3 |
| general present participle | durative or iterative aspect | 5 |
| singular present participle | | 2 |

Table 24--*Continued.*

| | | |
|---------------------------------------|-----------------|----|
| partially-bleached copula, past tense | durative aspect | 2 |
| copula, past tense | | 6 |
| copula, present tense | | 1 |
| adjectivized | durative | 7 |
| nominalized | | 1 |
| Total verbs | | 57 |

The arrangement of various kinds of inflection in table 24 corresponds loosely to the level of prominence that each type of inflection suggests when it appears in discourse. Inflection types toward the top of table 24 function most frequently to carry the primary and secondary storyline, while inflection types toward the bottom of the table function to provide less-salient information represented by the lower bands, such as setting, irrealis and cohesion. The verb that occurred in embedded direct speech, the irrealis mode verb *apema* 'I will bring,' was omitted altogether from the listing in table 24 because embedded quotations are not considered essential to the salience spectrum of narrative.

To address the text under examination specifically, twelve past tense, perfective aspect verbs, and no other verbs, form Band 1, the primary storyline. A listing of these twelve verbs, 'said' (sentence 4), 'burst forth' (sentence 6), 'chased' (sentence 8), 'shouted' (sentence 10), 'sat down' (sentence 14), 'threw' (sentence 16), 'ran' (sentence 19), 'hit' (sentence 19), 'fell' (sentence 20), 'died' (sentence 21), 'turned back' (sentence 23) and 'went out' (sentence 25), forms a synopsis of the story when supplemented with the corresponding subjects of these verbs.

An additional five past tense verbs, together with three punctiliar and iterative participles and one reiterative/continuative verb, make up Band 2, the script-predictable backgrounded actions or events that support the storyline. These five past tense verbs are *inárari* 'walked' (sentence 5),

maburi 'burst forth leaping' (sentence 11), *simirari* 'passed' (sentence 13), *sináchari* 'shouted' (sentence 16), and *chucúbari* 'remained there' (sentence 17). The three punctiliar and iterative participles are *huirisaga* 'having stood up' (sentence 16), *natagopa* 'hitting' (sentence 19), and *bu'huirasari* 'falling to the ground' (sentence 19), and the one reiterative or continuative verb is *aninachi* 'kept on barking' (sentence 14). Of these nine Band 2 verbs, four of them are found within dependent clauses (in sentences 13 and 16 and twice in sentence 19), as expected of backgrounded material.

Backgrounded durative activity that composes Band 3 of the salience spectrum includes the reasons and intentions for action as well as the physical positions and ongoing physical actions that contribute to main events. Some examples include '(the deer) would be passing by' (sentence 14) as an action that motivates the hunter to prepare an ambush, and 'crouches down' (sentence 14) along with 'holding a sarape in his hand' (sentence 15) as the physical positions in which the hunter awaits the deer. This text codes these backgrounded activities with one past tense verb, four general participles and two singular participles, two present tense/imperfective verbs and two adjectivized durative verbs that appear without copulas. Most of these forms of inflection appear midway down table 24 of types of verbal inflection as is appropriate to Band 3 of the salience spectrum.

Band 4 prominence information comprises setting and exposition. In this text such information includes identification ('this is another story,' sentence 1), descriptions of locations ('he lived in a low canyon,' sentence 3) and conditions ('it was dark,' sentence 13), possession or accompaniment ('he had his dog with him,' sentence 7), size ('its antlers were large,' sentence 17) and shape ('the canyon was closed at the other end,' sentence 12). This text encodes Band 4 information by means of two partially-bleached copulas, one present tense copula that appears with

a verbally-derived nominal and five past-tense copulas that appear with verbally-derived adjectivals. Verbs having this type of less-finite inflection appear toward the bottom of table 24.

Material involving concepts of an unreal world, including negatives and modals, makes up Band 5 of the salience spectrum. Only a few such sentences appear in the text. Examples include 'they no longer had corn' (sentence 4), 'he was not carrying a gun or a knife' (sentence 22) and 'he never arrived at the cornfield up on the mountain' (sentence 24). Negative expressions appear with each of these irrealis sentences. Verbs used to encode the material include one past tense perfective verb, one partially-bleached copula with its accompanying present tense/imperfective verb and one reduplicated past tense copula with its accompanying verbally-derived adjective. If the main character's intention expressed as 'I will bring back corn' (sentence 4) is included in this as-yet-unrealized band of events, then an irrealis mode verb is added to the list of encodings.

Cohesive material that ties parts of the narrative together comprises Band 6 of the salience spectrum. This text shows evidence of cohesive material in the preview found in sentence 2, the back-reference found in sentence 5 and the summary found in sentence 22. Perhaps because of its redundant nature in that it copies or paraphrases parts of the eventline, cohesive material in this Tarahumara text demonstrates encoding identical to the eventline verbs of Band 1. Both the cohesive-function verb *inárari* in 'as he walked' in the back-reference in sentence 5 and all three occurrences of the verb *mi'yari* in 'this is how he killed. . .' in the preview and summary in sentences 2 and 22 show complete past tense perfective inflection.

6.2.3.3 Summary of verbal encoding system

From this section on the relation between verbal encoding and textual organization emerges the theme that dynamic verbs signal foregrounded, storyline events while stative verbs signal

backgrounded or expository material. Verbs appear on a continuum between most dynamic and most stative in their tense and aspect inflection. Therefore, investigation of the organization of a narrative entails examination of the inflection of verbs.

6.3 Word order flexibility in the text

Preceding sections have explored the participant reference system and the verbal encoding system for their contributions to an understanding of the organization of the text. This next section investigates the instances of word order variation in the text for their contribution to motivating word order flexibility in the language.

6.3.1 Basic word order in Tarahumara

This study follows Copeland (1988: 248-249) and Burgess (1984: 9-10) in positing not only a basic SXV order for the language but also in declaring that initial position (when occupied by a constituent other than the subject argument) in the Tarahumara sentence is the position of greatest prominence, followed by final position which bestows only slightly lesser prominence on constituents than initial position would. Although other works on Tarahumara have nothing to say about second position, scrutiny of texts suggests that second position provides the third greatest position of salience in the sentence.

The types of constituents that fill these positions of prominence in a neutral Tarahumara sentence found are predictable. Within connected discourse, sentence introducers such as *ari biché* 'and then' take initial position, the position of greatest prominence. These sentence introducers are specific to the type of sentence connection and, therefore, naturally occur in this position of

prominence, in that sentence introducers make clear the relationship between previous and following actions.

Fully-inflected main verbs normally take the final position, the position of second greatest prominence. As explained by Herring (1997, personal communication), normal focus in a neutral sentence falls upon the verb or verb phrase. This identification of normal focus as occurring with the predicate of the sentence corresponds to the understanding that a sentence consists of a topic, most commonly the noun phrase subject, and a comment or focus, most commonly the verb phrase. According to Herring, sentences follow a nearly-universal pattern of beginning with old information, for the sake of coherence, and finishing with an assertion of new, unpredictable or marked information, for the sake of salience. This movement from old to new information over the course of a sentence results from the driving force of "communicative dynamism" (Firbas 1966b: 270). In conformity with this pattern, Tarahumara naturally reserves the prominent final position for main verbs.

The position of third greatest prominence, the second position (the next position immediately following the sentence introducer, a position that is identical with first position when there is no sentence introducer) normally falls to the subject of the sentence. In a neutral sentence, the subject is also the main, continuing topic. If second position in Tarahumara corresponds to the initial position in languages described by many discourse analysts that do not place such importance on sentence introducers, then the appearance of the subject in this near-initial position flows along naturally with the claims of Herring (1997, personal communication) and others that initial position is normally reserved for the topic of the sentence, at least in SV languages.

Sentence 23 from the text exemplifies a neutral SXV sentence that follows the pattern just described. This sentence is reproduced in (541) for convenience.

- (541) INTROD S X V
 Ari biché echi rijoy echo'ná jonsa cu ro'hui-ri.
 and then DEF man there from again turn back-PAST
 'Then from there the man went back to his dwelling.'

Initial position provides greatest salience to the coordinating conjunction *ari biché* 'and then,' which relates this sentence to others before and after it as an independent, storyline clause. Final position provides only slightly less salience to the eventline action verb *ro'hui-ri* 'turned back,' which helps form the backbone of the story. Second position provides a great deal of prominence to the topic *echi rijoy* 'the man,' which is the subject of the sentence as well as the topic of the new paragraph that begins here.

The claim that normal focus position is final position and is reserved for main verbs suggests that foregrounded, storyline verbs will take sentence-final position. Storyline verbs should not be followed by other material that would wrest from them their position of final prominence. This possibility may be tested by examining the verbs of this text that occur in sentence-final position. Such an examination actually yields a list of ten verbs that includes five primary, Band 1 verbs, two secondary, Band 2 verbs and two verbs from lower bands. The verbs comprising this list, starting from the inciting moment of the plot in sentence 5, are 'walked,' 'was,' 'chased,' 'sat,' 'shouted,' 'ran,' 'fell to the ground,' 'killed,' 'turned back' and 'to carry on his back.' In this list, the verbs 'was' and 'sat' (sentences 7 and 15) are the two stative verbs from lower bands; the other verbs are from Bands 1 and 2.

Differences between this list and the list of storyline verbs composed earlier in this chapter may be attributed to the difference in world-view between the western analyst and the Tarahumara storyteller; it is possible that this latter list more accurately reflects the intended storyline of the author. It is also possible that storyline verbs need not always have final prominence; the speaker

may prefer, even in a storyline clause, to give special prominence to other material by postposing it. In any case, the similarities between the two lists of verbs do suggest a tendency for storyline verbs to take sentence-final position as expected if final position is the normal focus position for the sentence.

As noted in other Uto-Aztecan languages (Langacker 1977: 26) new or re-introduced persistent subject topics in Tarahumara tend to precede the verb in neutral sentences. This SV ordering in sentences that introduce or re-introduce topics with full noun phrases holds throughout the text examined here. Sentence 7 exemplifies this SV ordering as shown in (542).

| | | | | | | |
|-------|-------------------------------------|-------------|--------------|-------|-----------------|----------------|
| (542) | | S | | | | V |
| | Ari biché | echi | rijoy | cochí | buqué-ami | nii-ri. |
| | and then | DEF | man | dog | own animal-AJZR | be-PAST |
| | 'Now the man had his dog with him.' | | | | | |

Example (542) shows a full noun phrase subject, *echi rijoy* 'the man,' in normal pre-predicate position. The sentence occurs following a disturbance of the topicality of 'the man' by intrusion of another topic, 'the deer,' and re-establishes 'the man' as the topic of this sentence, while it also introduces a new topical object, *cochi* 'the dog.' The sentence may be re-glossed as 'Now the man was dog-accompanied,' with a much lesser degree of salience afforded to the dog than to the man, who is the main topic.

Object topics in Tarahumara, however, when new or re-introduced, tend to follow the verb in neutral sentences. This VO ordering for full noun phrase object topics holds in the text examined here unless the object topic is of minor importance to the narrative or is an internal argument of a non-finite medial verb; in these latter situations, the object remains in its original pre-verbal position. For presentation of significant topics, though, a VO ordering moves the object topic to the final position of prominence, as sentence 2 of the text illustrates in (543).

- (543) Chabé rahué biré rijoy huisarapi pas-ca
 before day INDEF man sarape throw-PTCP
- mi'ya-ri biré chumari.
 kill-PAST INDEF deer
- 'Some time ago a man killed a deer by throwing his sarape over its antlers.'

Example (543) indicates that the newly-presented object topic *biré chumari* will be a persistent and essential topic in the narrative, in view of its sentence-final position. The OV ordering of the medial verb *pasca* and its object *huisarapi* indicates that this object will not have a major role in the story, or at least not in this portion of the story. Example (543) also indicates that the newly-presented subject topic *biré rijoy* will be a major participant in the narrative as well as the topic of this paragraph, in view of its placement in the highly-salient second position of the sentence. Note that initial position is given to the sentence introducer *chabé rahué* 'some time ago,' which by its specific shade of meaning relates this sentence to the narrative as having an aperture and preview function in the narrative.

6.3.2 Word order variation in the text

With the mention of the topical object that appears in sentence-final position the discussion turns to constituents that appear in positions other than the positions in which they were generated. Four motivations for movement besides object topicalization will now be addressed. These motivations are accommodation of predictable subjects of intransitive verbs, special emphasis, "heavy"-constituent shift and the economy principle.

6.3.2.1 Movement motivated by information structure and argument structure

The accommodation of predictable subjects of intransitive verbs explains the movement of five of the subjects found in post-verbal position in this text. As noted in chapters 3, 4 and 5, subjects of intransitive verbs--those that have external arguments only--appear in post-verbal position, rather than pre-verbal position, with an approximate 45% frequency that tends to correspond to the previous mention and predictability of these subjects in the discourse. Sentence 21 from the text illustrates the postposition of the EXPERIENCER subject of the intransitive verb *mucuri* 'died' as shown in example (544).

- (544) Echirigá t_i mucuri echi chamari_i.
 in this manner Ø die-PAST DEF deer
 'And so the deer died.'

The intransitive verb *mucú* 'to die' indicates a non-volitional change of state and takes *echi chamari* 'the deer' as an EXPERIENCER-role subject. The subject is generated in pre-verbal position as [Spec, IP] and moves by a process of Wh-movement to an adjoined position following the verb, forming the chain < t_i , *echi chamari_i* >. The post-posed subject, *echi chamari* 'the deer,' has been previously mentioned and is also predictable as the subject of this clause; the hunting script that is being realized in the telling of this story is expected to involve the death of the large game. So in some way not totally clear and worthy of further investigation, information structuring in the text motivates this predictable, explicit subject of an intransitive verb to follow the verb.

Four other clauses in this text, found in sentences 6, 13, 14 and 18, demonstrate postposed subjects that may be explained by post-verbal accommodation of previously-mentioned and predictable subjects of intransitive verbs. As expected of verbal domains in such instances, three of

the verbs involved are volitional verbs of motion, 'burst forth leaping' and 'passed by' (two occurrences), and the fourth verb is a non-volitional verb of physical state, 'be covered.'

The remaining five intransitive verbs having explicit subjects in the text follow their subjects. These are the verbs 'walked' in sentence 4, 'shouted' in sentence 10, 'sat down' in sentence 14, 'sat' in sentence 15 and 'turned back' in sentence 23. Thus, in this text intransitive verbs with explicit subjects are evenly divided between the VS and SV orderings in a proportion not unlike the 44% to 56% proportion found in the larger text corpus. While the pre-verbal subjects of these verbs have all been previously mentioned, perhaps they are in some way pertinent to the information structure of the text **less predictable** than the subjects that were post-posed.

It is curious that the postposing strategy operates for opposite purposes with regard to objects and subjects of verbs. As mentioned in section 6.3.1, postposing provides added salience to an object noun phrase when it is presented as topical for the first time or after an interruption. Yet movement to the same sentence-final position appears to **decrease** the salience of a subject that is script-predictable. Logic would suggest that some distinction in form ought to signal the difference in salience when topicalized objects and predictable subjects are moved to the same sentence-final position.

In fact, the audiocassette recordings of the texts do allow prosodic information regarding these contrasting strategies to be compared, yielding a tentative generalization that intonation, stress and length differ for noun phrases in sentence-final position depending on whether they are being introduced or re-introduced as topical on the one hand, or are script-predictable on the other hand.¹

¹A general impression of the prosody of topicalized objects is that the pitch at the end of the sentence falls slowly, allowing much of the topicalized object to be spoken on a pitch one step above sentence-final pitch, and that the topicalized object receives stress and additional length. Predictable subjects, on the other

An analysis of these differences is beyond the scope of this study, but further investigation of this area would most likely prove fruitful to the study of information structure.

6.3.2.2 Movement motivated by special emphasis

In addition to the motivation of accommodating predictable subjects of intransitive verbs, the motivation of special emphasis explains some fifteen instances of postposing in this text, not counting the object topicalization addressed in sections 6.3.1 and 6.3.2.1. When a speaker desires to stress a sentence constituent, whether a noun phrase argument or an oblique, the speaker may place the constituent in the final position because this is a position of added salience. This right dislocation is apparent in sentence 9 of the text, in which the subject, *echi cochí* 'the dog,' follows the copula and appears in sentence-final position, as shown in (545).

(545) t_i Hue sirú-ami níi-ri echi cochí_i.
 Ø very hunt-AJZR be-PAST DEF dog
 'It was a real hunting dog.'

A re-gloss to give the emphatic flavor of this sentence might be, 'And a very fine hunter it was, that dog.' Movement of the subject noun phrase *echi cochí* by means of Wh-movement from initial position, where the movement leaves a trace, to this sentence-final adjoined position gives added salience to the postposed subject.

Not only does postposing provide added salience to at least six other subject noun phrases in the text; postposing also gives emphasis to obliques in seven text sentences. An interesting example

hand, seem to be uttered entirely on the lowest pitch to which the sentence falls as it comes to an end, and are uttered rapidly and without stress, as if they contained parenthetical material. Frequently-occurring alternative patterns, however, in which series of declarative sentences end with raised rather than falling pitch and place equal stress and length on every word in sentence-final phrases, complicate the study of the distinctions mentioned here.

[**mapujiti** **aboni** **ma** **quetasi sunuhua-Ø** **muchi-ri**]_i.
 because 3PL already NEG have corn-PRES sit(pl)-PAST
 ‘... the man thought, “I’m going to bring corn from up there,” because they no longer
 had com there where they were living.’

Example (547) typifies both a postposed long object and a postposed long subordinate clause. The object of the speech verb *anirini*, ‘said to himself,’ is the clause <<*Sunú apémani cu ripáami*>> ‘I’m going to bring corn from up there’ which is moved from pre-verbal position to post-verbal position as are other complements of speech verbs. The oblique of reason that is an adjunct of the verb phrase in the main clause, the subordinate clause *mapujiti aboni ma quetasi sunuhua muchiri*, also moves from pre-verbal position to sentence-final position. The process of Wh-movement used here adjoins both clauses to IP in new positions created for them and leaves traces in their original pre-verbal positions.

In these instances the movement is motivated not so much by a desire to provide added salience for the moved clauses as by a need to simplify the task of cognitive processing by mentioning less complex elements like the subject and the verb first and reserving lengthy constituents for afterwards. Sentence 17 from the text, provided in (548) for convenience, exemplifies the appearance of subject and verb first, and the reservation of an adverbial subordinate clause for final position.

(548) **echi** **huasarapi** t_i echo’náchumari mo’ó-ra-chi
 DEF sarape trace there deer head-GEN-LOC

chucúba-ri [mapujiti t_j o’huéari ahué-ami]
 remain-PAST because trace great have horns-AJZR

niiri [echi chumari]_i.
 be-PAST DEF deer

‘Then the sarape stayed there on the head of the deer because it had large antlers.’

As typified in (548), the shorter, less-complex subject and verb continue to be essential operators that provide a framework for understanding the postposed material. Postposing of complex elements reduces the cognitive load and preserves effort, obviating the delay that would be caused if complex elements had to be processed in their base-generated positions while part of the processor is bound up in waiting for the final but crucial organizing element--the verb.

Movement of phonologically lengthy elements is an option and perhaps a tendency but is not a requirement. Although syntactically complex constituents such as subordinate clauses introduced by subordinating conjunctions generally move out of pre-verbal position in the texts examined for this study, constituents that are merely long phonologically sometimes remain in their base-generated position. Sentence 11 of the text contains a lengthy locative adjunct to the verb phrase that fails to shift to post-verbal position, as shown in example (549).

- (549) Echarí echi **quiná** **ca'ó** **tabachi** **o**
 then DIST this direction from above narrow place or
- comichi** **birénapi** mabu-ri echo'mí.
 creek canyon in just one part burst forth leaping-PAST there
 'Then the deer went away leaping upwards in the canyon where it was
 very narrow.'

In (549) the long oblique, *quiná ca'ó tabachi o comichi birénapi* 'upwards in the canyon where it was very narrow,' remains in its underlying pre-verbal position; it does not move to sentence-final position. Provided that the speaker does not desire to emphasize the long oblique and that it is not syntactically complex to the point of causing a processing burden, the option of leaving the long element in its original position remains viable.

Not only may long elements fail to move; short elements may, in fact, move as a result of the same complexity-induced process. Postposing movement motivated by complexity of constituents may be activated whenever such movement can reduce the cognitive processing load and not

only when constituents in themselves are phonologically long or syntactically complex. This impetus for movement often occurs in the case of a syntactically complex predicate in which a verb has two internal arguments, both base-generated in pre-verbal position. In these sentences, even though both of the pre-verbal, predicate-internal phrases may be short and non-complex in themselves, one of the phrases usually moves to a post-verbal position in order to reduce the cognitive-processing load. Sentence 16 contains such a situation, and the movement of one of its two pre-verbal phrases is illustrated in example (550).

(550) \emptyset **t_i** echi huasarapi pása-ri **echo'ná mo'ochí.**
 pro \emptyset DEF sarape throw-PAST there head-LOC
 'he threw his sarape over the antlers of the deer'

Example (550) illustrates a syntactically complex predicate that contains the verb *pásari* 'threw,' a THEME-role internal argument, *echi huasarapi* 'the sarape,' and another phrase, *echo'ná mo'ochi* 'onto its head.' Regardless of whether this locative phrase functions as a complement or an adjunct to the verb *pásari*, the locative phrase clearly receives some stress as the goal of the action and is moved to sentence-final position. The moved phrase is not in itself particularly long or complex, yet its movement out of the crowded pre-verbal position yields relief for the processing burden of this sentence. Presumably either phrase could move; if the speaker preferred to add salience to *echi huasarapi*, this latter noun phrase could be the one that is postposed, leaving *echo'ná mo'ochi* in pre-verbal position. The point is that both phrases may not remain in the pre-verbal position; one of the phrases must move so that it can be reserved for processing until after the verb has provided a framework for coding the sentence.

6.3.2.4 Apparent movement motivated by the economy principle

Whereas factors like EXPERIENCER-role subject accommodation, special emphasis and “heavy” constituent shift motivate true movement processes in Tarahumara, the motivation of economy does not explain a real movement operation. The economy principle, which causes speakers to avoid using a more complex or phonologically heavier constituent when a simpler, briefer constituent will suffice, often results in sentences having a null subject and marking subject agreement by attaching the appropriate clitic pronoun to another constituent. Thus, a brief clitic pronoun manifests agreement features and often does so in a position other than the usual position for a subject. Such a sentence appears in this text in the quotation in sentence 4, as shown in (551).

(551) <<∅ Sunú apéma=*ni* cu ripáami.>>
 pro corn carry-IRR-1SG.NOM again up there
 “‘I’m going to bring corn from up there.’”

In (551) no overt subject appears in the usual, initial subject position. Instead, a manifestation of agreement marking on INFL appears on the verb by the attachment of the clitic pronoun =*ni* to the end of the verb. No movement has occurred, but identification of the subject of the sentence is allowed by means of a constituent that appears in post-verbal position. As there is no need for a stressed pronoun in this sentence, the principle of economy has motivated the speaker to use the briefer, bound pronominal form =*ni* rather than the longer unreduced pronoun *nijé*.

6.3.2.5 Movement motivated by multiple factors

Several of the motivations described in preceding sections may function together in causing a constituent to move. In the text examined in this chapter, all three motivations for true movement are brought to bear upon the subjects of sentences 6 and 18, causing these subjects to be postposed

for a combination of reasons. Likewise, an object in sentence 22 is postposed for both of the relevant reasons, special emphasis and complexity. This example of object postposing for multiple reasons appears in (552).

- (552) chopi echi rijoy quetasi t_i cá-ami níi-ri
 but DEF man NEG *trace* carry-AJZR be-PAST
- tabiré carabino tabiré ripurá.**
 NEG rifle NEG axe
 'he wasn't carrying a gun or a knife'

Example (552) demonstrates a compound object involving left-sister adjunction of a negative to each part of the compound; thus, the object is syntactically complex. At thirteen syllables the compound object may be considered phonologically long as well. This sentence furthermore presents this object topic here for the first time and seeks to emphasize the non-existent character of this topic within the realm of this discourse. Thus, syntactic complexity and phonological length drive the compound object to final position in order to reduce the cognitive processing burden for speaker and listener, and the added salience resulting from sentence-final position meets the need of this newly-introduced topic for special prominence.

6.3.3 Summary of motivations for word order variation

This section has highlighted a number of forces that are at work to rearrange constituents normally found in SXV order in the Tarahumara sentence. When none of these forces applies, then a sentence introducer takes the initial position of greatest prominence, a main verb takes the final position of nearly-as-great prominence and the subject takes second position where it can be topicalized. Forces of object topicalization, accommodation of predictable subjects of intransitive verbs, special emphasis and “heavy” constituent shift come to bear so frequently upon constituents of

Tarahumara sentences, however, that departures from the neutral SXV ordering come to be more the rule than the exception.

6.4 Conclusions of the text analysis

This chapter demonstrates that examination of connected discourse yields much fruit in understanding the relationships among many aspects of the grammar. Such a study reveals that the uniform behavior of certain lexical classes such as conjunctions, the noun phrase reference system, the verbal encoding system and various processes of movement work together to reflect in the surface structure the speaker's intended organization of a narrative. These benefits, although interpreted here within a generative framework, can be derived only by rigorous application of the methodology devised by researchers in discourse and functional grammar.

The fruitfulness of discourse analysis in increasing the understanding gained through formal accounts prepared in the Government and Binding framework suggests that the study of pragmatics may take a prominent role alongside the study of syntax in Government and Binding theory. The results obtained from this type of performance oriented methodology that draws insights from pragmatic and discourse context do not conflict with but rather complement the competence oriented methodology characteristic of the Government and Binding theory, a methodology that in contrast to discourse analysis, examines analyst-produced sentences and judges their grammaticality according to the intuitions of the analyst without reference to context. Both methodologies have a significant role in comprehensive investigations of the syntax of a language.

CHAPTER 7

THEORETICAL IMPLICATIONS

This chapter highlights the significant findings of chapters 1 through 6 by comparing what has been learned about the Tarahumara language with what is currently presented in linguistic theory, particularly in Government and Binding theory as used in this paper, in order to discover the implications of the investigation for linguistic theory.

This chapter is organized in four sections. The first section, "A cross-linguistic perspective on Tarahumara," shows how Tarahumara relates to other languages, noting similarities and differences. The second section, "Tarahumara and Government and Binding theory," notes the contributions of study of the Tarahumara language to what is known about Government and Binding theory, including areas of the language that present both support and challenges for the theory, and outlines the contributions of Government and Binding theory to an understanding of the Tarahumara language. The third section, "Integration of the Government and Binding model with text analysis," focuses on the results of this attempt to integrate a formal, sentence-based approach with a functional, text-based approach. The final section, "Directions for further research," notes several areas of Tarahumara syntax that require further exploration and that are likely to yield fruit for understanding information structuring in language.

7.1 A cross-linguistic perspective on Tarahumara

This section details the ways in which Tarahumara observes the basic principles upon which the syntax of all languages operates, and describes the areas in which Tarahumara, within this uniformity of basic structure with other languages, is yet distinctive and asserts its own character.

7.1.1 Similarities of Tarahumara syntax to syntax of other languages

Even though the sociolinguistic situation in which Tarahumara is spoken causes it to maintain its integrity within the Uto-Aztecan language family without extensive borrowing from European languages and without a long period of influence from a written style or enforced metalinguistic standards, Tarahumara syntax nevertheless demonstrates conformity with languages around the world in basic areas. Tarahumara's rich repertoire of lexical verbs and well-developed system of verbal inflection expresses the range of human experience in sentences in which normal focus is upon the verb. The normal set of grammatical relations applies in Tarahumara in that expressions used as subjects, direct objects, and indirect objects appear in relation to verbs as required by the argument structure of those verbs; these grammatical relations are easily identified by their thematic relations to the verbs as AGENT, PATIENT, BENEFACTIVE and other roles. Tarahumara strategies for embedding of phrases and clauses within other phrases are also well-developed and frequently used.

Languages of the world observe a tendency to place heads of phrases in a uniform position with relation to other constituents of those phrases, either in a phrase-first position or a phrase-final position. Tarahumara is in accord with this general principle in demonstrating a strong tendency toward placement of phrasal heads in the final position of the phrase. Verbs follow their subjects

and their complements unless movement has occurred; fully inflected verbs generally follow less-fully inflected verbs in chaining constructions; nouns follow determiners, demonstratives, quantifiers and lexical adjectives; postpositions follow their complements; adjectives and adverbs follow their intensifiers or other modifiers; and suffixes and enclitics are used in preference to prefixes or proclitics. In this respect Tarahumara is similar to Chinese, another strongly head-final language, but contrasts with English and Spanish, which tend to be head-initial languages.

Syntactic patterns observed in constructing noun phrases in other languages are at work in Tarahumara as well, notably the Noun Phrase Accessibility Hierarchy proposed by Keenan and Comrie (1977), the implicational ordering of noun phrase types upon which relative clauses may be built, and the use of the economy principle in encoding noun phrases. First, Tarahumara upholds the Noun Phrase Accessibility Hierarchy, insofar as data are available for examination, by demonstrating that a continuous portion of Keenan and Comrie's hierarchy of syntactic roles, beginning with Subject and continuing through Direct Object and Indirect Object to Object of Postposition, may serve as heads on which relative clauses may be built. Second, the implicational ordering of noun phrase types that may be relativized is also upheld in Tarahumara, as data show that not only may non-overt noun phrases have relative clauses built upon them, but also that every form of noun phrase higher in the implicational ordering, including pronouns, bare nouns and full noun phrases, may be relativized. And thirdly, as in other languages, the economy principle is employed in Tarahumara to limit the encoding of noun phrases to the minimum size that is able to provide the required amount of clarity or emphasis, with a strong preference shown for non-overt noun phrases (zero anaphora) and clitic pronouns as opposed to full pronominal forms and full noun phrases.

The rich zero anaphora system of Tarahumara is similar to zero anaphora systems found in Italian, European Portuguese and Chinese, which are also *pro*-drop languages and demonstrate both

null subjects and null objects where the referents are understood from discourse or deictic context. An interesting point to be made here is that Tarahumara does not fit in easily with the generalization of Huang (1984) that rich zero anaphora systems are possible only in languages having either rich verbal inflection, like Italian, Portuguese and Spanish, or no verbal inflection at all, like Chinese. Tarahumara demonstrates an intermediate amount of verbal inflection much like the verbal inflection system of English, which does not usually allow zero anaphora with finite verbs, yet non-overt noun phrases are the most common choice for noun phrase encoding in Tarahumara.

Thus, Tarahumara is in harmony with other languages of the world in such basic areas of syntax as the use of verbs to express the focus of the sentence and the selection of noun phrases of various semantic or thematic roles to appear in certain grammatical relations to the verb, the observance of the tendency to place phrasal heads in a uniform position in relation to other phrasal constituents, and the patterns of construction of complex noun phrases and encoding of noun phrases. Tarahumara also resembles certain other languages of the world in using zero anaphora, although it does not conform to the general expectation about the correspondence of zero anaphora to verbal inflection.

7.1.2 Uniqueness of Tarahumara syntax

Tarahumara may lack unusual phonemes and remarkable prosodic features in its phonology, yet its agglutinative morphology combines with a number of unique features of syntax to provide Tarahumara with a distinctive character even among Uto-Aztecan languages. The most obvious characteristic of Tarahumara syntax is the amount of variability that is possible in word orders within the clause, giving rise to a specialized system for recovering grammatical relations. Other special features of Tarahumara syntax include the use of clitic pronouns, the use of the specifier

suffix in genitive constructions, the appearance of noun phrases as adjuncts within verb phrases, and the head-initial ordering of relative clauses and subordinating conjunctions. Each of these characteristics of Tarahumara is addressed briefly in order to point out its distinctiveness among languages of the world.

The extensive word order variability in Tarahumara may result from the lack of prescriptivist metalinguistic standards in language use and may reflect an undeniable value on individual variation and creativity in the culture as opposed to values of regimentation or conformity. The regular appearance of all six possible word orders, SOV, SVO, OVS, OSV, VSO and VOS, and the predominance of the derived SVO order in a basically SOV language attests to the importance of movement processes to achieve definite pragmatic purposes in Tarahumara discourse. One of these pragmatic purposes is increased ease of cognitive processing through re-positioning of syntactically complex material by preposing or postposing movement. In order to help predict when this movement will take place, a phonological “weight filter” can be posited with a critical value unique for this language. Capitalizing on the fact that phonological length is often iconic of syntactic complexity, the phonological “weight filter” for Tarahumara states that phrases containing more than about seven syllables of phonological material are candidates for movement.

With respect to the kinds of movement found in various languages around the world, Tarahumara may be characterized as a language that allows fairly free movement of constituents within the clause but prohibits movement of constituents outside the clause in which they originated. Thus, Tarahumara resembles Spanish, in which movement within the clause is acceptable, as in the sentence *Llamó por teléfono mi hermana* ‘my sister called on the telephone.’ In this respect Tarahumara differs from English in which movement within the clause is unacceptable, as in ‘*Sanded the shelves by hand our grandfather,’ whereas movement outside the clause is acceptable,

as in 'Cleaning the outside of second-floor windows Paul will never convince me is necessary three times a year.'

As a result of the high flexibility of word order within Tarahumara clauses, Tarahumara requires a specialized system for recovery of grammatical relations within clauses. When one or more noun phrases is present in a clause, the procedure for identifying subject and object may be described as a series of steps. First, search for a clitic pronoun that can identify the subject of the sentence unequivocally, since clitic pronouns never refer to objects. Second, search for a pronoun and determine whether it is in nominative case, indicating a subject, or accusative case, indicating an object. Third, search for person and number agreement on irrealis-mode verbs, if any are present, because this is the only finite verbal inflection that provides evidence of subject agreement. Fourth, note the use of a singular or plural verb stem in the case of verbs that have suppletive stems corresponding to the number of their subject. Finally, if all other strategies fail, use discourse context and topic continuity, understanding of the semantics of the verb, common sense and knowledge of the world to determine which noun phrase is the subject and which noun phrase is the object of the verb. This procedure demonstrates that word order is not a reliable guide for identifying grammatical relations in Tarahumara sentences and a battery of other tests must be applied in order to distinguish between subject and object.

Quite apart from the high variability of Tarahumara word order, the language also demonstrates several other unique features. The use of clitic pronouns attached to nearly any sentence constituent in combination with or instead of the corresponding full pronoun form is unusual among languages of the world, although it is common in Uto-Aztecan. The use of these clitic pronouns only to refer to sentence subjects, rather than also to refer to sentence objects, seems to be unique to Tarahumara among the Uto-Aztecan languages.

The consistent use of the specifier suffix *-ra* on the head noun in genitive constructions is another unique feature of Tarahumara. While it is not too surprising that a language should choose to mark features such as [+ definite] and [+ referential] not only by means of a definite article but also by means of a suffix, as Tarahumara does, and while it is not surprising that a head noun in a genitive construction could be marked as definite, it is unexpected to find that every genitive construction must be marked with this specifier suffix, as if it were in some way a feature integral to the Tarahumara genitive construction that is formed primarily by parataxis of the two participating noun phrases.

The frequent appearance of noun phrases as adjuncts within verb phrases is a peculiar feature of Tarahumara. In most languages of the world, noun phrases are used as specifiers of sentences and as complements of verbs, of adpositions and sometimes of adjectives and other nouns, but they are only rarely used as adjuncts or obliques. This distribution of noun phrases is related to their use as arguments of predications and to their need to receive abstract case. Thus, the appearance of noun phrases as locative and temporal obliques within verb phrases, not required by the argument structure of the relevant verb nor able to receive structural case through government by the verb, is unexpected.

One other special feature of Tarahumara syntax is the head-initial ordering of relative clauses and subordinating conjunctions. In a head-final language like Tarahumara, relative clauses would be expected to precede their heads, and subordinating conjunctions might be expected to follow the dependent clauses that they relate to the main clause. In Tarahumara, however, syntactically complex constituents of noun phrases, including relative clauses and derived adjectives, normally follow the head noun, probably as a result of movement to aid cognitive processing.

Subordinating conjunctions likewise flout the head-final tendency of the language and invariably appear at the beginning of the dependent clause.

Unique characteristics of Tarahumara, thus, include the high degree of variability of word order and the “weight filter” and specialized grammatical relation recovery system posited to handle this variability, as well as the use of clitic pronouns only in reference to subjects, the consistent use of the specifier suffix *-ra* in genitive constructions, the frequent appearance of noun phrases as adjuncts within verb phrases, the head-initial ordering of noun phrases with respect to their relative clauses and the appearance of subordinating conjunctions preceding rather than following dependent clauses.

7.2 Tarahumara and Government and Binding theory

This section addresses the interaction between the Tarahumara language and Government and Binding theory, seeking to identify the ways in which this study of the language has contributed to the formulation of the theory as well as to identify the ways in which the theory contributes to an understanding of the language. Because this study of the language has identified data that support the theory in some areas and challenge the theory in other areas, each of these aspects is addressed before discussing the insights provided by the theory for the language.

7.2.1 Support of the language for the theory

Aside from the general positive consideration that Tarahumara sentence data taken from natural texts fits for the most part without being forced or contrived into the formalisms of Government and Binding theory, Tarahumara data provides evidence in three specific areas for certain claims of the theory. The clause-final appearance of overt, finite INFL, the distribution of

clitic pronouns, and the non-appearance of overt subjects with non-finite verbs each provides support for Government and Binding theory in its own way.

In the first place, no abstract INFL head needs to be posited for Tarahumara to uphold the important claim in the Government and Binding theory that INFL is the head of the clause and tends to appear in a uniform position, at the end of the sentence in the case of this head-final language. Overt suffixes showing some degree of tense and agreement inflection appear on Tarahumara verbs, with the exception of present tense verbs and infinitives, and these verbs with their suffixes appear in clause-final position, allowing the inflectional suffix to take final position in the sentence. Movement processes creating adjoined positions at the end of the clause account for constituents that appear following verbs, allowing the inflectional suffix on the verb to be identified as INFL even in these clauses. Thus, even though the theory's claim that INFL is the head of the clause might seem abstract, the clause-final overt inflection on Tarahumara verbs provides support for the claim. Tarahumara clause-final overt verbal inflection is also representative of the heads of various types of phrases that take a phrase-final position and have various relationships such as government toward other phrasal constituents, as claimed in the theory.

The distribution of clitic pronouns also provides support for certain configurations claimed in Government and Binding theory. Tarahumara clitic pronouns may appear on any clausal constituent with the exception of complements of the verb and complements of postpositions. This distribution fits well with the understanding in this theory that the inflection of the verb agrees in person and number with the subject/specifier of the sentence, and that the inflection of the verb, INFL, is the head of the entire clause, and, therefore, governs and c-commands clausal constituents not separated from INFL by barriers. Because clitic pronouns are overt manifestations of bundles of inflectional features, such as person and number, found in the INFL head of the clause, they may

become overt on any terminal node of the clause not separated from the government of INFL by an intervening barrier. Government by a nearer head, such as V or P, constitutes a barrier to outside government by INFL; thus, complements of verbs and complements of postpositions are the only constituents of the clause on which bundles of inflectional features percolating down from INFL may not become overt as clitic pronouns.

The fact that overt subjects never appear with non-finite verbs in Tarahumara also provides support for the Government and Binding theory. In this theory, noun phrase subjects receive their abstract NOMINATIVE case from the finite INFL associated with the verb of the clause and are properly licensed to appear in subject position. Non-finite INFL is unable to assign NOMINATIVE case, however; thus, any subject argument of a non-finite verb must receive ACCUSATIVE case assignment from an exceptional case-marking verb, as happens occasionally in Tarahumara, or must remain non-overt. Subject arguments of medial, participial verbs found in the many chaining constructions of Tarahumara are never overt and have been analyzed as *big PRO* in the foregoing discussion, because they appear in a position where they cannot receive NOMINATIVE case from a non-finite verb. Thus, the non-appearance of overt subjects with non-finite verbs in Tarahumara is predicted and accounted for elegantly by the theory's requirements for abstract case assignment.

Not only do Tarahumara verbal inflection, clitic pronouns and non-overt subjects of non-finite verbs provide evidence for specific claims of Government and Binding theory; the fact that a formal grammar can be shown to account for the majority of structures found in texts and even for the extensive patterns of variation provides support for one of the presuppositions of the Government and Binding theory. The theory, like other formal theories, presupposes a large body of innate linguistic knowledge within the mind of the speaker or at least assumes a major proportion of conventionalized syntactic usage within the speech community as a basis on which minor syntactic

alterations are layered as the language changes over time. While Tarahumara clearly contains many grammaticalized forms, such as definite and indefinite articles and copulas, and while Tarahumara may even be changing gradually from an SOV to an SVO language, it nevertheless maintains a sizeable backbone of shared linguistic knowledge that is in conformity with basic cross-linguistic principles and that is not re-negotiated to any large degree in speech situations.

7.2.2 Challenges of the language to the theory

A comprehensive study of Tarahumara syntax, besides yielding data that provides support for Government and Binding theory, also reveals areas of the theory that are weak and require further development or revision. Seven aspects of the syntax described in this paper point to weak areas in the theory, along with a small amount of data that was not handled in this study. These aspects are listed specifically in the upcoming discussion with reference to the portion of the theory that is threatened by the data.

In the first place, numerous noun phrases appear as adjuncts, not complements, within the Tarahumara verb phrase. It is not evident how these noun phrases receive abstract case because they are not arguments of the verb and are not in the proper configuration of government and c-command with the verb to receive structural case. Nor are these noun phrases theta-marked by the verb so as to receive inherent case. For the time being these noun phrases are assumed to receive inherent or lexical case and to be licensed by the language in some way that is not well understood to appear within the verb phrase.

Secondly, Tarahumara genitive constructions often show evidence of a definite article such as *echi* in specifier position within the possessor noun phrase and always show evidence of a specifier suffix *-ra* on the head noun, the noun that indicates the thing possessed. These two items

appear in addition to the abstract element POSS which the theory asserts occupies the specifier position of the possessor noun phrase. The problem here is that, within the theory, the principle of structure preservation prevents a position from being doubly occupied, causing a conflict of claims regarding the same specifier position of a possessor noun phrase in the Tarahumara genitive construction.

Thirdly, clitic pronouns may appear not only on constituents of the clause headed by the INFL that contains inflectional features agreeing with the noun phrase specifier of the clause; clitic pronouns also appear on constituents in the head or the specifier position for CP, the complementizer phrase that contains the relevant clause but is above it in the hierarchical representation and is not headed or governed by INFL. For example, clitic pronouns may appear on complementizers such as *mapu* 'that,' coordinating conjunctions such as *ari biche* 'and then' and subordinating conjunctions such as *mapo 'ná*, 'wherever.' Because clitic pronouns should not be able to be manifested on constituents that are not governed by INFL, a "rescue" proposal is offered, suggesting that these constituents are generated within the lower clause or IP and receive the manifestation of INFL as a clitic pronoun before being moved to the [Spec, CP] or [C, CP] position in the higher complementizer phrase. This proposal seems contrived in an effort to save the analysis of clitic pronouns within the theory and is not entirely satisfactory.

In the fourth place, as in many other languages, the binary configuration posited by Government and Binding theory for the verb phrase is inadequate to handle both noun phrase arguments of a two-argument verb such as *'ya* 'give' or *binera* 'teach.' One of the arguments must be relegated to adjunct position if binarity is to be preserved, a solution that seems inaccurate, or, as proposed in this paper, both of the arguments must depend from the lowest V' node in the VP,

creating a ternary structure that, while accurate, seems inelegant. The theory has yet to suggest a solution that is both accurate and elegant for the problem posed to binarity by two-argument verbs.

A fifth challenge to the theory, also involving the question of elegance and simplicity, is brought forward by the frequent use of medial or participial verbs in chaining constructions in Tarahumara. Government and Binding theory treats these verbs and their objects as reduced, non-finite clauses and represents them as IP adjuncts within the VP. Thus, the complexity of the verb phrase is greatly increased and a great number of null subjects must be posited, reducing the degree of elegance of the analysis. The treatment of these medial or participial verbs in Generalized Phrase Structure Grammar (GPSG) on the other hand, offers a simpler approach; the non-finite verb and its object is labeled as a VP within the VP headed by the main verb, and no abstract subject is posited. Thus, Government and Binding theory is challenged to meet the simplicity requirement in its analysis of participial verb phrases while continuing to provide evidence for its mechanism of abstract assignment of NOMINATIVE case by finite INFL only.

A sixth area of challenge for Government and Binding theory contests the autonomy of the phonological, semantic and syntactic components of generative grammar. While work in this theory normally assumes that phonological processes are independent of syntactic processes (with some allowance made for lexical phonology), Tarahumara data appears to demonstrate interaction between the phonological and syntactic components when phonologically long constituents are pre-posed or postposed by syntactic processes. It is not known yet whether phonological length is a sufficient condition for movement or whether phonological length is merely iconic of syntactic complexity, which is then the true motivator of movement. If further research can show that phonological length alone, apart from syntactic complexity, can motivate movement, then the

assumption of the theory regarding the autonomy of the phonological and syntactic components is threatened.

A seventh challenge to the theory presented by the Tarahumara language relates to the scalar rather than categorial quality of two important mechanisms in the syntax. The first of these mechanisms, the phonological “weight filter” that helps to predict constituents that are candidates for movement on the basis of phonological length, is not able to determine absolutely which constituents are too long to remain in their original position. The “weight filter” is only able to predict the increasing likelihood of movement of a constituent with increasing length. Likewise, the mechanism that identifies whether a verb is fully inflected or not demonstrates only gradations along a continuum of inflection, so that for purposes of case-assigning ability and even more for purposes of foregrounding and backgrounding of clauses in discourse, it is difficult to state absolutely that a verb is completely inflected or uninflected. While a formal theory of grammar like Government and Binding would prefer to delineate absolute categories to which an element either belongs or does not belong, for at least these two mechanisms in Tarahumara it seems necessary to settle for scalar continua showing gradations between two extremes as is more typical of the functional approach to linguistics.

In addition to the seven areas of challenge just listed that were addressed in the course of this paper, a small quantity of textual data not handled in this study also poses a challenge to Government and Binding theory. This data, amounting to approximately fifteen sentences scattered throughout the fourteen texts examined in this study, involves sentences in which constituent structure does not correspond to information structure as it has elsewhere, with the aid of movement transformations that account for most deviations from SOV word order. A representative sentence in which constituency and information structure do not correspond appears in (553).

| | | | | | | | |
|-------|---|-------------------------|--------------------------|------|-----------------------|-----------------------|------------|
| (553) | ∅ | Quetasi | tami _j | hue | <i>t</i> _i | <i>t</i> _j | nochá |
| | <i>pro</i> | NEG | 1SG.ACC | very | <i>trace</i> | <i>trace</i> | touch-IMPV |
| | [nijé | ripóca-la] _i | | | | | |
| | 1SG | back-SPCF | | | | | |
| | 'don't pat me on the back so much' [z7] | | | | | | |

The problem for the theory in (553) is that neither NP-movement nor Wh-movement is able to account for the unexpected position of the first person singular accusative pronoun *tami*. As an internal argument of the verb *nochá* 'touch' the pronoun *tami* must appear in underlying position immediately preceding the verb *nochá*. But it is evident from the surface structure in (553) that *tami* has moved to the left of the intensifying adverb *hue* 'very,' which serves as adjunct to the verb phrase. The pronoun *tami* has nevertheless remained within the verb phrase as indicated by its new position to the right of the negative *quetasi*, which is adjoined as a left sister to the verb phrase. This position between the negative and the adjunct of a verb phrase is not a position that can serve as a landing site for any type of movement proposed in Government and Binding theory.

While it might be proposed within the confines of the theory that the pronoun *tami* in (553) is moved and adjoined to VP prior to the adjunction of the negative, it may be more helpful to research the use of the intensifying adverb *hue* in Tarahumara. Further study might yield a more explanatory account in the area of information structure, such as the possibility that *hue* is grammaticalizing as a proclitic for verbs with an emphatic quantifying function like its English gloss in (553), '(not) so much.'

This section has shown that a number of specific areas of Tarahumara syntax present challenges to the current formulation of Government and Binding theory. Perhaps none of these areas poses a serious threat to the theory, but their existence indicates the necessity of further development and modification of various aspects of the theory so that it may become capable of

more adequately handling data from a language like Tarahumara that is quite different from the European languages for which the theory was first conceived.

7.2.3 Contributions of the theory to understanding the language

Turning the discussion in the opposite direction to identify insights provided by Government and Binding theory into the syntax of the Tarahumara language, it should be evident from the discussion that specific helpful analyses within the model are too numerous to mention. Three significant over-arching benefits are discussed here, however, because they summarize many of the individual insights described in previous discussion.

In the first place, analysis within the Government and Binding model provides a formalism that is essential as a framework for further description of the language in any theoretical model and that also serves as a basis for checking proposals made concerning the language from functional viewpoints. This formal description suggests also that speakers of Tarahumara are endowed with a comprehensive knowledge of the grammar of their language, perhaps unconscious yet none the less accessible, that they refer to this body of linguistic knowledge in a uniform fashion in forming utterances, and that they are able to express every nuance of thought that they desire to express within their culture and worldview by using their own language.

Secondly, the application of Government and Binding theory to Tarahumara illustrates that the phrase structure of the language is indeed configurational and even hierarchical. Far from needing to be set aside as a non-configurational language due to its use of word order patterns in which verbs and their complements are separated by subjects and, therefore, are represented only by flat structures, Tarahumara may instead be used as a clear example of a language that follows the SOV pattern in a typical binary-branching hierarchical configuration. Positions for specifier,

adjunct, complement and head may be identified for nearly all Tarahumara phrases as found in available data, and few examples of orderings can be found that cannot be accounted for by appeal to movement processes.

These movement processes comprise the third major contribution of Government and Binding theory to an understanding of Tarahumara syntax. Nearly all of the extensive variations in word order found in Tarahumara sentences can be accounted for satisfactorily by means of processes of NP-movement or Wh-movement as proposed in the theory and described in chapter 5. The type of movement most often noted in Tarahumara, in which a subject or an object is preposed or postposed, is simply and neatly accounted for by the kind of Wh-movement that creates an adjoined position and adds it just above IP so that the constituent may be relocated in this new position from its original position in the sentence. Multiple movements may take place to derive the various possible permutations of the SOV basic order as well as other variations in phrase structure that are evident in Tarahumara sentences.

Significant benefits of applying the Government and Binding model to Tarahumara, thus, include the provision of a formalism, the demonstration of the configurational and hierarchical character of Tarahumara phrase structure, and the analysis of variation in word order as a result of basic movement processes.

7.3 Integration of the Government and Binding model with text analysis

Throughout this paper and particularly in chapter 6 there has been an attempt to integrate a formal, sentence-based approach with certain aspects of a functional, text-based approach in an effort to achieve a more complete understanding of Tarahumara syntax than either approach could

yield by itself. This section briefly describes some of the beneficial results of this attempt and discusses the role of pragmatics in Government and Binding theory.

As shown in the text analysis in chapter 6, attention to discourse supplies explanations for various syntactic phenomena described but not motivated in the Government and Binding model. Investigation of discourse context can yield explanations for the various types of encoding of noun phrases selected by speakers in different sentences for the same referent and can also reveal strategies for recovery of referents of the many null subjects and null objects found in connected discourse. Examination of discourse organization, with attention to different bands of salience, also yields explanations for speakers' selections of various types of verbal inflection. And perhaps most crucially, discourse analysis provides reasonable motivations for the many kinds of movement evident in Tarahumara sentences.

In identifying motivations for movement, while syntactic considerations alone, viewed in the Government and Binding perspective, may provide a few explanations for movement, textual study is likely to provide many more explanations. Syntactic considerations alone, such as abstract case assignment of subjects of passive verbs and the formation of a question from a declarative sentence, motivate a few types of movement evident in Tarahumara. Even some apparently syntactically motivated movement resulting from insertion of a negative morpheme, from the presence of an indirect object together with a direct object or from the presence of a relative clause may ultimately be pragmatically motivated through the necessity to facilitate cognitive processing. But purely pragmatic motivations for movement are especially clear in analyses of text; these motivations include introduction or re-introduction of a topic, acknowledgement of predictability of a topic, emphasis, contrastive focus and accommodation of "heavy" constituents to positions where they may be more easily interpreted.

Text analysis also yields some evidence towards understanding the computability of various types of embedding from the perspective of a Tarahumara speaker. Whereas center embedding of syntactically complex constituents is unusual in Tarahumara, left embedding is occasional and right embedding is most common, suggesting that for Tarahumara speakers, center embedding is the most difficult to compute and right embedding is the easiest. Left embedding is preferable to center embedding in computability but is only used for special purposes because of its greater difficulty of processing compared to right embedding. These observations regarding the computability of natural language help to fill out the picture of Tarahumara language processing but are only obtainable through examination of sentence structure across entire texts; statistics regarding frequency of use cannot be gathered from a sentence-only approach.

The attempt to integrate a formal, sentence-based approach with a functional, text-based approach brings the discussion to the last important question of this section: What is the exact role of pragmatics in Government and Binding theory? Proponents of the emergent grammar view assert that text IS syntax, that no independent rules of sentence formation exist apart from tendencies and clusters of "recurrent partials" in discourse, and that even notions of "sentence," "noun," and "verb" are by-products of discourse process (Hopper 1988).

The answer to this question from a formal perspective such as Government and Binding theory, however, is quite different. Given the presuppositions of this theory regarding the existence of a universal grammar and the innate, autonomous language faculty present in the minds of all speakers from birth, this theory holds that text is not syntax and is not governed by universal principles. Rather, only the sentence and lower level phrases are governed by universal linguistic principles in an innate language faculty possessed by every speaker. In this view, discourse ability,

like storytelling, is a separate skill that is not necessarily governed by universal principles and that is not innate but rather is acquired by different speakers with varying degrees of finesse.

The pragmatic component, therefore, although closely related to cognitive processing of language, is separate from the syntactic component and applies its filters and well-formedness conditions optionally after strictly grammatical sentences have been produced by the syntactic component. Because of the separation of these two human faculties, the syntactic component may produce grammatical sentences that do not appear in discourse because they are hard to parse. The pragmatic component eliminates or modifies such sentences based on various pragmatic considerations and discourse factors, allowing only **well-formed** grammatical sentences to appear in discourse. Given this dichotomy, even phrase structure and word order, which are usually thought of together, may be teased apart, because phrase structure depends on absolute realization of syntactic principles while word order is derived (through syntactic processes) from optional application of pragmatic considerations.

7.4 Directions for further research

This study, lengthy as it is, has merely dabbled at the surface of what is available in a close examination of Tarahumara texts. More extensive investigation of texts, particularly with regard to information structure, is likely to reveal intriguing relationships between principles of Government and Binding theory and pragmatic considerations in discourse. Three specific areas of Tarahumara syntax certain to yield significant understanding of the “packaging” of chunks of information are the following: use of the particle *ba* as described in Copeland 1997, placement of clitic pronouns on various sentence constituents, and selection among various types of verbal inflection.

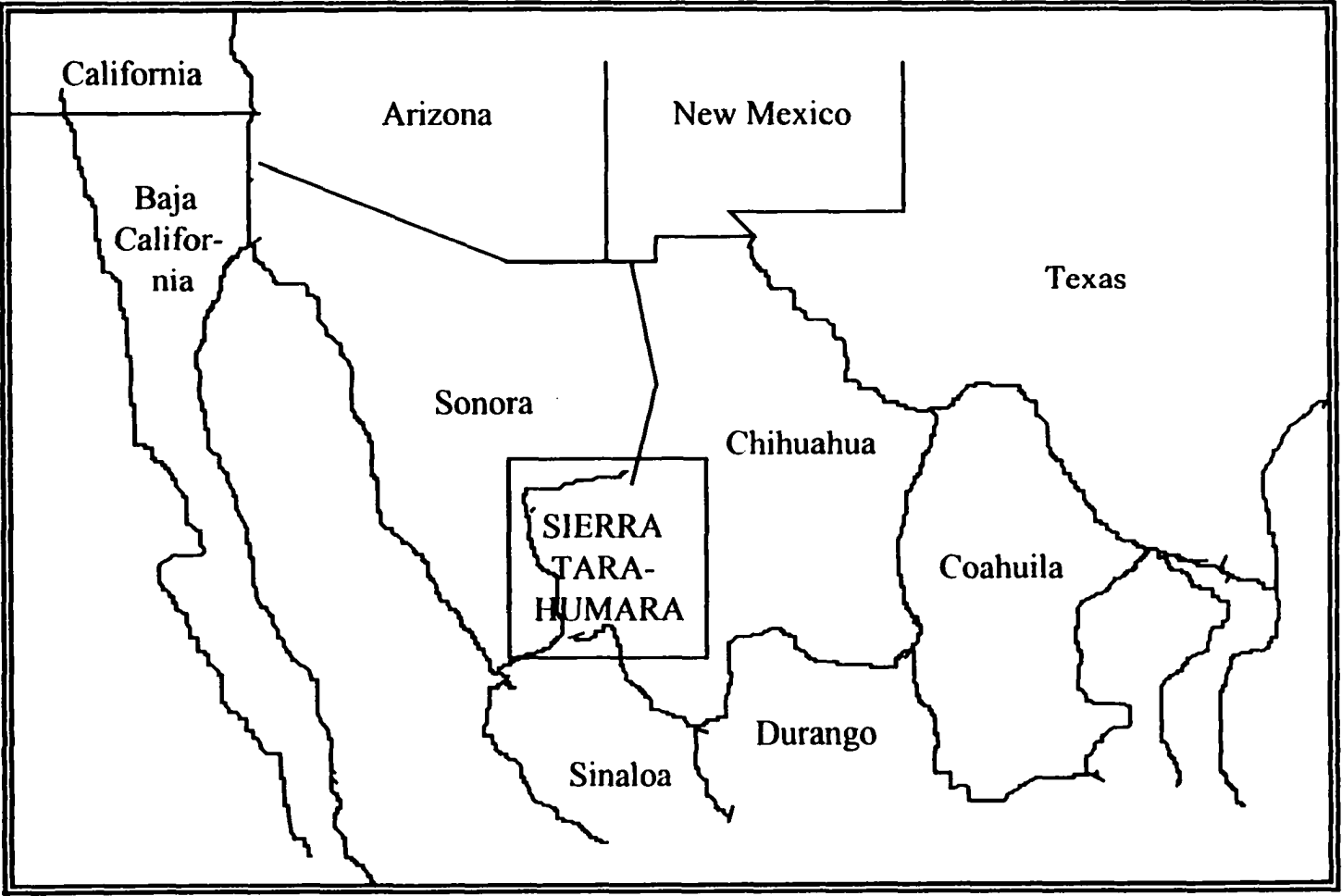
Studies of basic word order, though more far-reaching and difficult to plan, still hold the greatest potential for discovery of principles of information structuring. One major question still to be tackled in Tarahumara is, Why is VO order so much more common than OV order in this basically SOV language? The answer to this question probably goes far beyond considerations of movement for purposes of topicalization, emphasis or ease of processing as suggested in this study. Another question, equally weighty, is, Why is SV order so much more common than VS order in transitive sentences than it is in intransitive sentences? Here also, the answer to this question will probably involve much more than the simple blocking of heavy NP-shift of subjects because of the presence in sentence-final position of an object that has previously been moved to that position. The possibility of discourse ergativity in Tarahumara, in which subjects of intransitive sentences take on a PATIENT role, needs to be pursued in the study of this issue.

The benefits of undertaking a comprehensive description of Tarahumara syntax such as this one are several. The student gains an increased appreciation for the uniqueness of the Tarahumara language among the languages of the world. The study establishes the formalisms of the Government and Binding model as a valid basis on which to investigate further the functions and uses of the language. The outcome highlights the value of integrating aspects of a functional, discourse-based approach with a formal approach for a well-rounded understanding of the language. The most dynamic benefit, however, is perhaps the pinpointing of areas of Tarahumara syntax that invite further study and promise serviceable discoveries in reward for the effort of exploring them.

APPENDIX A

MAP OF THE SIERRA TARAUMARA IN RELATION TO NORTHERN
MEXICO AND THE SOUTHWESTERN UNITED STATES

MAP OF THE SIERRA TARAHUMARA IN RELATION TO NORTHERN MEXICO AND THE SOUTHWESTERN UNITED STATES



APPENDIX B
MAP OF THE SIERRA TARAHUMARA

APPENDIX C
UTO-AZTECAN LANGUAGES

UTO-AZTECAN LANGUAGES

| <u>Family</u> | <u>Branch</u> | <u>Group</u> | <u>Language</u> | <u>Speakers</u> | | |
|---------------|---------------|--------------|---------------------|-----------------|---------|-----------|
| Uto-Aztecan | Shoshonean | Numic | Mono | 20 | | |
| | | | Paviotso | 2,000 | | |
| | | | Panamint | 6 | | |
| | | | Shoshoni | 3,000 | | |
| | | | Comanche | 500 | | |
| | | | Kawaiisu | 10 | | |
| | | | Ute/Southern Paiute | 2,500 | | |
| | | | Tübatulabal | 6 | | |
| | | | Takic | Serrano | 2 or 3 | |
| | | | | Kitanemuk | extinct | |
| | | | | Gabrielino | extinct | |
| | | | | Cupeño | 10 | |
| | | | | Cahuilla | 50 | |
| | | | | Luiseno | 100 | |
| | | | Hopi | Hopi | 5,000 | |
| | | | Sonoran | Cáhita | Mayo | 50,000 |
| | | | | | Yaqui | 17-25,000 |
| | | | | Corachol | Cora | 15,000 |
| | | | | | Huichol | 12,500 |
| | | | | Opatan | Eudeve | extinct |
| | | Jova | | | extinct | |
| | | Ópata | extinct | | | |
| | | Tepiman | Papago-Piman | Papago-Piman | 15,000 | |
| | | | | Lower Piman | 1000 | |
| | | | Nevome | 1000 | | |
| | | | Northern Tepehuán | 5-8,000 | | |
| | | | Southeastern | | | |
| | | | Tepehuán | 5,000 | | |
| | | Southwestern | | | | |
| | | Tepehuán | 4-6,000 | | | |
| | Tepecano | extinct | | | | |

Uto-Aztecan Languages--*Continued.*

| <u>Family</u> | <u>Branch</u> | <u>Group</u> | <u>Language</u> | <u>Speakers</u> |
|---------------|---------------------|--------------|-----------------------------|-----------------|
| | | Tarahumaran | Guarijio | 2-3,000 |
| | | | Central Tarahumara | 30-40,000 |
| | | | Northern Tarahumara | 500 |
| | | | Southwest Tarahumara | 100 |
| | | | Western Tarahumara | 5-10,000 |
| | | Tubar | Tubar | extinct |
| | Aztecan/ Nahuatl | Nahuatl | Central Nahuatl | no data |
| | | | Classical Nahuatl | extinct |
| | | | Coatepec Nahuatl | 3,500 |
| | | | Durango Nahuatl | 800 |
| | | | Guerrero Nahuatl | 80-90,000 |
| | | | Eastern Huasteca Nahuatl | 410,000 |
| | | | Western Huasteca Nahuatl | 300,000 |
| | | | Isthmus Nahuatl | 16-20,000 |
| | | | Michoacán Nahuatl | 1,700-1,800 |
| | | | Morelos Nahuatl | 80-90,000 |
| | | | North Puebla Nahuatl | 55-60,000 |
| | | | Ometepec Nahuatl | 1,500-2,000 |
| | | | Orizaba Nahuatl | 90-100,000 |
| | | | Sierra de Puebla Nahuatl | 125,000 |
| | | | Southeast Puebla Nahuatl | 30-50,000 |
| | | | Tabasco Nahuatl | a few |
| | | | Tetelcingo Nahuatl | 3,000 |
| | | Pipil | Pipil | 20 |
| | | Pochutec | Pochutec | extinct |

APPENDIX D
LIST OF TEXTS AND SPEAKERS

LIST OF TEXTS AND SPEAKERS

| <u>Code</u> | <u>Type of Text</u> | <u>Title</u> | <u>Name of Speaker</u> | <u>Number of Lines</u> | <u>Number of Sentences</u> |
|-------------|---------------------|---|------------------------|------------------------|----------------------------|
| v | narrative | “My Search for the Family Cows” | Francisco Pérez | 64 | 35 |
| t | narrative | “Our Search for Other Tribes” | Dionicio Pérez | 34 | 21 |
| m | narrative | “The Man Who Killed a Deer with His Sarape” | Dionicio Pérez | 41 | 24 |
| b | expository | “Birds of the Mountains” | Bernabé Acosta | 22 | 17 |
| r | procedural | “How Footraces Are Run” | Bernabé Acosta | 25 | 23 |
| c | procedural | “How To Skin a Coyote” | Bernabé Acosta | 8 | 7 |
| h | procedural | “How To Make an Axe Handle” | Bernabé Acosta | 10 | 5 |
| u | procedural | “How To Make a Violin” | Bernabé Acosta | 16 | 15 |
| p | procedural | “How To Make a Head Scarf” | Bernabé Acosta | 6 | 6 |
| d | procedural | “How To Shoe a Donkey or Horse” | Bernabé Acosta | 6 | 4 |
| i | expository | “Introduction to the Three Folktales” | Ramón López Bautista | 5 | 2 |
| o | narrative | “The Tale of the Bear and the Wasp” | Ramón López Bautista | 55 | 23 |
| g | narrative | “The Legend of the Giant Canó” | Ramón López Bautista | 92 | 21 |
| z | narrative | “The Tale of the Buzzard and the Heron” | Ramón López Bautista | 104 | 34 |

REFERENCES

- Brambila, David. 1953. Gramática rarámuri. México, D.F.: Editorial Buena Prensa.
- Burgess, Don. 1984. Western Tarahumara. Studies in Uto-Aztecan grammar, ed. by Ronald W. Langacker, 1-149. Volume 4, Southern Uto-Aztecan Grammatical Sketches. Dallas, TX: The Summer Institute of Linguistics and The University of Texas at Arlington.
- _____. 1987. Chistes de la Sierra Tarahumara. Chihuahua, Mexico: Don Burgess.
- _____, Marie Fleurie de Burgess, Lázaro Triás Merino et. al. 1987. Tabilé suhuimeli ju: no tienen que morir. Nasuli, Bukidnon, Philippines: Steve Lynip.
- _____, Marie Fleurie de Burgess, and Ramón López Bautista. 1988. Quetasi suhuimea: no tienen que morir. Nasuli, Bukidnon, Philippines: Steve Lynip.
- _____, Aureliano Ramos Chaparro, Ismael Castillo Aguirre, Cesáreo Prieto Vega, Ventura Orozco Castro et. al. 1997. Compendio básico de la gramática ralámuli. Gobierno del Estado de Chihuahua, Coordinación Estatal de la Tarahumara, Proyecto de Bilepi Ralámuli Osiwaame, Fondo de Cultura Rarámuri.
- Burquest, Donald A. 1996. A field guide for principles and parameters theory. The University of Texas at Arlington and The Summer Institute of Linguistics.
- Copeland, James E. 1988. Comparisons of similarity in Tarahumara. LACUS Forum 14.248-60.
- _____. 1990. Intensification, contrast, and metaphor in Tarahumara: comparisons of dissimilarity. LACUS Forum 16.335-45.
- _____. 1991. The relativizing complementizer *mapu* in Tarahumara discourse. LACUS Forum 17.195-204.
- _____. 1992. Discourse prerequisites from phonological analysis: free alternation in Tarahumara. LACUS Forum 18.356-66.
- _____. 1993. Tarahumara reduplication: the grammaticalization of iconic intensification. LACUS Forum 19.313-26.
- _____. 1994a. Unmotivated free alternation in Tarahumara: the principle of emergence in phonology. Language Sciences 16. 213-27.

- _____. 1994b. Variation and constancy of patterning in language and culture: the case of Tarahumara. *LACUS Forum* 20.5-30.
- _____. 1996. The copula in Tarahumara: paths of grammaticalization. *LACUS Forum* 22.157-66.
- _____. 1997. On the Tarahumara particle <pa>: an optional mode of delimiting information segments. *LACUS Forum* 23.313-24.
- Crystal, David. 1991. *A dictionary of linguistics and phonetics*. Third edition. Cambridge, MA: Basil Blackwell.
- Firbas, Jan. 1966a. On defining the theme in functional sentence analysis. *Travaux Linguistiques de Prague*, ed. by Josef Vachek, 267-80. Volume 1. University, AL: University of Alabama Press.
- _____. 1966b. Non-thematic subjects in contemporary English. *Travaux Linguistiques de Prague*, ed. by Josef Vachek, 239-56. Volume 2. University, AL: University of Alabama Press.
- Fleming, Ilah. 1988. *Communication analysis: a stratificational approach. Volume 2, a field guide for communication situation, semantic and morphemic analysis*. Dallas, TX: The Summer Institute of Linguistics.
- _____. 1990. *Communication analysis: a stratificational approach. Volume 1, an introductory text*. Dallas, TX: The Summer Institute of Linguistics.
- Fontana, Bernard L. 1979. *Tarahumara: where night is the day of the moon*. Flagstaff, AZ: Northland Press.
- Gathings, Jerry Baylies. 1972. *A grammatical statement of Tarahumara*. El Paso, TX: UT masters thesis.
- Givón, Talmy. 1983. Topic continuity in discourse: an introduction. *Topic continuity in discourse: a quantitative cross-language study*, ed. by Talmy Givón, 1-41. Philadelphia, PA: John Benjamins Publishing Company.
- _____. 1983. Topic continuity and word-order pragmatics in Ute. *Topic continuity in discourse: a quantitative cross-language study*, ed. by Talmy Givón, 141-214. Philadelphia, PA: John Benjamins Publishing Company.
- _____. 1984. *Syntax: a functional-typological introduction. Volume 1*. Philadelphia, PA: John Benjamins Publishing Company.
- _____. 1990. *Syntax: a functional-typological introduction. Volume 2*. Philadelphia, PA: John Benjamins Publishing Company.

- _____, ed. 1983. *Topic continuity in discourse: a quantitative cross-language study*. Philadelphia, PA: John Benjamins Publishing Company.
- Grimes, Barbara F., ed. 1996. *Ethnologue: languages of the world*. Thirteenth edition. Dallas, TX: The Summer Institute of Linguistics.
- Grimes, Joseph E. and Barbara F. Grimes. 1996. *Ethnologue language family index to the thirteenth edition of the ethnologue*. Dallas, TX: The Summer Institute of Linguistics.
- Haegeman, Liliane. 1994. *Introduction to Government and Binding Theory*. Second edition. Cambridge, MA: Blackwell.
- Heath, J. 1994. Uto-Aztecan languages. *The encyclopedia of language and linguistics*, ed. by R.E. Asher et al. Volume 9, pages 4865-4866. New York, NY: Pergamon Press.
- Hilton, Kenneth Simon. n.d. *34 textos en el idioma Tarahumara como se habla en Samachique del región central*. Huntington Beach, CA: The Summer Institute of Linguistics, ms.
- _____. 1959. *Vocabulario Tarahumara*. Serie de vocabularios indígenas Mariano Silva y Aceves, I. México, D.F.: Instituto Lingüístico de Verano en Cooperación con la Dirección General de Asuntos Indígenas de la Secretaría de Educación Pública.
- _____, and Martha J. Hilton. 1975. *Vocabulario Tarahumara*. Serie de vocabularios indígenas Mariano Silva y Aceves, I. Second edition. México, D.F.: Instituto Lingüístico de Verano en Cooperación con la Secretaría de Educación Pública, ms.
- Hopper, Paul J. 1988. Emergent grammar and the a-priori grammar postulate. *Linguistics in context: connecting, observation, and understanding*, ed. by Deborah Tannen, 117-134. Norwood: Ablex.
- Huang, C. T. James. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15.531-74.
- Hwang, Shin Ja J. 1996. The grammar and discourse of relative clauses. *LACUS Forum* 22.144-56.
- Keenan, Edward L., and Bernard Comrie. 1977. Noun phrase accessibility and universal grammar. *Linguistic Inquiry* 8.63-99.
- Kennedy, John G. 1978. *Tarahumara of the Sierra Madre: beer, ecology, and social organization*. Arlington Heights, IL: AHM Publishing Corporation.
- Kenstowicz, Michael. 1994. *Phonology in generative grammar*. Cambridge, MA: Blackwell.
- Langacker, Ronald W. 1977. An overview of Uto-Aztecan grammar. *Studies in Uto-Aztecan grammar*, 1; Summer Institute of Linguistics, Publications, 56:1. Dallas, TX: The Summer Institute of Linguistics.

- Lionnet, Andrés. 1972. *Los elementos de la lengua Tarahumara*. México, D.F.: Universidad Nacional Autónoma de México.
- Llaguno, José A. 1984. *Tarahumar: adaptación del método "ASSIMIL."* México, D.F.: Obra Nacional de la Buena Prensa.
- Longacre, Robert E. 1989. Two hypotheses regarding text generation and analysis. *Discourse Processes* 12.413-460.
- _____. 1996. *The grammar of discourse*. Second edition. New York: Plenum Press.
- _____, and Stephen Levinsohn. 1978. Field analysis of discourse. *Current trends in text-linguistics*, ed. by W. Dressler, 103-22. Berlin: Walter de Gruyter.
- López Bautista, Ramón. 1980. *Qui'yá irétaca nahuisárami: relatos de los Tarahumaras*. Chihuahua, Mexico: Don Burgess McGuire.
- _____. 1980. *Qui'yá irétaca nahuisárami: relatos de los Tarahumaras*. México, D.F.: Instituto Nacional Indigenista.
- Miller, Wick R. 1967. Uto-Aztecan cognate sets. *University of California publications in linguistics*, 48. Berkeley.
- _____. 1992. Uto-Aztecan languages. *International encyclopedia of linguistics*, ed. by William Bright et al. Volume 4, pages 212-216. New York, NY: Oxford University Press.
- Mithun, Marianne. 1990. Is basic word order universal? *Pragmatics of word order flexibility*, ed. by Doris Payne, 15-61. Amsterdam: John Benjamins.
- Pennington, Campbell W. 1974. *The Tarahumar of Mexico: their environment and material culture*. Salt Lake City, UT: University of Utah Press.
- Pérez Flores, Francisco, and Ramón López Bautista. 1987. *Ralámuli ra'icháruami: frases Tarahumara—Español*. Chihuahua, Mexico: Don Burgess.
- Rubí Rubí, Patricia. n.d. *Osili ralamuli binearni: mi libro de primer grado Tarahumara*. Chihuahua, Mexico: Dirección General de Educación Indígena.
- Ruíz Becerra, Felipe. 1976. *Diccionario Tarahumara*. Creel, Chihuahua, Mexico: Misión Tarahumara Artesanías.
- Sheridan, Thomas E. 1996. The Rarámuri (Tarahumaras): when we walk in circles. *Paths of life: American Indians of the Southwest and northern Mexico*, ed. by Thomas E. Sheridan and Nancy J. Parezo, 142-61. Tucson, AZ: The University of Arizona Press.

_____, and Thomas H. Naylor, eds. 1979. *Rarámuri: a Tarahumara colonial chronicle 1607-1791*. Flagstaff, AZ: Northland Press.

Thord-Gray, I. 1955. *Tarahumara-English English-Tarahumara dictionary and an introduction to Tarahumara Grammar*. Coral Gables, FL: University of Miami Press.

Whaley, Lindsay J. 1997. *Introduction to typology: the unity and diversity of language*. Thousand Oaks, CA: SAGE Publications.

LIST OF ABBREVIATIONS

| | |
|-------|-----------------------|
| 1 | first person |
| 2 | second person |
| 3 | third person |
| ABS | absolutive case |
| ACC | accusative case |
| AdvP | adverb phrase |
| AJZR | adjectivizer |
| AP | adjective phrase |
| COMP | complementizer |
| COND | conditional mode |
| CONT | continuative aspect |
| COP | copula |
| CP | complementizer phrase |
| DEF | definite article |
| DESID | desiderative mode |
| DIST | distal demonstrative |
| EUPH | euphonic |
| EXH | exhortative |
| IMPV | imperative |
| INDEF | indefinite article |

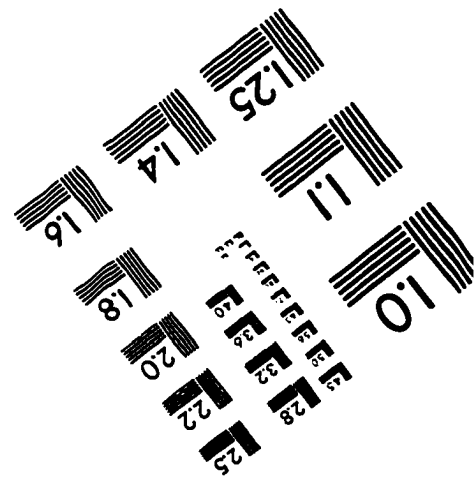
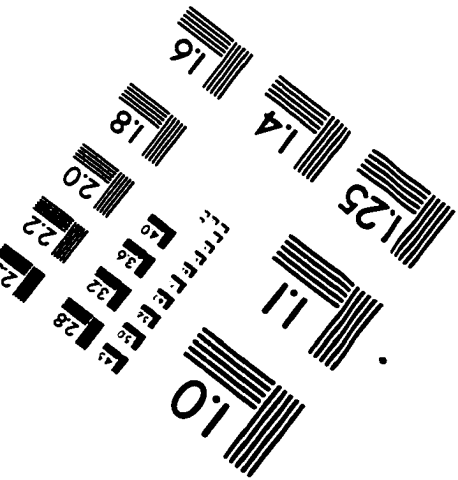
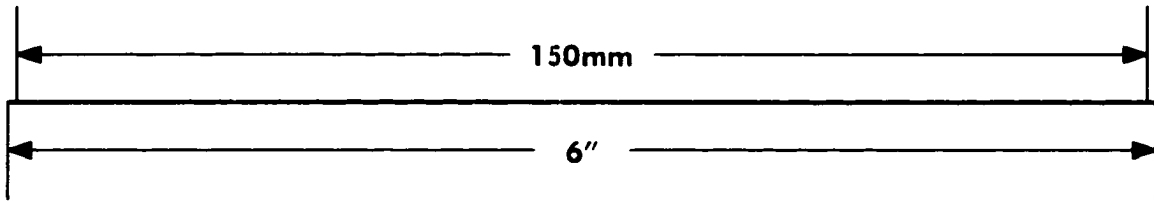
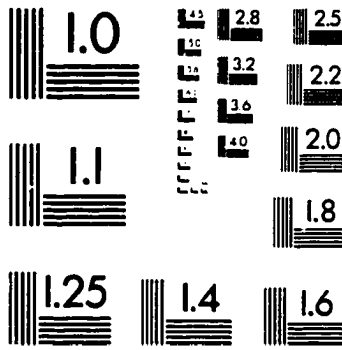
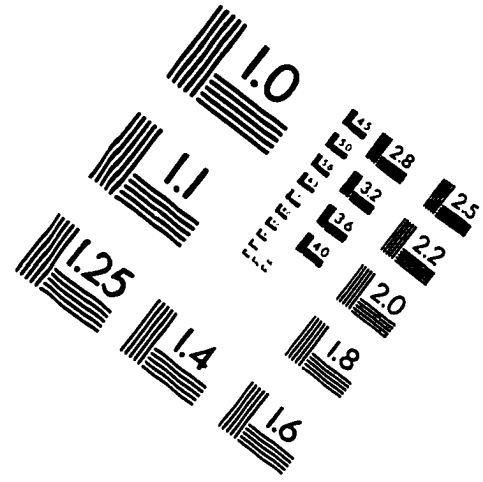
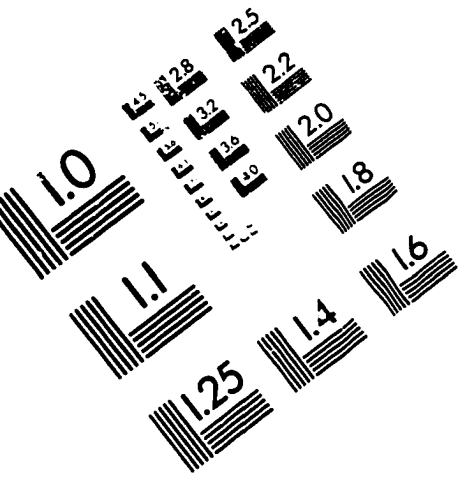
| | |
|----------|-----------------------------|
| INFL | verbal inflection |
| INTROD | sentence introducer |
| IP | inflectional phrase, clause |
| IRR | irrealis mode |
| LOC | locative |
| n.d. | no date |
| NEG | negative |
| NMZR | nominalizer |
| NOM | nominative case |
| NP | noun phrase |
| O | object |
| PASS | passive voice |
| PAST | past tense |
| PASTPASS | past tense passive voice |
| (pl) | plural verb stem |
| PL | plural |
| PP | postpositional phrase |
| PRES | present tense |
| PROG | progressive aspect |
| PROX | proximal demonstrative |
| PTCP | participle |
| REIT | reiterative aspect |

| | |
|--------|--------------------------|
| REL | relativizer |
| (refl) | reflexive |
| RFLX | reflexive pronoun |
| S | subject |
| SBJNV | subjunctive |
| (sg) | singular verb stem |
| SG | singular |
| SPCF | specifier particle |
| V | verb |
| VP | verb phrase |
| X | other material; obliques |

BIOGRAPHICAL INFORMATION

Diana Cohen received a Bachelor of Arts and a certificate for Teaching English as a Foreign Language in June 1988 from Columbia International University in Columbia, South Carolina. Following graduation from college she taught high school Spanish and Speech/Drama at a private school in York, Pennsylvania for two years and later traveled to Asia where she studied Mandarin Chinese. She then taught conversational and business English for three years at a commercial college in northwest China before returning to the U.S to study linguistics.

IMAGE EVALUATION TEST TARGET (QA-3)



APPLIED IMAGE, Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989

© 1993, Applied Image, Inc., All Rights Reserved