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ECONOMY OF CHAIN FORMATION

by

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A Thesis Submitted to
the Faculty of Graduate Studies and Research
in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

Department of Linguistics
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ISBN 0-612-12447-9

Canada

To my parents
Masayuki and Yasuko

ABSTRACT

This thesis investigates chain formation processes in syntax within the general framework of the Minimalist Program (Chomsky 1993, 1994, 1995), where comparison among derivations plays a central role. It is primarily concerned with interactions between Grammatical Function changing (Baker 1988a) and *wh*-movement. Constructions such as antipassive, applicative, and Object Preposing (special "passive") from typologically different languages are examined together with their implications for extraction. On a theoretical level, this thesis proposes a modification of the notion of reference set (Chomsky 1994, 1995), which fixes the domain of comparison for the purpose of economy. In particular, the notion of reference set is defined in terms of non-distinctness of numerations; this in turn is sensitive to the Interpretability of features (Chomsky 1995). It is also argued that the Minimal Link Condition is an economy condition that selects among convergent derivations on the basis of the notion of chain link comparability. The system advanced here, in combination with some independently motivated Minimalist assumptions, explains phenomena which have so far defied a unified account, thereby providing important empirical support for the leading ideas of the Minimalist Program.

RÉSUMÉ

Cette thèse examine le pocessus de formation de chaîne en syntaxe dans le cadre général du Programme Minimaliste (Chomsky 1993, 1994, 1995) dans lequel la comparaison entre dérivations joue un rôle central. Nous étudions principalement les interactions entre le changement de Fonction Grammaticale (Baker 1988a) et le mouvement *wh*. Nous examinons des constructions telles que les antipassives, les applicatives et la préposition d'objet (des "constructions passives" particulières) ainsi que leur implications au niveau de l'extraction dans des langues de typologie différente. Au niveau théorique, cette thèse propose une modification de ia notion d'ensemble de référence (Chomsky 1994, 1995) qui détermine le domaine de comparaison à des fins d'économie. En particulier, la notion d'ensemble de référence est définie en termes de caractère non-distinct de numérations; ceci est alors sensible à l'Interprétation de traits (Chomsky 1995). Nous montrons également que la Condition de Lien Minimal est une condition d'économie qui sélectionne la meilleure dérivation conbergente en utilisant la notion de comparabilité de lien de chaîne. Le système avancé ici, en conjonction avec des hypothèses Minimalistes indépendamment motivées, permet de rendre compte de phénomènes qui jusqu'à présent défiait toute explication unifiée, apportant ainsi un soutien empirique important aux idées principales du Programme Minimaliste.

ACKNOWLEDGEMENTS

This thesis puts an end to my study at McGill. Although the reason I ended up at McGill was somewhat weird, looking back, I am very glad that I did. When I first arrived at Dorval, I did not have the slightest idea whether I would be able to come this far. Over these years, a number of people helped me in their own unique ways. It is with great pleasure that I thank them here.

First and foremost, I should like to express my sincere gratitude to the members of my doctoral committee, Mark Baker, Lisa Travis, and Glyne Piggott.

I can never thank Mark Baker, my advisor, enough for his patience, guidance, and encouragement. My intellectual debt to him is so huge that I cannot even begin to describe it here. It has been such a privilege to have the opportunity to work with him. I believe that his deep influence on me will be felt throughout the pages to follow. While I was doing this project, Mark made sure that I was not totally off the mark (pun unintended). I just hoped that this thesis would get anywhere close to the high standard of scholarship he sets through his own research, but the task, as expected, has proved extremely difficult. I gave it my best shot within my limits, though.

It was Mark who suggested that I go haunt MIT (as an official tourist with a valid B2 visa) for the fall semester 1994-1995. I thank him for his timely advice.

I have benefitted tremendously from discussions with Lisa Travis, my unofficial advisor. She is the one who is largely responsible for what I know about Austronesian languages. Her keen original insight into language, which any syntactician would be envious of, has constantly amazed me. I wish to thank Lisa for being generous with her time and being always inspiring. At the same time, I am very grateful to her for support, encouragement, and kindness.

I am much indebted to Glyne Piggott, who read the draft of this thesis thoroughly and provided valuable critical comments. I would like to thank him also for his clear

teaching, from which I learned, among other things, how to appreciate elegant argumentation.

I would like to express my gratitude to Nigel Duffield and Daniel Valois for their presence and insightful questions at the oral defense, and to Alec Marantz for acting as the external examiner and providing useful comments.

I would like to thank the entire McGill linguistics community, especially the following people, for making my stay at McGill fruitful: Heather Goad, Ethine Guilfoyle, Norbert Hornstein, and Lydia White. The list continues. Mengistu Amberber, Natividad del Pilar, Joyce Garavito, Yahiro and Makiko Hirakawa, Edward Ikeda (and his parents Arthur and Mariko Ikeda), Alan Juffs, Takako Kawasaki, Mika Kizu, John Matthews, Joe Pater, Anna Maclachlan, Kumiko Murasugi, Máire Noonan, Philippe Prevost, Sharon Rose, Hidekazu Tanaka, Jan Voskuil, and Mihoko Zushi. Natividad deserves special mention for kindly providing me with Tagalog data. In addition, I am particularly thankful to Hidekazu and Takako for their help (often in twisted ways!) at various crucial moments during the last two years. Also, "merci beaucoup" to Lise Vinette, who made my departmental life a lot easier.

While I was in Boston, I had the wonderful opportunities to talk to Noam Chomsky, Kenneth Hale, and Shigeru Miyagawa. I wish to thank them for listening to the core ideas of this thesis and offering me very useful suggestions.

I also wish to thank Sandra Chung, Alexandre Kimenyi, and Sam Mchombo for their discussions/native speaker judgements as well as their important works.

I was fortunate to meet many young linguists in North America. For their help/ encouragement/discussions, thanks go to, among others, Hiroshi Aoyagi, Masatoshi Koizumi, Hideki Maki, Roger Martin, Keiko Miyagawa, Masao Ochi, Satoshi Oku, Norvin Richards, Tetsuya Sano, Asako Uchibori, Hiroyuki Ura, and Shin Watanabe.

My gratitude goes beyond North America. I wish to thank my former teachers in Japan who sparked my interest in linguistics: Yasuaki Fujiwara, Jun Haga, Shosuke

Haraguchi, Yukio Otsu, Takeo Saito, and Hidekazu Suzuki. Thanks also to Kenji Arisaka, Yasuyuki Fukutomi, and Yasuaki Murasato, my first lingaistics tutors, and to Michihiko Kawamura, Satomi Mishina, Kazumi Matsuoka, and Ayumi Suga, who shared with me the experience of studying abroad and gave me many words of encouragement as graduate students in my shoes.

My heartfelt thanks go to my non-linguist friends in Montreal and in Japan for their moral support. They are too numerous to list up here, but allow me to mention Masaru Okubo, Teiichi Ota, and especially the late Susumu Miyazaki.

I should like to acknowledge with appreciation the various kinds of financial support I received during my study at McGill; a scholarship from the Ishizaka Foundation for the first two M.A. years, a Government of Canada Award for the last three and a half Ph.D. years, a research assistantship (FCAR 91-ER-0578) for the academic year 1992-1993, a teaching assistantship (Winter, 1992-1993 and Fall, 1993-1994), and travel awards for the academic year 1994-1995 (McGill Post-Graduate Student Society, FCAR 94-ER-0578, Humanities Research Grants Sub-Committee, and MIT).

Turning now to my relatives, I am very much indebted to the late Nobuyuki and Setsu Saito, the late Yoshiaki Nakamura, Yoshiko Nakamura, Akiko Shinada, Hiroko Nakamura for years of support.

I am eternally grateful to my parents Masayuki and Yasuko Nakamura, to whom I owe what I am, who I am, and how I am. I thank them for encouraging me to pursue whatever I wanted to pursue. This thesis is humbly dedicated to them.

Thanks also to Yoko for putting up with me for all these years.

Last but certainly not the least, very special thanks to Mihoko for everything—her unfailing support, academic or non-academic, friendship, and love. Without her faith and trust in me, I would see no reason to carry on.

TABLE OF CONTENTS

ABSTRACT iii

RÉSUMÉ iv

ACKNOWLEDGEMENTS v

LIST OF ABBREVIATIONS xi

CHAPTER 1 INTRODUCTION 1

1.0. Introduction 1

1.1. Phenomena of Interest 1

1.2. Theoretical Framework 5

1.2.1. Model of Grammar 6

1.2.2. Reference Set 9

1.2.3. Attract 10

1.3. Major Goals 20

1.4. Organization 22

CHAPTER 2 CASE AND AGREEMENT 24

2.0. Introduction 24

2.1. Clausal Structure 24

2.2. Structural Case 28

2.2.1. Accusativity 28

2.2.2. Ergativity 30

2.3. Inherent Case 40

2.4. Case of CPs 44

2.5. Summary 52

CHAPTER 3 ANTIPASSIVES 53

3.0. Introduction 53

3.1. The Problem: Object Extraction in Antipassives 54

3.2. Antipassive as Caseless Aspect 58
3.3. Problems with ECP Accounts 68
3.4. An Economy Account 75
3.4.1. Notions of Economy 75
3.4.2. Western Austronesian 82
3.4.3. Outside Western Austronesian 91
3.5. Two Types of Antipassives 98
3.6. Some Implications 117
CHAPTER 4 APPLICATIVES 120
4.0. Introduction 120
4.1. The Problem: Object Extraction in Applicatives 121
4.2. Two Types of Applicatives in Bantu 126
4.3. An Economy Account 133
4.3.1. Type 1 and Type 2 Applicatives 135
4.3.2. Type 3 and Type 4 Applicatives 140
4.3.3. Problems with an ECP Account 148
4.4. Applicatives in Austronesian 152
4.5. Some Implications 170
CHAPTER 5 BEYOND A CLAUSE 173
5.0. Introduction 173
5.1. Successive Cyclicity 174
5.2. *Wh*-Agreement 192
5.3. Hyper/Super-Raising-to-Object 214
5.4. Summary 222
CHAPTER 6 OBJECT PREPOSING 223
6.0. Introduction 223
6.1. Object Preposing in Austronesian 224

6.2. Object Preposing in Bantu 239
6.3. Object Preposing in Romance 244
6.4. Summary 247
CHAPTER 7 CONCLUSIONS 249
REFERENCES 253

LIST OF ABBREVIATIONS

The following abbreviations are used in this thesis:

ABS-absolutive case
ACC-accusative case
ACCID-accidental mood
ADVLK-adverbial linker
ALL-allative case
APASS-antipassive morpheme
APPL-applicative morpheme
ASP-aspect marker
AT-Agent Topic morpheme
AUX-auxiliary verb
BT-Benefactive Topic morpheme
CASP-completive aspect
CAUS-causative morpheme
CLT-clitic
COMP-complementizer
COND-conditional mood
CT-Circumstantial Topic morpheme
DAT-dative case
DEF-definite marker
DET-determiner
DIR-directional morpheme
DS-directional suffix
EMPH-emphatic pronoun
ERG-ergative case
FEM-feminine
FOC-focus marker
FUT-future tense
HAB-habitual aspect
IMPERF-imperfective aspect
IND-indicative mood
INH-inherent case
INST-instrumental case
INTR-intransitive marker
IPAST-immediate past tense
LK-linker
LT-Locative Topic morpheme
MASC-masculine
N-noun
NC-numeral classifier
NCL-noun class (prefix)
NMLZ-nominalizer
NOM-nominative case
NONFUT-non-future tense
NONVOL-non-volitive mood
OBJ-object
OBL-oblique case

OP-object agreement prefix

PASS-passive morpheme

PAST-past tense

PERF-perfective aspect

PL-plural

POSS-possessive case

PRED-predicate marker

PRES-present tense

PURP-purposive marker

Q-question marker

REL-relative marker

RN-relational noun

RPAST-recent past tense

SG-singular

SP-subject agreement prefix

SUB-subject

TNS-tense marker

TR-transitive marker

TS-theme suffix

TT-Theme Topic morpheme

UNM-unmarked case

1-first person/class 1

2-second person

3-third person/class 3

5-class 5

It must be noted that some of the original glosses of cited examples have been changed for the sake of consistency.

CHAPTER 1

INTRODUCTION

1.0. Introduction

The thesis investigates certain chain formation processes in syntax and their intricate interactions from the viewpoint of economy, assuming the general framework of the *Minimalist Program* (Chomsky 1993, 1994, 1995). I will examine relevant data from a wide range of languages. It is hoped that they will shed light on the issue of how the theory of economy should be developed so as to properly account for locality effects imposed on chain formation. In the course of the discussions to follow, I am going to support the leading ideas of the Minimalist Program, as outlined in Chomsky (1993, 1994, 1995), while modifying some of its specific implementations. By so doing, this thesis aspires to contribute to the refinement of the theory of economy, a topic that emerged only in recent years and has so far remained rather obscure in its details. I would also like to explore some implications and ramifications of the proposals made here.

This introductory chapter has four aims; (a) to exemplify the kind of data I will be mainly interested in in this thesis, (b) to briefly introduce the theoretical framework adopted here, (c) to set the major goals of this thesis, and (d) to describe the organization of this thesis. These tasks are taken up in turn in the following sections.

1.1. Phenomena of Interest

A rather well-known property of natural languages that sets them apart from most formal languages is that they often permit multiple ways of expressing more or less the

same thing, *i.e.*, what Baker (1988a:7) calls *Thematic Paraphrases*. For instance, consider the following productive alternation found in Kinyarwanda, a Bantu language (Kimenyi 1980:94):[1]

(1) a. Úmwáalimu y-oohere-je igitabo **kw'**iishuûri.
teacher SP-send-ASP book **to** school
'The teacher sent the book to school.'

b Úmwáalímu y-oohere-jé-**ho** ishuûri igitabo.
teacher SP-send-ASP-APPL school book
'The teacher sent school the book.'

In (1) the verb *oohere* 'send' takes two internal arguments: one is the Theme *igitabo* 'book', and the other the Goal/Locative *ishuûri* 'school'. In (1a) the Locative is the object of the preposition. In (1b), on the other hand, it appears adjacent to the verb bearing the applicative morpheme *-ho*, and is not preceded by the preposition. (1b) is known as an applicative construction or a "double object" construction, where an oblique (in (1b), the Locative) has become an "object" (see for example Larson 1988, Baker 1988a,b, Marantz 1993 for discussion). Note that (1a-b) both express more or less the same proposition.

In view of examples like (1), one might get the wrong impression that the kind of alternation illustrated in (1) is rather free and unconstrained in natural language. As is well-known, natural languages tolerate certain alternations such as (1) but not others. Baker (1988a) has shown that there is a well-defined set of possible *Grammatical Function* (GF) changing alternations in human language and that their possibility as well as the impossibility of other alternations follows naturally from proposed linguistic principles.

Baker (1988a) was primarily concerned with the Case-related properties of GF changing processes. In the tradition of the grammatical theory this thesis is advocating

---

[1] Thanks are due to Alexandre Kimenyi (personal communication) for confirming the grammaticality of (1a) and (2a) below, which I constructed based on Kimenyi's (1980) description.

(see section 1.2.), Case has been associated with NP-movement (or A-movement). There is, however, another major transformational operation in the theory which has been one of the central topics of syntactic research, *i.e.*, *wh*-movement (or A'-movement) (see for example Chomsky 1977). Then a natural question, which Baker (1988a) did not attempt to answer, arises: Do GF changing alternations interact with *wh*-movement? And if they do, how?

For those who have some familiarity with the literature on *Relational Grammar* (see among others papers in Perlmutter 1983, Perlmutter and Rosen 1984, and Postal and Joseph 1990; see also Keenan and Comrie 1977), it is not difficult to answer the first question: the answer is positive. As an illustration, consider (2) where the Theme *igitabo* 'book' in (1) has been *wh*-extracted by relativization (Kimenyi 1980:94-95):

(2) a. Y-a-tw-eerets-e igitabo úmwáalímu y-oóhere-je **kw'**iishuûri.
SP-PAST-OP-show-ASP book teacher SP-send-ASP **to** school
'He showed us the book that the teacher sent to school.'

b. *Y-a-tw-eerets-e igitabo úmwáalímu y-oóhere-jé-**ho** ishuûri.
SP-PAST-OP-show-ASP book teacher SP-send-ASP-APPL school
('He showed us the book that the teacher sent school.')

As shown above, an interesting contrast emerges when we try to extract the Theme in (1); the *wh*-extraction is fine with (1a) but not with (1b). The observation is that the GF changing process in (1b), promoting the Locative to the status of "object," makes the other "object," *i.e.*, the Theme inaccessible to extraction.

One might argue that the contrast in (2) is not a matter of syntax at all. It has been suggested from a purely functional point of view that only nominals that are "referentially prominent" in a given discourse can be relativized (see for instance Kuno 1973, Schachter 1977). If the status of "object" just mentioned directly entails "referential prominence," then the deviance of (2b) could be attributed to the fact that the relativization has targeted the wrong nominal, *i.e.*, the Theme which is less prominent than the Locative.

Nonetheless, there are reasons to doubt that a functional perspective offers a unified account of data like (2).[2] If the "applied object" is more prominent than the "original object" in a "double object" construction, a functionalist explanation would expect that the contrast illustrated in (2) holds universally across languages. Curiously enough, not all "double object" constructions behave in the way Kinyarwanda (1b) does. English, for example, has a particular set of verbs that allow alternations of the kind shown in Kinyarwanda (1) (see Oehrle 1976, Larson 1988 among others). Observe (3).

(3) a. The teacher sent the book to the student.
b. The teacher sent the student the book.

(3a) corresponds to (1a), and (3b) to (1b). Now, consider the following examples of relativization based on (3a-b):

(4) a. I saw the book which the teacher sent to the student.
b. I saw the book which the teacher sent the student.

The grammaticality of (4a), corresponding to (2a), is anticipated. But the grammaticality of the English counterpart of ungrammatical (2b) in (4b) raises an interesting question. Why is it that (2b) is ruled out in spite of the fact that superficially similar (4b) is ruled in?

Thus, we are faced with the similar kind of problem that Baker (1988a) was: How can we explain why *wh*-movement is possible in certain GF changing alternations but not in others? In what follows, I will seek a formal analysis of the interplay between GF changing and *wh*-movement.

---

[2] See especially Chapters 3 and 4 for problems with functional/semantic accounts and a Relational Grammar account.

Here is a rough sketch of how my system works. Let us go back to the Kinyarwanda pair in (2). Suppose that (2a-b) "compete" with each other. We know that what is wrong with ill-formed (2b) is the *wh*-movement, for without the *wh*-movement, the sentence would be grammatical, as shown in (1b). Thus, let us compare the two instances of *wh*-movement in (2a-b). Keeping the discussion on an intuitive level, it appears that the *wh*-movement in well-formed (2a) is shorter than that in ill-formed (2b). Observe the word orders in (1) once again. The element to be extracted *igitabo* 'book' is closer to the sentence-initial position in (1a) than in (1b). Suppose that a derivation counts as "more economical" than its competing derivation if its *wh*-movement is shorter. Then we can rule out (2b) in favor of (2a); the *wh*-movement is shorter in the latter than in the former.

What about the English pair in (4)? Given the line of analysis in the preceding paragraph, we would wrongly expect (4b) to be blocked by (4a). The tacit assumption here is that (4a-b) gets evaluated with respect to each other. I will suggest that this assumption is incorrect, *i.e.*, (4a) and (4b) do not "compete" in the first place. If so, they are grammatical independently of each other, resulting in the alternation in (4). As one can tell from this outline, the determination of comparison domains for "competition" will be crucial in the present approach.

In brief, my primary concern will be with interactions between GF changing and *wh*-movement, though I will also discuss other kinds of phenomena.

1.2. Theoretical Framework

Linguistics has a long and rich history. Various linguistic phenomena have been studied and analyzed from different angles. The present study is couched within one specific tradition, *i.e.*, the tradition of generative grammar (see Chomsky 1957, 1965, and numerous subsequent works). The ultimate goal of generative grammar is to gain insight into the knowledge of language that exists in the human mind. Generative

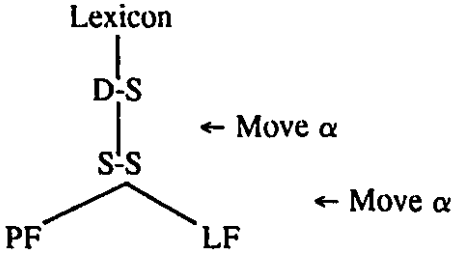
grammar presupposes the existence of the *language faculty* in the mind, which is specifically devoted to language. *Universal Grammar* (UG) is a theory of the initial state S_0 of the relevant component of the language faculty. UG interacts with experience in a restricted way and yields a particular language. The theory of a particular language is its *grammar*. See Chomsky 1957, 1965, 1981, 1986b among others.

Throughout this thesis, I presuppose the *Minimalist* approach to language outlined in Chomsky (1993, 1994, 1995). This is, however, certainly not the place to provide a comprehensive picture of this new framework. Thus, the reader is referred to Chomsky's (1993, 1994, 1995) original works for detailed discussions. Nonetheless, I will try to summarize elements that are most relevant to the content of this thesis in the hope that it will facilitate the discussions to follow in the succeeding chapters.

1.2.1. Model of Grammar

Minimalism departs sharply from "*Government-Binding*" (GB) *theory* (Chomsky 1981 and subsequent works) in that the principles of grammar are supposed to be formulated exclusively with notions belonging to the domain of "virtual conceptual necessity" (Chomsky 1993). The so-called T-model of grammar in GB theory is depicted in (5).

(5)

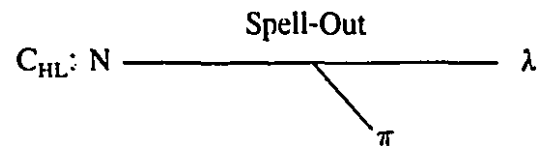


Here D-S, S-S, PF, and LF mean *D-Structure*, *S-Structure*, *Phonetic Form*, and *Logical Form* respectively. These were all assumed to be independent levels of representations, each of which must obey a specific set of principles. D-Structure is characterized as "a

pure representation of thematically relevant Grammatical Functions" (Chomsky 1981; see also Baker 1988a). PF and LF are *interface levels*; the former interacts with an *articulatory-perceptual system* A-P, the latter with a *conceptual-intentional system* C-I (Chomsky 1993).[3] S-Structure is derived from D-Structure by the transformational operation Move α[4]. S-Structure is a level that "connects" the other three levels with each other. LF is derived from it by further applications of Move α, a primary case of which has been thought as *Quantifier Raising* (QR) (May 1977, 1985) (see also Huang's (1982) influential work).[5]

The Minimalist model of grammar, on the other hand, can be schematized as in (6):

(6)



where C_{HL} stands for the *computational system* of human language, N for a *numeration* or an array of lexical items (see (7) below), π for a PF representation, and λ for an LF representation. A quick comparison between (5) and (6) will reveal a marked difference between the two models; Minimalism abolishes D-Structure and S-Structure, and there are only two interface levels, PF and LF. From the viewpoint of "virtual conceptual necessity," the existence of D-Structure and S-Structure is not justifiable. Furthermore, empirical arguments have been put forth that principles that were assumed to apply at the non-interface levels must in fact not apply at those levels (see, for example, Chomsky's (1993) discussion of Binding Theory; see also Hornstein 1995). To the extent that they

---

[3] See Chomsky (1994:43 fn.4) for a remark on the two interface levels.

[4] Or more generally, Affect α (see Lasnik and Saito 1984, 1992).

[5] Recently, the existence of QR has been called into question, as the Minimalist Program emerged. Thus, Hornstein (1995) proposes to do away with LF A'-movement altogether (including LF *wh*-movement). See Chomsky 1995, chap.4, subsec. 10.3. for a brief remark on QR.

are correct, there is no motivation left to posit D-Structure and S-Structure. In the model given in (6), a linguistic expression is taken to be nothing but a pair of $\{\pi, \lambda\}$.

The computational system maps an array of lexical items to the pair $\{\pi, \lambda\}$. The syntactic computation deriving λ is assumed to be uniform. It includes such operations as *Select*, *Merge*, and *Attract*. Select is a procedure that takes a lexical item from the numeration reducing its index by 1, and introduces it into the derivation already constructed (Chomsky 1994, 1995). The notion of numeration is characterized as follows (Chomsky 1994, 1995):

(7) *Numeration*:
A set of pairs (l, i), where l is an item of the lexicon and i is its index, understood to be the number of times that i is selected.

An example of numeration would be a set of lexical items $\{she_1, them_1, punched_1\}$. The well-formed expression *she punched them* is obtained by successfully computing from the numeration. If Select does not use up all the elements in the numeration, no derivation is generated.

Merge is an operation that takes a pair of syntactic objects and combines them into a new syntactic object (Chomsky 1994, 1995). The adoption of Merge allows the Minimalist approach to dispense with X-bar Theory assumed in earlier work (Chomsky 1981, 1986a, Fukui 1986, Jackendoff 1977, Stowell 1981 among others).

Attract is the Minimalist analogue of Move α (though it is substantially different).[6] I will come back to it shortly in subsection 1.2.3.

The operation *Spell-Out* can in principle apply anywhere in the course of a derivation. It is assumed to strip away from the structure already formed those elements that are relevant only to π. After Spell-Out, the structure without the PF-related elements

[6] In this thesis, I will use conventional terms like movement and raising without reservation, though I assume following Chomsky (1995) that transformations are more precisely attractions.

undergoes further computation until it achieves λ. If Spell-Out applies at a wrong point in a derivation, the derivation crashes.

A computation or derivation is said to *converge* at one of the interface levels if it consists only of legitimate objects that are interpretable at the level in question, satisfying the principle of *Full Interpretation* (FI) (Chomsky 1986b, 1991, 1993). Otherwise, a derivation is said to *crash*.

1.2.2. Reference Set

One of the leading ideas in Minimalism is that "the linguistic expressions are the optimal realizations of the interface conditions, where 'optimality' is determined by the economy conditions of UG (Chomsky 1993:4)." This implies that convergence is a necessary condition for a derivation to be realized as an expression, but not a sufficient condition. Thus, less economical derivations are blocked by more economical ones even if they converge (Chomsky 1994:5). In other words, the notion of comparison constitutes an integral part of the Minimalist Program.

Of course, in order for economy principles to have full empirical content, it is imperative to define exactly what derivations are comparable with each other, *i.e.*, the notion of *reference set* (Chomsky 1994, 1995). Chomsky (1994, 1995) argues that a reference set consists only of derivations sharing the same numeration.

(8) *Reference Set*:
A set of derivations that arise from the same numeration.

According to (8), derivations that start, for example, with the identical numeration {*she*$_1$, *them*$_1$, *punched*$_1$} "potentially" belong to the same reference set and hence compete with each other. I used the word "potentially" above, since Chomsky (1995) adopts the "local" interpretation of reference sets, under which we consider only continuations of the

derivation already constructed. This interpretation is supposed to have the desirable effect of substantially narrowing down the number of derivations to be evaluated, as the computation proceeds, reducing problems of computational complexity. Below I will propose to modify Chomsky's notion of reference set and his local interpretation.

The next subsection discusses the operation Attract in some detail.

1.2.3. Attract

Chomsky (1995:297) proposes that the transformational operation Attract is defined in the following way:

(9) *Attract*:
K *attracts* F if F is the closest feature that can enter into a checking relation with a sublabel of K.

(9) differs from Move α in that it refers to features rather than categories. Chomsky (1995) suggests that given that transformations are driven by the need for feature-checking in the Minimalist Program, it is only natural to say that they seek to raise features. Chomsky (1995:262) argues for the following economy condition:

(10) F carries along just enough material for convergence.

It follows from (10) that there is an asymmetry between overt movement and covert movement. In particular, overt movement raises categories, because, otherwise, it would leave elements that cannot be pronounced at the level of PF. LF raising, on the other hand, is nothing but feature raising,[7] since post-Spell-Out operations are free from PF-

[7] Chomsky (1995) argues that feature raising is adjunction to heads.

crash.[8]

Overt movement is triggered by strong features, which must be eliminated before Spell-Out. Chomsky (1995) advocates the idea that a derivation at a given stage cannot proceed to the next stage if it contains a strong feature.[9] If it fails to get rid of the strong feature, it will be cancelled. Overt movement is impossible unless forced, as required by *Procrastinate* (Chomsky 1993, 1994, 1995), which essentially states that derivational operations must be done as late as possible. Chomsky (1995) maintains that the economy condition in (10) provides a rationale for Procrastinate; feature raising is less costly than category raising in view of (10).

Features in the lexicon are assumed to divide into three major kinds; *phonological*, *semantic*, and *formal features*. As far as syntactic operations are concerned, only formal features matter.[10] Chomsky (1995) assumes that Attract, applied to the feature F, automatically carries along the set of formal features FF[F] including F. In this case, the features of FF[F] other than F raise as "free riders," to use Chomsky's terminology, and may undergo feature-checking.

The formulation of Attract in (9) incorporates both the *Minimal Link Condition* (MLC) (Chomsky 1993, 1994, 1995, Chomsky and Lasnik 1993) and the Principle of *Greed* (Chomsky 1991, 1993, 1994, 1995, Lasnik 1993, 1995). This highlights another important difference of Attract from Move α, which takes movement to be optional, stating "Move any category α anywhere." The MLC can be stated crudely as in (11).[11]

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[8] A question arises regarding overt raising of phonologically null elements such as null operators, *pros*, and PROs. If (10) is correct, it, like covert raising, must be feature raising. However, I will argue, contrary to (10), that covert raising can raise categories. I assume then that raising of phonologically null elements is category raising.

[9] In Chomsky 1993, a strong feature is assumed to lead to PF-crash for reasons that are no longer justified in Chomsky 1995.

[10] Under the revised notion of reference set to be presented below, semantic features, being interpretable, matter, too.

[11] Chomsky and Lasnik (1993) simply state "Minimize chain links." But this phrase is ambiguous. It means either "Minimize the length of chain links" or "Minimize the number of chain links."

(11) *Minimal Link Condition* (MLC):
Minimize the length of chain links.

Chomsky and Lasnik (1993) posit (11) essentially as a reformulation of Rizzi's (1990) *Relativized Minimality*. Intuitively, (11) requires that chain links created by the transformational operation be minimal in length. The definition of Attract in (9) maintains the essence of the MLC in that a given head K can attract only the closest feature. The notion of "closeness" is defined simply as follows (Chomsky 1995:358):[12]

(12) *Closeness*:
ß is *closer to* K than α if ß c-commands α.

The notion of checking domain characterizes strictly local relations such as Spec-head and head-head relations where feature-checking can take place. The checking domain of α is a set of positions included in Max(α), the smallest maximal projection including α, but excluded by the complement of α.[13] Consider the configurations in (13), where X has a feature to be checked.

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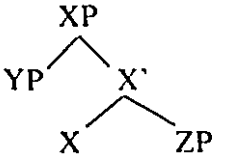
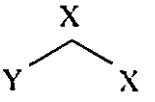
[12] Chomsky (1995) considers another more complicated option for the notion of closeness, given in (i) (Chomsky 1995:356) (see Chomsky 1993, 1994, 1995 for the definition of minimal domain).

(i) *Closeness*:
If β c-commands α and τ is the target of raising, then β is *closer to* K than α unless β is in the same minimal domain as (i) τ or (ii) α.

In Chomsky's (1995) system, (i) is needed on the assumption the strong feature of the "light" verb must be satisfied by its outer Spec, not its inner Spec (see Chomsky 1995 for details). But in the present framework where the paths of NP-movement in an accusative transitive clause do not intersect (see Chapter 2), the assumption is irrelevant and hence (i) (along with the notion of equidistance) can be replaced by much simpler (12).

[13] In Chomsky 1993, an adjoined position to the maximal projection of α is assumed to be in the checking domain of α, an assumption dropped in Chomsky 1994, 1995.

(13) a. 

b. 

In (13a) YP is in the checking domain of X, but ZP is not.[14] In (13b) Y is in the checking domain of X.

Greed, which says, on an intuitive level, that there cannot be superfluous movement, is now part of the definition of Attract. According to (9), every single instance of Attraction must establish a *checking relation* (not just a *checking configuration*) between the attracter and the attractee (Chomsky 1995:310). The notion of sublabel is stated in (14) (Chomsky 1995:268),

(14) A sublabel of K is a feature of $H(K)^{0max}$.

where a feature of $H(K)^{0max}$ is a feature of the head H(K) of K or some head adjoined to it. Suppose that K attracts F and that each feature of FF[F] is in the checking domain of each sublabel *f* of K. Then,

(15) Feature F' of FF[F] is in a *checking configuration* with *f*; and F' is in a *checking relation* with *f* if, furthermore, F' and *f* match.

A question arises as to what happens if there is mismatch of features during a computation. I simply follow Chomsky (1995:309) in assuming (16).

(16) Mismatch of features cancels the derivation.

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[14] It is assumed in Chomsky 1995 that no feature-checking can take place in a θ-position.

Thus, the configuration containing mismatch of features is regarded as an illegitimate syntactic object. As Chomsky (1995) points out, it is important to draw a distinction between mismatch and nonmatch. Consider the following examples:[15]

(17) a. *Her likes us.

b. She$_i$ seems [t'_i to [t_i like us]].

(17a) is a case of mismatch of features. Thus the accusative Case feature of *her* is in conflict with the nominative Case feature of the T (Tense), causing the derivation to abort. (17b), on the other hand, involves nonmatch of Case features in the Spec of TP in the embedded clause; the nominative Case feature of *she* fails to match the feature of the infinitival T, which has no Case. But this is fine, since it is not an instance of feature mismatch, and the computation continues until it yields the well-formed output in (17b). The Case feature of *she* successfully gets checked against the Case feature of the matrix T. The attraction by the infinitival T is consistent with the definition of Attract, for it allows the D-feature of the T to match that of the DP *she*, satisfying the *Extended Projection Principle* (EPP) (Chomsky 1982) (see below).

It should be emphasized that Attract is a definition and hence cannot be violated in any event.

As an illustration, let us now see how the definition of Attract given in (9) accounts for standard Relativized Minimality effects it is intended to account for. The following examples illustrate Relativized Minimality violations (see Rizzi 1990):

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[15] Technically, "traces" are "copies" of moved elements in the Minimalist Program (Chomsky 1993). But I do not hesitate to use "traces" for the sake of exposition.

(18) a. *Have$_j$ John might t_j left for Montreal by now?
b. *John$_j$ seems that it was told t_j that Bill got injured.
c. *How$_j$ do you wonder what John fixed t_j yesterday?

Rizzi's (1990) Relativized Minimality states that (antecedent) government of Y by X is blocked by intervening Z only if Z is a potential governor of the same kind as X for Y (see also Baker and Hale 1990 for an extension). (18a) is a violation of the *Head Movement Constraint* (HMC) (Travis 1984; see also Chomsky 1986a, Baker 1988a), where the movement of the head *have* skips over another head *might*. (18b) is a case of *super-raising*, in which the A-movement of *John* is blocked by the potential antecedent-governor *it* in the A-specifier position. (18c) is a classic example of a *wh*-island violation (see Chomsky 1964, Ross 1967 among many others); the A'-movement of the adjunct *wh*-phrase *how* out of the embedded clause is blocked by the potential antecedent-governor *what* in the intermediate Comp position, an A'-specifier position.

The HMC violation in (18a) is excluded by (9) in a straightforward manner. The strong feature of the complementizer must attract the closest element that can enter into a checking relation with it, *i.e.*, *might*. (19) satisfies (9).

(19) Might$_i$ John t_i have left for Montreal by now?

The situations concerning super-raising and *wh*-islands are more complicated, but are ruled out by (9). Let us first consider the *wh*-island violation in (18c). Suppose that we reached the following stage of the derivation after the strong [+WH] C within the embedded clause successfully attracting *what*:

(20) [$_\alpha$ do you wonder [$_\beta$ what$_i$ John fixed t_i how yesterday]]

What we need to do in (20) is to fill the position [Spec, α] by attracting some element.

Here I should mention an extremely important proposal recently made by Chomsky (1995) regarding the hitherto neglected asymmetry that exists between two classes of formal features. Chomsky (1995) proposes to make a sharp distinction between *interpretable* and *uninterpretable* features. Uninterpretable features must be deleted and, when possible, erased, as soon as they get checked since they do not play any role at LF. Deleted features are invisible at LF but accessible to the computation. Erased features are inaccessible to any kind of operation. In familiar cases we are mainly concerned with in this thesis, uninterpretable features cease to be accessible to the computational system once they get checked.[16] By virtue of being legitimate objects at LF, interpretable features, on the other hand, remain accessible to the computational system throughout computations even if they get checked. Interpretable features include those in (21a), uninterpretable ones those in (21b).

(21) *Dichotomy of Formal Features*:
a. Interpretable features: categorial features, ϕ-features of nominals, *wh*-features, Q-features
b. Uninterpretable features: Case features, ϕ-features of non-nominals, affixal features, strong features

The computational difference between the two kinds of features neatly explains the fact that a single nominal can satisfy the EPP several times (see below) and can check multiple agreement, but not multiple Case relations. In (17b) the EPP is satisfied twice in the embedded Spec of TP and the matrix Spec of TP. This is possible because the categorial D-feature of *she*, being interpretable at LF, does not delete and hence can be accessed over and over again throughout the derivation. Similarly, since the ϕ-features

[16] Chomsky (1995) suggests that this may be parameterized across languages; an uninterpretable feature of a head is not necessarily erased when checked in languages that allow multiple specifiers. See Reinhart 1981, Koizumi 1995, Ura 1994. I will take advantage of the deletion/erasure distinction in dealing with parametric variation with regard to raising out of CPs (Chapter 2, section 2.4.).

of a nominal is interpretable, it can check the ϕ-features of non-nominal elements more than one time (see Chapter 5 for examples). The uninterpretable Case feature of a nominal, in contrast, cannot enter into multiple checking relations, because it becomes inaccessible to the computational system once it is checked and erased.

Given this proposal, the derivation in (18c) does not arise in the first place, since it violates the definition of Attract. Once the *wh*-phrase *what* is raised into the embedded Spec of CP, as in (20), the matrix strong [+WH] C cannot "see" and attract any *wh*-phrase that is more distant from it than *what*. Thus, (22) is the only available choice in light of Attract.

(22) What$_i$ do you wonder t'_i John fixed t_i how yesterday?

In the above derivation, it is the *what* that moves into the matrix Spec of CP. This is possible and thus required, because its *wh*-feature, being interpretable at LF, remains accessible throughout the derivation. Chomsky concludes that (22) converges with all the uninterpretable features properly checked, but it converges only as gibberish.

Let us next consider super-raising in (18b). Suppose that we reached the following stage of the derivation in question:

(23) [$_\alpha$ was told John [$_\beta$ that Bill got injured]]

The next step is to fill the position [Spec, α], either by raising *John* or by inserting the expletive *it* drawn from the numeration to satisfy the EPP, which has been reinterpreted as the D-feature of T requiring raising or insertion of a DP into its checking domain (Chomsky 1994, 1995).

(24) *Extended Projection Principle* (EPP):
EPP = D-feature

If the D-feature of T is strong, as it is in English, the EPP must be satisfied before Spell-Out. In (23) the exercise of the option of raising *John* violates Procrastinate. Therefore, at this phase of the derivation, the insertion of *it* is preferred by Procrastinate. Then, we get (25).

(25) $[_{\alpha}$ it was told John $[_{\beta}$ that Bill got injured]]

Suppose next that we are ready to fill the matrix subject position. The definition of Attract in (9) dictates that the following derivation is the only choice:

(26) *It$_i$ seems that t_i was told John that Bill got injured.

In (26) the expletive *it* inserted in the intermediate subject position by Merge has been raised into the matrix subject position, being the closest element that can enter into a checking relation with the matrix T. Although its uninterpretable nominative Case feature gets erased when it is checked against the T of the intermediate clause, its categorial D-feature, being interpretable, remains accessible to the computational system. This means that the raising of *it* in (26) satisfies the EPP in (24). In effect, in (18b), *John*, which is farther from the matrix subject position than *it*, is "invisible" for Attract. In other words, (18b) cannot be generated, in violation of the definition of Attract itself.

Suppose now with Chomsky (1993) and Chomsky and Lasnik (1993) that the MLC is an economy condition independent of the definition of Attract. Then, under the set of assumptions Chomsky (1994, 1995) makes, the super-raising in (18b) would be wrongly predicted to be well-formed. Following Chomsky (1994, 1995), let us assume (27):

(27) Economy conditions select among convergent derivations only.

Given (27), the MLC, as an economy condition, chooses among convergent derivations. Note that the derivation in (26) results in a crashed derivation (in contrast to the convergent derivation in (22)) since, among other things, the uninterpretable Case feature of *John* will remain unchecked. Then (26) is not qualified to block the derivation in (18b), which converges since all its uninterpretable formal features are successfully checked and erased by the time it reaches LF. This is the reason why Chomsky (1994, 1995) proposes to incorporate the MLC into the definition of Attract.

(28), which arises from the same numeration that (26) arises from, is well-formed.

(28) It seems that John$_j$ was told t_j that Bill got injured.

(28) violates Procrastinate; in (28) *John* raises into the intermediate Spec of TP at the stage in (23). The raising of *John* is permitted, though, because it is necessary for convergence. Recall that (25) leads to a crashed derivation. In order for Chomsky's account to work, then, it must be that Procrastinate is a violable economy condition, *i.e.*, it is not part of the definition of Attract and can be overridden for convergence.

In short, the standard Relativized Minimality effects are accounted for by the definition of Attract together with the above-mentioned set of assumptions, of which the one about the interpretable/uninterpretable distinction is the most important.

This concludes the brief summary of Chomsky's (1995) feature-driven theory of transformation. In chapters to follow, I will adopt its basic technologies, but at the same time, I will make and defend assumptions that differ substantially from those made by Chomsky (1995).

1.3. Major Goals

In section 1.1., I mentioned that I am interested in the way GF changing affects *wh*-extractability. For reasons to be spelled out in Chapter 4, the ill-formedness of (2b) is unexpected under the standard analysis of *wh*-movement in GB theory, the *Empty Category Principle* (ECP) in particular (see Chomsky 1981, Lasnik and Saito 1984, 1992 among numerous others). Then the first major goal of this thesis will be to answer the following question:

(29) What explains interactions between GF changing and *wh*-movement?

It seems that the Minimalist model of grammar laid out in Chomsky (1993, 1994, 1995) is conceptually more elegant than any of its predecessors. If it is in fact on the right track, we expect that it should be explanatory empirically as well. The question is: Is it? If it can be demonstrated that the Minimalist Program offers a framework where the interactions in question can be explained in a principled way, we have empirical evidence for (some version of) Minimalism.

Given the Minimalist framework where economy conditions choose among competing derivations, the following two immediate questions arise:

(30) a. What is the nature of the reference set?
b. What is the nature of the economy conditions?

The second major goal of this thesis is to provide answers to the questions given in (30).

As seen above, Chomsky's (1994, 1995) answer to question (30a) is that the notion of reference set is defined in terms of the initial numeration. Moreover, Chomsky suggests that it is defined in a highly local manner; economy compares continuations of the derivation already constructed out of a given numeration. Discussing this issue,

however, Chomsky (1994:7) remarks that "at least this much structure seems to be required; whether more is needed is a hard question," hinting the possibility that his notion of reference set might need modification.

As for question (30b), Chomsky (1994, 1995) argues that economy conditions such as Procrastinate are local or strictly derivational in nature. Thus, according to Chomsky (1995:348), "we select Merge over Attract/Move if that yields a convergent derivation, irrespective of consequences down the road as long as the derivations converges; but we select Attract/Move even violating Procrastinate if that is necessary for convergence."

These answers of Chomsky's to (30a-b) are only natural in light of his strict adherence to the strictly derivational characterization of the computational system.

Importantly, the answer to the question in (29) will prove to be quite revealing with respect to the questions in (30). This is hardly surprising and in fact almost anticipated, since one of the principal innovations of Minimalism, which was lacking in previous theories, is the notion of comparison among derivations, and the inadequacy of previous theories in handling the phenomena of interest here, I will argue, is attributable to the lack of this notion. By investigating the relevant data, whose account makes crucial use of the notion of comparison, one can hope to gain insight into the theory of economy.

To be a bit more concrete, my short answer to (29) is that the MLC, together with an appropriate notion of reference set and a notion for deciding what chain links are comparable with each other, explains the interactions at issue. Crucially, the MLC I have in mind is an economy condition but not just part of the definition of Attract, as in Chomsky (1995).

My answer to (30a) in a nutshell is that the notion of reference set is sensitive to the Interpretability of features. As mentioned above, Interpretability plays an extremely important role in computational processes. I will argue that the distinction between interpretable and uninterpretable features also plays an important part in defining the reference set. In particular, I will suggest that only interpretable features are relevant in

determining reference sets.

As for (30b), I will argue contra Chomsky (1994, 1995) that the economy conditions are *not* local or strictly derivational in nature in the sense that they can apply *transderivationally*: strictly derivational conditions, being inherently *intraderivational*, cannot apply transderivationally. I will present empirical arguments for the non-local characterization of the economy conditions.

1.4. Organization

The rest of this thesis is organized in the following way.

Chapter 2 is intended to spell out the background assumptions about Case and agreement adopted in this thesis. In addition, it will be argued that ergative constructions, in a sense of the term to be clarified, necessitate modification of Chomsky's (1994, 1995) formulations of Attract and the EPP given above.

The topic of Chapter 3 is antipassive, a GF changing phenomenon which is known to interact with *wh*-movement. First, the analysis of antipassives assumed here will be presented. Then drawing on data from Tagalog, I will establish that the ECP cannot deal adequately with *wh*-extraction in Tagalog. As an alternative to the ECP, an economy-based account will be put forth. The MLC as an economy condition, in combination with a revised notion of Chomsky's reference set, will be argued to offer a unified account of extraction facts in Tagalog and other ergative languages. Also, different kinds of antipassives will be examined from the perspective of economy. Their properties with respect to the Specificity Effect (Enç 1991) and extraction will be shown to follow from the MLC and another economy condition called the Minimal Feature Condition (MFC).

In Chapter 4, GF changing applicative constructions in Bantu and Austronesian are discussed. More specifically, I will be concerned with the way in which they interact with *wh*-movement of logical objects. As will be seen, there are illegitimate cases of such *wh*-

movement which are problematic for the ECP. After presenting an analysis of applicatives, I will go on to show that the economy account introduced in Chapter 3 explains relevant extraction facts in a straightforward fashion.

Chapter 5 goes beyond a single clause and examines long-distance dependencies. It will be argued that the modified notion of reference set and the formulation of the MLC as an economy condition gain further support from successive cyclicity. It will also be argued that the so-called *Wh*-Agreement, which has been claimed to morphologically register the successive cyclic application of *wh*-movement (Chung 1982, 1994), does not in fact reflect successive cyclic Comp-to-Comp movement. I will show instead that it results from the interaction between a GF changing process, *i.e.*, antipassive, and *wh*-movement.

Chapter 6 consists of extensions of the proposed system to Object Preposing in Austronesian, Bantu, and Romance. It is shown that this special kind of "passive" interacts with *wh*-extraction and that the interaction can be explained by the present economy analysis. Thus it lends further empirical support to the analysis.

Chapter 7 concludes this thesis.

CHAPTER 2

CASE AND AGREEMENT

2.0. Introduction

This chapter is concerned with Case and agreement. Its main purpose is to spell out the present assumptions about them, thereby laying the groundwork on which the succeeding chapters are based. As we will see, some of the assumptions are substantially different from those made in Chomsky (1993, 1994, 1995).

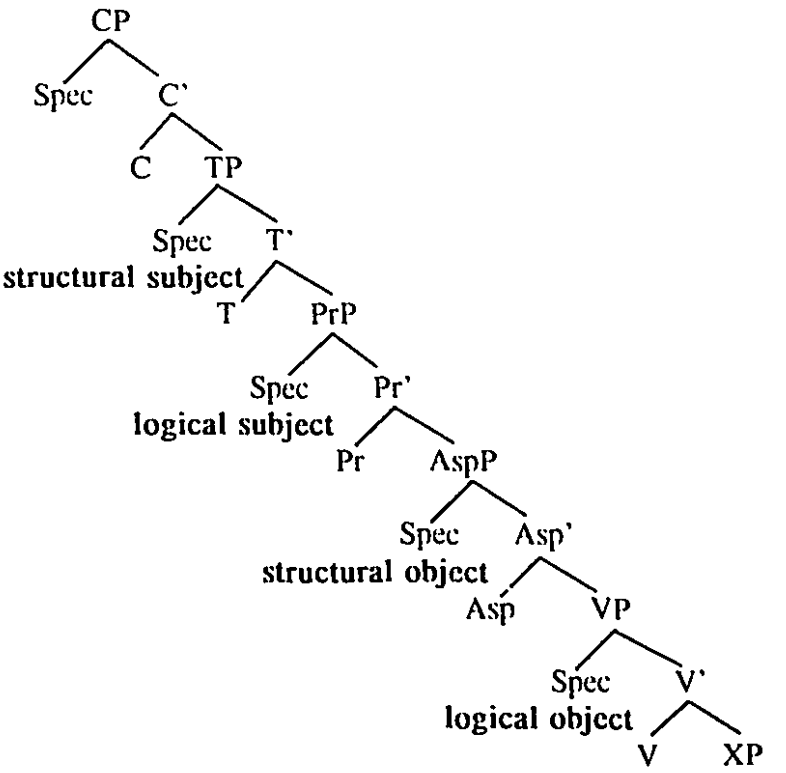
The organization of this chapter is as follows. In section 2.1. I present the phrase structure assumed throughout this thesis. In section 2.2. I consider structural Case, which is checked uniformly within a functional projection. It is suggested there that syntactic ergativity derives from the defectivity of the functional category Asp (Aspect) (Travis 1991, forthcoming). It is also suggested on the basis of ergative constructions that Chomsky's (1994, 1995) formulations of Attract and the Extended Projection Principle, presented in Chapter 1, need to be modified. Section 2.3. lists the basic properties of inherent Case, which, in contrast to structural Case, is checked within a lexical projection. Section 2.4. makes the assumption that CPs need not but may get Case (Levin and Massam 1985).

2.1. Clausal Structure

Throughout this thesis, I take the basic clausal architecture to be the following:[1]

[1] As mentioned in Chapter 1, Chomsky (1994, 1995) argues that X-bar Theory is almost entirely derivable from his theory of bare phrase structure based on the operation Merge. But in this thesis, I will stick to familiar X-bar notations for expository purposes.

(1)



where VP stands for Verb Phrase, AspP for Aspect Phrase (Travis 1991, forthcoming), PrP for Predicate Phrase (Bowers 1993), TP for Tense Phrase, and CP for Complementizer Phrase. There are a few points about the structure in (1) that need to be clarified. First, I assume a version of the *predicate-internal subject hypothesis* (see Bowers 1993, Fukui 1986, Kitagawa 1986, Koopman and Sportiche 1991, Kuroda 1988 among others), as the Minimalist Program does. The particular version I adopt here is Bowers' (1993), where the logical subject or the external argument is generated in the Spec of PrP.[2] The head Pr is a functional category with semantic content; it mediates the predication relation that holds between the logical subject in its specifier position and its complement (cf. Chomsky's (1994, 1995) "light" verb of non-substantive category that accommodates the external argument). Let us call the Spec of PrP the *logical subject position*. Let us also call the VP-internal position of thematic objects the *logical object*

[2] See Bowers (1993) for a critical review of the other versions of the internal subject hypothesis.

position.[3]

Secondly, however, the structure given in (1) differs from the one proposed by Bowers (1993) (and the one assumed in Chomsky 1993, 1994, 1995) in that the complement of Pr is not a lexical category but a functional category, namely, AspP. I assume following Travis (1991, forthcoming) that the logical subject position and the logical object position are separated by AspP.[4] Travis (1991) argues for the existence of AspP based mainly on data from Western Austronesian languages. In particular, facts on verbal morphology indicate that there is an aspectual head separating the two θ-related projections, and the Spec of AspP serves as a landing site for movement (see relevant examples below). It is rather common across languages of the world that aspectual morphemes are different from tense morphemes (see for instance Bybee 1985, Baker 1996). The positing of AspP has proved beneficial in analyzing a number of unrelated languages (see Baker 1996, Travis forthcoming among others).

The postulation of AspP, I believe, has theoretical motivation as well as empirical motivation. In Chomsky's (1991, 1993, 1994, 1995) system, structural Case features are supplied by V and T. But notice that we have an asymmetry here; V is a lexical category, while T is a functional category. We can eliminate this perhaps unwanted asymmetry by saying that structural Case features are associated exclusively with the tense-type functional categories, T and Asp. T and Asp are regarded as virtually the same element that has the feature specifications [±realis], and the only difference is that they have different scope; T has scope over the whole event, while Asp has scope only over internal arguments (Travis 1991, forthcoming). Asp, in this view, is nothing but "inner T."[5]

Thus, I hold that the Spec of AspP, like the Spec of TP, is a structural Case position,

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[3] I assume that the logical object position can be either the Spec of VP (in the case of ditransitive verbs) or the complement of V (in the case of transitive and unaccusative verbs).

[4] For similar proposals, see Koizumi (1993, 1995) and references cited there. I am committed to Travis' (1991, forthcoming) view that the functional category in question has semantic content.

[5] From this perspective, I will analyze antipassives as Caseless Asp or "inner infinitive" in Chapter 3.

which "derived objects" raise into (Travis 1991, forthcoming). Thus, the Spec of AspP is called the *structural object position*. The Spec of TP, on the other hand, is called the *structural subject position*.

Thirdly, it should be pointed out that the structure in (1) does not employ the kind of proliferated INFL (inflectional) system, where Agr (Agreement) and T each head their own projections (see Pollock 1989, Chomsky 1991, 1993, and others). Chomsky (1995) has recently proposed to eliminate Agr entirely from the lexical inventory of UG. The conceptual reason for this proposal is that only functional categories with semantic content should exist; since Agr is not interpretable at LF, it follows that its existence is not justifiable (see Chomsky 1995 for discussion).[6] In this thesis, I subscribe to this view both for conceptual and expository reasons. But the elimination of Agr leads us to ask how exactly agreement is achieved. Following Travis (1994), I assume that agreement is the grammatical encoding of a relation between a specifier position and a functional category (see also Sportiche 1990). Technically speaking, one way to implement this idea is to say, partially following Chomsky (1995), that ϕ-features are optionally added to the functional categories T and Asp, as they are introduced to the numeration. Hence, nominal elements in the Spec of TP or the Spec of AspP can in principle trigger agreement under a Spec-head configuration. Even without Agr then, we can still entertain the view before Pollock 1989 that agreement is a reflex of a local Spec-head relation (cf. Chomsky 1986a).

Also, the phrase structure in (1) is faithful to the Minimalist claim that θ-role assignment and structural Case assignment are divorced; θ-positions are not structural Case positions (Chomsky 1993, 1994, 1995).[7]

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[6] A closely related restrictive view on functional categories has been expressed by Travis (1994).

[7] The situation surrounding inherent Case assignment is different. In fact, inherent Case positions coincide with θ-positions. Furthermore, in syntactically ergative languages/constructions, the structural object position (the Spec of AspP) and the logical subject position (the Spec of PrP) are virtually collapsed into one. See below.

The functional head C clearly is interpretable. It indicates the illocutionary force of the whole clause, such as declaration versus interrogation (see Cheng 1991 in particular). The Spec of CP hosts a series of syntactic operators, of which *wh*-phrases are a classic example.

In short, we have the following rather elegant system. There can be two structural Case positions in a clause. They are the Spec of TP and the Spec of AspP, and both are potentially able to check agreement. In a triadic clause, one argument must get inherent Case (see section 2.3. and Chapter 4). The logical subject and the logical object are generated in the Spec of PrP and the VP-internal position, respectively. The Spec of CP is the operator position. All the projections in (1), lexical and functional, survive until LF, precisely because they are interpretable.

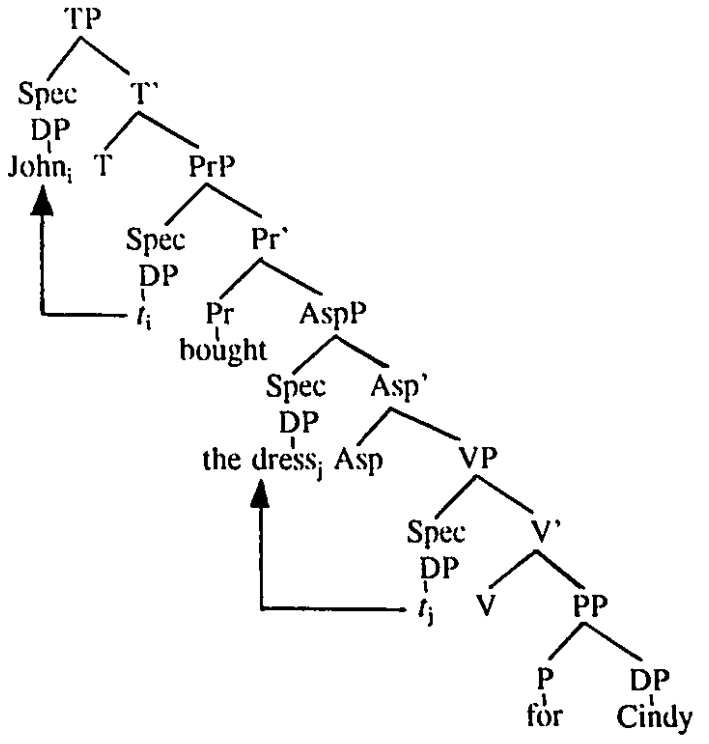
2.2. Structural Case

2.2.1. Accusativity

Under the present analysis, the English transitive sentence in (2) has the derivation in (3) (irrelevant details omitted).

(2) John bought the dress for Cindy.

(3)



In the above structure in (3), the logical subject *John* has overtly moved into the structural subject position, *i.e.*, the Spec of TP, while the logical object *the dress* has raised into the structural object position, *i.e.*, the Spec of AspP.[8] I assume with Bowers (1993) that the V raises to the head of PrP in overt syntax in English.

The analysis given in (3) differs from such analyses as Chomsky's (1991, 1993) and Murasugi's (1992), under which crossing paths of NP-movement are created in the basic transitive clause in accusative languages. Given the phrase structure in (1), the nominative chain and the accusative chain do not intersect at all, since logical subjects are generated above the structural object position.

The derivation in (3) clearly satisfies the definition of Attract (Chomsky 1995).

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[8] Koizumi (1993, 1995) argues that the latter movement takes place in overt syntax, though it is into the Spec of AgroP in his terminology (see also Johnson 1991). Even if it turns out to be covert, I assume that the entire category not just the formal features is raised, contra Chomsky (1995). See succeeding chapters for arguments for this assumption.

(4) *Attract*:
K *attracts* F if F is the closest feature that can enter into a checking relation with a sublabel of K.

(5) *Closeness*:
ß is *closer to* K than α if ß c-commands α.

In (3) the T attracts *John* generated in the Spec of PrP, the closest nominal that can check its formal features against the T, whereas the Asp attracts *the dress* generated in the Spec of VP, the closest nominal that can check its formal features against the Asp.

2.2.2. *Ergativity*

Now, let us shift our attention to ergativity. In recent years, there has been much interest in the syntax of Case and agreement in ergative languages from a formal point of view (see, among many others, Bittner 1994, Bobalijk 1993, Bok-Bennema 1991, Campana 1992, Bittner and Hale 1996, Maclachlan 1995, Maclachlan and Nakamura 1994, Murasugi 1992, Nakamura 1994b). Although analyses of ergativity differ in details, evidence has been accumulating that absolutive Case is tied with T and should be equated with nominative Case in accusative languages (Bittner 1994, Campana 1992, Maclachlan 1995, Maclachlan and Nakamura 1994, Murasugi 1992, Nakamura 1994b, but contra Bobalijk 1993 and Chomsky 1993).

Here I will present an analysis of ergativity using the clause structure given in (1). Let us consider the following example from Tagalog, an Austronesian language spoken in the Philippines.[9]

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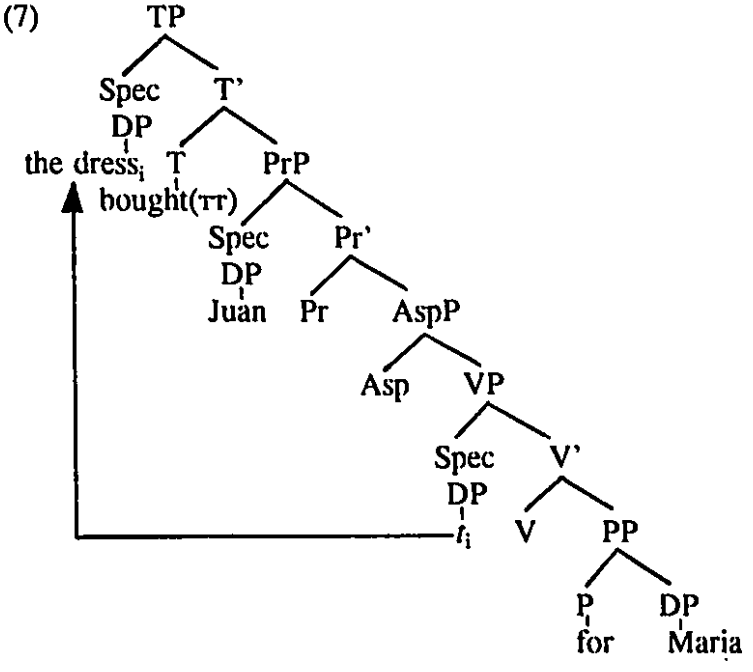
[9] Tagalog makes a distinction between proper names and non-proper names in terms of Case-marking and prepositions. For proper names, *si-* (absolutive), *ni-* (ergative), and *kay-* (oblique) are used. For non-proper names, *ang-* (absolutive), *ng-* (ergative), and *sa-* (oblique) are used. Note that the inherent Case-marker is homophonous with the ergative marker *ng-*. See below.

(6) B-in-ili ni Juan ang damit para kay Maria.
bought(TT) ERG-Juan ABS-dress for OBL-Maria
'Juan bought the dress for Maria.'

Following Byma (1986), De Guzman (1988), Maclachlan (1995), Maclachlan and Nakamura (1994), Nakamura (1994b), Payne (1982) and others, I regard Tagalog as an ergative language. My commitment to the ergative view of Tagalog is reflected in the glosses.

Essentially, I adopt the kind of analysis of Tagalog proposed by Guilfoyle *et al.* (1992) and Richards (1993), but with some modification. Under the present analysis, the transitive construction in (6) is derived in the way shown in (7).

(7)



In (7) the absolutive-marked thematic object 'the dress' is the structural subject (Guilfoyle *et al.* 1992, Richards 1993) and raises covertly into the Spec of TP, while the ergative-marked thematic subject stays in the Spec of PrP. The covert raising of absolutive DPs means that the T in Tagalog does not have a strong D-feature.

What is responsible for the parametric difference between, say, English and Tagalog with respect to the pattern of NP-movement in a transitive clause? I maintain that the difference reduces to the following lexical property:

(8) In ergative languages, Asp is defective.

My claim here is that in core cases, ergative languages differ from accusative languages essentially in one respect; the Asp in the former but not the latter is defective so that it cannot check its structural Case feature against nominals by itself. In particular, it can only participate in structural Case-checking with the mediation of another functional category, *i.e.*, the Pr. The structural Case feature of the Asp is transferred to the Pr, which in turn checks the Case feature against the nominal in its specifier position. Thus, in ergative languages, the logical subject and structural object positions are collapsed into one, so to speak. This immediately explains why structural ergative Case is found only on logical subjects.

If Chomsky (1995) is correct in maintaining the strict complementarity of θ-role assignment and feature-checking, the ergative DP in the "inner" Spec of PrP must raise into the "outer" Spec of PrP (cf. Murasugi 1992 and Chomsky's (1995) discussion of agreement in APs). The short raising, if it exists, has little to do with the main concerns of this thesis and therefore will be suppressed throughout for ease of exposition.

In aspect-split ergative languages, the defectivity of Asp is usually tied with perfectivity (see Dixon 1979 among others). Thus, the nominative-accusative pattern is found in imperfective clauses, where the Asp can check structural Case in its specifier, while the absolutive-ergative pattern is found in perfective clause, where the Asp is defective. In mood-split languages like Chamorro, an Austronesian language spoken in the Mariana islands, the accusative pattern in associated with the irrealis mood, and the ergative pattern with the realis mood (Chung 1982, Cooreman 1987). Consider the

following pair from Chamorro (Chung 1982):

(9) a. Ha-fa'gasi si Juan i kareta.
3SG.ERG-wash UNM-Juan the car
'Juan washed the car.'

b. Pära u-fa'gasi si Juan i kareta
FUT 3SG.NOM-wash UNM-Juan the car
'Juan is going to wash the car.'

In realis (9a), the ergative agreement appears on the verb. In irrealis (9b), on the other hand, the verb bears the nominative agreement. Within the current framework, one may say that the Asp in realis clauses is defective in Chamorro.[10]

Now, let us consider how the derivation in (7) is allowed. No interesting question arises with respect to the logical subject, which remains *in situ* throughout the derivation. The raising of the absolutive into the Spec of TP, however, raises a question concerning Attract.

The definition of Attract in (4) seems to prohibit the raising at issue. Specifically, the T must attract the logical subject in the Spec of PrP rather than the logical object, since Attract is supposed to be able to access the D-feature that is responsible for the Extended Projection Principle (EPP).

(10) *Extended Projection Principle* (EPP):
EPP = D-feature

The D-feature of the T can enter into a checking relation with the undeletable D-feature of the logical subject. Furthermore, the Spec of the PrP is closer to the T than the Spec of the VP is. Therefore, given what we have assumed so far, the absolutive raising over

[10] In split-ergative languages, we can draw a distinction between ergative Case and accusative Case, though the source of these Cases is the same, *i.e.*, Asp; ergative Case needs mediation of Pr, but accusative Case does not (cf. Bittner and Hale 1996).

the ergative DP is incorrectly predicted to be impossible.

Faced with this problem, one might be tempted to suggest that Tagalog does not obey the EPP. Then the only uninterpretable formal feature of the T to be checked would be the Case feature. If this suggestion is correct, the covert absolutive movement would be permitted, since the absolutive DP is the closest element that can enter into a checking relation with the Case feature of the T; the ergative DP, whose Case gets erased in the Spec of PrP, cannot enter into a checking relation with the T.

There are, however, good reasons to believe that this cannot be the whole story. The problem posed by the kind of NP-movement shown in (7) takes the sharpest form when we consider languages like Dzamba, a Bantu language spoken in Zaire, where the T has the morphological realization of its ϕ-features and the NP-movement at issue takes place in overt syntax. Let us observe the following examples from Dzamba (Bokamba 1976):

(11) a. oPɔsɔ a-tom-áki i-mu-nkanda.
Pɔsɔ SP(NCL1)-send-IMPRRF the-NCL3-letter/book
'Pɔsɔ sent the letter/book.'

b. I-**mu**-nkanda **mu**-tom-áki oPɔsɔ.
the-NCL3-letter/book SP(NCL3)-send-IMPERF Pɔsɔ
'The letter/book Pɔsɔ sent.'

As shown in (11a), Dzamba, like other Bantu languages, has the SVO word order in its canonical transitive clause. Notice that in (11a), the verb agrees with the structural subject *oPɔsɔ* in the Spec of TP. Interestingly, Dzamba has the kind of construction given in (11b), in which the thematic object of (11a) *i-mu-nkanda* 'the letter/book' has been raised overtly into the Spec of TP "over" the undemoted thematic subject, triggering the agreement on the verb.

We can account for the alternation in (11) by assuming that there are two kinds of Asps in Dzamba; one is defective, and the other is not. Dzamba, however, differs from split ergative languages like Chamorro in that the defectivity of Asp in the language is

not tied with any particular aspect or mood (see Chapter 6). If the initial numeration happens to contain a non-defective Asp, the Spec of Asp is a structural Case position, deriving the accusative pattern in (11a). If, on the other hand, the numeration happens to contain a defective Asp, the ergative pattern in (11b) is derived.[11] The OVS word order in (11b) suggests that the verb raises overtly up to the T in Dzamba; the thematic subject is in the Spec of PrP, and the thematic object in the Spec of TP.

The suggestion made above with respect to (7) does not help when it encounters (11b). Clearly, the T in (11b) has ϕ-features and thus must attract the closest DP, whose ϕ-features remain throughout the derivation. Then Attract would wrongly rule out examples like (11b).

In view of the marginal role agreement plays in the present framework, it is reasonable to modify the definition of Attract in (4) in the following way:

(12) *Attract* (revised):
K *attracts* F if F is the closest feature that can enter into a checking relation with an *intrinsic* sublabel of K.

The practical effect of (12) is that only intrinsic features, explicitly listed in the lexicon, can attract. I assume following Chomsky (1994, 1995) that features like Case features of the T and the Asp, strong features, and *wh*-features are intrinsic to heads, but the ϕ-features of the T and the Asp are not. Given the modification in (12), Attract in no way can access such optional features as the ϕ-features of the T and the Asp, a desirable result. Chomsky (1995:259) remarks "There is, so far as I know, no reason to suppose that the property [intrinsic] plays any role in C_{HL}." Contrary to Chomsky's view, I argue that the very existence of ergative constructions like (11) justifies the computational system making the distinction between intrinsic and optional features. In other words, I

[11] For discussion of the interaction between the ergative construction and extraction in Dzamba, see Chapter 6, section 2.

am suggesting that the old intuition that operations involving Case and agreement are asymmetric is in fact real; it is, say, the T that checks the Case of a DP, not the other way around; the agreement of the T is determined by the DP in its Spec, not the other way around.

But this is not the end of the story. The raising in (11b) still remains problematic in terms of the EPP. Since the raising is overt, the T in Dzamba has a strong D-feature which must be eliminated before Spell-Out. Given Chomsky's (1995) version of the EPP in (10), the logical object does not have a chance to be attracted by the T because of the logical subject whose D-feature remains accessible throughout the derivation and which is the closer to the T. Thus (11b) is incorrectly predicted to be ill-formed.

The situation in (11b) is thus analogous to super-raising in examples like (13) repeated from Chapter 1.

(13) *John$_j$ seems that it was told t_j that Bill got injured.

Recall that Chomsky's (1995) explanation of the ill-formedness of (13) relies directly on the definition of Attract. Although the uninterpretable Case feature of the expletive *it* erases as soon as it gets inserted into the intermediate Spec of TP, its interpretable features, *i.e.*, the categorial D-feature and the ϕ-features, remain accessible to the computational system. Thus, the matrix T must attract the expletive, because the latter has the features that can potentially enter into a checking relation with the former. The matrix T cannot "see" beyond the expletive, which is closer to it than the DP *John*. As a consequence, (13) cannot be generated at all. The question then is: How can we rule in (11b) without ruling in (13)?

An important clue to the answer to this question is provided by word order facts from certain Austronesian languages. In arguing for the existence of AspP, Travis (1991) presents direct evidence for the overt raising of the VP-internal absolutive DP into the

Spec of AspP in such Austronesian languages as Kalagan, a Philippine language spoken in parts of Mindanao, and Pangasinan, another Philippine language mainly spoken in the central part of the province of Pangasinan. According to Collins (1970:4), in Kalagan, when the absolutive-marked DP is not the Agent, it immediately follows the Agent. The order of other constituents is fixed. Apparently, the same is true of Pangasinan (Benton 1971). Observe the following Pangasinan examples (adapted from Benton 1971:190-191; for similar Kalagan examples, see Collins 1970 and Keenan 1972:180):

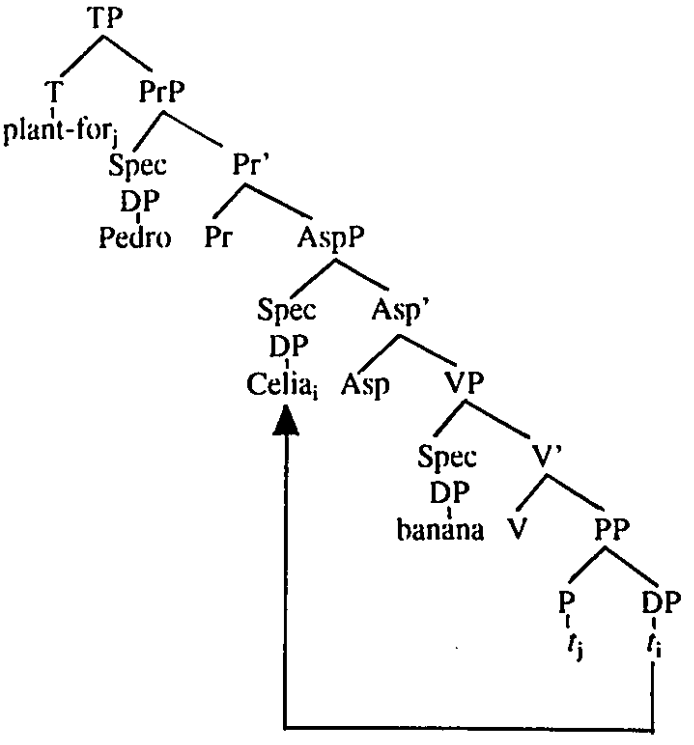
(14) a. I-tanem nen Pedro **may ponti** para kinen Celia.
plant(TT) ERG-Pedro ABS-**banana** for OBL-Celia
'Pedro will plant the banana for Celia.'

b. **Man**-tanem **si Pedro** na ponti para kinen Celia.
plant(AT) ABS-**Pedro** INH-banana for OBL-Celia
'Pedro will plant the banana for Celia.'

c. Itanem-**an** nen Pedro **si Celia** na ponti.
plant(BT) ERG-Pedro ABS-**Celia** INH-banana
'Pedro will plant the banana for Celia.'

The Theme Topic construction in (14a), similar to that in Tagalog (6), exemplifies the basic transitive clause in Pangasinan. Putting aside details that do not concern us here, (14b) and (14c) illustrate the Agent Topic construction (or the antipassive; see section 2.3. and Chapter 3) and the Benefactive Topic construction (or the benefactive applicative; see Chapter 4). (14b), where the absolutive DP is the external argument, exhibits the canonical word order Verb-Agent-Theme-Oblique. In (14a) the absolutive Theme immediately follows the ergative Agent. This example is not very informative, for it conforms to the canonical word order, and the word order can be obtained without movement of the absolutive Theme into the Spec of the AspP. (14c) is the most telling of (14a-c). In (14c) the absolutive Benefactive appears to the immediate right of the ergative Agent. The structure of (14c) at Spell-Out is the following:

(15)



Under the present analysis, (14c) is derived by *Preposition Incorporation* (PI) (Baker 1988a,b).[12] The object of the incorporated preposition is forced to receive structural Case. In (15) the Benefactive has raised overtly into the Spec of AspP.

One might well wonder why the VP-internal absolutive DP must raise into the Spec of AspP in overt syntax in languages like Kalagan and Pangasinan, even though no structural Case-checking takes place in the process; the Asp in these languages are defective, and the absolutive DP must raise further into the Spec of TP in covert syntax. I suggest that this is an "inner" EPP effect; the Asp in those languages has a strong D-feature, which triggers overt raising. The existence of the "inner" EPP is not surprising from the present perspective. It is anticipated, because Asp is nothing but T with a narrower scope. Data like (14c) confirm that strictly speaking, the EPP cannot be equated with Case-checking, as is already known for languages like English (cf. Chomsky 1993,

[12] The assumption that (14c) involves PI is motivated by the fact that only absolutive DPs are extractable in Pangasinan (Benton 1971, Seiter 1975). See Chapter 4, section 4.

1994, 1995).

Thus, the sole purpose of the raising in (15) is to satisfy the EPP. Notice that it is disallowed by Attract in conjunction with the EPP in (10). The logical object 'banana' in the Spec of VP, whose D-feature never deletes throughout the computation, c-commands and thus is closer to the Benefactive within the PP. Hence, the strong D-feature of the Asp must attract the D-feature of the logical object, contrary to fact.

What seems to be wrong is the EPP in (10). Descriptively, what we would like to say is the following: only DPs with unchecked Case features can satisfy the EPP, as in (16).

(16) *Extended Projection Principle* (EPP) (tentative):
EPP = $D_{[+Case]}$-feature

If we assume (16), (14c) is correctly ruled in. In (14c) the logical object checks its inherent Case directly with the verb and its Case feature gets erased *in situ* (see the next section and Chapter 4). Thus, the Benefactive is actually the closest DP that can enter into a checking relation with the strong feature of the Asp. (16) also correctly allows (11b). In (11b) the T cannot attract the logical subject, whose ergative Case feature has already been erased in the Spec of PrP, and hence attracts the logical object instead.

As noted above, the EPP cannot be identified with Case-checking. However, the suggestion in the preceding paragraph, if correct, implies that the EPP and Case-checking are closely related to each other after all. Why should this be? The connection between the two becomes clear if we think of D as the locus of Case features. In some languages, D directly indicates Case (cf. German). In some languages, structural Case-checking of logical objects is tied with specificity, which I assume is the property of D.

Now, we have lost Chomsky's (1995) explanation of (13). Since the Case feature of the expletive *it* disappears as soon as it gets inserted in the intermediate Spec of TP, Attract seems to be able to legitimately raise the DP *John*. I will postpone the discussion

of (13) until section 2.4. where I argue that it is excluded by Attract together with a slightly modified version of (16).

Summarizing, I have suggested that the defectivity of Asp is responsible for syntactic ergativity. In addition, the above considerations of ergative constructions have led us to conclude (a) that optional features, the ϕ-features of T and Asp in particular, cannot attract, and (b) that the EPP is not entirely divorced from Case, prompting some modifications of Chomsky's (1994, 1995) proposals.

2.3. Inherent Case

The preceding section concerned structural Case. In this section, I enumerate the basic properties of inherent Case.[13]

First, inherent Case is closely tied with θ-relations. Following Chomsky (1981, 1986a), Baker (1988a,b), I assume that inherent Case is checked by lexical heads such as V under direct θ-marking. Thus, the Minimalist Case theory of the sort presented here allows us to draw a structural distinction between structural Case and inherent Case; structural Case is checked within a functional projection, whereas inherent Case is checked within a lexical projection (see Laka 1993, Takahashi 1993).[14]

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[13] I distinguish inherent Case from "lexical/semantic Case" which is presumably assigned by null prepositions (or adpositions) (see for example Nikanne 1993).

[14] Lasnik (1995) argues that inherent Case, like structural Case, is checked within a functional projection. He considers (i):

(i) There will be a man available.

Given the "standard" small clause analysis of the kind proposed by Stowell (1981), *be* licensing inherent Case does not θ-mark *a man* in (i); it is *available* that θ-marks *a man*. According to Lasnik (1995), the "light" verb *be* and the lower predicate *available* merge in Agro at LF and licence inherent Case in Spec of AgroP. I will not adopt this kind of analysis for the following reasons. First, given the assumption that ϕ-features can optionally be added to functional heads in forming a numeration (Chomsky 1995), it is mysterious under Lasnik's (1995) account why inherently Case-marked DPs never trigger agreement (except special cases like the *there*-construction; see below). Secondly, in applicatives derived by PI in accusative languages (see Chapter 4), Lasnik would have to hold that both the logical object with inherent Case and the applied object with structural Case must raise into Spec of AgroP, though there is no evidence to indicate that Agro in question allows multiple specifiers. Thirdly, the "standard" small clause analysis may be challenged; certainly, *be* has the ability to assign a θ-role, as shown in (ii).

In English *there*-constructions, for instance, unaccusative verbs can assign inherent Case (see Belletti 1988, Lasnik 1992, 1995 among others). Consider the following contrast in grammaticality:

(17) a. *There a lady laughed / *There laughed a lady.
b. There arrived a lady.

As shown in (17a), *there*-constructions cannot be formed with unergative verbs, wherever the verb lands. This is because *a lady* in (17a) is an external argument generated in the Spec of the functional category Pr, being unable to receive inherent Case. The structural Case of the T is checked against the Case feature of the expletive *there*.[15] Thus, the Case of the external argument in (17a) will be left unchecked, leading to a violation of Full Interpretation (FI) (Chomsky 1986b, 1991, 1993). In (17b), on the other hand, *a lady* is an internal argument generated within the lexical projection VP (Perlmutter 1978, Burzio 1986, Baker 1988a among others). It is directly θ-marked by the unaccusative verb and hence its inherent Case is successfully checked by the verb, satisfying FI.

Secondly, in canonical cases, inherent Case assignment is subject to the Specificity Effect (SE) (Enç 1991, cf. Safir 1985, Belletti 1988).[16] Thus, the DP with inherent Case must be nonspecific. Compare (18) with (17b).

(18) *There arrived the lady.

The ungrammaticality of (18) is due to the fact that the "associate" of the expletive is

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(ii) There must be a solution.

[15] Contra Chomsky (1994, 1995), who argues that *there* is a "pure" expletive with only the categorial D-feature. Under Chomsky's (1994, 1995) proposal, nothing seems to rule out examples like (17a) (as noted also by Lasnik (1995)); the Case and φ-features of the external argument raise and adjoin to the T at LF, allowing the derivation to converge.

[16] See Chapter 3 for environments where the SE on inherently Case-marked nominals is neutralized.

specific. The DP *the lady*, being specific, cannot check its Case, causing a violation of FI (see Mahajan 1991, 1992, Laka 1993, Takahashi 1993, and also Diesing 1992).

Why is it that the SE holds of inherent Case (in canonical cases, see footnote 16)? One possible reason has to do with the connection between the category D and Case that I exploited in the above discussion of the EPP. Suppose that in the constructions under consideration, the specific D must bear structural Case rather than inherent Case (cf. Mahajan 1991, Laka 1993), while the nonspecific D can bear either Case (see below). Then the SE observed in (17b) and (18) follows. In (18) the specific DP must receive structural Case, but the only structural Case of the T is assigned to the expletive. (17b) is well-formed, since the nonspecific DP has the option of receiving inherent Case.

This proposal directly accounts for the fact that in some languages, including Turkish, specific DPs require overt agreement or Case-marking, while nonspecific DPs do not and, in fact, must not show overt agreement or Case-marking. Consider the following Turkish examples (Enç 1991:5):

(19) a. Ali bir kitab-i aldi.
Ali one book-ACC bought
'A book is such that Ali bought it.'

b. Ali bir kitap aldi.
Ali one book bought
'Ali bought some book or other.'

In (19a) the object is accusative-marked and is interpreted as specific, as indicated by the English translation. In (19b), on the other hand, the object lacks Case-marking and is construed as nonspecific. This sort of general discrepancy between specific and nonspecific DPs with regard to agreement and Case-marking can naturally be accounted for within the Minimalist Case theory. Specific DPs, having to undergo structural Case-checking, must raise and enter into a Spec-head relation with a functional category, which can manifest itself morphologically as agreement on the verb or Case-marking on the

nominal, as in (19a). Nonspecific DPs may receive inherent Case within the VP, in which case they never enter into a Spec-head configuration with a functional category and thus do not trigger agreement or get overt Case-marking, as in (19b).

At this point, a question arises as to why the inherently Case-marked nominal can trigger agreement in the *there*-construction, as in (20).

(20) There are many people in the garden.

This construction seems to pose a problem for the modified definition of Attract in (12). In (20) the Case and strong D-features of the T get eliminated by the expletive, leaving only the ϕ-features. But according to the formulation of Attract in (12), the ϕ-features of verbal elements, being optional, cannot attract. Then there would be no way in which they can be erased and the derivation would be expected to crash, contrary to fact.

I believe that the key to the solution to this problem lies in the proper understanding of the morphological nature of *there*. Let us assume following Chomsky (1991, 1993) and Lasnik (1995) that *there* has an uninterpretable [+affix] feature; the derivation containing *there* will crash at LF unless the associate with inherent Case adjoins to it (Lasnik 1995).[17] The affixal feature of *there*, being an intrinsic feature, can attract the associate, and in this case the ϕ-features of the associate raise as "free riders," entering into the checking relation with the T. In short, the agreement between the inherently Case-marked DP and the T can exceptionally be established in examples like (20) thanks to the affixal feature of *there*, which allows LF attraction of the DP.

Thirdly, inherent Case-checking is optional, as argued by Belletti (1988). Consider the following example:

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[17] Within the framework of Chomsky (1994, 1995), only the set of formal features of the associate should raise. I should point out that it is not clear how *there* can "see" only the inherently Case-checked nominal; the inherent Case gets erased before the LF raising. It may be that the nominal in question is an NP rather than a DP and that *there* attracts the N-feature (cf. Chomsky 1995).

(21) A lady arrived.

The well-formedness of (21) indicates that the uninterpretable Case feature of the T has been successfully checked and erased. This implies that *a lady* in (21) does not receive inherent Case from the unaccusative verb *arrive*, which can potentially assign inherent Case to it. If inherent Case assignment were obligatory, (21) would be wrongly expected to be ill-formed; the Case feature of *a lady* gets erased in its base position and cannot enter into a checking relation with the Case feature of the T, resulting in a crashed derivation. Therefore, the conclusion is that assignment of inherent Case is an optional process.

Inherent Case plays an important role in antipassive constructions, some of which exhibit the SE on inherently Case-marked DPs in the expected way (see Chapter 3). Inherent Case assignment will also be relevant when we examine applicative constructions in Chapter 4.

2.4. Case of CPs

Let us finally consider the relation between Case and CPs. Following Levin and Massam (1985), I assume that CPs need not but may receive Case (cf. Bošković 1995, Chung 1991, Safir 1985, Stowell 1981). The fact that CPs do not need Case can be illustrated by the following examples:

(22) a. my proof *(of) John's guilt
b. my proof that John is guilty

(23) a. I am afraid *(of) John.
b. I am afraid that John is insane.

The (a) examples above show that nouns and adjectives do not assign Case in English.[18] Despite the inability of these predicates to assign Case, the (b) examples are well-formed, demonstrating that CPs do not need Case. Thus, there is an important difference between DP arguments and CP arguments; the former always need Case, whereas the latter do not.

But CPs can get Case (Chung 1991, Kitagawa 1986, Safir 1985, Stowell 1981). Thus in well-formed examples like the following,

(24) That John likes Mary is obvious.

the CP in the structural subject position is assumed to bear a Case feature to eliminate that on the tensed T, which obligatorily assigns nominative Case in English. If the CP failed to check the nominative Case of the T in (24), (24) would be incorrectly expected to be ill-formed.

The claim that CPs receive Case in certain situations can be justified on the basis of facts from ergative languages. Let us consider the following Chamorro examples (see Chung 1982, 1991):

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[18] One may ask why Asp does not license structural accusative Case in examples like (23a). Adopting Noonan's (1992) proposal, we can assume that accusative Case-checking is somehow dependent on the presence of the functional head Pr. This captures the observation that accusative Case is not available with stative predicates and unaccusative verbs, which lack external arguments (see Burzio 1986 among others). This account, however, does not cover examples like (ia).

(i) a. John insisted *(on) Mary's resignation.
b. John insisted that Mary resign.

(ia) contains the external argument *John*. This means that the structural requirement on accusative Case-checking is satisfied. Nonetheless, (ia) is ungrammatical without the preposition. As argued by Rothstein (1992), the ungrammaticality has nothing to do with Case, contra Pesetsky (1982). Rather, it is due to a violation of the selectional property of the verb *insist*. Then examples like (ib) cannot be used to show that CPs do not have to get Case.

(25) a. Kulan in-sienti [na mahalang i che'lu-nmami nu hämi].
like 1PL.ERG-feel COMP miss the sibling-1PL.POSS OBL-1PL.EMPH
'We sort of feel that our sister misses us.'

b. Ha-istotba häm [na malägu' i lahi-nmami ni kareta].
3SG.ERG-disturb 1PL.ABS COMP want the son-1PL.POSS OBL-car
'It disturbs us that our son wants the car.'

Note that the matrix verbs in (25) are realis, bearing ergative agreement. In (25a) the first-person plural pronoun gets ergative Case. It must be then that the structural Case of T is assigned to the complement CP, assuming that the tensed T in Chamorro, like that in English, must have a Case feature. (25b) contains a sentential logical subject. Notice that it triggers the third-person singular ergative agreement on the verb, suggesting that it receives structural ergative Case. The first-person plural pronoun in (25b) receives absolutive Case.

In brief, CPs do not have to get Case, but they may do so. In certain environments, like (24) and (25), they are in fact forced to bear Case.

Now let us go back to the problem posed by the English super-raising in (13). As we noted above, given the EPP in (16), Chomsky's (1995) account of (13) cannot be maintained. The raising of *John* into the matrix Spec of TP in (13) satisfies the definition of Attract, because *it* in the intermediate Spec of TP, its Case feature being already checked and erased, can no longer satisfy the EPP. In other words, *John* is the closest element that can enter into a checking relation with the matrix T in (13). Notice that (13) converges. Then, it would be incorrectly predicted that (13) should block (26), which arises from the same numeration as (13).

(26) It seems that John$_j$ was told t_j that Bill got injured.

This is because of Procrastinate: at the point where we must fill the intermediate Spec of TP, the raising of *John* into the position, as in (26), is not required for convergence, and

hence is prohibited.

What then excludes the super-raising in (13)? Since (13) does not block (26), it must be either that it crashes or that it cannot be generated. I believe that a clue to the answer to this question is provided by the long-standing observation in the literature that CPs are an absolute barrier for NP-movement in languages like English. Thus, NP-movement out of a CP is ill-formed, whether the embedded clause in question involves expletives or not.

(27) a. *Mary$_i$ seems that John met t_i.
b. *I believe Mary$_i$ that John met t_i.

In (27a) the thematic object of the embedded clause has super-raised into the matrix structural subject position, while in (27b) it has super-raised into the matrix structural object position.

One might think that examples like (27) are ruled out purely for Case reasons. If the Asp in English obligatorily checks structural accusative Case, then in (27) *Mary* cannot raise out of the embedded clause. This is because once its Case feature gets erased in the embedded clause, it can no longer be attracted by the matrix T, whether the attraction is to satisfy the Case requirement or the EPP of the T. Then (27) violates the definition of Attract and hence cannot be generated.

I assume, however, that languages like Turkish and English have Caseless Asp in their lexicon. If this is correct, the above Case account of (27) is untenable. Consider the Turkish pair in (19) again. In (19a) there are two instances of structural Case-checking; one for nominative *Ali*, the other for accusative *bir bitab* 'one book', which, being specific, cannot get inherent Case. The inherent Case the verb can assign does not cause (19a) to crash, since it is optional; in (19a) we take the option of not assigning inherent Case. Now, in (19b) we take the option of the verb checking inherent Case within the

VP, as can be seen by the absence of the accusative Case-marker on 'one book'. How about the Case of the Asp in (19b)? The well-formedness of (19b) shows that Turkish has Caseless Asp; if the Asp in (19b) must always be with a Case feature, (19b) would be incorrectly expected to crash, leaving an unchecked Case feature.

English also has Caseless Asp. Consider (28) which differs from (2) minimally.

(28) John bought a dress for Cindy.

In (2), similar to (19a), the specific Theme cannot get inherent Case, and hence checks its structural accusative Case against the Asp. In (28), similar to (19b), the nonspecific Theme checks its inherent Case within the VP in the same way that the associate in the well-formed *there*-construction does. Then it must be that the Caseless Asp is used in (28), since otherwise (28) would result in a crashed derivation.

In Turkish examples like (13), the difference between accusative Case-checking and inherent Case-checking is morphologically realized. But in English examples like (2) and (28), it is not. There are, however, reasons to believe that the specific Theme with structural accusative Case in (2) raises out of the VP, while the nonspecific Theme with inherent Case in (28) remains within the VP. One reason has to do with the so-called Antecedent-Contained Deletion (ACD) construction. Observe the following contrast:

(29) a. I read the books that you did.
b. *I read two books that you did.

Hornstein (1994, 1995), Lasnik (1993), and Takahashi (1993) argue that what licenses the ACD construction in (29a) is the raising of the specific Theme out of the VP into a

structural Case position.[19] Consider the following LF representations for (29a-b):

(30) a. $[_{TP}\ I_i\ [_{PrP}\ t_i$ read $[_{AspP}\ [_{DP}$ the books that you did $[_{VP}\ e]]_j\ [_{VP}\ t_V\ t_j]]]]$
b. *$[_{TP}\ I_i\ [_{PrP}\ t_i$ read $[_{AspP}$ Asp $[_{VP}\ t_V\ [_{DP}$ two books that you did $[_{VP}\ e]]]]]]$

In (30a) the specific DP object raises into the Spec of AspP, while in (30b) the nonspecific DP object stays *in situ*. In (30a) the non-elided VP which gets copied into the gapped VP will not contain a null VP at LF due to the raising of the object. As a consequence, no infinite regress arises (see May 1985). (30b) is ill-formed because of the lack of raising of the nonspecific object; copying the non-elided VP into the gapped VP necessarily leads to a regress with yet another empty VP to be filled (see the above references for detailed discussion).

Then there is evidence that nonspecific Theme gets inherent Case within the VP in English. This in turn means that English has Caseless Asp in its lexicon and that it is used in examples like (28).

Hence let us make the assumption that in (27) we insert the Asp without a Case feature in the embedded clause. *John* does not block the raising of *Mary*, for its Case feature is already erased when its raising takes place. Nonetheless, (27) is ill-formed, since the raising crosses the CP boundary.

Why should this be the case? I would like to suggest that the answer rests on the proper formulation of the EPP. Note that CPs can satisfy the EPP in English, as shown in (24) above. This means that the EPP must refer not only to the D-feature but also to the C-feature at least in English.

We saw that DPs and CPs form a natural class in that they are able to receive Case.

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[19] Hornstein (1994, 1995), Lasnik (1993), and Takahashi (1993) all take this raising to be into the Spec of AgroP above the higher VP (the PrP in the present framework). See these works for problems with previous analyses of the ACD construction such as Baltin 1987 and May 1985.

The difference, though, is that DPs need to get Case, while CPs do not. Since the modified version of the EPP crucially hinges on Case, the similar behavior of DPs and CPs with respect to Case is one more reason to believe that the EPP must make reference to CPs.

From this perspective, it would be natural to propose (31).

(31) *Extended Projection Principle* (EPP) (final version):
EPP = D/C[unerased Case]-feature

This particular version of the EPP states that the EPP can be satisfied by a Case-sensitive categorial feature *i.e.*, a D-feature or a C-feature, whose Case has not been erased. There are two situations in which a given Case-sensitive categorial feature can enter into satisfaction of the EPP. In one, the categorial feature at issue bears Case. This is the standard instance of the EPP fulfilled by DPs. In the other, the categorial feature lacks Case altogether even before the computation. This case is limited to CPs, which do not need to bear Case.

It seems that there is parametric variation in terms of NP-movability out of CPs. Thus there are languages which, unlike English, permit raising out of CPs (see Ura 1994 and Chapter 5). To deal with this variation, I exploit the distinction between deletion and erasure proposed by Chomsky (1995). As mentioned in Chapter 1, when uninterpretable features enter into a checking relation, they delete. Furthermore, they erase, if possible. Deleted features are invisible at LF but accessible to the computational system, whereas erased features are inaccessible to any kind of syntactic operation. Let us stipulate that in languages like English, Case features of CPs, when they are checked, delete but do not erase.

Going back to (13), suppose that we reached the stage where the matrix T induces attraction. With the version of the EPP in (31) and the assumption made in the preceding

paragraph, I maintain that the following is the only option:

(32) *[[that it was told John that Bill got injured]$_i$ seems t_i].

The definition of Attract dictates that matrix T must attract the embedded CP, as in (32), since the CP, whether or not it has inherent Case, qualifies as the closer element that can enter into a checking relation with the T in terms of the EPP. It is clear that if the CP lacks Case, it can satisfy the EPP imposed by the T. Even if the CP checks its inherent Case feature against the matrix verb *seem*, the Case feature, though deleted, remains visible to the computation. This means that the CP can still fulfill the EPP. The derivation in (32) crashes, leaving the Case feature of *John* unchecked. Note that in (32) *John* (or its Case feature), by definition, cannot be attracted by the matrix T, because the latter does not c-command the former. Thus, *John* in (13) does not have any chance of being attracted by the matrix T due to the fact that it is contained in a CP. The ill-formedness of (27) can be handled in the same manner. In brief, we can derive the absolute barrierhood of CPs for NP-movement in English-type languages from the definition of Attract in a way different from Chomsky's (1995), which does not consider the possible role of CPs in satisfying the EPP. Raising out of TP complements is allowed even in English under the present analysis, since they cannot bear Case or satisfy the EPP.

In languages where checked Case features of CPs delete and further erase, CPs do not constitute a barrier for NP-movement, because once their Case features erase, they cannot satisfy the EPP in the way their English counterparts can (see Chapter 5 for examples). I will continue to assume that Case features of DPs, when properly checked, delete and erase in all languages.

2.5. Summary

The main aim of this chapter has been to make explicit the background assumptions about phrase structure, Case, and agreement adopted throughout this thesis. In the course of the above discussion, I have modified Chomsky's (1994, 1995) versions of Attract and EPP. I have also made the assumption, following Levin and Massam (1984), that CPs may but need not be assigned Case.

CHAPTER 3

ANTIPASSIVES

3.0. Introduction

In Chapter 2, I laid out an analysis of Case and agreement in the spirit of Minimalism. With this analysis as background, I now proceed to intricate interactions of Grammatical Function (GF) changing and *wh*-movement. This chapter focuses on one topic of this nature—the interaction of antipassivization and *wh*-extraction—which is of much interest, because pre-Minimalist analyses have failed to deal adequately with it. I will argue that the interaction in question is best explained in terms of economy, the Minimal Link Condition (MLC) in particular. Significantly, the discussion in this chapter provides insight into current issues surrounding the notion of reference set, the MLC, and the nature of parameterization.

The organization of this chapter is as follows. In section 3.1., the primary problem which this chapter addresses is raised, using data from Tagalog. There the descriptive generalization to be explained and the intuitive idea to be pursued are presented. In section 3.2., I present an analysis of antipassives as involving Caseless Aspect. Section 3.3. is devoted to establishing that the Empty Category Principle (ECP) fails to offer a unified account of extraction in Tagalog. Section 3.4. proposes an economy account of Tagalog extraction couched within a particular conception of Minimalism. It is argued that the extraction at issue can be explained in a principled way by the MLC as an economy condition combined with a modified version of Chomsky's (1994, 1995) notion of reference set. After presenting the analysis, I go on to extend it to ergative languages other than Tagalog. It is shown that they are also amenable to the present treatment. Section 3.5. concerns a secondary question that arises in connection with the relation between antipassivization and extraction, *i.e.*, the dichotomy of antipassive constructions

often mentioned in the Mayan literature; so-called *Absolutive Antipassive*, which requires its logical object to be nonspecific, versus so-called *Agentive Antipassive*, which requires its logical subject to be extracted. I suggest that the dichotomy is a result of tension between the two general economy conditions; the MLC and the Minimal Feature Condition (MFC), of which the latter demands that the number of features used in a derivation be minimal. Section 3.6. explores some implications of the present account. They include the following claims: (a) the notion of reference set is sensitive to Interpretability (Chomsky 1995), (b) the MLC qualifies as an economy condition that selects among convergent derivations, and (c) variation in terms of extractability stems from morphological properties of the lexicon, as claimed in the principles-and-parameters approach.

3.1. The Problem: Object Extraction in Antipassives

Throughout the history of generative syntax, one of its main concerns has been the problem of locality imposed on movement operations. In the last fifteen years or so, we have observed a considerable progress in this area. Since Chomsky's (1981) postulation of the ECP within the framework of Government-Binding (GB) theory, a large amount of work has been carried out to elaborate on it (Huang 1982, Lasnik and Saito 1984, 1992, Cinque 1990, Rizzi 1990 among numerous others) or to present alternatives to it (Pesetsky 1982, Kayne 1983, Aoun 1985 in particular). Whatever its precise definition may be, the ECP aims to account for the so-called *subject/object* and *argument/adjunct asymmetries*. Consider the following ((2) adapted from Rizzi 1990):

(1) a. *Who$_i$ do you think that t_i likes Mary?
b. Who$_i$ do you think that John likes t_i?

(2) a. ?Which problem$_i$ do you wonder how to solve t_i?

b. *How$_i$ do you wonder which problem to solve t_i?

In languages like English, objects are more extractable than subjects, as shown in (1), and arguments more extractable than adjuncts, as shown in (2). Thus, logical objects are taken to be the most extractable. This has been captured by either the "disjunctive" version of the ECP (see Chomsky 1981, Lasnik and Saito 1984 for details) or the "conjunctive" version of the ECP (see Cinque 1990, Rizzi 1990 for details). Under the disjunctive version, traces of logical objects are θ-marked and hence properly governed by verbs. Under the conjunctive version, they are (a) properly head-governed, and (b) assigned referential θ-roles and hence virtually exempt from antecedent government.

The ECP then makes the following empirical prediction: logical objects are always extractable in cases where such locality conditions as the *Subjacency Condition* (Chomsky 1973, 1977) or Huang's (1982) *Condition on Extraction Domain* (CED)[1] are not a factor (see among others Chomsky 1986a, Cinque 1990, Lasnik and Saito 1992 for relevant discussion).

Languages like Tagalog, an Austronesian language, appears to falsify this prediction.[2] This is because there are constructions in Tagalog where Subjacency and the CED are irrelevant, but logical objects cannot be extracted, though subjects and adjuncts can be. This extraction pattern seems to be essentially the opposite of that predicted by

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[1] *Condition on Extraction Domain* (CED):
A phrase A may be extracted out of a domain B only if B is properly governed.
(Huang 1982:505)

Primary cases of CED violations are extraction out of subjects (in languages like English) and extraction out of adjuncts.

[2] The general extraction pattern to be discussed below holds of other Western Austronesian languages such as Iban, Javanese, Malagasy, Bahasa (Indonesia and Malaysia), Minang-Kabau, Toba Batak (Keenan and Comrie 1977), Bikol, Pangasinan, Hiligaynon, Ilokano (Seiter 1975), Cebuano (Bell 1976), Kapampangan (Mirikitani 1972, Rowsell 1983). Here I shall use Tagalog as a representative. Extraction in Malagasy is examined briefly in Section 3.4. below. Bahasa data are considered in Chapter 4 and Chapter 6.

the ECP. As a point of departure, observe the following paradigm from Tagalog:

(3) a. Sino ang b-**um**-ili ng damit?
who ANG bought(AT) INH-dress
'Who is the one that bought a/the dress?'

b. *Ano ang b-**um**-ili si Juan?
what ANG bought(AT) ABS-Juan
('What is the thing that Juan bought?')

c. Saan b-**um**-ili si Juan ng damit?
where bought(AT) ABS-Juan INH-dress
'Where did Juan buy a dress?'

(3a-c) are examples of the so-called Agent Topic construction, where the absolutive-marked Agent is the structural subject in the sense defined in Chapter 2 (see among others Guilfoyle *et al.* 1992, Kroeger 1993, Maclachlan 1995, Maclachlan and Nakamura 1994, Nakamura 1994b, Richards 1990, 1993). Under the ergative analysis of Tagalog we have been assuming in this thesis, the Agent Topic construction is an antipassive construction. Descriptively speaking, antipassivization can be characterized as a GF changing operation that "demotes" the direct (thematic) object to some sort of "oblique" status (see Baker 1988a among others). Quite strikingly, the Theme, which is expected to be readily extractable by the ECP, cannot be extracted in this antipassive construction, as illustrated in (3b). In spite of this ban on Theme extraction, it is possible to extract Agent and adjuncts, as shown in (3a) and (3c). Thus, (3) highlights what may be called the *reversed* subject/object and argument/adjunct asymmetries.

A skeptic might object that the Theme in Tagalog antipassives is no longer an argument or even an object in some sense and hence its inextractability does not pose real threat to the ECP. But as we will see in the next section, there is evidence that logical objects in Tagalog antipassives are in no way demoted syntactically. Then the problem for the ECP posed by (3) is indeed real.

In order to extract the Theme in (3b), it must be made the structural subject by the

use of the so-called Theme Topic construction, as in (4b).

(4) a. *Sino ang b-**in**-ili ang damit?
who ANG bought(TT) ABS-dress
('Who is the one that bought the dress?')

b. Ano ang b-**in**-ili ni Juan?
what ANG bought(TT) ERG-Juan
'What is the thing that Juan bought?'

c. Saan b-**in**-ili ni Juan ang damit?
where bought(TT) ERG-Juan ABS-dress
'Where did the man buy the dress?'

Under the present ergative analysis of Tagalog, the Theme Topic construction is the basic transitive sentence where the logical object gets absolutive Case, while the logical subject gets ergative Case. In this construction, the Agent cannot be extracted, as in (4a), though the adjunct can be extracted, as in (4c).

Given the difficulties with the ECP (see section 3.3.), the main purpose of this chapter is to seek an alternative analysis that accounts for the peculiarities of *wh*-extraction in ergative languages like Tagalog in a unified way. Since extraction facts like (3) and (4) have remained problematic for GB theory, and any contemporary syntactic theory for that matter, it would be interesting to see if the Minimalist approach provides an explanatory solution to those puzzling facts.

Keeping to *wh*-extractions in simple clauses in ergative languages, like those in (3) and (4), I maintain that the descriptive generalization to be explained is the following:

(5) *Generalization*:
Extraction of a non-absolutive DP argument in a certain construction is prohibited only if there is a well-formed equivalent of the construction where it gets absolutive-marked.

What (5) says is roughly "Extract structural subjects whenever possible" (cf. Keenan

1972, Keenan and Comrie 1977, Woodbury 1977, Dukes 1993, Kroeger 1993). As we will see, (5) is a rather robust generalization that is valid across a number of unrelated ergative languages.

The suggestion I am going to make is relatively simple. The generalization given in (5) has an obvious economy flavor; extraction of structural subjects out of the Spec of TP forms the shortest *wh*-chain possible, *i.e.*, the most economical chain in view of the MLC. Recall one of the guiding mottos of the Minimalist Program, as it is voiced by Chomsky (1993, 1994, 1995); "the linguistic expressions are the optimal realizations of the interface conditions, where 'optimality' is determined by the economy conditions of UG (Chomsky 1993:4)." Thus, it is claimed that a well-formed derivation must survive competition among a set of derivations defined by the notion of reference set. From this perspective, consider the pair (3b) and (4b) once again. Suppose that we take seriously the fact that (3b) and (4b) are intended to express the same meaning and that they compete with each other for the purpose of economy. Then, a rather straightforward account of problematic (3b) becomes available; (3b) is blocked by more economical (4b) in the sense to be spelled out in detail below. Section 3.4. will execute this idea using elements of the Minimalist Program.

But before we go into the discussion of *wh*-extraction, it is necessary to see how antipassives are derived.

3.2. Antipassives as Caseless Aspect

Consider the following pair of sentences from Greenlandic Eskimo (Eskimo-Aleut) (Woodbury 1977):

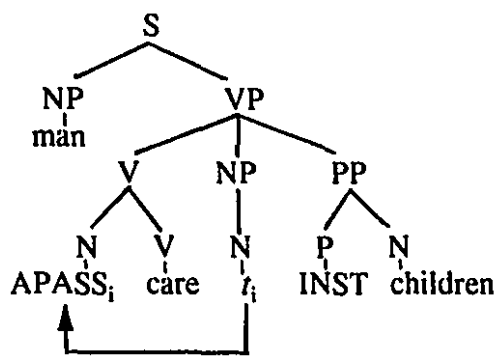
(6) a. Aŋut-ip miirqa-t paar-ai.
man-ERG child-PL(ABS) care-IND/3SG.SUB/3SG.OBJ
'The man takes care of the children.'

b. Aŋut-Ø miirqa-t paar-si-vug.
man-ABS children-INST care-APASS-IND/3SG.SUB
'The man takes care of children.'

Greenlandic Eskimo is an ergative language. (6b) is the antipassive counterpart of (6a). As shown above, transitive sentences become intransitive, when the antipassive morpheme attaches to the verb; in (6b) the "demotion" of the Theme is signalled by the instrument-marker, and the intransitivizing effect by the fact that the verb has lost the object agreement and that the Agent gets absolutive Case.

Working within GB theory, Baker (1988a) argues that antipassivization is a species of *Noun Incorporation* (NI). Under his analysis, antipassive morphemes are generated in the direct object position (the sister position of V in his framework) and subsequently undergo head movement to V due to their affixal status. Baker would posit the following derivation for the Greenlandic Eskimo example in (6b):

(7)



In the above derivation, the antipassive morpheme incorporates into the verb. The instrumental phrase is regarded as an adjunct "doubling" the θ-role of the antipassive morpheme similar to a "*by*-phrase" "doubling" the Agent θ-role in passives in some languages.

Baker (1988a) notes that his analysis of antipassives as NI explains the fact that the distribution of the antipassive process is similar to that of the NI process. In particular, both processes are restricted by the ECP under Baker's framework.[3]

Here I present an alternative account to Baker's (1988a) analysis. I would like to suggest that an antipassive morpheme is an intransitivizing morpheme associated with the functional category Asp.

Let us consider antipassives in Tagalog in some detail. Observe the Tagalog examples in (8):

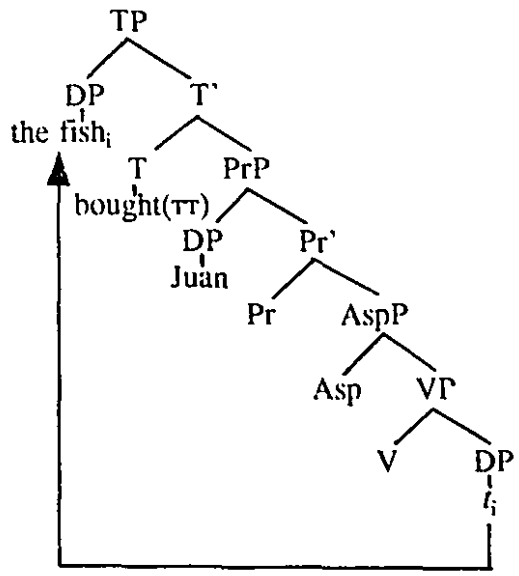
(8) a. B-**in**-ili ni Juan ang isda.
bought(TT) ERG-Juan ABS-fish
'Juan bought the fish.'

b. B-**um**-ili si Juan ng isda.
bought(AT) ABS-Juan INH-fish
'Juan bought fish.'

(8a) is an example of the transitive Theme Topic construction, which we have already seen in Chapter 2. Its LF representation looks like the following (Guilfoyle *et al.* 1992, Richards 1993):

[3] For Baker's (1988a) ECP account, it is crucial that logical subjects are generated outside the VP, as in (7), contrary to the VP-internal subject hypothesis. See Baker (1996) for an economy-based account of NI using the MLC. See also Tsushi (1995) for an alternative view.

(9)



(9) is the basic ergative transitive clause where we find two instances of structural Case-checking; one is the ergative Case-checking of the Agent 'Juan' in the Spec of PrP, the other the absolutive Case-checking of the Theme 'the fish' in the Spec of TP.

What is the nature of the Theme Topic morpheme *-in-* in (8a)? It is arguably the aspect marker with the feature specification [+realis] or [+started] (see for instance De Guzman 1978, Kroeger 1993, Maclachlan 1995).[4] In view of this, I propose to analyze it as the transitive marker or the morphological realization of the ([+started]) Asp with a structural Case feature which licenses ergative Case. This claim seems to be supported by the fact that the morpheme appears on the verb even in constructions other than the Theme Topic construction where there is an ergative DP. The constructions in question include, for example, the so-called Benefactive Topic construction, as in (10a), and the so-called Locative Topic construction, as in (10b).

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[4] To be precise, it is probably misleading to call the aspectual morpheme *-in-* the "Theme Topic" morpheme, because examples like (8a) can be analyzed as containing the "real" Theme Topic morpheme, which happens to be phonologically null. The latter morpheme is realized as the suffix *-in* when the aspect is [-realis] or [-started] (thus the two morphemes do not cooccur). For discussions of Tagalog verbal morphology, see among others De Guzman 1978, Maclachlan 1995, Schachter and Otanes 1976, Voskuil 1993. For present purposes, I will continue to refer to the aspectual *-in-* as the "Theme Topic" morpheme.

(10) a. I-b-in-ili ni Juan ng isda si Maria.
bought(BT) ERG-Juan INH-fish ABS-Maria
'Juan bought Maria (the) fish.'

b. B-in-ilh-an ni Juan ng isda ang tindahan.
bought(LT) ERG-Juan INH-fish ABS-store
'Juan bought (the) fish at the store.'

I defer detailed discussion of these constructions until Chapter 4. What should be noted here is that the morpheme *-in-* shows up in the verbal complex in (10) (but crucially, not in (8b); see below). Its appearance in (10) is straightforwardly accounted for if it is a morphological spell-out of the ergative Case feature of the Asp.

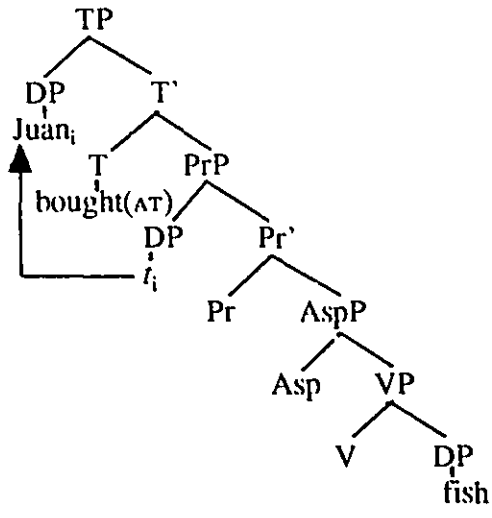
(8b), on the other hand, is the antipassive clause where there is only one instance of structural Case-checking, *i.e.*, the absolutive Case-checking of the Agent. But how is the Theme licensed?

In this connection, it is important to realize that the Theme in antipassive (8b) exhibits the Specificity Effect (SE) (Enç 1991); it must be nonspecific (see Adams and Manaster-Ramer 1988 among others).[5]

As we saw in section 2.3. in Chapter 2, the SE is symptomatic of inherent Case. In this light, I argue that the logical object in (8b) receives inherent Case directly from the verb and stays within the VP throughout the derivation (see also Maclachlan 1995, Maclachlan and Nakamura 1994, Nakamura 1994b). Thus (8b) is assumed to have the following structural representation at LF:

[5] For an economy-based account of the specificity facts in (8), see Section 3.5. below. The Specificity Effect in the Agent Theme construction is neutralized when its Agent undergoes extraction, as indicated by the gloss for (3a). Again, see Section 3.5.

(11)



In (11) the Agent raises into the Spec of TP covertly, while the nonspecific Theme, being directly θ-marked by the verb and hence eligible for inherent Case, remains within the VP.

Notice that the structure in (11) differs from that in (7) in that the logical object is not syntactically demoted. If (11) is the right kind of structure for antipassives, it follows that the antipassive morpheme cannot be an incorporated noun, since the complement position of the verb is occupied by the logical object itself.

There is empirical evidence that the Theme in antipassives in Tagalog does not have the status of adjunct. Kroeger (1993) presents convincing arguments for this thesis based on two kinds of tests. One is what he calls Adjunct Fronting ("Emphatic Inversion" in Schachter and Otanes 1972) that affects only obliques and adjuncts. The other is controllability. The generalization is that only argument DPs may be controllers. First, observe the following Tagalog examples pertaining to Adjunct Fronting (Kroeger 1993):[6]

[6] For placement of pronominal clitics in Tagalog, see Sityar 1989 and Kroeger 1993. For present purposes, one can assume that they appear in the second position of the clause they belong to.

(12) a. Para kay Pedro ko binili ang laruan.
for OBL-Pedro 1SG.ERG bought(TT) ABS-toy
'For Pedro I bought the toy.'

b. *Ang libro ng ito ko binili para kay Pedro.
ABS-book-LK-this 1SG.ERG bought(TT) for OBL-Pedro
('This book I bought for Pedro.')

(13) a. *Ng balot siya kumain.
INH-duck.embryo 3SG.ABS ate(AT)
('Balot he ate.')[7]

b. *Ng isda siya hindi makakakain.
INH-fish 3SG.ABS not NONVOL.eat(AT)
('Fish he cannot eat.')

(12a), where the PP *para kay Pedro* 'for Pedro' has been preposed, is well-formed, but (12b), where the structural subject *ang libro ng ito* 'this book' has been preposed, is ill-formed. This illustrates the fact that only PPs can undergo Adjunct Fronting. If the Theme in the Agent Topic construction were demoted, we would predict that (13a-b), in which it has been fronted, should be grammatical. Clearly, this is not the case. The ungrammaticality of (13) remains mysterious under Baker's (1988a) analysis positing the structure in (7).

Second, consider (14) from Tagalog (Kroeger 1993):

(14) Bumisita si Juan sa hari nang nagiisa.
visited(AT) ABS-Juan OBL-king ADVLK one(AT)
'Juan visited the king alone.'

In (14) only the argument *Juan* can be interpreted as the subject of the verb *nagiisa* 'be alone'. Since *hari* 'king' is oblique-marked,[8] it cannot qualify as a controller. Given this,

[7] In Tagalog and Chamorro (see below), gender is not specified on third-person pronominals, but I gloss them with the masculine form in English.

[8] The oblique-marker is used as a last resort in Tagalog antipassives when the Theme is specific and cannot get inherent Case. See section 3.5. below.

if the Theme in antipassives is non-oblique, the prediction would be that it may be a legitimate controller. (15) confirms this prediction (Kroeger 1993):

(15) a. Hinuli ng polis ang magnanakaw nang pumapasok sa bangko.
caught(TT) ERG-police ABS-thief ADVLK enter(AT) OBL-bank
'(The) police caught the thief entering the bank.'

b. Nanghuli ng magnanakaw ang polis nang pumapasok sa bangko.
caught(AT) INH-thief ABS-polis ADVLK enter(AT) OBL-bank
'The police caught a thief entering the bank.'

These sentences are both ambiguous in the same way, *i.e.*, either *magnanakaw* 'thief' or *polis* 'police' can be interpreted as the Agent of the verb *pumapasok* 'enter'. The ambiguity of (15a) is not surprising because both of the DPs in the superordinate clause are non-oblique. The ambiguity of (15b), however, is not expected under Baker's (1988a) analysis, which would treat *magnanakaw* 'thief' as an oblique and thus predict it to be unable to be a controller.

In brief, the logical object in antipassives like (8b) is not demoted syntactically, pointing to the correctness of the structure in (11).

If the antipassive or Agent Topic morpheme in (8b) is not an incorporated noun, what is it? Within the current framework, the natural thing to say is that it is the intransitive marker or the morphological realization of the Caseless Asp. In structures like (11), the Asp must be without a structural Case feature. Otherwise, they would result in crashed derivations, with the uninterpretable Case feature of the Asp surviving until LF. The present analysis of the Agent Topic morpheme as the Caseless Asp explains the fact that it is in complementary distribution with the Theme Topic morpheme.

The claim that antipassive morphology is somehow tied with Asp seems to be supported by the fact that in many languages, it has obvious aspectual overtones. In particular, antipassives differ from their ergative transitive counterparts in that they are often construed as "imperfective." This has been reported to hold in such diverse

languages as Chamorro (Austronesian: Cooreman 1988), Chukchee (Paleo-Asiatic; Comrie 1979), Circassian (Northwest Caucasus; Hewitt 1981), West Greenlandic (Eskimo-Aleut; Fortescue 1984; see also Bittner 1987), Tzutujil (Mayan; Dayley 1985a), Warrungu (Australian; Tsunoda 1988), Kalkatungu (Australian; Dixon 1980), Wargamay (Australian; Dixon 1981), and K'iche' (Mayan; Mondloch 1981).

At this point, let us go back to the Greenlandic Eskimo examples in (6). According to Woodbury (1977) and Sadock (1980), the logical object accompanied by the instrument-marker in the antipassive in (6b) shows the SE (see Payne 1982 for Yup'ik Eskimo).[9] This is highly suggestive of the object receiving inherent Case. Morphological realizations of inherent Case are subject to cross-linguistic variation (Bittner and Hale 1996).[10] Inherent Case happens to be realized morphologically as the instrument-marker in Greenlandic Eskimo. Morphological realizations of the Case feature of Asp also vary from language to language. The Case feature of the Asp has overt morphology in Tagalog (8a), but not in Greenlandic Eskimo (6a).

The present analysis of antipassive still captures its distributional similarity with NI noted by Baker (1988a); the antipassive process affects logical objects.[11] Baker (1988a) derived this observation from the ECP. Under the present analysis, the distributional property of antipassive follows from the fact that logical objects but not logical subjects are eligible for inherent Case. Let us take once again the Greenlandic Eskimo antipassive in (6b). Suppose that we attempt to assign the only structural Case of the T to the logical object in (6b) (recall from Chapter 2 that assignment of inherent Case is optional). What happens is that the Case of the logical subject will be left unchecked, resulting in a crashed derivation. Thus the proposed account together with Full Interpretation (FI)

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[9] But according to Bittner (1987), antipassive objects can be specific in West Greenlandic Eskimo. Then the antipassive in this language is similar to the Agent Topic construction in Malagasy. See below.

[10] Bittner and Hale (1996) call what I have been calling inherent Case structural oblique Case.

[11] Baker (1988a), citing Gibson 1980, mentions that Exceptional Case-Marking (ECM) subjects can be antipassivized in Chamorro. Such antipassivization can also be handled under the present approach.

guarantees that antipassive affects logical objects in such a way that they receive inherent Case.

The distribution of antipassive in ditransitive sentences is also explicable. Baker (1988a) discusses the following examples from Central Arctic Eskimo (Johnson 1980, Johns 1984):

(16) a. Anguti-up titiraut nutarar-mut tuni-vaa.
man-ERG pencil(ABS) child-ALL give-3SG.SUB/3SG.OBJ
'The man gave the pencil to the child.'

b. Anguti-up titirauti-mik nutaraq tuni-vaa.
man-ERG pencil-INST child(ABS) give-3SG.SUB/3SG.OBJ
'The man gave the child the pencil.'

In (16a) the Goal is accompanied by the allative-marker, and the Theme receives absolutive Case. (16b) can be regarded as the "double object" version of (16a). Thus in (16b) the Goal gets absolutive Case, while the Theme gets inherent instrumental Case.

It is possible to form an antipassive based on (16a) but not on (16b), as shown in (17).

(17) a. Anguti titirauti-mik nutarar-mut tuni-si-vuq.
man(ABS) pencil-INST child-ALL give-APASS-3SG.SUB
'The man gave the pencil to the child.'

b. *Anguti titirauti-mik nutarar-mik tuni-si-vuq.
man(ABS) pencil-INST child-INST give-APASS-3SG.SUB
('The man gave the child the pencil.')

(17) is grammatical in the same way as (6b) is; the Theme receives inherent Case within the VP. The ungrammaticality of (17b) indicates that antipassive cannot affect indirect objects.[12] One can attribute the ungrammaticality to the general ban on a verb assigning

[12] Bittner (1994:74) reports that examples like (17b) are marginal in West Greenlandic Eskimo.

two inherent Cases (see Baker 1988b). What is wrong with (17b) then is that both the Theme and the Goal are assigned inherent instrumental Case.[13]

This concludes the presentation of the analysis of antipassives as involving the Caseless functional category Asp.[14] In the next section, I wish to establish that the ECP cannot provide a satisfactory account of Tagalog extraction.

3.3. Problems with ECP Accounts

Bearing in mind the analysis presented in the preceding section, let us go back to the data in (3) and (4).

Notice, first of all, that examples like (3b) immediately rule out the possibility of explaining Tagalog extraction by the disjunctive ECP, according to which an empty category must be either lexically governed or antecedent-governed (see Chomsky 1981, Lasnik and Saito 1984 in particular). In (3b) the trace of *ano* 'what' is lexically governed by the verb, satisfying this version of the ECP. Recall from the preceding section that inherently Case-marked DPs in Tagalog like the *wh*-trace in (3b) are not syntactically demoted in the sense that they are not accompanied by a covert preposition.

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[13] Alternatively, if the Goal is not directly θ-marked by the verb, it is not eligible for inherent Case.

[14] As is well-known, the logical object may often be omitted in antipassives, as in (i) from Greenlandic Eskimo (Sadock 1980):

(i) Angut unata-a-voq.
man(ABS) beat-APASS-IND/3SG.SUB
'The man beat someone.'

I assume that in examples like (i), a nonspecific object *pro* may get inherent Case within the VP. According to the description of Aissen (1983), Tzotzil (Mayan) seems to have an antipassive which does not allow the logical object to be phonetically realized. The implied object must be human, either a nonspecific human or a discourse referent. (ii) exemplifies this antipassive (Laughlin 1975).

(ii) Muk' bu š-i-mil-van.
never ASP-1SG.ABS-kill-APASS
'I never killed anyone.'

It may be that the antipassive morpheme *-van* is the morphological realization of null Case (Chomsky and Lasnik 1993) of the Asp, a rather natural possibility if the Asp is indeed like the T. Then in (ii) a PRO would be generated in the logical object position and raise into the Spec of AspP.

One may suppose then that the conjunctive formulation of the ECP given in (18) (Cinque 1990, Rizzi 1990 among others) could explain the ungrammaticality of (3b) and (4a).

(18) *Empty Category Principle* (ECP):
A nonpronominal empty category must be
(i) properly head-governed
(ii) antecedent-governed.

Clause (i) is irrelevant for present purposes (see Cinque 1990, Rizzi 1990). This is because the three positions in question, the structural subject position (the Spec of TP), the logical subject position (the Spec of PrP), and the logical object position (the Spec of VP or the complement of VP) are all properly head-governed in Tagalog; the Spec of TP must be properly head-governed, given the grammaticality of (3a) and (4b) where the extraction leaves a trace in the Spec of TP, and the Spec of PrP and the Spec or complement of VP are properly head-governed θ-positions. In fact, we will see below that *wh*-extraction can take place out of the logical subject and object positions.

Following Rizzi (1990:37-40), let us assume that clause (ii) applies at LF. The definition of antecedent government is given below (Rizzi 1990:6):

(19) *Antecedent Government*: X antecedent-governs Y iff
(i) X and Y are coindexed
(ii) X c-commands Y
(iii) no barrier intervenes
(iv) Relativized Minimality is respected

As the definition in (19) indicates, there are two primary ways in which antecedent government fails: (a) a barrier (Chomsky 1986a) intervenes between a trace and its antecedent ((19iii)) or (b) an element intervening between a trace and its antecedent induces a Relativized Minimality effect ((19iv)). In actuality, Guilfoyle *et al.* (1992:393)

note in passing that the ill-formedness of (3b) and (4a) might be attributable to either barriers or Relativized Minimality.

First, let us consider a putative barrier account of the impossibility observed in (3b) and (4a) of extracting non-absolutive DPs from within the PrP directly to the Spec of CP, skipping the Spec of TP. An obvious solution is to suggest that PrP constitutes a barrier in Tagalog. But in order for this *Barriers* account to work, both of the following two assumptions have to be correct; in Tagalog, (a) PrP is not L-marked (see Chomsky 1986a:10-16), and (b) adjunction to PrP is impossible. This is because only a non-L-marked maximal projection can be an inherent barrier and adjunction voids barrierhood. One could perhaps maintain the first assumption by saying that T in Tagalog is not an L-marker. The second assumption, however, seems implausible. Chomsky (1986a:6) suggests the following:

(20) Adjunction is possible only to a maximal projection that is a nonargument.

Under the standard assumption, arguments are DPs, PPs, and CPs. Given (20), to save the *Barriers* account, we are forced to say that PrP in Tagalog is actually an argument and thus nothing can adjoin to it.[15] But it is certainly theoretically undesirable to parameterize argumenthood across languages.

More importantly, there is an empirical problem with this barrier approach. Recall that extraction of VP-adjuncts like *saan* 'where' is fine in both the Agent Topic construction, as in (3c), and the Theme Topic construction, as in (4c). Then the barrier account must allow adjuncts but not arguments to be able to adjoin to PrP.[16] It remains

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[15] Within the *Barriers* approach, NP-movement to Spec of TP from within PrP in examples like (8) (see (9) and (11)) would be legitimate without PrP-adjunction if we accept the notion of extended chain (Chomsky 1986a:75).

[16] TP-adjuncts such as *bakit* 'why' are also extractable in both the Agent Topic and the Theme Topic constructions, as shown below:

mysterious why there must be a difference between arguments and adjuncts in terms of voiding the barrierhood of PrP. As far as I am aware, no independent argument for such a difference has been presented in the literature.

The so-called recent past construction, shown in (21) below, poses a further empirical problem for the barrier account. The recent past tense is indicated by the morpheme *ka-* and aspectual reduplication (Schachter and Otanes 1976). Sentences with verbs in the recent past are peculiar in that they lack topic morphology (such as the Agent Topic morphology) on the verbs and absolutive DPs. The absence of absolutive DPs can be straightforwardly explained if we assume that the T in this construction is devoid of a Case feature.

(21) Kabibili lang ni Juan ng tela.
buy(RPAST) just ERG-Juan INH-cloth
'Juan has just bought some/the cloth.'

They are also peculiar in that they permit extraction of logical subjects and logical objects, as shown in (22) (McGinn 1988):[17]

(i) a. Bakit s-um-ulat ang doktor ng liham?
why wrote(AT) ABS-doctor INH-letter
'Why did the doctor write a letter?'
b. Bakit s-in-ulat ng doktor ang liham?
why wrote(TT) ERG-doctor ABS-letter
'Why did the doctor write the letter?'

Examples like (ia-b) would not pose a problem for the ECP (the barrier account and the Relativized Minimality account below), since the adjunct in question is assumed to be generated in a TP-adjoined position above the PrP and the Spec of TP.

[17] Kroeger (1993), discussing extraction in the recent past construction, remarks that "the acceptability of patient extraction is greatly reduced when the patient phrase is a common noun, perhaps because of potential ambiguity." In (i), for instance, *bata* 'child' can be interpreted as the eater or the eaten because the ergative Case-marker and the inherent Case-marker are homophonous in Tagalog (adapted form Kroeger 1993):

(i) ??Ano ang kakakain lang ng bata?
what ANG eat(RPAST) just ERG-child
'What is the thing that has a/the child just eaten?'

I assume with Kroeger that the low acceptability of (i) is due to a pragmatic factor.

(22) a. Sino ang kabibili lang ng tela?
who ANG buy(RPAST) just INH-cloth
'Who is the one that has just bought some/the cloth?'

b. Ano ang kabibili lang ni Juan?
what ANG buy(RPAST) just ERG-Juan
'What is the thing that Juan has just bought?'

Now compare, for example, ungrammatical (3b) with grammatical (22b). Notice that in both of them, the extraction has targeted the inherently Case-marked DP within the VP. In order to explain the contrast, the barrier account must maintain either that PrP-adjunction is possible in (22b) but not in (3b) or that the PrP is L-marked in (22b) but not in (3b). These assumptions, however, are clearly stipulative.[18]

In short, the above considerations show that the notion of barrier cannot provide a satisfactory account of the Tagalog data. It is probably worth pointing out that the innovations of the definition of barrier since Chomsky (1986a) suggest that PrP or VP is not a barrier (see Cinque 1990, Lasnik and Saito 1992).

The generalization about argument extraction we can make from the examples considered so far is that it cannot skip the Spec of TP.[19] This is obvious in the case of (3b) and (4a). In (22) the T in the recent past, devoid of a Case feature, presumably does not project a specifier position.

Here a natural way to capture this generalization suggests itself, *i.e.*, a Relativized

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[18] Richards (1991a) argues that relativization and clefting in Tagalog, which behave like *wh*-questions in the language, can be explained by Huang's (1984) *Generalized Control Rule* (GCR) together with the assumption that the empty category involved in these constructions is pronominal at S-structure. The grammaticality of examples like (22b) (and (25) below) are problematic for this account, since the GCR forces the allegedly pronominal empty category to be coindexed with the nearest c-commanding DP, *i.e.* the Agent, resulting in a violation of Condition B of Binding Theory.

[19] This rough generalization has been made for Bahasa (Malaysia) in Hung 1987. Hung (1987) captures it by assuming that all maximal projections are potential barriers to government and movement except for the elements in their specifier positions. Under her account, (4a) would be ruled out by the (disjunctive) ECP, since the IP blocks the required antecedent government (it is crucially assumed that the Spec of VP is not lexically governed). (3b) would be excluded by Subjacency (Chomsky 1973, 1977), since the *wh*-movement crosses two barriers, the VP and the IP. This account, however, does not cover (25) below from Tagalog. In addition, it is far from obvious how the account deals with adjunct extraction like (3c) and (4c). I will discuss some Bahasa data in Chapters 4 and 6.

Minimality account. Relativized Minimality is formulated as follows (Rizzi 1990:7):

(23) *Relativized Minimality*: X α-governs Y only if there is no Z such that
(i) Z is a typical potential α-governor for Y,
(ii) Z c-commands Y and does not c-command X.

Intuitively, (23) says that government of Y by X is blocked by intervening Z only if Z is a potential governor of the same kind as X for Y. If an element in the Spec of TP counts as a potential governor for a trace whose antecedent is in the Spec of CP, then Relativized Minimality can handle the above examples involving argument extraction.

This account has some initial plausibility. As has been noted in the literature, the Spec of TP in ergative languages behaves like an A'-position with respect to tests such as binding (see Campana 1992, Guilfoyle *et al.* 1992, Bittner 1994 among others). If the Spec of TP is invariably an A'-specifier position in Tagalog, then the argument extraction pattern examined above is expected under Relativized Minimality; movement into the Spec of CP, an A'-specifier position, is blocked by the structural absolutive subject in an intervening A'-specifier position (at LF). As a matter of fact, this kind of account of extraction in ergative languages has been proposed by Campana (1992).[20]

The Relativized Minimality account, however, is not without problems. First, the adjunct extraction illustrated in (3c) and (4c) is problematic for this account. The extraction is assumed to be from some position internal to the PrP. Then Relativized Minimality incorrectly predicts that (3c) and (4c) should be ill-formed.

Secondly, Relativized Minimality also predicts that whenever an absolutive structural subject is present in the Spec of TP, *wh*-extraction out of the PrP should be blocked. This prediction, however, is not borne out. Consider the following examples (cf. Cena 1979):

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[20] Campana (1992) assumes that movement of absolutives is adjunction to AgrsP, though.

(24) a. Kasama ni Juan ang tao.
be with ERG-Juan ABS-man
'Juan is with the man.'

b. Kasingtaas ni Juan ang tao.
be as tall as ERG-Juan ABS-man
'Juan is as tall as the man.'

(24a-b) illustrate the comitative construction and the comparative construction in Tagalog respectively. As in the case of the recent past construction, they contain the morpheme *ka-* and lack topic morphology. This leads us to believe that *ka-* is in complementary distribution with topic morphemes. The constructions in (24) differ, though, from the recent past construction in that they permit absolutive DPs. Now consider (25):

(25) a. Sino ang kasama ang tao?
who ANG be with ABS-man
'Who is the one that is with the man?

b. Sino ang kasingtaas ang tao?
who ANG be as tall as ABS-man
'Who is the one that is as tall as the man?

In (25a-b) it is possible to extract the ergative DPs from the PrP "over" the absolutive structural subject *tao* 'man' to the Spec of CP, contrary to the above prediction.[21] Examples such as (25) show that Relativized Minimality fails to offer a unified account of extraction in Tagalog.

It is worth pointing out that examples like (25) also show that Keenan and Comrie's

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[21] As is expected, the absolutive DP is also extractable in (24):

(i) a. Sino ang kasama ni Juan?
who ANG be with ERG-Juan
'Who is the one that Juan is with?'
b. Sino ang kasingtaas ni Juan?
who ANG as tall as ERG-Juan
'Who is the one that Juan is as tall as?'

Obviously, (ia-b) are fully consistent with the present analysis.

(1977) account based on the Accessibility Hierarchy and functional accounts that make crucial use of the topicality associated with the structural subject (cf. Schachter 1977) are on the wrong track (see Cena 1979).[22] Keenan and Comrie (1977) maintain that only structural subjects can be extracted in languages like Tagalog (see also Keenan 1972). The fact that the ergative DPs can be extracted in (25) argues against this claim. Furthermore, the extraction facts in the recent past construction in (22) are problematic for Keenan and Comrie (1977). Schachter (1977) suggests that only "referentially prominent" topics (*i.e.*, absolutive DPs) are extractable in Philippine languages. (25), where the non-topic DPs has been extracted, poses a problem for this functional account. The same point can be made on the basis of (22).

To sum up, this section has established that the ECP cannot deal adequately with Tagalog extraction, no matter whether we invoke the notion of barrier or the notion of Relativized Minimality.

In what follows, I will seek a unified account of extraction in Tagalog based on the Minimalist approach outlined in Chomsky (1993, 1994, 1995).

3.4. An Economy Account

In this section, I will pursue the intuitive idea mentioned in Section 3.1.; a most natural way to deal with problematic (3b) within the Minimalist Program would be to say that it is blocked by a more economical alternative derivation, that is, (4b).

3.4.1. Notions of Economy

The first step toward an economy account is to decide exactly what derivations are evaluated with each other, *i.e.*, the notion of reference set. In order to make the

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[22] They also are problematic for the above barrier account.

comparison between (3b) and (4b) possible, we must modify Chomsky's (1994, 1995) original concept of reference set, given below:

(26) *Reference Set*:
A set of derivations that arise from the same numeration.

The notion of numeration is defined in the following way (Chomsky 1994):

(27) *Numeration*:
A set of pairs (l, n), where l is an item of the lexicon and n is its index, understood to be the number of times that l is selected.

It is important to realize that Chomsky's notion of reference set in (26) does not allow us to compare (3b) and (4b). According to (26), economy compares derivations that share the same initial array of lexical items. (3b) and (4b) contain the arrays of lexical items, roughly {*ano*$_1$, *ang*$_1$, *bumili*$_1$, *Juan*[Abs]$_1$, *OP*[Inh]$_1$, Asp$_1$, Pr$_1$, T$_1$, C$_1$} and {*ano*$_1$, *ang*$_1$, *binili*$_1$, *Juan*[Erg]$_1$, *OP*[Abs]$_1$, Asp[+Case]$_1$, Pr$_1$, T$_1$, C$_1$}, respectively.[23] The arrays are not totally identical, because there is a Case difference in them; for example, *Juan* has absolutive Case in the first array, while it has ergative Case in the second. Thus the derivations arising from them do not compete under Chomsky's (1994, 1995) system.

I argue that Chomsky's notion of reference set is a bit too tight and should be loosened slightly. More specifically, let us assume that economy compares derivations that have "sufficiently similar" arrays of lexical items (Nakamura 1994a). I propose (28) for syntactic computations.

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[23] *OP* stands for null operator. I assume that examples like (3a-b) and (4a-b) consist of headless relative clauses. See below.

(28) *Reference Set* (revised):
A set of derivations that arise from *non-distinct* numerations.

The notion of non-distinctness used in (28) can be stated as follows:[24]

(29) *Non-Distinctness*:
Numerations N and N' are *non-distinct* if and only if there is a one-to-one correspondence C between their members, such that if $(l, n) \in$ N and $(l', n') \in$ N' and (l, n) corresponds to (l', n') in C then l and l' have the same *interpretable* features and n = n'.

The most salient feature of the revised notion of reference set in (28), coupled with (29), is that it asserts that only certain lexical features—those that get interpreted at LF—are relevant. As already mentioned in Chapter 1, Chomsky (1995) proposes to make a sharp distinction between interpretable and uninterpretable features. He claims that this distinction plays a crucial role during computations leading to LF. Interpretable features remain accessible to the computational system even if they get checked, while uninterpretable ones cease to be accessible once they get checked and erased. Interpretable features include formal features such as categorial features and the ϕ-features of nominals, whereas uninterpretable features include phonological features, Case features, the ϕ-features of verbal elements, and affixal features (Chomsky 1995). Given this dichotomy of great significance, one may well wonder if it has another prominent influence on the language faculty. My suggestion is that it does by entering into the notion of reference set. If my suggestion is on the right track, it means that Interpretability is even more important than is envisaged in Chomsky 1995. Note that semantic features, being interpretable, matter in terms of the reference set. Thus the lexical items *cats* and *dogs*, for example, are distinct from each other, though they share

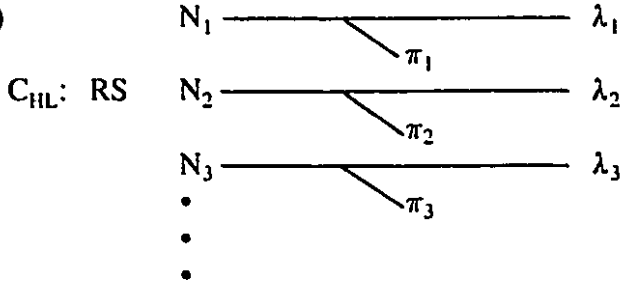
[24] I wish to thank Mark Baker (personal communication) for helpful discussion of non-distinctness in the reference set.

the same categorial and ϕ-features.

Given the revision in (28), (3b) and (4b) arise from non-distinct numerations and therefore belong to the same reference set, a welcome result from the present perspective; the differences between them in terms of phonology and Case are immaterial for the purpose of the reference set. For instance, the phonological/Case difference between *bumili* and *binili* is ignorable, so is the difference between *si Juan* with absolutive Case and *ni Juan* with ergative Case. The intuition is that (3b) and (4b) compete, for they are "intended to express the same meaning."

In effect, then, I am arguing for the general picture of the computational system depicted in (30).

(30)



Before the syntactic computation, a set of competing numerations which consists of unordered lexical items with the same interpretable features is selected. What the computational system does is to create legitimate syntactic objects interpretable at LF by efficiently getting rid of uninterpretable features. Economy conditions select among convergent derivations.

The revised notion of reference set, as it stands, appears to be too lax to be computationally realistic. Thus, for example, the derivation yielding the expression *he loves her* competes with the one yielding the expression *she loves him* under (28), since they contain non-distinct arrays of lexical items. But it would be wrong to say that they in fact compete, for they lead to LF representations that receive distinct interpretations

regarding the θ-roles.

I wish to suggest, modifying Chomsky's (1995) idea of the local reference set, that derivations are comparable at some step of computation only if their numerations yet to be exhausted by the operation Select are non-distinct from each other. In other words, I propose that the notion of reference set in (28) should be interpreted derivationally. Accordingly, the reference set is not defined once for all before the computation begins.

Given this interpretation of the reference set as non-distinctness of numerations throughout the computation, the above-mentioned problem regarding *he loves her* and *she loves him* is avoided. Although they are potentially comparable before computation, they become incomparable as soon as relevant lexical items are drawn from their numerations by the operation Select to form VPs. In the case of the former expression, the numeration $\{he_1\}$ will be left, while in the case of the latter expression, the numeration $\{she_1\}$ will be. But these leftover numerations are distinct, making the derivations incomparable for the purpose of economy.

Examples like the following seem to indicate that this kind of dynamic characterization of the reference set is necessary anyway.

(31) Where did John say that Mary bought the dress?

(31) is ambiguous. On one interpretation, the *wh*-adverbial *where* is associated with the matrix clause, and (31) is construed as asking the location where John's utterance took place. On the other interpretation, *where* originates from the embedded clause, and (31) is taken to be asking the location where Mary purchased the dress. The two interpretations result from different derivations given below:

(32) a. $[_{CP}$ where$_i$ did John say t_i $[_{CP}$ that Mary bought the dress]]

b. $[_{CP}$ where$_i$ did John say $[_{CP}$ t'_i that Mary bought the dress t_i]]

(32a) corresponds to the first interpretation, (32b) to the second interpretation. Notice that they both arise from the same numeration. Suppose that the reference set is determined once for all before computation. Then we would wrongly predict that (32b) should be blocked by (32a). Given the notion of chain link comparability to be presented shortly, the chain link (t'_i, t_i) in (32b) is not comparable to any chain link in (32a). But the link (where$_i$, t'_i) in (32b) is comparable with the link (where$_i$, t_i) in (32a), and the latter is shorter than the former. The MLC to be formulated below would incorrectly predict that (32b) is blocked by (32a).

With the proposed interpretation of the reference set (or Chomsky's (1995) local interpretation), (32a-b) do not really compete, a desirable result. Once *where* gets inserted into the embedded clause in (32b), (32b) can no longer be compared with (32a).

Thus, there are reasons, both conceptual and empirical, to adopt the derivational interpretation of the reference set, and so I do.

Under Chomsky's (1995) system, the MLC is part of the definition of Attract and thus inviolable. But I will show below that the MLC qualifies as an economy condition independent of Attract. Now that I have expanded the reference set by allowing (transderivational) comparison among non-identical (but non-distinct) numerations, it will be necessary to determine exactly what chain links get compared with each other for economy purposes. Accordingly, I propose a measure for applying the MLC to a set of competing derivations. It can be stated as follows:

(33) *Chain Link Comparability*:
Chain links CL and CL' are *comparable* if and only if derivations D and D' belong to the same reference set, such that if CL $\in$ D and CL' $\in$ D' then items of the lexicon $l \in$ CL and $l' \in$ CL' have the same *interpretable* features, and K and K' attracting l and l' are selected from numerations N and N' at the same point.

The intuitive idea here is that it is "fair" to compare chain links only if they are of the

same kind, *i.e.*, they are formed by the corresponding heads attracting the corresponding elements to satisfy the "same" morphological requirement. Thus, according to (33), comparing Case-driven movement with *wh*-movement, for example, would be pointless.

(33) is perhaps reminiscent of Rizzi's (1990) Relativized Minimality. It is similar to Relativized Minimality in that it recognizes different types of movement. But it is different from Relativized Minimality in that (i) it refers to the non-distinctness of moved elements, (ii) it does not refer to syntactic positions such as A-specifier or A'-specifier positions but to the attracting head, and (iii) it is silent about potential antecedent governors that would block certain instances of movement. Due to (i), chains headed by distinct elements are not comparable. As for (ii), given that landing sites for movement are determined on grounds independent of Relativized Minimality (see Chomsky 1994, 1995 for recent discussion), there is no need for a theory of locality to be sensitive to bar-level or positional distinctions, as has been pointed out by Chomsky and Lasnik (1993). This is precisely the reason why Chomsky and Lasnik (1993) reduce Relativized Minimality to the MLC. With regard to (iii), (33) does not have to make reference to potential antecedent governors, because derivations whose movements skip them will be screened out by derivational economy, in particular, by the definition of Attract itself, as we saw in Chapter 1 (see Chomsky 1994, 1995). The revised definition of Attract is given below:

(34) *Attract*:
K *attracts* F if F is the closest feature that can enter into a checking relation with an *intrinsic* sublabel of K.

Recall from Chapter 2 that we concluded that only intrinsic features of heads can attract and that optional features such as the ϕ-features of T or Asp cannot attract nominals.

Given the notions in (28)-(33), the Minimal Link Condition, which roughly says "Minimize the length of chain links (Chomsky and Lasnik 1993)," can be formulated in

the following manner as an economy condition:

(35) *Minimal Link Condition* (MLC):
Derivation D blocks derivation D' if there exist chain links CL $\in$ D and CL' $\in$ D' such that CL and CL' are *comparable* and CL is shorter than CL'.

The notion of chain length can be informally stated as follows (Nakamura 1994a, Baker 1995; see also Collins 1994):

(36) *Length of Chain Link*:
Length L of chain link CL is the number of maximal projections that dominate the tail but not the head.

Thus, in the following hypothetical structure:

(37) ... $[_{XP}\ \alpha_i$ X $[_{YP}$ UP Y $[_{ZP}\ t_i$ Z WP]]] ...

the length of the chain link (α_i, t_i), which crosses the maximal projections ZP and YP, is 2.

With these notions of economy in mind, let us go back to the Tagalog extraction data introduced in the preceding section.

3.4.2. Western Austronesian

(3a) and (4a), where the Agent has been extracted, are repeated here as (38a) and (38b) respectively.

(38) a. Sino ang b-**um**-ili ng damit?
who ANG bought(AT) INH-dress
'Who is the one that bought a/the dress?'

b. *Sino ang b-**in**-ili ang damit?
who ANG bought(TT) ABS-dress
('Who is the one that bought the dress?')

Given the revised notion of reference set in (28), (38a-b) compete with each other. This is because they share the same set of sets of interpretable features. The phonological and Case differences between them are ignorable, since they are not interpretable at LF. The derivations for the relevant portions of (38a-b) are (39a-b) (with the *wh*-chains indicated by the lines).[25] I assume with Seiter (1975), Richards (1991b) among others that a sentence like (38a-b) consists of a *wh*-word predicate predicated onto a headless relative clause introduced by *ang*[26] and that it involves null operator movement before Spell-Out (Chomsky 1977).

(39) a. $[_{CP}\ OP_i\ [_{TP}\ t'_i$ bought(AT) $[_{PrP}\ t_i$ Pr $[_{AspP}$ Asp $[_{VP}\ t_V$ the dress]]]]]
$|$——$!$

b. *$[_{CP}\ OP_i\ [_{TP}$ the dress$_j$ bought(TT) $[_{PrP}\ t_i$ Pr $[_{AspP}$ Asp $[_{VP}\ t_V\ t_j]]]]]$
$|$————————————————$|$

Chain link comparability states that the *wh*-chain links in (39) are indeed comparable, for they are formed by the corresponding C heads attracting the non-distinct null operators. The MLC correctly predicts that (39a) blocks (39b), because the *wh*-chain link in the

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[25] As mentioned in footnote 5, the SE is neutralized in (38a). (38a), under the interpretation where the Theme is construed as nonspecific, does not compete with (38b), in which the Theme is obligatorily specific, because the interpretative difference with respect to specificity (which I assume is associated with D) means that they arise from distinct numerations. (38a) under this interpretation converge independently of (38b). (39a) is the structure for (38a), where the Theme is specific, and competes with (39b).

[26] Evidence for this assumption includes, for instance, the invariant form of the *wh*-word (the argument *wh*-in-situ shows Case) and the structural identity with clefting. The element *ang* that introduces the headless relative clause is presumably s(n) (absolutive-marked) specific determiner (see Schachter and Otanes 1976 among others).

former (OP_i, t'_i), whose length is 1 (the maximal projection crossed is TP), is shorter than that in the latter (OP_i, t_i), whose length is 2 (the maximal projections crossed are PrP and TP). The NP-movement of the null operator in (39a) does not enter into the calculation of the "cost" at issue, since it does not have a comparable chain link in (39b) due to chain link comparability. Intuitively, the NP-movement has to take place anyway for Case-theoretic/EPP reasons and thus counts as a "free ride" for the *wh*-movement.

Next, consider (3b) and (4b), which are recapitulated here as (40a) and (40b).

(40) a. *Ano ang b-**um**-ili si Juan?
what ANG bought(AT) ABS-Juan
('What is the thing that Juan bought?')

b. Ano ang b-**in**-ili ni Juan?
what ANG bought(TT) ERG-Juan
'What is the thing that Juan bought?'

As already mentioned, in light of (28), (40a-b) belong to the same reference set for syntactic computations. The relevant parts of (40a-b) have the structures in (41a-b) respectively.

(41) a. *$[_{CP}\ OP_j\ [_{TP}\ Juan_i$ bought(AT) $[_{PrP}\ t_i$ Pr $[_{AspP}$ Asp $[_{VP}\ t_V\ t_j]]]]]$

b. $[_{CP}\ OP_j\ [_{TP}\ t'_j$ bought(TT) $[_{PrP}$ Juan Pr $[_{AspP}$ Asp $[_{VP}\ t_V\ t_j]]]]]$

In (41a) the null operator gets inherent Case within the VP, whereas in (41b) it checks its absolutive Case in the Spec of TP. As in the case of (39), the extraction must take place out of the Spec of TP in (41). (41b) blocks (41a), for the *wh*-chain link in the

former is shorter than that in the latter.[27] In this way, data like (40a) which are problematic for the ECP can be neatly handled by the MLC as a relative economy condition.

It should be pointed out and emphasized here that ill-formed (38b) and (40a) cannot be ruled out by the definition of Attract in (34) even if we assume (a) that the reference set is defined as in (28) instead of (26) and (b) that *wh*-movement of DPs whose Case is unchecked forces them to pass through a Case position on their way to the Spec of CP (cf. Bošković 1993). This is because Attract is inherently intraderivational, *i.e.*, it applies within a single phrase-marker. Therefore, the kind of relative transderivational comparison given above cannot be done in terms of Attract (thanks to Hidekazu Tanaka (personal communication) for clarifying discussion).[28] The conclusion is that (38a-b) and (40a-b) all satisfy Attract and converge, leaving no illegitimate LF objects, but the MLC, as an economy condition choosing among convergent derivations, rules out (38b) and (40a) in favor of (38a) and (40b).

Now, let us consider extraction of possessors out of DPs, which is allowed in Tagalog. Tagalog then offers a special opportunity to empirically test one of the recent claims made by Chomsky (1995). He claims that LF raising is nothing but feature raising. The rationale behind this claim is the following: given that Attract carries along the least amount of material for PF-convergence, it follows that there is no LF pied-piping, since post-Spell-Out operations are free from PF-crash. Recall that absolutive Case-checking happens after Spell-Out in Tagalog (Richards 1993, Maclachlan and

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[27] It has been argued that the extracted nominal in relative clauses must be specific (cf. Kuroda 1969, Perlmutter 1972). This claim seems to be well in accord with the observation that the headless relative clause in Tagalog is headed by *ang* (see footnote 26). If it is true, then (40a) would doubly violate the MLC and the MFC (see Section 3.4.). The same remark applies to (42a). See below for Malagasy data similar to (40), where the SE and the MFC are irrelevant.

[28] Thus the notion of closeness used in the definition of Attract to express locality cannot be used for the purpose of relative economy and hence something like (36) is needed. This becomes especially clear when we discuss examples like (42) below, where a *wh*-chain link formed in the overt component is made shorter by raising of an element containing the tail of the *wh*-chain link in the covert component.

I will present empirical arguments that Attract cannot apply transderivationally in Chapters 4 and 6.

Nakamura 1994). Chomsky's (1995) theory predicts then that in the Agent Topic and Theme Topic constructions, extraction of possessors can take place not only out of absolutive DPs but also out of non-absolutive DPs; if only the Case feature of an absolutive DP raises and adjoins to T, it would not affect in any way the length of the *wh*-chain whose tail the absolutive DP contains. This prediction, however, is not borne out. Observe the examples in (42) where the possessor of the Theme has been extracted.

(42) a. *Sino ang b-**um**-ili si Juan ng kotse?
who ANG bought(AT) ABS-Pedro INH-car
(Lit. 'Who is the one that Juan bought *t* car?')

b. Sino ang b-**in**-ili ni Juan ang kotse?
who ANG bought(TT) ERG-Juan ABS-car
Lit. 'Who is the one that Juan bought *t* car?'

(42a-b) compete with each other under the proposed revision in (28). In (42) the extraction of the possessor has to take place out of the absolutive DP.[29] (43a-b) are the LF structures for (42a-b) respectively.

(43) a. *$[_{CP}$ OP_j $[_{TP}$ bought(AT) $[_{PrP}$ Juan Pr $[_{AspP}$ Asp $[_{VP}$ t_V $[_{DP}$ t_j car]]]]]]

b. $[_{CP}$ OP_j $[_{TP}$ $[_{DP}$ t_j car]$_i$ bought(TT) $[_{PrP}$ Juan Pr $[_{AspP}$ Asp $[_{VP}$ t_V t_i]]]]]

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[29] This is also true of cases where the possessor of the Agent is extracted.

(i) a. Sino ang b-um-ili ang nanay ng kotse?
who ANG bought(AT) ABS-mother INH-car
Lit. 'Who is the one that *t* mother bought a/the car?'
(* as Lit. 'Who is the one that the mother bought *t* car?')

b. *Sino ang b-in-ili ng nanay ang kotse?
who ANG bought(TT) ERG-mother ABS-car
(Lit. 'Who is the one that *t* mother bought the car?')
(OK as Lit. 'Who is the one that a/the mother bought *t* car?')

The lack of *Subject Condition* violations in Tagalog (and ergative languages in general) would follow if we assume that Huang's (1982) Condition on Extraction Domain (see footnote 1) (or whatever replaces it in the Minimalist Program) applies strictly derivationally. At the time when the extraction takes place in examples like (42b), the structural subject is within the VP, properly governed by the verb.

The *wh*-chains in (43a-b) are the same in length at the time they are formed. The crucial difference here is that the Theme stays within the VP in (43a), while it raises covertly into the Spec of the TP in (43b). (43a), I argue, is blocked by more economical (43b), since the *wh*-chain link becomes shorter in the latter after the LF raising of the absolutive DP.

Data like (42) are significant in that they demonstrate that covert raising can raise entire categories, not just features. They also confirm the claim that the MLC cannot simply be part of the definition of the derivational operation Attract: as noted above, there is no way to draw derivationally a distinction between (42a) and (42b) in terms of the *wh*-chains.

Turning next to the recent past construction, the derivations for (22a,b) are (44a,b) respectively (I disregard the adverbial *lang* 'just'):

(22) a. Sino ang kabibili lang ng tela?
who ANG buy(RPAST) just INH-cloth
'Who is the one that has just bought some/the cloth?'

b. Ano ang kabibili lang ni Juan?
what ANG buy(RPAST) just ERG-Juan
'What is the thing that Juan has just bought?'

(44) a. $[_{CP}\ OP_i\ [_{TP}$ bought(RPAST) $[_{PrP}\ t_i$ Pr $[_{AspP}$ Asp $[_{VP}\ t_V$ some/the cloth]]]]]

b. $[_{CP}\ OP_j\ [_{TP}$ bought(RPAST) $[_{PrP}$ Juan Pr $[_{AspP}$ Asp $[_{VP}\ t_V\ t_j]]]]]$

The extractions in (44a-b) are legitimate in spite of the fact that they proceed in the same way as those in ill-formed (39b) and (41b) in relevant respects. Note that they show that there is no general ban on extracting ergative DPs ((44a)) or inherently Case-marked DPs ((44b)). Under the present economy account, their well-formedness is predicted, since there is no alternative derivation that would block them. In particular, one cannot turn the logical subject or the logical object into the structural subject in (22); the recent past

construction disallows absolutive DPs. Moreover, (22b), for instance, cannot be blocked by (40b), because they do not belong to the same reference set; they contain different aspectual morphemes with different meanings.

Next, let us consider the examples of the comitative and comparative constructions in (25) whose structural representations are given in (45):

(25) a. Sino ang kasama ang tao?
who ANG be with ABS-man
'Who is the one that is with the man?'

b. Sino ang kasingtaas ang tao?
who ANG be as tall as ABS-man
'Who is the one that is as tall as the man?'

(45) a. $|_{CP}\ OP_i\ |_{TP}$ the man_j be-with $|_{PrP}\ t_i$ Pr $|_{AspP}$ Asp $|_{VP}\ t_V\ t_j|||||$

b. $|_{CP}\ OP_i\ |_{TP}$ the man_j as-tall-as $|_{PrP}\ t_i$ Pr $|_{AspP}$ Asp $|_{VP}\ t_V\ t_j|||||$

Again, (45a-b) are well-formed even though (39b), where the *wh*-phrase has been extracted in exactly the same way as (45a-b), is ruled out. The reason has to do with the absence of more economical alternatives to (45a-b). As Cena (1979:123) notes, ergative DPs in the comitative and comparative constructions cannot be turned into structural subjects in Tagalog, for there simply is no topic morphology that makes them absolutive. In other words, there is no way for them to take a "free ride" into the Spec of TP in the first place when they are extracted. This means that the extraction in (45a-b) actually forms the shortest possible link. Therefore, examples such as (25) are correctly ruled in.

It is worth pointing out that the Tagalog extraction facts examined above conform to the generalization in (5).

The economy account deals straightforwardly with the adjunct extraction in (3c) and (4c), which are repeated below for convenience:

(46) a. Saan b-**um**-ili si Juan ng damit?
where bought(AT) ABS-Juan INH-dress
'Where did Juan buy a dress?'

b. Saan b-**in**-ili ni Juan ang damit?
where bought(TT) ERG-Juan ABS-dress
'Where did Juan buy the dress?'

Unlike argument extraction, adjunct extraction does not involve a headless relative clause, as suggested by the fact that the fronted *wh*-adjunct is not followed by *ang*. The derivations for (46a-b) are given in (47a-b).

(47) a. $[_{CP}$ where$_k$ $[_{TP}$ Juan$_i$ bought(AT) $[_{PrP}$ t_i Pr $[_{AspP}$ Asp $[_{VP}$ dress t_V $t_k]]]]]$

b. $[_{CP}$ where$_k$ $[_{TP}$ the dress$_j$ bought(TT) $[_{PrP}$ Juan Pr $[_{AspP}$ Asp $[_{VP}$ t_j t_V $t_k]]]]]$

(47a-b) are both legitimate, since they have no alternatives that would be more economical. To be precise, (47a-b) do not compete with each other. This is because the Theme in (47a) is necessarily nonspecific, whereas that in (47b) is necessarily specific. This interpretive discrepancy means that (47a) and (47b) arise from different reference sets. Hence, they converge independently of each other.

In short, the present economy account successfully explains all the Tagalog data examined above. The reversed argument/adjunct asymmetry arises because arguments can potentially take a Case/EPP-driven "free ride" to the Spec of TP, while adjuncts, having no need to check a Case feature or a D-feature, cannot. Economy dictates that whenever *wh*-arguments can enjoy a "free ride," they must. In cases like the recent past construction where the option of taking a "free ride" is not open, non-absolutive DPs can be directly extracted. What we have been observing in this chapter is the working of relative economy.

The reversed argument/adjunct asymmetry is also observed in languages like

Malagasy (footnote 2). Consider the following pair from Malagasy (based on Guilfoyle *et al.* 1992):

(48) a. Mividy ny vary ny lehilahy.
buy(AT) the rice the man
'The man bought the rice.'

b. Vidin' ny lehilahy ny vary.
buy(TT) the man the rice.
'The man bought the rice.'

In Malagasy, the structural subject (or the absolutive in my terms) occurs at the end of a sentence (Keenan 1976, Guilfoyle *et al.* 1992). Thus, although no Case-marking morphology appears on the DPs in (48), we know that *ny lehilahy* 'the man' gets absolutive Case in (48a), whereas *ny vary* 'the rice' gets absolutive Case in (48b). I assume that the present ergative analysis of Tagalog applies to Malagasy as well. The Theme in the Agent Topic construction in Malagasy gets inherent Case within the VP. But unlike its counterpart in Tagalog, it is not conditioned by the SE (see Section 3.4.). Thus, it can readily be specific, as shown in (48a). The Agent in the Theme Topic construction receives ergative Case in the Spec of the PrP.

Consider next (49) and (50), which involve the Agent extraction and the Theme extraction, respectively (adapted from Guilfoyle *et al.* 1992).

(49) a. Iza no mividy ny vary?
who NO buy(AT) the rice
'Who bought the rice?'

b. *Iza no vidin' ny vary?
who NO buy(TT) the rice
('Who bought the rice?')

(50) a. *Inona no mividy ny lehilahy?
what NO buy(AT) the man
('What did the man buy?')

b. Inona no vidin' ny lehilahy?
what NO buy(TT) the man
'What did the man buy?'

(49) is parallel to Tagalog (38), and (50) to Tagalog (40). The above economy account explains these examples in the by now familiar manner; (49b) is blocked by (49a), and (50a) by (50b) because of the MLC in (35).

As in Tagalog, adjunct extraction is possible both in the Agent Topic construction and in the Theme Topic construction ((51) is provided by Lisa Travis (personal communication)).

(51) a. Aiza no mividy ny vary ny lehilahy.
where NO buy(AT) the rice the man
'Where did the man buy the rice?'

b. Aiza no vidin' ny lehilahy ny vary.
where NO buy(TT) the man the rice.
'Where did the man buy the rice?'

The well-formedness of these examples is expected. (51) differs from (46) in Tagalog, though, in that (51a-b) do compete with each other. This is because the Theme is specific in both of them. The adjunct extractions in them are equally economical and the most economical.

3.4.3. Outside Western Austronesian

I have illustrated my system of relative economy using the data from Tagalog and Malagasy. In the rest of this section, I would like to discuss some data from languages outside Western Austronesian.

Many (but not all) ergative languages of the world have antipassive constructions. Thus, Mayan languages such as Jacaltec (Craig 1977), K'ekchi (Berinstein 1985), K'iche' (Mondloch 1981, Larsen 1987, Davies and Sam-Colop 1990), Mam (England 1983), and Tzutujil (Dayley 1985a,b) have been reported to have productive antipassive constructions. In addition, a number of Australian ergative languages, of which Dyirbal (Dixon 1972, 1979) is perhaps the best documented, have antipassives. Looking at the north, we find, for instance, such languages from different families as Halkomelem (Salish; Gerdts 1988), Greenlandic and Yup'ik Eskimo (Eskimo-Aleut; Payne 1982, Woodbury 1977), Chuckchee (Paleo-Asiatic; Kozinsky *et al.* 1988). Quite surprisingly, those languages with antipassives are faithful to the generalization in (5) repeated below (see the references cited above; see also Larsen and Norman 1979 for Mayan):[30]

(5) *Generalization*:
Extraction of a non-absolutive DP argument in a certain construction is prohibited only if there is a well-formed equivalent of the construction where it gets absolutive-marked.

In what follows, I will briefly examine Dyirbal, Halkomelem, and Mam in turn.

Dixon (1972), studying relativization in Dyirbal, states that only absolutive-marked nominals can be relativized in the langauge. Observe the following Dyirbal examples:

(52) a. Payi yuri pangkul yarangku pakan.
there(ABS) kangaroo(ABS) there(ERG) man(ERG) spear-NONFUT
'The man speared the kangaroo.'

b. Payi yara pakal-nga-nyu pakul yuriku.
there(ABS) man(ABS) spear-APASS-NONFUT-ABS there(DAT) kangaroo(DAT)
'The man speared the kangaroo.'

[30] With a handful of exceptions. See for instance footnote 32.

(52a) is a transitive sentence, whereas (52b) is its antipassive version, where the antipassive morpheme *-ngay-* appears in the verbal complex. As shown in (52b), the inherent Case assigned by the verb is realized morphologically as dative in Dyirbal. Now consider the following examples of relativization:

(53) a. Palan jukumpil ngaja purangu nyinanyu.
there(ABS) woman(ABS) I(ABS) see-NONFUT-ABS sit-NONFUT
'The woman whom I am watching is sitting down.'

b. Payi yara pakal-**nga**-nyu pakul yuriku
there(ABS) man(ABS) spear-APASS-NONFUT-ABS there(DAT) kangaroo(DAT)
panakanyu.
return-NONFUT
'The man who speared the kangaroo is returning.'

In (53a) the Theme argument has been extracted in the transitive clause. In (53b) the Agent has been extracted with the obligatory use of the antipassive. In both (53a) and (53b), the extracted nominal must be absolutive. In particular, one cannot use an antipassive in extracting the Theme or a simple transitive sentence in extracting the Agent. This restriction can be explained by the present analysis.

Examples (54a-b) are from Halkomelem (Gerdts 1988):

(54) a. Ni pə́n-ə́t-ə́s k^{w}Θə swəy?qe? k^{w}Θə sqéwΘ.
AUX plant-TR-3ERG DET man DET potato
'The man planted the potatoes.'

b. Ni pə́n?-ə́m k^{w}Θə swəy?qe? ?ə k^{w}Θə sqéwΘ.
AUX plant-INTR DET man OBL DET potato
'The man planted the potatoes.'

(54a) is transitive, as indicated by the transitive morpheme *-ə́-*, while (54b) is

intransitive or antipassivized, as indicated by the intransitive morpheme *-ən-*.[31] In Halkomelem antipassives, the thematic object is accompanied by the "oblique" marker, as in (54b), which I assume is the Halkomelem-particular morphological form of inherent Case.

As expected, argument extraction targets absolutive DPs in Halkomelem ((55a) is from Gerdts 1988, (55b) is from Gerdts 1980):[32]

(55) a. Scé.ltən kʷθə ni q'ʷəl-ət-ʔé.nʔ.
salmon DET AUX bake-TR-1SUB
'Salmon is what I baked.'

b. Sléni? θə ni q'ʷəl-əm ʔə tᶿə səplíl.
woman DET AUX bake-INTR OBL-DET bread
'A woman is the one who baked the bread.'

These examples contain headless relative clauses introduced by the determiners. In (55a) the absolutive Theme has been extracted, and in (55b) the absolutive Agent has been extracted.

Interestingly, Halkomelem seems to behave in the same way as Tagalog in terms of

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[31] Thus, the Halkomelem pair in (54) is similar to the Tagalog pair in (8) with respect to verbal morphology.

[32] An apparent counterexample from Halkomelem to the generalization in (5) is given in (i) (Gerdts 1980):

(i) Sléni? θə ni q'ʷəl-ət tᶿɛ ɪ.
woman DET AUX bake-TR DET ɪ.ɜd
'A woman is the one who baked he bread.'

In (i) it appears that the ergative DP has been directly extracted. The economy account seems to predict that (i) should be blocked by (55b). There is, however, something strange about (i). In particular, the ergative agreement drops in (i). Compare (i) to (ii) without *wh*-extraction.

(ii) Səplíl tᶿə ni q'ʷəl-ət-əs θə sléni?.
bread DET AUX bake-TR-3ERG DET woman
'Bread is what the woman baked.'

I speculate that the Spec of PrP in Halkomelem can license an A'-bound *pro* when its binder is "referential" (Cinque 1990, Chung 1994). If this speculation is on the right track, (i) and (55b) do not compete, since the former but not the latter contain an extra element in the numeration, *i.e.*, a *pro*. Then (i) and (55b) would converge independently of each other (see also the brief discussion of the role of "referentiality" in Chamorro in Chapter 5). It may be that an A'-bound *pro* cannot trigger agreement in Halkomelem.

extraction of possessors. Gerdts (1988:76) explicitly states that a possessor can be extracted only if the possessive phrase from which it is extracted receives absolutive Case. Consider the following (Gerdts 1988):

(56) a. Ni q'^{w}ə́l-ə́t-ə́s k^{w}Θə́ scé.ltə́n-s lə́ sléni?.
AUX bake-TR-3ERG DET salmon-3POSS DET woman
'He baked the woman's salmon.'

b. Státə́l-stə́x^{w} cə́n lə́ sléni? ni q'^{w}ə́l-ə́t-ə́s k^{w}Θə́ scé.ltə́n-s.
know-CAUS 1SUB DET woman AUX bake-TR-3ERG DET salmon-3POSS
'I know the woman whose salmon he baked.'

(57) a. Ni q'^{w}ə́l-ə́t-ə́s k^{w}Θə́ sqé?ə́q-s lə́ sléni? k^{w}Θə́ scé.ltə́n.
AUX bake-TR-3ERG DET y.brother-3POSS DET woman DET salmon
'The woman's younger brother baked the salmon.'

b. *Státə́l-stə́x^{w} cə́n lə́ sléni? ni q'^{w}ə́l-ə́t-ə́s k^{w}Θə́ sqé?ə́q-s
know-CAUS 1SUB DET woman AUX bake-TR-3ERG DET y.brother-3POSS
k^{w}Θə́ scé.ltə́n.
DET salmon
('I know the woman whose younger brother baked the salmon.')

In well-formed (56b) based on (56a), the possessor of the absolutive Theme has been extracted by relativization. In ill-formed (57b) based on (57a), the possessor of the ergative Agent has been extracted. It should be clear how the explanation goes; (57b) is blocked by its antipassive counterpart.[33] Since possessor extraction in Halkomelem patterns with that in Tagalog, the points made earlier about the latter can also be made on the basis of the former; *i.e.*, there is LF pied-piping and the MLC cannot be a strictly derivational condition.

Let us now turn to Mam. Consider first the following pair from Mam (England 1983):

[33] Gerdts (1988) does not give examples where the possessor of Agent is extracted with antipassives.

(58) a. Ma Ø-tzaj t-tzyu-7n Cheep ch'it.
RPAST 3SG.ABS-DIR 3SG.ERG-grab-DS José bird
'José grabbed the bird.'

b. Ma Ø-tzyuu-n Cheep t-i7j ch'it.
RPAST 3SG.ABS-grab-APASS José 3SG.ERG-RN bird
'José grabbed the bird.'

(58a) illustrates the transitive clause in Mam. Like many other Mayan languages, Mam is a verb-initial language. (58b) is the antipassive counterpart of (58a), in which the antipassive morpheme *-n* is suffixed to the verb, and the thematic object is preceded by the dative "relational noun." I assume that the dative "relational noun" in antipassives like (58b) is the morphological reflex of inherent Case assignment, which has no categorial status.

Observe the following Mam examples of extraction (England 1983):

(59) Cheej chi-Ø-kub't-tzyu-7n xiinaq.
horse ASP-3SG.ABS-DIR 3SG.ERG-grab-DS man
'It is the horse that the man grabbed.'

(60) a. *Xiinaq chi-Ø-kub't-tzyu-7n cheej.
man ASP-3SG.ABS-DIR 3SG.ERG-grab-DS horse
('It is the man that grabbed the horse.')

b. Xiinaq x-Ø-kub'-tzyu-n t-e cheej.
man ASP-3SG.ABS-DIR-grab-APASS 3SG.ERG-RN horse
'It is the man that grabbed the horse.'

In (59) the absolutive Theme of the transitive clause has been extracted with no difficulty. But when it comes to Agent extraction, one is obliged to use the antipassive construction, as shown by the contrast between (60a) and (60b). Under the economy account, (60a) is blocked by (60b), since the extraction of the absolutive in the latter creates the shorter

wh-chain.[34]

Before closing this section, yet another prediction the economy account makes is worth mentioning, *i.e.*, that if an ergative language lacks a counterpart of the Tagalog Agent Topic or antipassive construction altogether, the ergative DP should be extractable in simple clauses. There are indeed ergative languages without antipassive constructions. They include, for example, Niuean (Polynesian) and Chorti (Mayan). The prediction is borne out by Niuean (Seiter 1980). (61) illustrates the simple transitive sentence in Niuean.

(61) To lagomatai he ekekafo a ia.
FUT help ERG-doctor ABS-him
'The doctor will help him.'

As in Tagalog, the extraction of absolutive DPs is fine, as shown in (62).

(62) Ko hai ne fahi e Sione?
PRED who NONFUT beat ERG-Sione
'Who is it that Sione beat?'

But unlike Tagalog, Niuean permits extraction of ergative DPs freely. This is shown in (63).

(63) Ko hai ka kini e māla?
PRED who FUT clear ABS-plantation
'Who is it that is going clear the plantation?'

In the absence of more economical alternatives (*i.e.*, an antipassive), (63) is the most

[34] The meaningless "directional suffix" *-7n* in (60a), I assume, can be ignored for the purpose of the reference set. See below for K'ekchi. Note that the aspectual morphemes in (59) and (60b) take different shapes, which may make sense from the present view that the antipassive morpheme is tied with Asp.

economical and therefore well-formed.

According to Quizar and Knowles-Berry (1988), the Cholan Languages lack (productive) antipassives. "Although the Cholan languages are like other Mayan languages in utilizing SVO order to indicate agent-focus, they do not have an antipassive verb for this construction (Quizar and Knowles-Berry 1988:91)." As expected, extraction of absolutive arguments is also fine in Chorti.

(64) e winik še7 yo7pa-Ø tama e otot
the man who came-3SG.ABS to the house
'the man who came to the house'

As shown in (65), ergative arguments can be directly extracted in Chorti.

(65) e winik še7 uy-ahk'-u-Ø uw-išk-a7r
the man who 3SG.ERG-hit-TS-3SG.ABS 3SG.ERG-wife-N
'the man who hit his wife'

Again, (65) is well-formed, because there is no antipassive equivalent of (65) which would be more economical.

To sum up this section, the economy account has been shown to be successful in capturing the generalization given in (5).

3.5. Two Types of Antipassives

This section considers a curious phenomenon observed in certain ergative languages including Tagalog, whereby extraction of the Agent argument in a clause neutralizes the SE otherwise imposed on the Theme argument in an antipassive clause. I will present an economy-based account of the phenomenon, which I believe leads to understanding of the dichotomy of antipassives mentioned at the outset of this chapter.

As noted in Chapter 2 and above, the SE is observed in the Agent Topic construction in Tagalog (see, for example, Adams and Manaster-Ramer 1988). Thus, the following pair from Tagalog is typical:

(66) a. B-**in**-ili ni Juan ang kotse.
bought(TT) ERG-Juan ABS-car
'Juan bought the car.'

b. B-**um**-ili si Juan ng kotse.
bought(AT) ABS-Juan INH-car
'Juan bought a car.'

In the Theme Topic construction in (66a), the Theme *kotse* 'car' must be specific, while in the Agent Topic or antipassive construction in (66b), it must be nonspecific, exhibiting the SE. I have argued that the SE imposed on the Theme in the Agent Topic construction has to do with inherent Case. When the Theme happens to be nonspecific, it is eligible for inherent Case and therefore remains within the VP throughout the derivation (cf. Belletti 1988, Diesing 1992).[35]

It is interesting to note that we find situations in Tagalog where the SE on the Theme with inherent Case is neutralized (see Maclachlan and Nakamura 1994, Nakamura 1994b and references cited there). First, consider the following examples of the Agent Topic construction (Byma 1986):

(67) a *Nag-hintay si Juan ni Maria.
wait for(AT) ABS-Juan INH-Maria
('Juan waited for Maria.')

b. Nag-hintay si Juan kay Maria.
wait for(AT) ABS-Juan OBL-Maria
'Juan waited for Maria.'

[35] For reasons of economy, the MFC in particular. See below.

In (67) the Theme is the proper noun *Maria*, which is inherently specific. (67a) is ill-formed due to the SE.[36] But in fact, one can have a specific Theme in the Agent Topic construction by placing an oblique preposition before the Theme, as in (67b).[37]

It is widely known that objects of prepositions are exempt from the SE. This point can be seen by the French *il* impersonal construction. Observe the following French examples (Safir 1985):

(68) a. Il est arrivé trois hommes.
'There arrived three men.'

b. *Il est arrivé les trois hommes.
('There arrived the three men.')

The impersonal construction in (68), like its counterpart in English, exhibits the SE; the nominal after the unaccusative verb *arrivé* must be nonspecific. However, the SE does not hold if the nominal in the impersonal construction is the complement of a preposition (Safir 1985).

(69) a. Jean a tiré sur le bateau.[38]
'Jean shot at the boat.'

b. Il a été tiré sur un bateau.
Lit. 'There was shot at a boat.'

c. Il a été tiré sur le bateau
Lit. 'There was shot at the boat.'

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[36] Compare (67a) with (i), where the Theme is nonspecific.

(i) Nag-hintay si Juan ng bus.
wait for(AT) ABS-Juan INH-bus
'Juan waited for a bus.'

[37] There seems to be dialectal/idiolectal variation concerning the acceptability of sentences like (67b). For instance, they are reported as ungrammatical in Schachter and Otanes 1972:382 (see also MacFarland 1978, Adams and Manaster-Ramer 1988). It would be reasonable to assume that the variation at issue depends on whether a given dialect/idiolect permits "preposition insertion" in the Agent Topic construction as a last resort.

[38] (69a) also has the interpretation 'Jean shot on the boat', which is irrelevant for present discussion.

The SE is absent in (69) in contrast to (68). This is the case because of the preposition *sur* 'at'.

There is further indication that oblique prepositions play a role in neutralizing the SE. Consider the Benefactive Topic construction in Tagalog mentioned above, as in (70):

(70) I-binili ni Juan ng kotse ang babae.
bought(BT) ERG-Juan INH-car ABS-woman
'Juan bought the woman a/the car.'

In (70) the Benefactive *babae* 'woman' is the structural subject and absolutive-marked. The Benefactive Topic construction is assumed to be an applicative construction derived by Preposition Incorporation (PI) in the sense of Baker (1988a,b) (see Chapter 4 for more details). Thus, the morpheme *i-* in (70) is analyzed as an incorporated preposition. The PI makes it impossible for the Benefactive to get Case *in situ* (Baker 1988a,b), forcing it to move into a structural Case position, *i.e.*, the Spec of TP (at LF). Interestingly, the Theme *kotse* 'car' in (70) can be specific in spite of the fact that it is assigned inherent Case within the VP. The lack of the SE in applicative constructions in Tagalog would be captured if we assume that the oblique Case feature of the incorporated preposition can somehow optionally participate in inherent Case assignment by the verb.

In view of this, I present the following condition as a descriptive generalization (cf. Maclachlan and Nakamura 1994, Nakamura 1994b):

(71) *Condition on the Specificity Effect* (CSE):
A nominal with inherent Case fails to exhibit the SE if an oblique Case feature is part of the inherent Case-assigning head.

Given the CSE in (71), the neutralization of the SE in (67b), (69c), and (70) follows.[39]

The CSE also accounts for the SE in serializing languages like Anyi, a Western Kwa language spoken mainly in Ivory Coast. As is well-known, serializing languages have few prepositions if any. Then, it would be predicted that the inherently Case-marked Theme in double object constructions in such languages should exhibit the SE, since there would be no PI involved. This prediction is borne out, as the following Anyi examples demonstrate (Van Leynseele 1975:200-202):

(72) a. Kòfí mà kàsí bùlúkú.
Kofi give(HAB) Kasi book
'Kofi gives Kasi a book.'

b. *Kòfí mā kàsí bùlúkú-ə̃.
Kofi give(HAB) Kasi book-DEF
('Kofi gives Kasi the book.')

c. Kòfí fà bùlúkú-ə̃ fà-ˡmā́ kàsí.
Kofi take(HAB) book-DEF take-give(HAB) Kasi
'Kofi gives the book to Kasi.'

The contrast between (72a) and (72b) shows that the Theme in the double object construction has to be indefinite or nonspecific. In order to express the meaning of (72b), the serial verb construction in (72c) must be used (for an analysis of serial verb constructions, see Baker 1989). In (72c) the Theme exhibits no SE, presumably because it can be assigned structural Case by the Asp associated with the first verb.

Let us assume then that the CSE is descriptively correct, though I will not try to spell

[39] In the recent past construction in Tagalog, no SE is observed on the Theme with inherent Case. I must assume that the recent past morphology can optionally have an oblique Case feature.

out the exact mechanism of how the SE gets neutralized.[40]

Tagalog constructions involving Agent extraction, however, seem to pose a problem for the CSE just presented (as pointed out also by Richards (1995)). Consider the following cleft construction:

(73) Siya ang b-**um**-ili ng kotse.
3SG.ABS ANG bought(AT) INH-car
'He is the one who bought a/the car.'

As shown in (73), the SE observed in the Agent Topic construction is neutralized if the construction involves extraction (Schachter and Otanes 1972, MacFarland 1978 among others). Why should this be the case? It appears that the CSE is at odds with the neutralization of the SE in examples like (73), because no element with an oblique Case feature seems to be found in the verbal complex; to account for the SE in (66b), we must assume that the morpheme *-um-*, which I regarded as a morphological realization of the Caseless Asp, lacks such a feature.

I would like to argue that the problem for the CSE posed by (73) is only apparent. My suggestion is that Tagalog has two kinds of Agent Topic morphemes, one which has an oblique Case feature, and the other which does not. If the latter is used, the SE is observed. If the former is used, the SE fails to be observed. What is confusing is that these morphemes happen to be homophonous. In effect, I am claiming that the two kinds of *-um-* can be used in (73), but only one kind without an oblique Case feature can be used in (66b). If this is correct, the specificity facts in these examples follow.

On the face of it, this account may sound very *ad hoc*. I suggest that there is good evidence for it. First, I would like to establish based on Chamorro, an Austronesian language, that it is perfectly natural to posit two kinds of Agent Topic morphemes in

[40] Further support for the CSE may come from cross-linguistic variation among Austronesian languages in terms of the SE in the Agent Topic construction. See below for Malagasy.

Austronesian. Consider the following Chamorro pair (Topping 1973:85):

(74) a. Hu-hatsa i lamasa.
1SG.ERG-lifted the table
'I lifted the table.'

b. **Man**-hatsa yu' lamasa.
AT-lifted 1SG.ABS table
'I lifted a table.'

(74a) exemplifies the regular transitive or "Theme Topic" construction, and (74b) the Agent Topic or antipassive construction (Cooreman 1987). The Agent Topic morpheme in (74b) is *man-*, while (74a) does not contain any special topic morphology. The transitivity of (74a) is evident from the Agent *pro* triggering the ergative agreement. The intransitivity of (74b) can be seen by the fact that the pronominal Agent takes the absolutive form; the Theme is assigned inherent Case within the VP. As in the case of Tagalog (66b), the Agent Topic construction in (74b) exhibits the SE; its Theme must be nonspecific.

The SE in the *man*-marked Agent Topic construction can also be illustrated by the following pair parallel to Tagalog (67) (based on Gibson 1980):

(75) a. *Man-**man**-bisita i famagu'un si Juan
PL-AT-visited the children UNM-Juan
('The children visited Juan.')

b. Man-**man**-bisita i famagu'un gias Juan.
PL-AT-visited the children OBL-Juan
'The children visited Juan.'

(75a) is ill-formed since the Theme *Juan* is intrinsically specific. (75b), on the other hand, is well-formed since *Juan* is the object of the preposition *gias*.

Now, let us see what happens in Agent Topic constructions involving extraction in

Chamorro. Consider (76) where the Agent is extracted by clefting (Topping 1973:244):

(76) a. Guiya **man**-li'e' palao'an.
3SG.EMPH AT-saw woman
'He is the one who saw a woman.'

b. Guiya l-**um**-i'e' i palao'an.
3SG.EMPH AT-saw the woman
'He is the one who saw the woman.'

Interestingly enough, two kinds of Agent Topic morphemes are used depending on the specificity of the Theme.[41] In (76a) the Theme *palao'an* 'woman' is nonspecific, and the morpheme *man-* is used. In (76b), on the other hand, the Theme *i palao'an* 'the woman' is specific, and the morpheme *-um-* is used, which is most likely to be cognate with the homophonous morpheme in Tagalog (Topping 1973). Chung (1982, 1994) calls this special morphology contingent on Agent extraction "*Wh*-Agreement" (see Chapter 5). In present terms, *man-* in (74b) and (76a) lacks an oblique Case feature, whereas *-um-* in (76b) has one. Thus (74b) and (76a) exhibit the SE. In (76b) the oblique Case feature of *-um-* is supposed to take part in the inherent Case-checking, permitting the specific Theme. (76) demonstrates that Chamorro has two types of Agent Topic morphemes, and they have different phonological realizations. Given this fact, it is reasonable to claim that Tagalog, just like Chamorro, has two types of Agent Topic morphemes, which happen to be homophonous.

In the preceding discussion, we saw that Chamorro has two kinds of Agent Topic constructions. Recall that under an ergative analysis of Philippine-type languages, the Agent Topic construction is regarded as an antipassive construction. In this light, it is

[41] These morphemes are homophonous with the number agreement morphemes used in intransitive realis clauses (*man-* is for plural subjects, *-um-* for singular subjects; Topping 1973, Chung 1982, Cooreman 1987). The homophony of these morphemes may make sense in light of Travis' (forthcoming) claim that the functional category Number (see Ritter 1991) is the nominal counterpart of Asp; the Agent Topic morphemes are related to Asp under the present analysis.

only reasonable to expect that there exist ergative languages outside the Austronesian family which possess two types of antipassives parallel to those found in Chamorro. As a matter of fact, Mayanists have traditionally distinguished between two kinds of antipassives in Mayan languages; Absolutive Antipassive and Agentive Antipassive (see Smith-Stark 1978 among others). Here I will illustrate each of them by drawing relevant data from K'ekchi, a Mayan language spoken in Guatemala (Berinstein 1985).

Beginning with Absolutive Antipassive, consider (77) (Berinstein 1985).

(77) a. X-Ø-a-tiu — li ic.
RPAST-3ABS-2ERG-eat — the chile
'You ate the chile.'

b. X-at-ti'-o-c — ic.
RPAST-2ABS-eat-APASS-ASP — chile
'You ate chile.'

(77a) exemplifies a transitive clause in K'ekchi. In (77a) the Agent *pro* 'you' and the Theme *li ic* 'the chile' trigger the ergative agreement and the absolutive agreement respectively. (77b) illustrates the Absolutive Antipassive. In this construction, the Theme must be nonspecific. This point can be appreciated by contrasting (77b) with (78) (Berinstein 1985).

(78) *X-at-ti'-o-c — li ic.
RPAST-2ABS-eat-APASS-ASP — the chile
('You ate the chile.')

In the above sentence, the Theme in (77b) has been made specific by adding the definite determiner *li* to it. The result is the ungrammaticality of (78). The intransitivity of (77b) is clearly indicated by the fact that the Agent triggers the absolutive agreement; the nonspecific Theme gets inherent Case within the VP without the mediation of a functional

category and thus cannot trigger agreement. Notice that (77b) is strikingly similar to Tagalog (66b) and Chamorro (74b) in terms of the obligatory nonspecificity of the Theme.

Let us turn next to Agentive Antipassive. It is an antipassive construction where extraction of the Agent is mandatory. In K'ekchi, the Theme in this construction is dative-marked. Observe the following examples (Berinstein 1985):

(79) a. X-Ø-x-sac' li tz'i' li cuink.
RPAST-3ABS-3ERG-hit the dog the man
'The man hit the dog.'

b. *X-Ø-sac'-o-c r-e li tz'i' li cuink.
RPAST-3ABS-hit-APASS-ASP 3ERG-DAT the dog the man
('The man hit the dog.')

(79a), like (77a), is a usual transitive clause. (79b) is the Agentive Antipassive version of (79a), in which the Theme *li tz'i'* 'the dog' is assigned "dative" Case. It is ungrammatical, since the Agent *li cuink* 'the man' is not extracted (for a well-formed example of Agentive Antipassive, see (80b) below).

Now, let us consider extraction of the Agent in the two kinds of antipassives. As shown in (80), both of them permit such extraction (Berinstein 1985).

(80) a. Laat nac-at-il-o-c coc'al.
2EMPH TNS-2ABS-see-APASS-ASP children
'It is you who watch children.'

b. Li cuink x-Ø-sac'-o-c r-e li tz'i'.
the man RPAST-3ABS-hit-APASS-ASP 3ERG-DAT the dog
'It was the man who hit the dog.'

(80a) contains the Absolutive Antipassive, (80b) the Agentive Antipassive. What is noteworthy about (80a-b) is that they are exactly like Chamorro (76a-b) in that it is the

specificity of the Theme that determines which of the two kinds of antipassives will be employed. If the Theme is nonspecific, the Absolutive Antipassive will be chosen, as in (80a). If it is specific, the Agentive Antipassive will be chosen, as in (80b). Thus, the Absolutive Antipassive behaves in the same way as the *man-* Agent Topic construction. The Agentive Antipassive corresponds to the *-um-* Agent Topic construction. In fact, the latter two constructions share one more striking similarity, *i.e.*, they are used when their external arguments are extracted (for reasons to be explained below). This has already been demonstrated in (79b) for K'ekchi. And this is apparently true of Chamorro, too (see Chung 1982, Cooreman 1987).[42] For example, *-um-* cannot antipassivize (74a).

In brief, K'ekchi has two kinds of antipassive or "Agent Topic" morphemes: one, like Chamorro *man-*, has no oblique Case feature, and the other, like Chamorro *-um-*, has an oblique Case feature. The former produces Absolutive Antipassive, while the latter produces Agentive Antipassive. Unlike the situation in Chamorro, but like that in Tagalog, they happen to be homophonous.[43] But unlike in Tagalog, the difference between them clearly manifests itself in the way the Theme gets Case-marked when they are used. If the Absolutive Antipassive morpheme is used, the Theme is assigned inherent Case in the by now familiar way, exhibiting the SE. If the Agentive Antipassive morpheme is used, it also gets inherent Case, but with the help of the oblique Case

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[42] In Chamorro, there is another context in which the morpheme *-um-* shows up, *i.e.*, the control construction, as in (i) from Topping 1973 (see Cooreman 1987 for detailed discussion).

(i) Malägu' gui' b-um-isita si Rita.
want 3SG.ABS AT-visit UNM-Rita
'He wants to visit Rita.'

The use of *-um-* is required in (i), since the Agent PRO must raise into the Spec of TP in the embedded clause to check its null Case (Chomsky and Lasnik 1993). Obligatory antipassivization within control infinitival clauses is also found in such ergative languages as Dyirbal, as in (ii) (Dixon 1991).

(ii) Bay-i yara walnggarra-nyu qunyjal-nga-ygu ba-gu-n bana-gu.
there.ABS-MASC man.ABS want-PAST drink-APASS-PURP there-DAT-FEM water-DAT
'The man wanted to drink water.'

[43] The antipassive morpheme in K'ekchi is realized as *-o* when attached to a monosyllabic verb, and as *-n* otherwise (Berinstein 1985).

feature of the Agentive Antipassive morpheme. One may propose to take the dative Case in (80b) to be the morphological reflex of the participation of the oblique Case feature of the Agentive Antipassive morpheme in the inherent Case-checking.[44]

The K'ekchi data just reviewed are significant in that they demonstrate that the kind of phenomena we saw for Tagalog and Chamorro is in fact general and is not some sort of quirk associated solely with Austronesian; K'ekchi has no genetic connection whatsoever with the two (possibly closely related) Austronesian languages. Given this, it is sensible to conclude that the distribution of the SE we are interested in here must follow not from some language-particular rules but from principles of grammar. In what follows, I will attempt to offer a principled account from an economy perspective.

So far, I have argued that Tagalog, Chamorro, and K'ekchi all have two kinds of Agent Topic or antipassive morphemes: one with an oblique Case feature, and the other without such a feature. There is a remaining question regarding their distribution. Phrasing the question in terms of Tagalog, why is it that *-um-* with the oblique Case feature cannot be used in contexts involving no extraction, as in (66b), while it can be used in contexts involving Agent extraction, as in (73)? I wish to suggest an economy-based solution. In particular, I propose (81) as a general economy condition on feature specification.[45]

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[44] It could be suggested that (80b) is a case of preposition insertion as a last resort, triggered by the specificity of the Theme. This suggestion, however, has difficulty in explaining why the dative "preposition" cannot be used without Agent extraction. Compare the ill-formedness of (79b) with the well-formedness of Tagalog (67b) and Chamorro (75b).

[45] Burzio (1991) proposes that Binding Theory should be replaced by the following:

(i) *Binding Theory = Morphological Economy:*
A bound NP must be maximally underspecified.

I suspect that (i) may be subsumed under (81). But an attempt to that end would demand a modification of the concept of reference set adopted here.

(81) *Minimal Feature Condition* (MFC):
Derivation D blocks derivation D' if D and D' belong to the same reference set and the number of features in numeration N of D is less than the number of features in numeration N' of D'.

(81) requires that the number of features used in a successful derivation be minimal. More explicitly, it, combined with the notion of reference set in (28), states "Minimize the number of *uninterpretable* formal features."

Concentrating for the moment on Tagalog constructions where no extraction is involved, the intuitive idea is that when the Theme is specific, it is not necessary to use *-um-* with an oblique Case feature, since the alternative Theme Topic construction is available, as in (66a). Hence, the use of *-um-* with an oblique Case feature is prohibited. This idea accords well with the observation that the "insertion" of oblique-markers in examples like (67) and (75) is a "last resort." The LF structures for (66a-b) under the intended reading 'Juan bought the car' are given in (82a-b) respectively.[46]

(82) a. $[_{TP}$ the car$_j$ bought(TT) $[_{PrP}$ Juan Pr $[_{AspP}$ Asp$[+$Case$]$ $[_{VP}$ t_V $t_j]]]]$

b. $*[_{TP}$ Juan$_i$ bought(AT) $[_{PrP}$ t_i Pr $[_{AspP}$ Asp$[+$Case, $+$obl$]$ $[_{VP}$ t_V the car$]]]]$

Given the revised notion of reference set in (28) where only interpretable features matter, (82a-b) compete with each other for economy purposes. Notice that neither of (82a-b) blocks the other, as far as the MLC in (35) is concerned. This is simply because they do not have any comparable chain links (see (33)). How about the MFC? The crucial difference between (82a) and (82b) lies in the uninterpretable Case features of the Asps; the Theme Topic morpheme in the former has a Case feature, which I represent as a

[46] Case and oblique features, being uninterpretable, are assumed not to be present at LF, but are shown in (82), (83), and (85) for the sake of exposition.

single feature [+Case], while the Agent Topic morpheme in the latter has an oblique Case feature, which I represent as a combination of two features [+Case] and [+obl(ique)]. (82b) is blocked by (82a) in terms of the MFC, since the use of the Theme Topic morpheme in the latter with one feature is more economical than that of the Agent Topic morpheme in the former with two features. This explains why only *-um-* without an oblique Case feature can be used in (66b), which exhibit the SE due to the CSE.

There is, in fact, another question about (66) that must be answered. I have been assuming following Belletti (1988) and Lasnik (1992) that assignment of inherent Case is optional (see Chapter 2). Suppose that we choose to have a nonspecific Theme in the Theme Topic construction and choose not to assign inherent Case to the nonspecific Theme. Then the Theme must raise into the structural subject position for absolutive Case-checking. In the derivation under consideration, the Agent would get ergative Case in the usual way. The question is: why is it that the Theme in the Theme Topic construction, as in (66a), cannot be nonspecific? The proper answer, I argue, hinges on the MFC. Now, we are comparing the following two derivations with the intended reading 'Juan bought a car':

(83) a. *$[_{TP}$ a car$_j$ bought(TT) $[_{PrP}$ Juan Pr $[_{AspP}$ Asp[+Case] $[_{VP}$ t_V $t_j]]]]$

b. $[_{TP}$ Juan$_i$ bought(AT) $[_{PrP}$ t_i Pr $[_{AspP}$ Asp $[_{VP}$ t_V a car]]]]

Once again, neither of (83a-b) blocks the other with respect to the MLC, for no comparable chains are formed in (83). What is responsible for the ill-formedness of (83a) is the presence of the Case feature of the Asp, which is lacking in (83b); from the viewpoint of the MFC, (83b) counts as more economical than (83a).

In short, the MFC successfully accounts for the specificity facts in non-extraction contexts such as (66). Note that the MFC is a transderivational economy condition. There

is nothing wrong with each individual derivation in (82) and (83). In particular, the derivations in (82) and (83) each satisfy the definition of Attract. There is nothing wrong with their LF representations, either, which consist only of legitimate LF objects. Thus, the MFC selects among convergent derivations.

What about cases such as (73) where extraction of Agent is involved? Recall from the previous sections that when one wishes to extract Agent in sentences like (73), the Agent Topic construction must be used. Compare (73) with ill-formed (84) where the Agent has been extracted in the Theme Topic construction.

(84) *Siya ang b-**in**-ili ang kotse.
3SG.ABS ANG bought(TT) ABS-car
('He is the one who bought the car.')

The explanation offered above made crucial use of the MLC given in (35). To repeat it briefly, the definition of reference set in (28) allows us to make comparison between (73) and (84), and (84) is blocked by more economical (73). Consider LF representations (85a) and (85b) for (73) and (84) respectively (only relevant portions shown). Note that the relevant interpretation is the one where the Theme is construed as specific and hence the Asp in (85a) must have an oblique Case feature.

(85) a. $[_{CP}\ OP_i\ [_{TP}\ t'_i$ bought(AT) $[_{PrP}\ t_i$ Pr $[_{AspP}$ Asp[+Case, +obl] $[_{VP}\ t_V$ the car]]]]]
|____|

b. *$[_{CP}\ OP_i\ [_{TP}$ the car$_j$ bought(TT) $[_{PrP}\ t_i$ Pr $[_{AspP}$ Asp[+Case] $[_{VP}\ t_V\ t_j]]]]]$
|_____|

According to chain link comparability in (33), the *wh*-chain link in (85a) and that in (85b) are comparable. The MLC correctly predicts that (85b) is blocked by more economical (85a), because the *wh*-chain link in the latter is shorter that in the former.

Therefore, in cases involving Agent extraction, the use of the Theme Topic

morpheme *-in-* is simply not an option. The use of *-um-* with an oblique Case feature is permitted in such situations, being the most economical by default. And of course, nothing prevents one from using *-um-* without a Case feature.

In this way, the economy account nicely captures the fact that the SE is observable in non-extraction contexts like (66b), but not in extraction contexts like (73). Notice that the above discussion forces us to assume the following:

(86) The MFC is overridden by the MLC.

If the reverse of (86) were true, we would incorrectly expect that Agent extraction has no effect whatsoever on the SE; using the Agent Topic morpheme without an oblique Case feature would always be more economical than using the one with it. I speculate that (86) would follow from the interpretation-oriented nature of the computational system. Intuitively, linguistic objects such as chains that can get interpreted at LF are more important than those uninterpretable formal features that play no role at LF. Hence, the MLC, which constrains chain formation, outweighs the MFC, which concerns uninterpretable features.[47]

An alternative to this speculation would be to suggest that (86) would follow if (i) only convergent derivations compete for the purpose of economy, and (ii) violations of the MLC lead to crashed derivations (Chomsky 1994). In other words, if the derivation in (85b) crashes, there would be no way for it to block (85a). But I have rejected the second assumption: (85a-b) compete with each other for relative economy, because both of them converge (see section 3.4.). Thus, this alternative seems untenable.

The present analysis also straightforwardly extends to the Chamorro and K'ekchi examples examined above. Let us consider Chamorro first. Chamorro (74) can be

[47] (86) will be modified later in Chapter 5.

accounted for in the same way as Tagalog (66). When the Theme is specific, the use of *-um-* with an oblique Case feature is blocked by the availability of the more economical Asp with a structural Case feature, as in (74a). The Agent Topic morpheme *man-* does not possess any Case feature, requiring the Theme to be nonspecific, as in (74b). The Theme in (74a) must be specific for the same reason as that in (66a) must be specific.

The same explanation for Tagalog (73) covers Chamorro (76). The only difference between them is that Chamorro distinguishes between the two Agent Topic morphemes phonologically, while Tagalog does not. Note that as in Tagalog (73), the Agent Topic construction must be used in sentences like (76). In particular, (76b) is the most economical for reasons mentioned above, blocking (87) (based on Topping 1973).

(87) *Guiya ha-li'e' i palao'an.
3SG.EMPH 3SG.ERG-saw the woman
('He is the one who saw the woman.')

Thus, the present economy account, extended to Chamorro, neatly captures the observation that in that language, *-um-* never show up on the two-place verb when the "Theme Topic" construction is available.

Let us next go back to the K'ekchi data. When the Absolutive Antipassive morpheme lacking the features [+Case, +obl] is used, as in (77b), the inherently Case-marked Theme is obligatorily nonspecific. The reason why the Agentive Antipassive cannot be used without Agent extraction has to do with the MFC. Consider the pair in (79) once again. Given the notion of reference set adopted here, (79a-b) belong to the same reference set, assuming that the dative-marker on the Theme in (79b) is nothing but a dummy Case-marker with no categorial status.[48] In light of the MFC, (79b) is blocked

[48] There is another noteworthy difference between (79a) and (79b), *i.e.*, the presence or the absence of the "aspect marker" *-e*. This "aspect marker" is merely the non-future intransitive suffix that bears no aspectual meaning on its own (Berinstein 1985). Thus, it can be found in intransitive sentences like the following where its appearance is only optional, suggesting the relative insignificance of its role:

by more economical (79a); the former uses the oblique Case feature of the Agentive Antipassive morpheme in order to accommodate the specific Theme.

Turning to the Agent extraction in (80), the same explanation for Tagalog (73) and Chamorro (76) holds of (80) as well. Again, one must use the antipassive constructions in (80), as required by the MLC. The transitive counterpart of (80b) is ill-formed, as illustrated below (based on Berinstein 1985):

(88) *Li cuink X-Ø-x-sac' li tz'i'.
the man RPAST-3ABS-3ERG-hit the dog
('It was the man who hit the dog.')

(88), in violation of the MLC, is blocked by more economical (80b). (80b) is the most optimal output, even though (88) is more economical in terms of the MFC.

To summarize, given the assumption that Absolutive Antipassive morphemes are truly Caseless, while Agentive Antipassive morphemes have a peculiar oblique Case feature, the economy analysis based on the MFC and the MLC successfully accounts for why Absolutive Antipassive requires nonspecific Theme, while Agentive Antipassive requires specific Theme and Agent extraction, allowing us to make sense of this intriguing dichotomy of antipassives.

As illustrated above, Tagalog, Chamorro, and K'ekchi all show the SE in their antipassive constructions involving no Agent extraction. There are, however, ergative languages whose antipassive constructions are totally insensitive to the SE even without Agent extraction. One such language is Malagasy. Observe the following paradigm from

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(i) X-Ø-chal(-c).
RPAST-3ABS-arrive(-ASP)
'He arrived.'

I assume for concreteness that the verbal complex in (79a) contains a null transitive morpheme corresponding to the intransitive morpheme *-c*.

Malagasy (adapted from Guilfoyle *et al.* 1992:380-381):[49]

(89) a. Sasa-**na** ny zazavavy amin'ny savony ny lamba.
wash(TT) the girl with the soap the clothes
'The girl washes the clothes with the soap.'

b. M-**an**-sasa ny lamba amin'ny savony ny zazavavy.
wash(AT) the clothes with the soap the girl
'The girl washes the clothes with the soap.'

c. **An**-sasa-**na** ny zazavavy ny lamba ny savony.
wash(CT) the girl the clothes the soap
'The girl washes the clothes with the soap.'

In the Agent Topic sentence in (89b), the Theme *lamba* 'clothes', which is supposed to be assigned inherent Case, is specific with no preposition preceding it. Why should Malagasy be different from Tagalog, Chamorro, and K'ekchi in this regard?

Let us focus on the topic morphology in (89). As illustrated in (89a), the Theme Topic morpheme in Malagasy is *-na*. This transitive morpheme is found in the Circumstantial Topic sentence in (89c), which I assume is an applicative construction derived by PI. It follows then that the morpheme *an-* in (89c) is an incorporated preposition. Notice that this morpheme is homophonous with the Agent Topic morpheme in (89b). One may suggest then that the Agent Topic morpheme in Malagasy is like an incorporated preposition in that it has an optional oblique Case feature. Given this, the absence of the SE in (89b) is exactly what we expect in view of the CSE in (71). When the Theme is nonspecific in the Agent Topic construction, the Agent Topic morpheme does not have any Case feature. When the Theme is specific, it has an optional oblique Case feature.[50] In effect, the reasons for the neutralization of the SE in (89b) and the

[49] The morpheme *m-* on the verb in the Agent Topic construction in (89a) indicates present tense. Present tense is morphologically null in other constructions.

[50] To be precise, what is optional is the feature [+oblique] of the Agent Topic morpheme. Under the revised notion of reference set, (89a) and (89b) belong to the same reference set. Ignoring the prepositional phrase, (89a) and (89b) each use two Case features and hence are equally economical. If the Case feature of the Agent Topic morpheme in (89b) did not count for the MFC, it would be incorrectly expected that

Tagalog applicative construction in (70) are basically the same. As is expected, the SE is absent in the applicative construction in (89c).

To wrap up, under the present approach, the cross-linguistic difference in terms of the SE in antipassive constructions reduces to the morphological nature of antipassive morphemes, a welcome result.

3.6. Some Implications

I conclude this chapter by considering some implications of the economy account presented above.

To the extent that the present analysis is correct, it lends empirical support to the general framework of Minimalism, in which it is claimed that a set of convergent derivations are evaluated with respect to one another, and the optimal one is selected. In the Minimalist Program, there is no place for the ECP. With the notion of government gone, it is simply unformulable. It has been demonstrated that the problem for the ECP posed by the interaction between antipassivization and *wh*-extraction can be resolved naturally by economy.

The success of the economy account implies that Chomsky's (1994, 1995) notion of reference set must be modified in such a way that it refers to Interpretability of features (Chomsky 1995) along the lines of (28). This modification, if on the right track, should have far-reaching consequences. Indeed, it will prove essential in solving some of the long-standing problems to be discussed in the succeeding chapters.

As for the MLC, it must be a non-local economy condition, contra Chomsky (1994) who claims that it applies strictly derivationally. As mentioned in Chapter 1, Chomsky (1995) goes so far as to argue that it is simply part of the definition of Attract. If the

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(89a) is blocked by (89b). See Chapter 5, section 5.1. for the irrelevance of optional features to economy.

present analysis is correct, the MLC must be maintained as an independent economy condition that selects among convergent derivations.

Furthermore, as already pointed above, the present account suggests that LF pied-piping is a viable option, contra Chomsky (1995), who claims that LF raising is nothing but feature raising. We will see more evidence supporting this conclusion later in Chapter 5.[51] If it is correct, it implies that the rationale Chomsky (1995) gives to Procrastinate is mistaken; there is an economy condition which requires attracted F to carry along just enough material for convergence. According to Chomsky, this condition is directly responsible for Procrastinate; it has the effect of making pre-Spell-Out movement, which must raise categories for PF convergence, more costly than post-Spell-Out movement, which is assumed to be able to raise only features, being free from PF-crash. Given the existence of category raising at LF, we cannot reduce Procrastinate to the alleged economy condition.[52]

With regard to parameterization, the present account reinforces the view, held in the Minimalist Program, that linguistic variation reduces to differences in the lexicon (see Baker 1996 for recent discussion of the nature of parameterization). I would like to suggest that the kind of interlinguistic as well as intralinguistic variation in terms of extractability investigated above stems from the morphological properties of antipassive morphemes or Asps. The reversed argument/adjunct asymmetries obtain, say, in an Agent Topic construction and its corresponding Theme Topic construction in Tagalog, because the Asp without Case and the one with Case, which are indistinguishable for economy purposes, put these constructions in competition. The Asp in the recent past, comitative, and comparative constructions in Tagalog, as a lexical property, does not have a choice between the two kinds of Asps regarding Case, and hence they exhibit no such

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[51] If the Case-theoretic account of the English ACD construction proposed by Hornstein (1994, 1995), Lasnik (1993), and Takahashi (1993) is correct, then it shows that the covert movement into the structural object position can raise the entire category including the relative clause containing the elided VP.

[52] In Chapter 5, I will suggest a different way to derive Procrastinate.

asymmetries. Similarly, if an ergative language lacks the Caseless Asp in its lexicon, as in Niuean, no basis of comparison between an ergative construction and its antipassive counterpart is formed, allowing argument extraction rather freely. Note that this kind of parameterization is made possible by the introduction of the new concept of reference set, which I take to be one of its important consequences.

The discussion in section 3.5. indicates that the interlinguistic as well as intralinguistic variation concerning the SE in antipassives is also reducible to the lexical properties of antipassive morphemes or Asps. We can distinguish three kinds of antipassives. First, if an antipassive morpheme is devoid of a Case feature, the construction containing it (*i.e.*, Absolutive Antipassive) shows the SE. Secondly, if an antipassive morpheme has an oblique Case feature, the antipassive containing it (*i.e.*, Agentive Antipassive) must have specific Theme and involve Agent extraction due to the conspiracy between the MLC and the MFC. Thirdly, if an antipassive morpheme can be either with or without an oblique Case feature, as in Malagasy, the Theme can be either specific or nonspecific, with no Agent extraction required. The revised notion of reference set has been found crucial in accounting for the distribution of the SE in antipassives.

CHAPTER 4

APPLICATIVES

4.0. Introduction

The focus of this chapter is on extraction of logical objects in applicative constructions, another phenomenon which has remained problematic in GB theory.[1] I will attempt to show that the economy analysis laid out in the previous chapter naturally extends to such extraction, thereby providing further empirical support for the Minimalist framework.

This chapter is organized in the following way. Drawing on data from Bantu languages, Section 4.1. discusses why object extraction in applicatives is problematic for previous theories and hence is of considerable interest. Bantu languages are chosen as the object of the study, because they are known to be very productive in applicative constructions and thus provide a good place to look into from the present perspective, as we will see. The generalization to be captured is presented there. Section 4.2. summarizes an updated Minimalist version of Baker's (1988b, 1992a) analysis of two types of Bantu applicatives, on which the succeeding discussions are based. Descriptively, if an applicative involves Preposition Incorporation, then its Theme gets inherent Case within the VP and cannot trigger agreement or passivize. Otherwise, the Theme in an applicative may control agreement and undergo passivization. In Section 4.3., an economy-based account of Theme extraction in Bantu applicatives is presented. More specifically, I claim

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[1] Extraction of applied objects, which has also escaped a principled account as far as I am aware, will not be discussed here and is left open for future investigation. For attempts in this regard, see Baker 1988a,b, Alsina and Mchombo 1991 among others. I believe that the omission of discussion of extraction of applied objects here is justifiable, since there are reasons to think that extraction of logical objects and that of applied objects in applicatives cannot be given a unified account; the kind of descriptive generalization about the former to be presented below does not extend to the latter.

that the MLC together with the notion of reference set proposed in Chapter 3 neatly handles all relevant data. Section 4.4. consists of a discussion of applicatives in Austronesian, Bahasa (Malaysia and Indonesia), Tagalog, and Chamorro in particular. It is argued that the generalization presented for Bantu holds of these languages, hence the economy account generalizes to them, too. Section 4.5. lists some implications of this chapter.

4.1. The Problem: Object Extraction in Applicatives

As pointed out at the beginning of Chapter 3, the ECP espoused in GB theory, whether it is formulated disjunctively (Chomsky 1981, Lasnik and Saito 1984 among others) or conjunctively (Cinque 1990, Rizzi 1990), predicts that thematic objects can always be extracted in cases where such locality conditions as the Subjacency Condition (Chomsky 1973, 1977) and Huang's (1982) CED are irrelevant (see Cinque 1990; see also Chomsky 1986a, Lasnik and Saito 1992). This prediction is disconfirmed by the Kinyarwanda example in (1b) repeated from Chapter 1 (Kimenyi 1980:94-95).[2]

(1) a. Y-a-tw-eerets-e igitabo úmwáalímu y-oóhere-je **kw'iishuûri.**
SP-PAST-OP-SHOW-ASP book teacher SP-send-ASP **to school**
'He showed us the book that the teacher sent to school.'

b. *Y-a-tw-eerets-e igitabo úmwáalímu y-oóhere-jé-ho ishuûri.
SP-PAST-OP-SHOW-ASP book teacher SP-send-ASP-APPL school
('He showed us the book that the teacher sent to school.')

(1a-b) both involve relativization.[3] (1b) is an applicative construction, extensively

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[2] Kinyarwanda is spoken in Rwanda as the national language, and also in eastern Zaire and southern Uganda (Kimenyi 1980). The other Bantu languages discussed in this chapter are: Chichewa, spoken in Malawi and eastern Zambia (Trithart 1977), Chimwiini, closely related to Swahili and spoken in Somalia (Kisseberth and Abasheikh 1977), and Kichaga, spoken in Tanzania (Bresnan and Moshi 1990).

[3] In general, Bantu languages allow *wh*'s-in-situ for questions. The examples of extraction discussed here are those of relativization or clefting.

discussed in Baker 1988a,b within the framework of GB theory (see Chomsky 1981 and subsequent work), while (1a) is a basic transitive clause, with the Locative expressed by a prepositional phrase headed by *ku*.[4] Roughly speaking, "an applicative construction" is used as a cover term for a set of closely related grammatical function changing processes where the addition of an applicative morpheme to the verb makes some oblique become an object (Baker 1988a). Of great interest in the present context is the fact that the Theme argument can be extracted in (1a) but not in (1b). The ungrammaticality of (1b) poses a serious problem for any version of the ECP. And no GB theorist (with the sole exception of Marantz 1993, to the best of my knowledge) has addressed this problem seriously.[5]

Within the framework of Relational Grammar (RG), the ungrammaticality of (1b) has been captured by the *Relational Annihilation Law* (RAL) originally due to Perlmutter and Postal (1974). It can be stated as follows: "NP whose grammatical relations have been taken over by another cease to bear any grammatical relation to their verb, that is, they are demoted to nonterm status (Gary and Keenan 1977:87)." In RG, (1b) is taken to be an example of objectivization of Locatives since the applied locative object acquires all the properties associated with direct object (DO) (Kimenyi 1980; see below). By the RAL, the initial DO or the Theme is put *en chômage* and loses all its DO properties including extractability.

Given a pair like (1), one might conjecture that thematic objects can never be extracted in applicative constructions. Interestingly, this is not the case even within Kinyarwanda, as the example in (2b) demonstrates (Kimenyi 1980:79-83).

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[4] In (1a) the vowel after the preposition *ku* is lengthened. See Kimenyi (1980) for some phonological rules of Kinyarwanda.

[5] Marantz's (1993) account of (1b) and its problems will be discussed later in Section 4.3. after the economy account advocated in this paper is presented.

(2) a. N'iíbárúwa umugabo y-aándik-a **n'**ííkárámu.
be letter man SP-write-ASP **with** pen
'It is the letter that the man is writing with the pen.

b. N'iíbárúwa umugabo y-aándik-**iish**-a íkárámu.
be letter man SP-write-APPL-ASP pen
'It is the letter that the man is writing with the pen.'

(2b) contains an instrumental applicative construction, and (2a) its analytic counterpart, with the preposition *na* placed before the Instrument.[6] In both of them, the extraction of the Theme is grammatical, consistent with the ECP.

Instruments advanced to DO by the use of the instrumental applicative morpheme acquire all the DO properties in Kinyarwanda (Kimenyi 1980; see below). Then, the RAL predicts that (2b) should be ill-formed, a prediction falsified by its well-formedness. Thus, the Kinyarwanda instrumental applicative bluntly violates the RAL, as observed by Kimenyi (1980).[7]

In short, we have a paradoxical situation surrounding (1b) and (2b). Namely, the ungrammaticality of (1b) favors (one aspect of) RG over (one aspect of) GB theory, while the grammaticality of (2b) favors the latter over the former. It seems that neither theory provides a truly satisfactory explanation. If (1b) and (2b) receive a unified account from a Minimalist perspective, we have empirical support for the general framework outlined in Chomsky 1993.

I claim that the descriptive generalization about the puzzling behavior of Theme extraction in applicatives, including (1b) and (2b), is the following:

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[6] In (2a), as in (1a), the object of the preposition has undergone vowel lengthening. In Kinyarwanda the Agent in passives is also expressed by the preposition *na* (see below).

[7] In trying to cope with Kinyarwanda applicatives, Gary and Keenan (1977) present a weaker version of the RAL. However, it is not without problems, as Gary and Keenan themselves note (see also Dryer 1983, Perlmutter and Postal 1983, Bresnan and Moshi 1990). Perlmutter and Postal (1983) attempt to explain relevant Kinyarwanda data without relying on the RAL. But again, their RG account is not free from problems (see Bresnan and Moshi 1990). Note that a more serious problem with the RAL is posed by applicatives (dubbed Type 3 applicatives below) such as the Chimwiini benefactive and goal applicatives, where NP-movability and *wh*-movability of thematic objects do not correlate with each other. See Section 4.3.

(3) *Generalization*:
Extraction of Theme in an applicative is prohibited only if
(i) the applicative is derived by Preposition Incorporation, and
(ii) there is an analytic equivalent of the applicative containing an independent preposition.

As can be seen in (3), there are two factors that determine the extractability of Theme in applicatives. One is the relevance of Preposition Incorporation (henceforth PI) in the sense of Baker (1988a,b) ((3i)), and the other the availability of an unincorporated counterpart of the incorporated preposition in question ((3ii)). Only when the two conditions in (3) are met simultaneously does extraction of logical objects result in ill-formedness.

The interaction of the two factors given in (3) yields the following four-way typology of Bantu applicatives, where each of the four possible combinations is attested:

(4) *Four-Way Typology of Bantu Applicatives*:

	Type 1	*Type 2*	*Type 3*	*Type 4*
PI?	yes	no	yes	no
Independent P?	yes	yes	no	no
Applicatives to be discussed	•*Kinyarwanda locative* •*Chimwiini instrumental*	•*Kinyarwanda instrumental* •*Chichewa instrumental*	•*Chimwiini benefactive* •*Chimwiini goal*	•*Kichaga benefactive* •*Kinyarwanda benefactive*

Type 1 applicatives are those in which both of the two conditions in (3) are satisfied and thus Theme extraction is banned. I suggest that the Kinyarwanda locative applicative, exemplified in (1b), represents this type; the applicative morpheme *-ho* in (1b) is an incorporated preposition and has its independent counterpart *ku* in the analytic construction in (1a). As we will see below, the Chimwiini instrumental applicative, like

the Kinyarwanda locative applicative, disallows extraction of Theme arguments. Type 2 applicatives lack PI, but have their analytic counterparts. They are represented by the Kinyarwanda and Chichewa instrumental applicatives (and also by the Chichewa locative applicative). Hence, the applicative morpheme *-iish-* in (2b) is not an incorporated preposition (see Section 4.2. for discussion) but has its corresponding preposition *na* in (2a). We have not seen any examples of Type 3 and Type 4 applicatives yet (see Section 4.3.). Type 3 applicatives are derived by PI but lack their analytic equivalents. The Chimwiini benefactive and goal applicatives (along with the Chichewa benefactive applicative) belong to this type. Type 4 applicatives are those in which neither of the two conditions in (3) is met. They include the Kichaga benefactive/malefactive applicative and the Kinyarwanda benefactive applicative. In accord with the generalization in (3), Type 3 and Type 4 applicatives allow extraction of logical objects.

The challenge then is to explain why only Type 1 applicatives prohibit extraction of Theme arguments without recourse to *ad hoc* stipulations.

I argue that the generalization in (3) can be best explained by economy considerations. To the extent that the present analysis is correct, it gives substantial support to the Minimalist contention that the ECP reduces to descriptive taxonomy, of no theoretical significance (Chomsky 1993:46, fn. 19).

The intuitive idea to be pursued, as touched upon in Chapter 1, section 1.1., is fairly simple. Remember that the notion of relative comparison among competing derivations has proved very useful in accounting for the extraction facts in antipassives in Chapter 3. Capitalizing on this notion once again, I suggest that there are cases where an applicative and its analytic counterpart compete with each other. To be more specific, I maintain that a Type 1 applicative and its analytic equivalent get compared with each other, precisely because the incorporated preposition and the independent preposition are non-distinct as far as the determination of comparison domains is concerned. Then, Kinyarwanda (1a-b) compete with each other. What I will claim is that (1b), containing

the applicative, is blocked by the more economical (1a), containing the analytic construction (for reasons to be spelled out below), resulting in the curious extraction asymmetry. In the case of Type 2, Type 3, and Type 4 applicatives, on the other hand, there is no such basis of comparison. The applicative morpheme in a Type 2 applicative, not being prepositional, is to be distinguished from its corresponding independent preposition for economy purposes. This means that economy does not choose between Kinyarwanda (2a) and (2b). Hence, neither of them blocks the other. As for Type 3 and Type 4 applicatives, they do not compete with analytic constructions since there are no such constructions in the first place. In brief, Theme extraction in Type 1 applicatives behaves differently from that in the other types of applicatives, because it gets evaluated (and eventually rejected) by economy with respect to its comparable extraction in analytic constructions. In what follows, I will strive to show that the economy account presented in Chapter 3 automatically extends to object extraction in applicatives without any modification.

4.2. Two Types of Applicatives in Bantu

Before going into the analysis of extraction in applicatives, however, it is imperative to make explicit my assumptions about how applicatives are derived. I assume following Baker (1988b, 1992a) that there are (at least) two kinds of Bantu applicative constructions (see also Marantz 1993 and Woolford 1993). One kind, represented by the Kinyarwanda locative applicative, involves syntactic PI, whereas the other kind, represented by the Kinyarwanda instrumental applicative, does not. In the latter kind, one may assume that the applicative morpheme is verbal, combining with a verb in the lexicon and introducing an additional internal argument into the argument structure of the verb (cf. Alsina and Mchombo 1990, 1993, Bresnan and Moshi 1990). The distinction between the two kinds is one of the two factors that determine the extractability of Theme in applicatives (see

(3)).

Consider first the minimal pair in (5) from Kinyarwanda (Kimenyi 1980:94).[8]

(5) a. Úmwáalimu y-oohere-je igitabo **kw'**iishuûri.
teacher SP-send-ASP book to school
'The teacher sent the book to school.'

b Úmwáalímu y-oohere-jé-**ho** ishuûri igitabo.
teacher SP-send-ASP-APPL school book
'The teacher sent the book to school.'

(5b) is the applicative equivalent of (5a). As Kimenyi (1980:94-95) notes, the thematic object in the Kinyarwanda locative applicative, as in (5b), does not show any properties associated with the structural object. In particular, it cannot trigger pronominal agreement:

(6) a. *Úmwáalímu y-a-cy-oohere-jé-**ho** ishuûri.
teacher SP-PAST-OP-send-ASP-APPL school
('The teacher sent it to school.')

b. Úmwáalímu y-a-ry-oohere-jé-**ho** igitabo.
teacher SP-PAST-OP-send-ASP-APPL book
'The teacher sent the book to it.'

Nor can it become the subject of a passive:

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[8] The locative applicative morpheme in Kinyarwanda is peculiar in that unlike other Bantu applicative morphemes, it does not get suffixed directly to the verb stem. As a matter of fact, it can even appear after the Locative instead of being attached to the verbal complex, as illustrated in (i) (Kimenyi 1980:89):

(i) Umugóre y-oohere-je isóko **ho** umubooyi.
woman SP-send-ASP market APPL cook
'The woman sent the cook to the market.

If the locative applicative morpheme is an incorporated preposition, as I assume it is, Baker's (1985) *Mirror Principle* would expect it to be attached directly to the verb stem. I do not have a proposal to offer regarding its idiosyncratic placement.

(7) a. *Igitabo cy-oohere-j-w-é-**ho** ishuûri n'úúmwáalímu.
book SP-send-ASP-PASS-ASP-APPL school by teacher
('The book was sent to school by the teacher.')

b. Ishuûri ry-oohere-j-w-é-**ho** igitabo n'úúmwáalímu.
school SP-send-ASP-PASS-ASP-APPL book by teacher
'The school was sent the book by the teacher.'

The applied object, on the other hand, can trigger agreement, as in (6b), and can be passivized, as in (7b). Thus, the applied object in the Kinyarwanda locative applicative acquires the properties of the structural object. In other words, the Kinyarwanda locative applicative complies fully with the RAL (see (1b) above for extraction).

Consider next the pair in (8) again from Kinyarwanda (Kimenyi 1980).

(8) a. Umugabo a-ra-andik-a ibárúwa **n'**íkárámu.
man SP-PRES-write-ASP letter **with** pen
'The man is writing a letter with the pen.'

b. Umugabo a-ra-andik-**iish**-a ikárámu ibárúwa.
man SP-PRES-write-APPL-ASP pen letter
'The man is writing a letter with the pen.'

According to Kimenyi (1980:81-83), in the Kinyarwanda instrumental applicative, either the Theme or the Instrument can trigger pronominal agreement:

(9) a. Umugabo a-ra-y-aandik-**iish**-a ikárámu.
man SP-PRES-OP-write-APPL-ASP pen
'The man is writing it with the pen.'

b. Umugabo a-ra-y-aandik-**iish**-a ibárúwa.
man SP-PRES-OP-write-APPL-ASP letter
'The man is writing a letter with it.'

And either can become the subject of a passive:

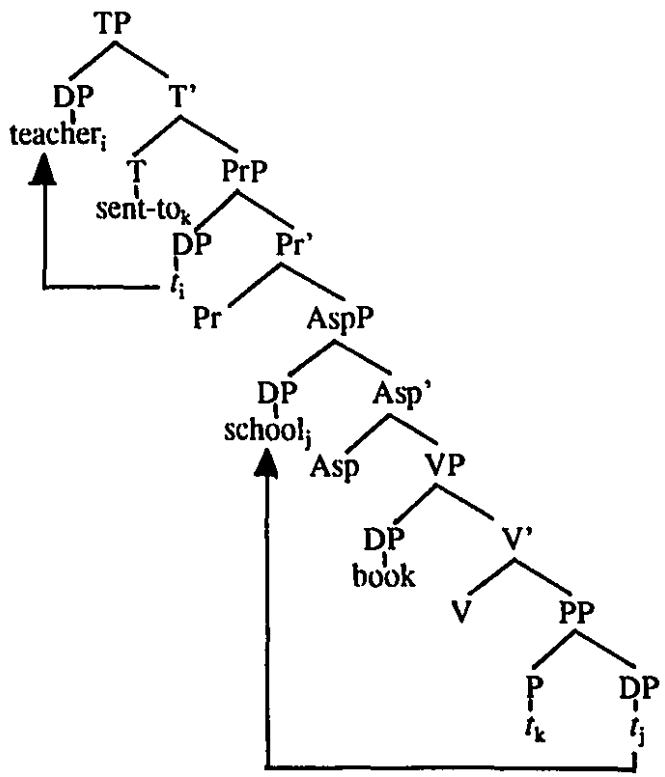
(10) a. Íbárúwa i-ra-andik-**iish**-w-a íkárámu n'ûmugabo.
letter SP-PRES-write-APPL-PASS-ASP pen by man
'The letter is being written with a pen by the man.'

b. Íkárámu i-ra-andik-**iish**-w-a íbárúwa n'ûmugabo.
pen SP-PRES-write-APPL-PASS-ASP letter by man
'The pen is being used to write a letter by the man.'

This means that the Kinyarwanda instrumental applicative does not obey the RAL, as already shown by the legitimate extraction in (2b).

The above contrast between the locative applicative and the instrumental applicative in terms of the behavior of the Theme is explicable if we follow Baker (1988b, 1992a) in assuming that the locative applicative involves the process of PI, but the instrumental applicative does not. Thus, (5b) has the following structure (irrelevant details omitted):[9]

(11)



[9] In examples like (5b) involving PI, I assume that the applied object has overtly raised into the Spec of AspP, making it adjacent to the raised verb. If the Locative is in the Spec of AspP in (5b), the verb must have raised at least up to Pr. In the representations that follow, I place verbs in T.

Baker's (1988a,b, 1992a) analysis of PI can be recast in the following manner within the current framework. It is assumed here that structural Case is checked uniformly in specifier positions of functional projections, in the case of accusative clauses, TP and AspP (cf. Chomsky 1993). Accordingly, in (11), after the PI, the Locative 'school' is forced to move to a structural Case position, that is, the Spec of AspP, since traces left by PI are not capable of assigning or checking Case, as argued by Baker (1988a). As noted in Chapter 2, one of the advantages of a Minimalist Case theory is that it enables us to draw in clear structural terms the distinction between structural and inherent Cases that has always remained obscure: structural Case is checked within a functional projection, while inherent Case is checked within a lexical projection. I assume following Baker (1988a,b) that in (11) the Theme 'book' gets inherent Case within the VP. It is eligible for inherent Case because it is the internal argument directly θ-marked by the verb (Chomsky 1981, 1986b, Baker 1988a,b).

The claim that the Theme in (11) is assigned inherent Case rather than structural Case immediately accounts for the fact that it cannot control agreement or undergo passivization, as shown in (6a) and (7a). First, it cannot trigger agreement because it stays within the VP throughout the derivation; in order for a DP to trigger agreement, it must be in a Spec-head relation with a functional head with ϕ-features at some point in a derivation (Chomsky 1995, Sportiche 1990, Travis 1994 *etc.*). Secondly, it cannot be passivized since, as is well-known crosslinguistically, inherent Case cannot be "absorbed" by passive morphology. We may assume following Baker (1992b) that passive morphology is tied with Asp; it renders structural Case-checking in the Spec of AspP impossible, forcing objects with structural Case to raise further into a higher structural Case position, that is, the Spec of TP. It is very common across languages that passive morphology is related to aspect, perfective aspect in particular. Also, in many languages including Kinyarwanda, the passive morpheme suppletes with or infixes into the aspectual morphology of the verbal complex. In contrast with the Theme, the Locative in (11) can

control agreement, as in (6b), and passivize, as in (7b), since it checks its structural Case in the Spec of AspP.

As we have already seen in Chapter 2 in connection with Pangasinan, the raising of the Locative in (11) across the Theme obeys the revised definition of Attract in (12), if we assume the EPP in (13).

(12) *Attract*:
K *attracts* F if F is the closest feature that can enter into a checking relation with an *intrinsic* sublabel of K.

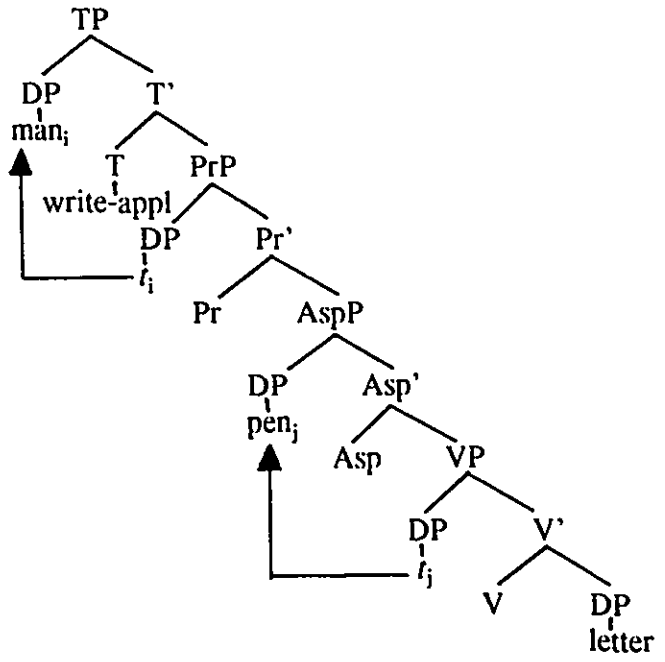
(13) *Extended Projection Principle* (EPP):
EPP = D/$C_{[\text{unerased Case}]}$-feature

The overt raising in question is triggered by the "inner" EPP, the strong D-feature of the Asp. The Theme does not block the raising, because its inherent Case feature gets erased automatically, as soon as it is introduced into the phrase marker by Merge. As a consequence, the raising of the Theme into the Spec of AspP would not satisfy the EPP in (13) and hence Attract in (12). In other words, the Locative is the closest nominal that can enter into a checking relation with the Asp.

Adapting Baker's (1992a) account, I assume that the function of the Kinyarwanda instrumental applicative morpheme is to add a new internal argument (namely, the Instrument) to the existing argument structure of the verb (cf. Marantz 1993). Thus, (8b) is supposed to have the following structure:[10]

[10] In (8b), as in the Chichewa instrumental applicative (Baker 1988b), the Theme can precede the Instrument (Kimenyi 1980). I assume that the DP adjacent to the verb has raised into the Spec of AspP.

(14)



In (14) both the Theme 'letter' and the Instrument 'pen' are the internal arguments of the lexically formed applied verb and are directly θ-marked by the verb. Thus, either of them is eligible for an inherent Case that the verb can assign (see Baker 1988b for the Chichewa instrumental applicative). The result is that either of them can be structurally Case-marked; if one of them gets structural Case, the other can get inherent Case.[11] This straightforwardly explains why either the Theme or the Instrument can exhibit the hallmarks of the structural object in (9) and (10), that is, agreement controllability and

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[11] To be precise, this is not exactly the case with Kinyarwanda, although it is with Chichewa. As discussed in detail in Bresnan and Moshi 1990, there are important systematic differences between Kinyarwanda-type and Chichewa-type Bantu languages. Within the present framework, they all stem from the fact that more than one postverbal DP can be structurally Case-marked simultaneously in the former languages, while only one can at a time in the latter languages. Thus, in Kinyarwanda (8b), for example, both the Theme and the Instrument can potentially get structural Case.

One may suggest that this is attributable to the difference in the nature of the functional head Asp; the Asp in Kinyarwanda, for example, can check more than one structural accusative Case, while that in Chichewa can check only one (see Chomsky 1994, 1995, Ura 1994; cf. Baker 1988a). In other words, the checked Case feature of the Asp in Kinyarwanda deletes but does not necessarily erase, admitting multiple specifiers, whereas that in Chichewa always erases. It is important to note that in the Kinyarwanda locative applicative, as in (5b) (see the structure in (11)), the Asp can check only one Case. It seems that in (5b), the incorporated preposition somehow forces the Case feature of the Asp to erase when it is checked. The question of how exactly this process works will be left open.

I will suppress this parametric difference for the most part except when Marantz's (1993) work is discussed in the next section.

passivizability (but see footnote 11). (14) is the structural representation where the Instrument checks its structural Case in the Spec of AspP, whereas the Theme is assigned inherent Case within the VP (see footnote 10).

It should be clear that the definition of Attract in (12) is observed whether it is the Instrument that checks structural accusative Case, as in (14), or it is the Theme that does so, given the EPP in (13), according to which only DPs with unerased Case features can satisfy the EPP.

I assume partly following Marantz (1993) that the Kinyarwanda instrumental applicative morpheme *-iish-* is of the verbal category [-N, +V]. It combines with a verb lexically, forming a complex verb. In contrast, the locative applicative morpheme in Kinyarwanda is assumed to be of the prepositional category [-N, -V]. It combines with a verb syntactically.

To sum up this section, if an applicative construction involves PI, then the Theme no longer exhibits the Case/agreement-related properties that it has in a basic transitive clause, that is, it cannot be passivized, nor can it trigger agreement. On the other hand, if an applicative construction does not involve PI, then the Theme may retain its Case/agreement-related properties: it can be passivized and can trigger agreement. Therefore, passivization and pronominal agreement serve as diagnostics for the presence or absence of PI in Bantu applicatives.

With this background on applicatives in mind, let us turn now to the main concern of this chapter, extraction of thematic objects in applicatives.

4.3. An Economy Account

As noted at the outset, the ungrammaticality of (1b) poses a serious problem for the ECP. Pursuing the intuitive idea mentioned in Section 4.1., a most natural way to deal with it within the Minimalist Program would be to say that (1b) is blocked by a more

economical alternative derivation, that is, (1a).

Let us remind ourselves of the key elements of the economy account presented in Chapter 3. It has been argued that the notion of reference set for syntactic computations is sensitive to the distinction between interpretable and uninterpretable features (Chomsky 1995). More specifically, I suggested that one can disregard such uninterpretable features as phonological features, Case features, the ϕ-features of verbal elements, and affixal features in determining a set of competing derivations. The revised notion of reference set is repeated below:

(15) *Reference Set*:
A set of derivations that arise from *non-distinct* numerations.

The notions of numeration and non-distinctness used in (15) are stated as follows ((16) is taken from Chomsky 1994):

(16) *Numeration*:
A set of pairs (l, n), where l is an item of the lexicon and n is its index, understood to be the number of times that l is selected.

(17) *Non-Distinctness*:
Numerations N and N' are *non-distinct* if and only if there is a one-to-one correspondence C between their members, such that if (l, n) $\in$ N and (l', n') $\in$ N' and (l, n) corresponds to (l', n') in C then l and l' have the same *interpretable* features and n = n'.

Recall that (15) should be interpreted derivationally in terms of the operation Select. Thus competing derivations must meet (15) at each step (defined by Select) of the computation.

I also suggested that we need the notion of chain link comparability, which decides what chain links are comparable with each other in competing derivations. It can be characterized as in (18).

(18) *Chain Link Comparability*:
Chain links CL and CL' are *comparable* if and only if derivations D and D' belong to the same reference set, such that if CL $\in$ D and CL' $\in$ D' then items of the lexicon $l \in$ CL and $l' \in$ CL' have the same *interpretable* features, and K and K' attracting l and l' are selected from numerations N and N' at the same point.

Given the notions in (15)-(18), the MLC, which roughly says "Minimize the length of chain links," can be formulated in the following manner:

(19) *Minimal Link Condition* (MLC):
Derivation D blocks derivation D' if there exist chain links CL $\in$ D and CL' $\in$ D' such that CL and CL' are *comparable* and CL is shorter than CL'.

Remember that it has been argued in Chapter 3 that the MLC, as an economy condition, selects among derivations leading to convergence and applies transderivationally. I continue to assume that the length of a chain link can be stated as follows (Nakamura 1994a, Baker 1996).

(20) *Length of Chain Link*:
Length L of chain link CL is the number of maximal projections that dominate the tail but not the head.

With (15)-(20) in mind, we can now go back to (1) and (2).

4.3.1. Type 1 and Type 2 Applicatives

Let us begin with the Kinyarwanda locative applicative, a Type 1 applicative. But before we consider (1a-b), let us see how (5a-b) without Theme extraction are both allowed. (5a-b) have the following derivations (with the NP-chains indicated):

(21) a. $|_{TP}$ teacher$_i$ sent $|_{PrP}$ t_i Pr $|_{AspP}$ book$_j$ Asp $|_{VP}$ t_j t_V $|_{PP}$ to school$|||||$

b. $|_{TP}$ teacher$_i$ sent-to$_l$ $|_{PrP}$ t_i Pr $|_{AspP}$ school$_k$ Asp $|_{VP}$ book t_V $|_{PP}$ t_l $t_k|||||$

Under (15), the derivations in (21) belong to the same reference set, assuming that the preposition in (21a) and the incorporated preposition in (21b) share the identical interpretable features. This assumption is motivated by the fact that (5a-b) are essentially equivalent in meaning and that the preposition in (5a) and the applicative morpheme in (5b) are of the same category |-N, -V|. The only difference between the two elements is that the latter is an affix, while the former is not (Baker 1988a).[12] As far as the reference set is concerned, the phonological, affixal, and Case differences between (21a) and (21b) are immaterial, because they have no bearing on interpretation whatsoever.

In (21a) the strong D-feature of the Asp attracts the Theme 'book'. In (21b) it attracts the Locative 'school'. In both of them, the T attracts the Agent 'teacher' with nominative Case. These instances of movement are not blocked by the MLC in (19). The reason is as follows. The nominative chains headed by 'teacher' in (21), which are indeed comparable in light of (18), are equally economical, since they are the same in length. The accusative chains in (21) are not comparable with each other, because they are headed by the different elements. Furthermore, the head chain created by the PI in (21b) does not have any corresponding head chain in (21a).

But notice that if Attract applied transderivationally in such a way that it chooses between (21a) and (21b), we would incorrectly expect that (21b) cannot be generated, for

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[12] In view of Attract, it must be the verb that has the affixal feature not the applicative morpheme. Notice that the uninterpretable affixal feature should not count for the purpose of the Minimal Feature Condition (MFC) put forth in Chapter 3. If it did, (21b) with the feature would wrongly be blocked by (21a) without it (neither of them blocks the other in terms of the MLC; see below). Then one may suggest that the affixal feature is optional and thus immaterial for the purpose of economy (see Chapter 5). This suggestion, however, is incompatible with the formulation of Attract in (12), under which only intrinsic features can attract. I leave this issue unresolved, but for concreteness, I assume with Baker (1988a) that the affixal feature in question is on the applicative morpheme.

the Asp would have to attract the Theme 'book' which is closer than the Locative 'school'. Thus the well-formedness of pairs like (5a-b) provides an empirical argument that Attract is intraderivational, the thesis we put forth in Chapter 3 on conceptual grounds.

Turning now to (1a-b), the structural representations for their relevant portions are given below (details omitted):[13]

(22) a. $|_{CP}\ OP_i\ |_{TP}$ teacher$_j$ sent $|_{PrP}\ t_j$ Pr $|_{AspP}\ t'_i$ Asp $|_{VP}\ t_i\ t_V\ |_{PP}$ to school$]]]]]]$

b. $*|_{CP}\ OP_i\ |_{TP}$ teacher$_j$ sent-to$_l$ $|_{PrP}\ t_j$ Pr $|_{AspP}$ school$_k$ Asp $|_{VP}\ t_i\ t_V\ |_{PP}\ t_l\ t_k]]]]]]$

(22a-b) compete for economy. Since (22a-b) are virtually (21a-b) plus the *wh*-extraction of the Theme, the *wh*-extraction must be the cause of the ungrammaticality of (22b). So let us focus on the *wh*-movement indicated in (22). The two instances of *wh*-movement in (22) each satisfy the definition of Attract. Thus there is nothing wrong with (22a-b), if considered separately. Chain link comparability holds that the two *wh*-chain links are comparable. The MLC, as a relative economy condition, correctly predicts that (22a) blocks (22b), because the *wh*-chain in the former (OP_i, t'_i), whose length is 3 (the maximal projections crossed are AspP, PrP, and TP), is shorter than that in the latter (OP_i, t_i), whose length is 4 (the maximal projections crossed are VP, AspP, PrP, and TP).[14] The NP-movement of the null operator in (22a) is extraneous to the calculation of the "cost" at issue. This is because it does not have a comparable NP-movement in (22b), according to the definition of chain link comparability. Thus the NP-movement

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[13] As before, *OP* in the representations stands for a null operator. Recall from footnote 11 that the Asp in Kinyarwanda (22b) does not allow multiple specifiers, making the extraction of the null operator through a second Spec of AspP impossible.

[14] The ill-formedness of (22b) cannot be attributed to the fact that the null operator has inherent Case since there is no general ban on extracting inherently Case-marked DPs. See well-formed (32) and (33) from Chimwiini below where the null operators are assigned inherent Case.

forced to take place for Case/EPP reasons counts as a "free ride" for the succeeding *wh*-movement.

The contrast between (1a) and (1b) is important in that it provides evidence that the MLC is more than a Minimalist rendition of Relativized Minimality (cf. Chomsky and Lasnik 1993). Notice that Relativized Minimality fails to explain the ill-formedness of (1b) (see (22b)), since the Spec of AspP is not an A'-specifier position that would block A'-movement. Thus, examples such as (1b) argue for the MLC over Relativized Minimality.

I remarked above that (5a-b) are essentially equivalent in meaning. It has been observed, however, that the applied object in Bantu applicatives is construed as "affected" (see, for instance, Marantz 1993). Thus it seems that the Locative *ishuûri* 'school' is somehow "affected" in (5b) but not in (5a). As is obvious, it is crucial to the present account that (5a-b) are comparable for economy. I suggest that the kind of "affectedness" in (5b) is insignificant for the purpose of the reference set, because it is not a feature of nominals in the lexicon; there is nothing that makes nominals intrinsically "affected" (see (16)).[15]

Turning next to the Kinyarwanda instrumental applicative, a Type 2 applicative, the relevant parts of (2a-b) have the derivations in (23a-b) respectively.

(23) a. $[_{CP}\ OP_i\ [_{TP}\ man_j$ write $[_{PrP}\ t_j$ Pr $[_{AspP}\ t'_i$ Asp $[_{VP}\ t_i\ t_V\ [_{PP}$ with pen]]]]]]

b. $[_{CP}\ OP_i\ [_{TP}\ man_j$ write-appl $[_{PrP}\ t_j$ Pr $[_{AspP}\ t'_i$ Asp $[_{VP}$ pen $t_V\ t_i]]]]]$

In (23a-b) the Theme raises into the Spec of AspP to check its structural Case. (23a-b) arise from distinct numerations and hence are not subject to comparison at all. This is

[15] It may be that "affectedness" is read off LF as a configurational effect (Mark Baker (personal communication).

precisely because no PI is involved in (23b) (see Section 4.2.). In light of the notion of non-distinctness in (17), the preposition in (23a) with the categorial features [-N, -V] and the applicative morpheme in (23b) with the categorial features [-N, +V] are distinguishable for economy purposes.[16] The well-formedness of (23a-b) thus comes as no surprise, since they are independently the most economical result of their respective reference sets. The same remark applies to the well-formedness of (8a-b) without extraction of the logical object.

As discussed in Baker 1988b, the Chichewa instrumental applicative does not involve PI. Hence, the Theme in the Chichewa instrumental applicative (in the dialect described by Baker (1988b)) can trigger agreement.[17] Furthermore, it has an analytic counterpart. This means that the Chichewa instrumental applicative is identical to the Kinyarwanda instrumental applicative in the relevant respects. As I predict, the Theme is extractable in the Chichewa instrumental applicative (Baker 1988b, Alsina and Mchombo 1990, 1993). The following example from Alsina and Mchombo 1993:32 shows that this is true:

(24) Īli ndi dengu liméné ányăni á-kú-phwány-ír-a mwăla.
this be basket REL baboons SP-PRES-break-APPL-ASP stone
'This is the basket that the baboons are breaking with a stone.'

As in the case of Kinyarwanda (2b), (24) is not blocked by its analytic equivalent, because they do not belong to the same reference set.

The present account of extraction of thematic objects in the instrumental applicative in Kinyarwanda and Chichewa also extends to the locative applicative in Chichewa, which Baker (1992a) argues is not derived by PI. Baker's (1992a) claim is supported by the fact that the Theme in the locative applicative exhibits the properties of structurally Case-

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[16] Or if the applicative morpheme is indeed lexical, it would not be visible to syntax at all.

[17] However, it cannot be passivized. Thus, the Chichewa counterpart of Kinyarwanda (10a) is ungrammatical. I do not have anything interesting to say about this unexpected discrepancy. See Baker 1988b, Alsina and Mchombo 1993, Marantz 1993, and Woolford 1993.

marked DPs, namely, it can induce pronominal agreement and passivize (see Alsina and Mchombo 1990, 1993). Then, the prediction is that the Theme in the applicative can be extracted in spite of the fact that there is an analytic counterpart of the applicative (Trithart 1977, Mark Baker (personal communication)). This prediction is fulfilled, as the following example provided by Sam Mchombo (personal communication) shows.

(25) Ūwu ndi mkéká uméné álēnje á-ná-lúk-fr-a pá-mchēnga.
this be mat REL hunters SP-PAST-weave-APPL-ASP on-sand
'This is the mat that the hunters wove on the beach.'

4.3.2. Type 3 and Type 4 Applicatives

Above, we saw how PI plays a role in determining the extractability of the Theme argument in applicatives (see (3i)). I maintain that there is another key factor, that is, the availability of the independent counterpart of the affixal applicative morpheme in question (see (3ii)).

Recall that in my account of (1), it is (1a) that blocks (1b). Suppose that (1a) was not available for some reason. Then, economy would predict that (1b) would be well-formed, being the most economical in the absence of better alternatives. I argue that this possibility is in fact instantiated in the Chimwiini benefactive and goal applicatives.

The Chimwiini benefactive and goal applicatives involve PI. Thus, they pattern with the Kinyarwanda locative applicative in that the Theme in them does not show any characteristics of the structural object (Kisseberth and Abasheikh 1977). Specifically, the Theme cannot control agreement:[18]

[18] The applicative morphemes in the Chimwiini examples are capitalized, as in Kisseberth and Abasheikh 1977.

(26) a. *Hamadi Ø-sh-pikILile wa:na cha:kuja.
Hamadi SP-OP-cooked(APPL) children food
('Hamadi cooked food for the children.')

b. Hamadi Ø-wa-pikILile wa:na cha:kuja.
Hamadi SP-OP-cooked(APPL) children food
'Hamadi cooked food for the children.'

(27) a. *Nu:ru Ø-chi-letELele mwa:limu chibu:ku.
Nuru SP-OP-brought(APPL) teacher book
('Nuru brought the book to the teacher.')

b. Nu:ru Ø-m-letELele mwa:limu chibu:ku.
Nuru SP-OP-brought(APPL) teacher book
'Nuru brought the book to the teacher.'

In (26) and (27) the (a) examples where the logical object triggers object agreement are ungrammatical. On the other hand, the (b) examples where the applied object controls object agreement are grammatical.

The Theme in the Chimwiini benefactive and goal applicatives cannot be passivized, either:

(28) a. *Cha:kuja sh-pikILila wa:na na Hamadi.
food SP-was cooked(APPL) children by Hamadi
('Food was cooked for the children by Hamadi.')

b. Wa:na wa-pikILila cha:kuja na Hamadi.
children SP-was cooked(APPL) food by Hamadi
'The children was cooked food by Hamadi.'

(29) a. *Chibu:ku chi-letELela mwa:limu na Nu:ru.
book SP-was brought(APPL) teacher by Nuru
('The book was brought to the teacher by Nuru.')

b. Mwa:limu Ø-letELela chibu:ku na Nu:ru.
teacher SP-was brought(APPL) book by Nuru
'The teacher was brought the book by Nuru.'

But what sets the Chimwiini benefactive and goal applicatives apart from the Kinyarwanda locative applicative is that they do not have analytic counterparts (Kisseberth

and Abasheikh 1977). Consider the following Chimwiini examples:

(30) a. *Ja:ma Ø-tilanzile: nama **ka** chija:na.
Jama SP-cut meat **for** small child
('Jama cut the meat for the small child.')

b. Ja:ma Ø-sh-tilangILile chija:na nama.
Jama SP-OP-cut(APPL) small child meat
'Jama cut the meat for the small child.'

(31) a. Mwa:limu Ø-lesele chibu:ku **ka** Nu:ru.
teacher SP-brought book **to** Nuru
'The teacher brought the book to Nuru's place.'

b. Mwa:limu Ø-m-letELele Nu:ru chibu:ku.
teacher SP-OP-brought(APPL) Nuru book
'The teacher brought the book to Nuru.'

As shown in (30), there simply is no analytic equivalent of the benefactive applicative. (30a) is ungrammatical under the intended reading. According to the description of Kisseberth and Abasheikh (1977), it appears that the goal applicative has a corresponding nonapplicative version. But as Kisseberth and Abasheikh point out, in pairs like (31), the nonapplicative and applicative versions are clearly different in meaning, as indicated by the translations in (31). In view of (25), (31a-b) are not comparable for the purpose of economy, since although the preposition in (31a) and the applicative morpheme in (31b) share the same categorical features [-N, -V], they are semantically distinct and thus do not have the same interpretable features.

Given that Chimwiini benefactive and goal applicatives are derived by PI but lack their analytic counterparts, economy predicts that extraction of the Theme in them is legitimate, a prediction borne out by the following examples of relativization:

(32) nama ya Nu:ru Ø-m-tiłangILilo: mwa:ná
meat REL Nuru SP-OP-cut(APPL) child
'the meat that Nuru cut for the child'

(33) chibuku cha Nu:ru Ø-m-łetELelo mwa:limú
book REL Nuru SP-OP-brought(APPL) teacher
'the book that Nuru brought to the teacher'

(34) illustrates the derivation for (32) (irrelevant details omitted).

(34) $[_{CP}\ OP_i\ [_{TP}\ Nuru_j$ cut-for$_l$ $[_{PrP}\ t_j$ Pr $[_{AspP}$ child$_k$ Asp $[_{VP}\ t_i\ t_V\ [_{PP}\ t_l\ t_k]]]]]]$

Notice that in (32) (and (33)) there is a prefix on the verb agreeing with the applied object, pointing to the correctness of (34) where the applied object occupies the Spec of AspP. The extraction in (34) is fine in spite of the fact that it proceeds in exactly the same way as the illegitimate extraction in Kinyarwanda (1b) (see (22b)) since in Chimwiini there is no alternative derivation to be taken into consideration. The well-formedness of (33) receives the same explanation.

One might suspect that the extractability of the Theme in applicatives is an inherent property of a given language. Thus, one might say that it must be the case that the Theme in applicatives can always be extracted in Chimwiini. We have already seen, however, that this line of thinking is incorrect. In Kinyarwanda, the Theme is extractable in the instrumental applicative, but not in the locative applicative.

Similarly, the instrumental applicative in Chimwiini differs from the benefactive and goal applicatives in the same language in that it does have a basic transitive counterpart, as shown in (35) (Kisseberth and Abasheikh 1977).[19]

[19] Kisseberth and Abasheikh (1977:196) point out that in the Chimwiini instrumental applicative, the Instrument is presupposed. Thus, the instrument applicative is natural when the Instrument is topicalized, as in (36a) and (i) in footnote 20, though sentences like (35b) are grammatical, with the Theme stressed.

(35) a. Nu:ru Ø-tiłanziłe: nama **ka:** chisu.
Nuru SP-cut meat **with** knife
'Nuru cut the meat with a knife.'

b. Nu:ru Ø-tiłangILile: náma chisu.
Nuru SP-cut(APPL) meat knife
'Nuru cut the meat with a knife.'

Note that these sentences are basically synonymous, suggesting that the preposition in (35a) and the applicative morpheme in (35b) possess the same semantic features. The diagnostics for the presence or absence of PI adopted here tell us that the instrumental applicative morpheme in Chimwiini is an incorporated preposition. Consider the following examples:

(36) a. *Chisu, nama i-tiłangILila na Nuru.
knife meat SP-was cut(APPL) by Nuru
('The knife, the meat was cut with by Nuru.')

b. Chisu sh-tiłangILila: nama na Nuru.
knife SP-was cut(APPL) meat by Nuru
'The knife was used to cut meat by Nuru.'

(36) shows that the Instrument but not the Theme can undergo passivization in the Chimwiini instrumental applicative. This means that the applied Instrument rather than the Theme is the structural object, indicating that PI is at work in the applicative.[20]

Given that the Chimwiini instrumental applicative morpheme is prepositional and has its independent counterpart, the present analysis predicts that the Theme cannot be

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[20] In Chimwiini, there is a restriction that an applied object cannot trigger agreement if it is inanimate (Kisseberth and Abasheikh 1977). Thus, (ib), where the verb agrees with the Instrument, is unacceptable along with expectedly ungrammatical (ia), where the verb agrees with the Theme.

(i) a. *Chisu, Nu:ru Ø-i-tiłangILile: nama.
knife Nuru SP-OP-cut(APPL) meat
'The knife, Nuru cut meat with.'

b. *Chisu, Nu:ru Ø-sh-tiłangILile: nama.
knife Nuru SP-OP-cut(APPL) meat
'The knife, Nuru cut meat with.'

extracted in the applicative, as in the case of the Kinyarwanda locative applicative. This predication is correct, as illustrated below:

(37) a. nama ya Nu:ru Ø-tiłanziło: **ka:** chisú
meat REL Nuru SP-cut **with** knife
'the meat that Nuru cut with the knife'

b. *nama ya Nu:ru Ø-tiłang**I**Lilo: chisú
meat REL Nuru SP-cut(APPL) knife
('the meat that Nuru cut with the knife')

The relevant structures for (37) are provided below (unimportant details suppressed):[21]

(38) a. $[_{CP}\ OP_i\ [_{TP}$ Nuru$_j$ cut $[_{PrP}\ t_j$ Pr $[_{AspP}\ t'_i$ Asp $[_{VP}\ t_i\ t_V\ [_{PP}$ with knife$]]]]]]$

b. *$[_{CP}\ OP_i\ [_{TP}$ Nuru$_j$ cut-with$_l\ [_{PrP}\ t_j$ Pr $[_{AspP}$ knife$_k$ Asp $[_{VP}\ t_i\ t_V\ [_{PP}\ t_l\ t_k]]]]]]$

Since the applicative morpheme and the instrumental preposition in Chimwiini share the same semantic as well as categorial features, they are treated as indistinguishable for economy purposes. With the notion of reference set given in (15), then, the structural representations in (38) are evaluated with each other. As in the case of Kinyarwanda (22) above, (38b) is blocked by the more economical (38a), since the *wh*-chain link in (38a) is shorter than the one in (38b).

The Chimwiini data examined here give support to the claim that whether or not there is an independent counterpart of an applicative morpheme is crucial with regard to the extractability of the Theme argument in an applicative.

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[21] Presumably, the raising of the Instrument in (38b) takes place at LF, given the word order in (35b). Although I do not know exactly why this should be the case, I suspect that the covert raising may be related to the fact mentioned in the preceding footnote that inanimate applied objects cannot trigger agreement in Chimwiini. As has been noted in the literature, there is a tendency that agreement is contingent on overt raising (cf. Chomsky 1995).

Given that the instrumental applicatives in Kinyarwanda and Chichewa pattern together in terms of object extraction (namely, the Theme is extractable), one might have suspected that the extractability of the Theme in an applicative is dictated by the semantic nature of the applicative. Chimwiini (37b) argues against this view; the Theme is not extractable in the Chimwiini instrumental applicative. The moral then is that a semantic account that focuses on the thematic roles of the DPs in the clause does not work and thus a syntactic account seems to be called for.

The Chichewa benefactive applicative, like the Chimwiini benefactive applicative, is known to involve PI (only the applied Benefactive can trigger agreement and can be passivized) but has no analytic equivalent (Baker 1988b, Alsina and Mchombo 1990).[22] Then, the prediction is that the Theme is extractable in the applicative. This is true, as shown below (Alsina and Mchombo 1990:496):

(39) Ī-yi ndi mphátso iméné chítsîru chí-ná-gúl-ír-a atsíkāna.
this be girl REL fool SP-PAST-buy-APPL-ASP girls
'This is the gift that the fool bought for the girls.'

So far, we have examined applicatives of Type 1 (the Kinyarwanda locative applicative and the Chimwiini instrumental applicative), Type 2 (the instrumental applicatives in Kinyarwanda and Chichewa along with the Chichewa locative applicative), and Type 3 (the Chimwiini benefactive and goal applicatives along with the Chichewa benefactive applicative described by Baker (1988b) and Alsina and Mchombo (1990)).

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[22] The benefactive applicative morpheme in Chichewa differs in terms of PI from the instrumental and locative applicative morphemes in the language, though they are homophonous. Thus I divorce the categorial status of an applicative morpheme from etymology. The remark about the benefactive applicative does not apply to Trithart's (1977) dialect of Chichewa. In particular, either the Benefactive or the Theme in the benefactive applicative can trigger agreement and passivize in the dialect, indicating that no PI is involved in the applicative. Furthermore, no analytic equivalent of the benefactive applicative is found, as in the dialect investigated by Baker (1988b) and Alsina and Mchombo (1990). Thus, the benefactive applicative in Trithart's dialect is similar to the Kichaga and Kinyarwanda benefactive applicatives, to which I will turn momentarily. As is expected, the counterpart of (39) in Trithart's dialect is well-formed. Note that the dialectal difference in Chichewa shows that whether an applicative morpheme is prepositional or not has nothing to do with etymology.

For the sake of completeness, let us look at the benefactive/malefactive applicative in Kichaga, which represents Type 4 applicatives. According to Bresnan and Moshi (1990), Kichaga lacks prepositions altogether. This means that an applicative in Kichaga does not have an analytic version. The benefactive/malefactive applicative in the language does not involve PI. Thus, either the Theme or the Benefactive/Malefactive can trigger agreement and undergo passivization, as illustrated below (Bresnan and Moshi 1990:150):

(40) a. N-á-í-kì-lyí-ɪ-à m̀-kà.
FOC-SP-PRES-OP-eat-APPL-ASP wife
'He/She is eating it for/on the wife.'

b. N-á-í-m̀-lyì-ɪ-à k-èlyâ.
FOC-SP-PRES-OP-eat-APPL-ASP food
'He/She is eating food for/on him/her.'

(41) a. K-èlyá k-í-lyì-ɪ-ò m̀-kà.
food SP-PRES-eat-APPL-PASS wife
'The food is being eaten for/on the wife.'

b. M̀-kà n-á-í-lyì-ɪ-ò k-èlyâ.
wife FOC-SP-PRES-eat-APPL-PASS food
'The wife is being benefitted/adversely affected by someone eating the food.'

As is expected by the present economy account, the Theme can be extracted in the Kichaga benefactive/malefactive applicative (adapted from Bresnan and Moshi 1990:159):

(42) K-èlyá á-í-lyì-ɪ-à m̀-kà kí-pùsù.
food SP-PRES-eat-APPL-ASP wife rotten
'The food that he is eating for the wife is rotten.'

No alternative is available that would block (42).

The same situation holds of the Kinyarwanda benefactive applicative, which has neither PI nor its analytic version; the lack of PI is confirmed by the fact that the Theme in the applicative can trigger pronominal agreement and undergo passivization (Kimenyi

1980). Then it is predicted that the Theme is extractable, which is indeed the case ((43) adapted from Marantz 1993:134).

(43) N-a-boon-ye ibíryo umugóre a-rá-hé-er-a umugabo ímbwa.
SP-PAST-see-ASP food woman SP-PRES-give-APPL-ASP man dog
'I saw the food that the woman is giving the dog for the man.'

Again, (43) is the most economical in the absence of alternative derivations.

4.3.3. Problems with an ECP Account

Having presented my economy account, now I would like to turn to Marantz's (1993) explanation of extraction of logical objects in Bantu applicatives, which merits special attention since it is the only serious attempt in the GB literature to deal with the problem addressed here.

As noted in passing (see footnote 11), there are roughly two kinds of Bantu languages with respect to the number of postverbal DPs in applicatives that exhibit "primary object" properties like passivizability, object agreement, and adjacency to the verb (see Bresnan and Moshi 1990 for a detailed discussion). In languages such as Kinyarwanda and Kichaga, more than one postverbal DP can potentially display "primary object" properties, while in languages such as Chichewa and Chimwiini, only one DP can.

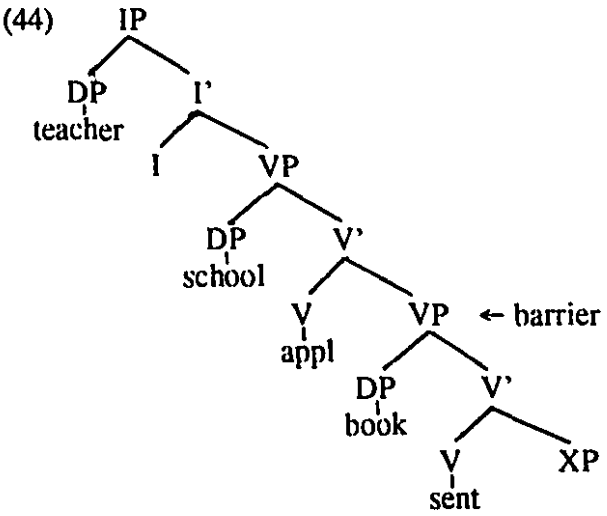
In Marantz's (1993) terms, Kinyarwanda-type languages are raising/adjunction (R/A) languages, whereas Chichewa-type languages are merger/incorporation (M/I) languages. In the former languages, the main verb is assumed to raise and adjoin to the applicative morpheme, which Marantz analyses as a verb heading its own projection. In the latter languages, the main verb and the applicative morpheme "merge" in the sense of Marantz (1984) or they undergo Incorporation in the sense of Baker (1988a). In conjunction with a set of specific assumptions (which are no longer tenable in Minimalism), the difference between the two types of languages is argued to reduce to the difference in the way that

the verb and the applicative morpheme combine. The crucial assumption is that the main verb combined with the applicative morpheme will govern into the lower VP in M/I languages (due to Baker's (1988a) *Government Transparency Corollary*[23]) but not in R/A languages (see Marantz 1993 for details).

From this assumption, it follows that the lower VP is never a barrier in M/I languages. Marantz (1993) notes that this VP may be a barrier to government and movement in R/A languages, which he exploits to account for the correlation between the NP-movability and the *wh*-movability of internal arguments in applicatives in these languages.

Going back to the Kinyarwanda locative applicative, Marantz would assign (5b) the following structure:[24]

(44)



Marantz suggests that the lower VP in (44) may be a barrier. This would explain why the

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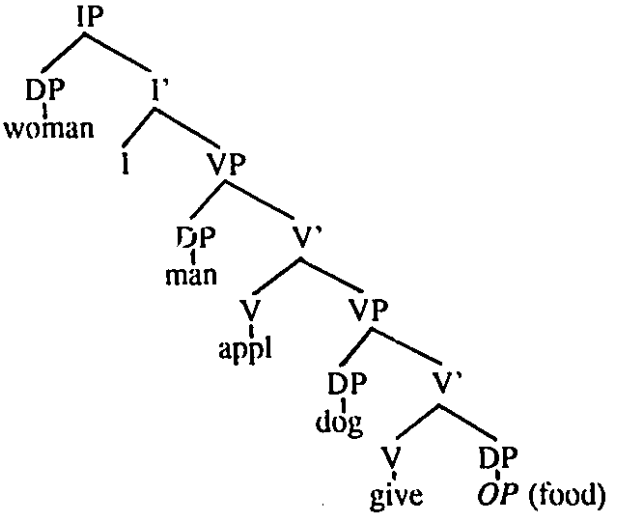
[23] *Government Transparency Corollary* (GTC):
A lexical category which has an item incorporated into it governs everything which the incorporated item governed in its original structural position.
(Baker 1988a:64)

[24] Marantz (1993) assumes that logical subjects are generated in Spec of IP, contra the Predicate-Internal Subject Hypothesis adopted in the Minimalist framework.

Theme dominated by the lower VP can neither be extracted (see (1b)) nor passivized (see (7a)).

Under Marantz's account, the relevant part of the Kinyarwanda benefactive applicative in (43) would have the following structure similar to (44):

(45)



Marantz stipulates that the benefactive applicative morpheme but not the locative one has the ability to void the barrierhood of the VP in Kinyarwanda. Thus, the crucial difference between (44) and (45) is that the lower VP is a barrier in the former but not in the latter. This would explain why the Theme can be extracted in (43) but not in (1b).

There are, however, problems with Marantz's account. As he himself notes, it does not explain why there must be a difference between the locative applicative and the benefactive applicative in Kinyarwanda in terms of the barrierhood of the lower VP. In addition, it is not clear how the main verb can raise over the barrier to adjoin to the applicative morpheme in structures like (44). More generally, recent studies on locality point to the conclusion that VP is not a barrier (see Cinque 1990, Lasnik and Saito 1992).

There is a further problem with Marantz's approach. As mentioned above, the lower VP in applicatives in M/I languages is never a barrier under his analysis. The prediction

then is that the Theme can always be extracted in those languages. This prediction, however, is empirically incorrect. As shown in (37b), the Theme in the instrumental applicative in Chimwiini, a M/I language, cannot undergo *wh*-movement. To deal with Chimwiini, Marantz would have to stipulate, as he does for Kinyarwanda, that the lower VP is a barrier in the instrumental applicative, while it is not in the benefactive and goal applicatives, a move that would make his account far from explanatory. Note that he explicitly argues that in applicative structures, Benefactives and Goals are always generated in the Spec of the higher VP, while Instruments and Place Locatives can be generated either in the Spec of the higher VP or in the Spec of the lower VP. This would cope with the Kinyarwanda instrumental applicative where the Theme is indeed extractable (see (2b)) since it has the option of being generated in the Spec of the higher VP above the putative barrier. But the difficulty with this account is that the Theme in instrumental applicatives is wrongly expected to be extractable in any language.

Therefore, I conclude that Marantz's (1993) account contains many problems. They do not arise under my account, which does not make use of the notion of barrier.

To summarize, the present economy account successfully captures the generalization given in (3). When and only when the two conditions in (3) are met simultaneously, as in the case of Type 1 applicatives, an applicative construction and its analytic version get compared, and the latter counts as a more economical alternative to the former, as far as Theme extraction is concerned, due to the MLC. Otherwise, no comparison can be made between an applicative and its corresponding nonapplicative (if there is one), allowing them to converge independently of each other. Furthermore, it has been shown that the economy account is both theoretically and empirically superior to Marantz's (1993) ECP-type account using barriers.

Before closing this section, let us consider the following English examples repeated from Chapter 1:

(46) a. The teacher sent the book to the student.
b. The teacher sent the student the book.

(47) a. I saw the book which the teacher sent to the student.
b. I saw the book which the teacher sent the student.

In Chapter 1, these examples were contrasted with the Kinyarwanda examples in (1) and (5). The question raised there was: Why is it that (47b) is grammatical when its Kinyarwanda counterpart in (1b) is ungrammatical?

In the present context, the answer must be: PI is not involved in the English double object construction. If this is true, then (46a-b) do not belong to the same reference set in the first place, and neither do (47a-b). Each of (47a-b) converges without blocking the other.

Here I will not go into a detailed analysis of the English double object construction (see, among many others, Aoun and Li 1989, Baker 1988a, Bowers 1993, Kayne 1984, Larson 1988, Oehrle 1976, Stowell 1981). The above references except Baker 1988a argue that the English double object construction is not derived by PI, a conclusion consistent with the present analysis.[25]

4.4. Applicatives in Austronesian

In the preceding sections, we concentrated on applicatives in several languages of the Bantu family. If the present account is actually capturing some truth about natural

[25] In the English double object construction, its verb never bears an overt applicative morpheme. This may be taken to be an indication of the lack of PI in the English double object construction, given the assumption that substantive categories such as Ps cannot generally be morphologically null (perhaps for reasons having to do with recoverability). The fact that only "applied" objects seem to behave like structural objects in English (for instance, *the student* but not *the book* can be passivized in (46b) (for most speakers)) can be accounted for by posting the kind of double predication structure proposed by Bowers (1993), where "applied" objects are generated in the Spec of PrP as "inner" logical subjects. Then they are not eligible for inherent Case (since they are not generated within lexical projections) and hence must get structural Case.

languages, we would expect it to prove successful beyond Bantu, too. In this section, therefore, I consider another language family, *i.e.*, Austronesian languages, where productive applicative constructions are attested. In particular, Bahasa (Malaysia and Indonesia), Tagalog, and Chamorro will be discussed in turn.

Bahasa is a Western Austronesian language with a basic word order of SVO.

(48) Ali **mem**-ukul anjing itu.
Ali TR-hit dog the
'Ali hit the dog.'

In (48) the verb bears the transitive prefix *meng-*, whose appearance on the verb has been described as being conditioned by semantic and stylistic factors (Danoesoegondo 1971).

Unlike Philippine languages such as Tagalog, which I claimed have fully ergative syntax, Bahasa has accusative constructions.[26] Its accusativity can be clearly seen by examining applicative constructions like the one in (49b) (Chung 1976b).

(49) a. Orang itu masak ikan **untuk** perempuan itu.
man the cook fish **for** woman the
'The man cooked fish for the woman.'

b. Orang itu me-masak-**kan** perempuan itu ikan.
man the TR-cook-APPL woman the fish
'The man cooked the woman fish.'

(49b) is a benefactive applicative construction, (49a) its analytic counterpart, where the Benefactive is accompanied by the preposition *untuk* 'for'. In Bahasa the structural subject in the Spec of TP precedes the verb (Hung 1987, Guilfoyle *et al.* 1992 among others). Thus, *orang itu* 'the man' is the structural subject in (49). As shown in (49b), the applied

[26] But in fact, Bahasa shows a high degree of ergativity in such constructions as the Object Preposing construction (Chung 1976a,b, Hung 1987). Object Preposing is discussed in more detail in Chapter 6.

object *perempuan itu* 'the woman' becomes the structural object rather than the structural subject in Bahasa. The word order in (49b) can be explained by saying that the applied object has raised into the Spec of AspP after the PI (see below), and the verb has raised at least up to Pr. Thus, the applied object in Bahasa contrasts sharply with its counterpart, say, in Tagalog in that the latter always becomes the structural subject (see below).

Here a brief remark is in order about the applicative morpheme in Bahasa. The applicative morpheme is usually realized as *-kan*, but it has the alternative forms *-i* and *-Ø* for a small set of verbs. For instance, the verb *iriim* 'send' takes *-i*, while the verb *bajar* 'pay' takes *-Ø* (Chung 1976b).

(50) a. Lakilaki itu meng-irim-i wanita itu seputjuk surat.
man the TR-send-APPL woman the a letter
'The man sent the woman a letter.'

b. Anak lakilaki itu mem-bajar polisi itu lima dolar.
child male the TR-pay police the five dollar
'The boy paid the policeman five dollars.'

According to Chung's (1976b) description, verbs that take *-i* or *-Ø* in their applied forms regularly allow *-kan* to attach to them in their nonapplied forms. Compare (50) with (51).

(51) a. Lakilaki itu meng-irim(**-kan**) surat kepada wanita itu.
man the TR-send(-KAN) letter to woman the
'The man sent a letter to the woman.'

b. Anak lakilaki itu mem-bajar(**-kan**) lima dolar kepada polisi itu.
child male the TR-pay(-KAN) five dollar to police the
'The boy paid five dollars to the policeman.'

(51a-b) are the analytic versions of (50a-b) respectively. Thus, in (51) the Goal argument is preceded by the preposition *kepada* 'to'. As indicated by the parentheses, the

morpheme *-kan* is optional in (51), suggesting that it is insignificant, as far as the class of verbs accepting *-i* and *-Ø* are concerned. In contrast, verbs that take *-kan* in their applied forms normally do not permit it otherwise (Chung 1976b).

As shown in Chung (1976b), the applied object but not the thematic object acts like the structural object. One obvious piece of evidence comes from the fact that the applied object must immediately follow the verb; the immediate postverbal position is the canonical structural object position in Bahasa.

Passivization provides further evidence that the applied object is the structural object in the Bahasa applicative construction. Consider the following examples based on (49b):

(52) a. *Ikan **di-masak-kan** perempuan itu oleh orang itu.
fish PASS-COOK-APPL woman the by man the
('A fish was cooked the woman by the man.')

b. Perempuan itu **di-masak-kan** ikan oleh orang itu.
woman the PASS-COOK-APPL fish by man the
'The woman was cooked fish by the man.'

As shown in (52b), the applied Benefactive object *perempuan itu* 'the woman' in (49b) can be passivized. On the other hand, the logical object *ikan* 'fish' in (49b) cannot be passivized. Given the assumption that passivization targets only structural objects (see section 4.2. above), it follows that the applied object is indeed the structural object. The ungrammaticality of (52a) suggests that the logical object receives inherent Case.

The same point can be made with respect to applicatives like (50a) where we find the morpheme *-i* on the verb. Observe (53):

(53) a. *Surat itu di-kirim-i wanita itu oleh lakilaki itu.
letter the PASS-send-APPL woman the by man the
('The letter was sent to the woman by the man.)'

b. Wanita itu di-kirim-i sebuah surat oleh lakilaki itu.
woman the PASS-send-APPL a letter by man the
'The woman was sent a letter by the man.'

(53a) is ungrammatical, because the logical object in the goal applicative in Bahasa resists passivization. (53b), on the other hand, is grammatical, since the structural Case of the applied object can be "absorbed" by the passive morphology.

In the present context, this means that the applicative in Bahasa is derived by PI. In view of examples like (51), however, one may well raise objection to the idea that the applicative morpheme in Bahasa is an incorporated preposition. In (51) *-kan* can cooccur with an independent preposition and therefore cannot be an incorporated preposition. I agree that *-kan* in (51) is not an incorporated preposition, but this does not necessarily imply that *-kan* in (49b) is not an incorporated preposition (see footnote 22). In fact, there is a marked difference between the two instances of *-kan*; in contrast to *-kan* in (51), *-kan* in (49) cannot cooccur with the preposition.

In this light, I assume that in the dialect of Bahasa (Indonesia) described by Chung (1976b), there are (at least) two kinds of *-kan*. One is an incorporated preposition used with verbs that disallow the superfluous use of *-kan*, as in (51). The other is a verbal derivational suffix that optionally attaches to the special class of verbs that take *-i* and *-Ø* in applicatives and its role perhaps is to indicate the ditransitivity of the verbs.[27]

If it is true that the Bahasa applicative is derived by PI, the economy account advocated here straightforwardly explains the fact that it prohibits extraction of logical

[27] It is interesting to note that this use of *-kan* has virtually disappeared in the younger generation of Indonesians (Chung 1976b:55). This is in line with the general trend toward eliminating *-i* and *-Ø* in favor of *-kan*, as observed by Chung (1976b). What seems to be happening, from the present viewpoint, is that *-kan* is becoming the only prepositional applicative morpheme—probably as a way of economizing the lexicon.

objects. Consider the following examples of relativization (Chung 1976b):

(54) a. Djaket yang saya djahit **untuk** Hasan ter-letak di atas medja.
coat COMP I sew **for** Hasan ACCID-lie on top table
'The coat that I sewed for Hasan is lying on the table.'

b. *Djaket yang saya djahit-**kan** Hasan ter-letak di atas medja.
coat COMP I sew-APPL Hasan ACCID-lie on top table
('The coat that I sewed Hasan is lying on the table.')

(55) a. Saya me-lihat surat yang Ali kirim(-kan) **kepada** kakak saya.
I TR-see letter COMP Ali send(-KAN) **to** sibling my
'I saw the letter that Ali sent to my sister.'

b. *Saya me-lihat surat yang Ali kirim-**i** kakak saya.
I TR-see letter COMP Ali send-APPL sibling my
('I saw the letter that Ali sent my sister.')

Under the present proposal, an applicative and its analytic equivalent, being non-distinct from each other in the sense of (17), are subject to relative comparison for economy purposes. As in the case of the Kinyarwanda locative applicative and the Chimwiini instrumental applicative, Theme extraction in the Bahasa applicative, whether it is the benefactive applicative (54b) or the locative/goal applicative (55b), results in ill-formedness. The structures for the relevant parts of (54a-b), for example, are provided below:

(56) a. $[_{CP}\ OP_i\ [_{TP}\ t''_i\ T\ [_{PrP}$ I sew $[_{AspP}\ t'_i$ Asp $[_{VP}\ t_i\ t_V\ [_{PP}$ for Hasan$]]]]]]$

b. *$[_{CP}\ OP_i\ [_{TP}\ I_j\ T\ [_{PrP}\ t_j$ sew-for$_l\ [_{AspP}$ Hasan$_k$ Asp $[_{VP}\ t_i\ t_V\ [_{PP}\ t_l\ t_k]]]]]]$

For (economy) reasons to be discussed in Chapter 6, it is assumed that the thematic object or the null operator in (56a) has undergone Object Preposing (Chung 1976a,b) into the

Spec of TP,[28] and the thematic subject gets covert ergative Case in the Spec of PrP, though what is really crucial for the current discussion is that the null operator receives structural Case. In (56b) the null operator gets inherent Case within the VP (Object Preposing cannot affect DPs with inherent Case (Chung 1976b)), while the logical subject and the applied object receive structural Cases; nominative Case and accusative Case, respectively. The MLC formulated above correctly maintains that (56b) is blocked by more economical (56a), for the length of the *wh*-chain link is shorter in the former than in the latter. The same explanation applies to the pair in (55).

The Bahasa applicatives just examined give further support to the moral of the story I drew on the basis of the Bantu applicatives; it is not the semantic nature of an applicative that governs the extractability of its thematic object. For instance, one might have suspected from the above discussion of the Bantu benefactive applicatives that Theme extraction is universally possible in a given benefactive applicative. This is incorrect: Theme extraction is impossible in the Bahasa benefactive applicative. Hence, I emphasize once again that a purely syntactic account, like the one pursued here, seems to be what we need.

Up until now, we have examined Bantu languages and Bahasa, whose basic syntax is accusative (though Bahasa is in fact much more ergative than the Bantu languages surveyed in this chapter; see Chapter 6). Let us now turn to ergative languages of the Austronesian family, Tagalog and Chamorro.

Notice first that the present account maintains that the generalization in (3), repeated below, covers not only accusative but also ergative languages.

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[28] Object Preposing requires the absence of the transitive marker *meng-* on the verb (Chung 1976a,b, Hung 1987). Examples like (54a) and (55a) are consistent with this requirement.

(3) *Generalization*:
Extraction of Theme in an applicative is prohibited only if
(i) the applicative is derived by Preposition Incorporation, and
(ii) there is an analytic equivalent of the applicative containing an independent preposition.

Suppose that there is a pair of an applicative and its analytic equivalent in an ergative language and that it meets both of the two conditions given in (3). Then it is predicted that the Theme in the applicative, which gets inherent Case, cannot be extracted. The reason should be clear by now; the *wh*-chain of the Theme in the applicative is longer in length than that in the analytic equivalent, where the Theme can take advantage of a Case/EPP-driven "free ride," and therefore the former is blocked by the latter in light of the MLC. The only relevant difference between accusative and ergative languages is that the "free ride" the Theme enjoys in the analytic construction is longer in ergative languages than in accusative languages; in the latter, the Theme raises into the structural object position, *i.e.*, the Spec of AspP, while in the former, it raises into the structural subject position, *i.e.*, the Spec of TP (as in the Bahasa structure in (56a) with Object Preposing).

Notice also that in principle, we should find the four-way typology depicted in (4) in ergative languages as well. In the above discussion, passivizability and agreement controllability were used as independent diagnostics for the presence or absence of syntactic PI. The core observation was that if an applicative involves PI, then only the applied object can be passivized and trigger agreement. These diagnostics, extended to ergative languages, would state that if an applicative is derived by PI, then the applied argument (Benefactive, Locative *etc.*) but not the Theme becomes absolutive. If, on the other hand, an applicative lacks PI, either the applied argument or the Theme should be able to become the structural subject in an analogous way that either the Instrument or the Theme can become the structural object in Chichewa (but see footnote 17).

In what follows, I will examine some data from Tagalog and Chamorro. It is suggested that Tagalog has Type 1 applicatives, where the logical object cannot be extracted in accord with the generalization provided in (3), while Chamorro has Type 2 and Type 4 applicatives, where no PI is involved.[29]

Let us begin with Tagalog, which I believe has Type 1 applicatives. As is well-known, Philippine languages including Tagalog are very productive in "Topic" constructions other than Agent Topic or Theme Topic constructions. Observe for example the pair in (57). In the Benefactive Topic construction given in (57b), the Benefactive object of the preposition *para* has been turned into the structural subject or the absolutive by the use of the Benefactive Topic morpheme *i-* attached to the transitive Theme Topic form of the verb.

(57) a. B-in-ili ni Juan ang isda **para** kay Maria.
bought(TT) ERG-Juan ABS-fish **for** OBL-Maria
'Juan bought the fish for Maria.'

b. I-binili ni Juan ng isda si Maria.
bought(BT) ERG-Juan INH-fish ABS-Maria
'Juan bought Maria (the) fish.'

Following the lead of Starosta *et al.* (1982) (cf. Baker (1988a:468, fn. 17), Guilfoyle *et*

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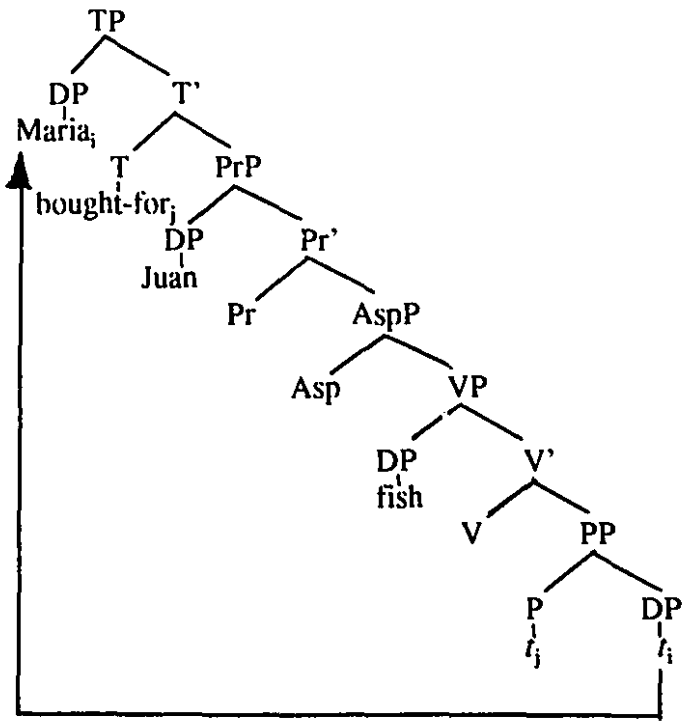
[29] I suspect that the Tzotzil applicative may represent Type 3 applicatives. According to Aissen (1987:104), a Tzotzil transitive clause can contain an (thematic) indirect object only if the predicate is suffixed with the morpheme *-be*. Consider the following Tzotzil examples:

(i) a. 7i-j-meltzan j-p'ej na.
CASP-1ERG-make one-NC house
'I made a house.'
b. 7i-j-meltzan-be j-p'ej na li Xun-e.
CASP-1ERG-make-APPL one-NC house the Xun-CLT
'I made a house for Xun.'

(ia) has been turned into applicative (ib) by the use of *-be*. Note that there seems to be no analytic counterparts of applicatives like (ib). Note also that it is the applied argument that receives structural absolutive Case; it can trigger absolutive agreement and undergo passivization, but not the direct object, as demonstrated by Aissen (1987). Thus the Tzotzil applicative appears to have the signature properties of PI. If this judgement is correct, it qualifies as a Type 3 applicative, and its Theme is predicted to be extractable. Regrettably, I do not have relevant Tzotzil data.

al. (1992:382, fn. 7)), I analyze (57) as an applicative construction involving PI. This analysis immediately accounts for the fact that in the Benefactive Topic construction, only the Benefactive can be the structural subject; if the applicative morpheme *i-* in (57) is verbal rather than prepositional, it would be incorrectly expected that the Theme could be the structural subject, too. The LF structure of (57b) under this analysis is provided below:

(58)



In (58) the applicative morpheme *i-* generated as the head of the PP undergoes movement to the V due to its affixal nature (Baker 1988a). After the PI, the Benefactive *Maria* is forced to move to a structural Case position. It covertly raises into the Spec of TP (Maclachlan 1995, Maclachlan and Nakamura 1994, Nakamura 1994b, Richards 1990, 1993; cf. Guilfoyle *et al.* 1992). The Agent is assigned ergative Case in the Spec of PrP. The Theme receives inherent Case within the VP (Baker 1988a,b). The raising of the Benefactive satisfies the definition of Attract in (12), since neither the raising of the

Agent nor the raising of the Theme into the Spec of TP would contribute to checking of the EPP and Case features of the T.

If the derivation of (57) depicted in (58) is indeed correct, the present analysis predicts that the Theme cannot be extracted in the Benefactive Topic construction; it should be more economical to extract the Theme in its corresponding Theme Topic construction. This prediction is borne out, as shown below:

(59) a. Ano ang b-in-ili ni Juan **para** kay Maria?
what ANG bought(TT) ERG-Juan **for** OBL-Maria
'What is the thing that Juan bought for Maria?'

b. *Ano ang i-binili ni Juan si Maria?
what ANG bought(BT) ERG-Juan ABS-Maria
('What is the thing that Juan bought Maria?')

In (59) the Theme Topic construction yields a grammatical output. (59b), the Benefactive Topic construction, is blocked by (59a). Let us assume that the independent preposition *para* and the incorporated preposition *i-* share the same interpretable features, more specifically the same semantic and categorial features. Then (59a-b) both belong to the same reference set, the phonological, Case, and affixal differences being ignorable.[30] The derivations for the relevant portions of (59a-b) are given below:

(60) a. $[_{CP}\ OP_i\ [_{TP}\ t'_i$ bought $[_{PrP}$ Juan Pr $[_{AspP}$ Asp $[_{VP}\ t_i\ t_V\ [_{PP}$ for Maria]]]]]]
$|$_____$|$

b. *$[_{CP}\ OP_i\ [_{TP}$ Maria$_j$ bought-for$_k$ $[_{PrP}$ Juan Pr $[_{AspP}$ Asp $[_{VP}\ t_i\ t_V\ [_{PP}\ t_k\ t_j]]]]]]
$|$_____$|$

(60b), where the null operator is inherently Case-marked, is blocked by more economical (59a), where it checks its absolutive Case in the Spec of TP, because the length of the

[30] The oblique-marker *kay* in (59a) is assumed to be nothing but a morphological reflex of the Case of the preposition, with no categorial status.

wh-chain is shorter in (59a) than in (59b).

This account automatically extends to other Tagalog constructions such as the Locative Topic construction. Consider (61):

(61) a. B-in-ili ni Juan ang isda sa tindahan.
bought(TT) ERG-Juan ABS-fish OBL-store
'Juan bought the fish at a/the store.'

b. Binilh-**an** ni Juan ng isda ang tindahan.
bought(LT) ERG-Juan INH-fish ABS-store
'Juan bought (the) fish at the store.'

(61b) illustrates the Locative Topic construction, where the object of the preposition *tindahan* 'store' in (61a) has become the absolutive. Again, I propose to analyze the Locative Topic construction as an instance of PI. As expected, the Theme in this construction is not extractable. This is demonstrated in (62).

(62) a. Ano ang b-in-ili ni Juan sa tindahan.
what ANG bought(TT) ERG-Juan OBL-store
'What is the thing that Juan bought at a/the store?'

b. *Ano ang binilh-**an** ni Juan ang tindahan.
what ANG bought(LT) ERG-Juan ABS-store
('What is the thing that Juan bought at the store?'

The reason for the ill-formedness of (62b) as opposed to the well-formedness of (62a) should be obvious. Given that the preposition *sa* in (62a) and the applicative morpheme -*an* are indistinguishable for economy purposes, (62a-b) are in competition with each other.[31] (62b) is blocked by (62a) for the same reason that (59b) is blocked by (59a).

Let us next consider Chamorro applicative constructions, which I suspect exemplify

[31] The relevant interpretation of (62a) here is the one where the Locative is construed as specific. When the Locative is nonspecific in (62a), (62a) does not compete with (62b), in which the Locative is obligatorily specific.

Type 2 and Type 4 applicatives. As noted in the previous chapters, Chamorro is a mood-split ergative langauge. The Chamorro examples given below are all in the realis mood, where the language exhibits ergativity. Observe the following Chamorro examples (Gibson 1980):

(63) a. Hu-tugi' i kätta **pära** i che'lu-hu.
1SG.ERG-write the letter **to** the sibling-1SG.POSS
'I wrote the letter to my brother.'

b. Hu-tugi'-i i che'lu-hu ni kätta.
1SG.ERG-write-APPL the sibling-1SG.POSS OBL-letter
'I wrote my brother the letter.'

(63b) is an applicative construction, whereas (63a) is its analytic counterpart. In the latter, the Goal argument is preceded by the preposition *pära*. In the former, the verb bears the applicative morpheme *-i*,[32] and the Goal appears without the preposition.

As has been noted in the literature (Gibson 1980), the applied argument but not the logical object behaves like a structurally Case-marked element in the Chamorro applicative. For instance, the Goal in (63b) can be the structural subject of a passive, but the Theme cannot be. Then, given the line of logic utilized above, one might be tempted to conclude that the Chamorro applicative involves PI.

There are, however, reasons to doubt this conclusion. For example, there is an indication that the applicative morpheme in Chamorro is not prepositional. Observe the following pair (adapted from Topping 1973):

[32] The applicative morpheme *-i* is realized as *-yi* or *-gui* depending on the phonological contexts it occurs in (Gibson 1980).

(64) a. Hu-fa'tinas-i si Paul kafe.
1SG.ERG-make-APPL UNM-Paul coffee
'I made Paul some coffee.'

b. Hu-fa'tinas-i si Paul ni kafe.
1SG.ERG-make-APPL UNM-Paul OBL-coffee
'I made Paul the coffee.'

As one might have already noticed, there is one marked difference between Tagalog and Chamorro applicatives in terms of the use of the oblique-marker with the Theme.[33] If the Theme is nonspecific, as in (64a), it bears no oblique-marker. If, on the other hand, it is specific, as in (64b), it must be oblique-marked.

In the discussion of the Specificity Effect (SE) in antipassives in Chapter 3, it was suggested that the Chamorro oblique-marker is "inserted" as a last resort into the *man-* antipassive construction, which, without the oblique-marker, exhibits the SE on its Theme. Then what we have in (64) is the SE; the Theme in the Chamorro applicative must be nonspecific, but the SE is neutralized by the use of the oblique-marker.

It has been observed in Chapter 3 that PI neutralizes the SE. Thus, consistent with this observation, the Theme in, say, Tagalog applicatives, which I analyzed as PI, is not subject to the SE; the Theme argument in (57b) and (61b), for instance, can be either specific or nonspecific. If a double object construction is not derived by PI, it can impose the SE on its Theme. Consider the following examples from Anyi, a Kwa language, recapitulated from Chapter 3 (Van Leynseele 1975):

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[33] Note that *ni*, as in (63b) and (64b), is the combined form of *nu* and the determiner *i* (see Topping 1973 and Cooreman 1987).

(65) a. Kòfí mà̀ kàsí bùlúkú.
Kofi give(HAB) Kasi book
'Kofi gives Kasi a book.'

b. *Kòfí mā kàsí bùlúkú-ə̄.
Kofi give(HAB) Kasi book-DEF
('Kofi gives Kasi the book.')

c. Kòfí fà bùlúkú-ə̄ fà-ˡ mā́ kàsí.
Kofi take(HAB) book-DEF take-give(HAB) Kasi
'Kofi gives the book to Kasi.'

The contrast between (65a) and (65b) shows that Anyi double object constructions are constrained by the SE. In order to express the intended meaning of (65b), one has to use the serial verb construction in (65c), where the definite or specific Theme is assumed to check its structural Case against the Asp associated with the higher verb and thus is free from the SE, an effect related to inherent Case-checking.

If it is true that PI neutralizes the SE, then it must be that Chamorro applicatives, showing the SE, lack PI. It should be pointed out here that the Kinyarwanda locative applicative, the Chimwiini instrumental, benefactive, and goal applicatives, and the Bahasa applicative, which I claimed involve PI above, do not seem to involve a SE. Besides agreement controllability and passivizability, the lack of a SE serves as a third diagnostic for the relevance of PI; an applicative derived by PI must pass all the three diagnostics.

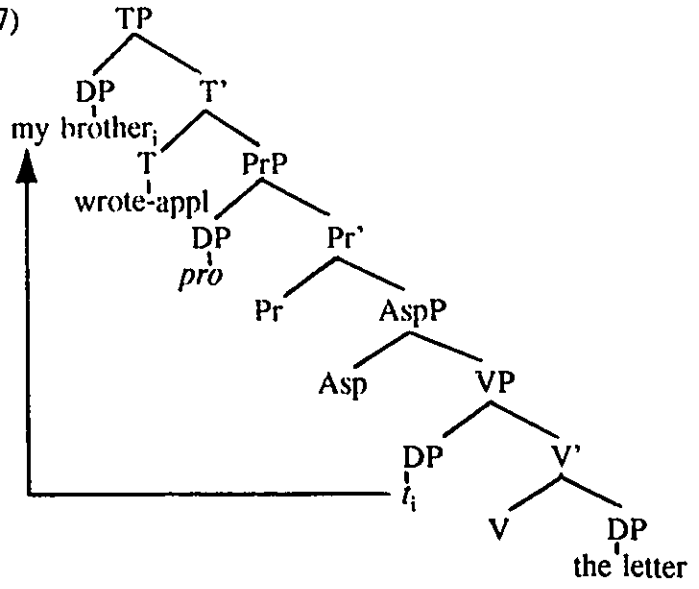
There is in fact more direct evidence that the applicative morpheme is not an incorporated preposition. According to Gibson (1980), the preposition *pära* can occur in applicatives in some dialects of Chamorro. Gibson (1980) gives the following example:

(66) Hu-tugi'-i (pära) si Juan ni kätta.
1SG.ERG-write-APPL (to) UNM-Juan OBL-letter
'I wrote Juan the letter.'

(66) provides a straightforward argument for the lack of PI in Chamorro applicative constructions; if the applicative morpheme in (66) is indeed an incorporated preposition, we would not expect the preposition *pära* to appear before the applied object.[34]

Therefore, let us assume that the Chamorro applicative does not involve PI. The LF representation for (63b) would be as follows:

(67)



In (67) the Goal 'my mother' raises into the Spec of TP at LF. The Agent *pro* is assigned ergative Case in the Spec of PrP. The specific Theme 'the letter' gets oblique Case within the VP.[35]

If the Chamorro applicative is not derived by PI, the present analysis can account for the fact that its Theme is extractable, as shown by the grammaticality of (68b) (based on Gibson 1980).

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[34] Mark Baker (personal communication) points out the possibility that historically, the applicative morpheme may be the reduced form of the verb *na'i* 'give'. See below.

[35] From the present perspective, it is not clear why the Goal cannot get inherent Case in the way the Instrument in the Kinyarwanda instrumental applicative can. It may be that the applied verb, as a lexical property, assigns inherent Case only to the Theme in Chamorro. Or it may be that the structure of the Chamorro applicative is more complex than that in (67) and the Goal is generated in a position (*i.e.*, Spec of PrP) where it cannot receive inherent Case (see Bowers 1993).

(68) a. Hafa un-tugi' **pāra** i che'lu-mu.
what 2SG.ERG-write **to** the sibling-2SG.POSS
'What did you write to your brother?'

b. Hafa un-tugi'-i i che'lu-mu?
what 2SG.ERG-write-APPL the sibling-2SG.POSS
'What did you write your brother?'

(68b) is an applicative construction, and (68a) its analytic equivalent. In both of them, the Theme argument has been successfully extracted. The LF structures for the relevant parts of (68a-b) are given in (69a-b).

(69) a. $|_{CP}$ OP_i $|_{TP}$ t'_i wrote $|_{PrP}$ you $|_{AspP}$ $|_{VP}$ t_i t_V $|_{PP}$ to your brother$|||||$
$|\_\_\_\_|$

b. $|_{CP}$ OP_i $|_{TP}$ your brother$_j$ wrote-appl $|_{PrP}$ you $|_{AspP}$ $|_{VP}$ t_j t_V $t_i|||||$
$|\_\_\_\_\_|$

Since the preposition in (69a) and the applicative morpheme in (69b) are distinct for the purpose of the reference set, the derivations in (69) do not compete with each other in the first place. Hence, they converge independently of each other, though the length of the *wh*-chain is shorter in (69a) than in (69b).

The sharp contrast between Tagalog and Chamorro with respect to extraction of Themes in applicatives can be regarded as a rather striking confirmation of the generalization put forward in this chapter. It has been argued in the literature (Topping 1973) that these two languages of the Austronesian family are close relatives. Given their alleged genetic association, one might reasonably expect that they behave more or less the same way in terms of major syntactic operations such as extraction. As a matter of fact, we saw in the previous chapter that the two languages behave in basically the same way regarding the interaction of antipassives and extraction. Naively speaking, then, there would be no reason why Theme extraction in applicatives in these languages should behave differently. Under the present view, the answer is solid: the presence versus

absence of PI.

Shifting our attention now to Type 4 applicatives, note first that Chamorro has a group of ditransitive verbs that "require" double object structures (3-2 Advancement in RG terms; Gibson 1980). One member of this group is *na'i* 'give'. The following example is from Gibson 1980:161):

(70) Ha-na'i yu' si Antonio nu i floris.
3SG.ERG-give 1SG.ABS UNM-Antonio OBL-the flower
'Antonio gave me the flowers.'

(70) is similar to the applicative construction in (63b) in terms of the Case arrays; the Agent, the applied argument, and the Theme are assigned ergative, absolutive, and oblique Cases, respectively. But it is dissimilar to (63b) in that it does not have its analytic counterpart, satisfying one of the two conditions on Type 4 applicatives.[36]

Does (70) meet the other condition that Type 4 applicatives lack PI? The answer seems to be positive. Thus, double object constructions like (70) display the SE (Cooreman 1987).

(71) a. Ha-na'i yu' i patgon un lepblo.
3SG.ERG-give 1SG.ABS the child a book
'The child gave me a book.'

b. Ha-na'i hao ni lepblo.
3SG.ERG-give 2SG.ABS OBL-book
'He gave you the book.'

(71a-b) are parallel to (64a-b). As shown in (71), the Theme in the double object structure must be nonspecific without the SE-neutralizing oblique-marker.

[36] Note also that the double object structures in (70) and (71) do not contain overt applicative morphology.

Given that Chamorro constructions such as (70) and (71) are Type 4 applicatives, it is predicted that the Theme in them should be able to extract. This prediction is empirically correct (Gibson 1980, Sandra Chung (personal communication)).

(72) Hafa ha-na'i hao si Antonio?
what 3SG.ERG-give 2SG.ABS UNM-Antonio
'What did Antonio give you?'

The well-formedness of (72) is in total accord with the present analysis. In the absence of more economical alternatives, (72) is the optimal derivation.

To wrap up this section, the generalization given in (3) has been argued to be valid in Austronesian languages like Bahasa, Tagalog, and Chamorro. The economy account developed in this thesis automatically extends to Theme extraction in applicatives in these languages.

4.5. Some Implications

It has been shown above that the economy account explains in a unified way extraction of thematic objects in applicatives both in accusative and ergative languages. Let us now discuss some implications of the account, which I believe are nontrivial.

First, to the extent that the present analysis is correct, it lends further empirical support to the general framework of Minimalism, in which it is claimed that a set of convergent derivations are evaluated with respect to one another, and the optimal one is selected. In the Minimalist Program, there is no place for the ECP, which played a central role in the GB era. It has been demonstrated that the problems object extraction in applicatives poses for the ECP can be resolved by economy. As already noted above, the MLC, which Chomsky and Lasnik (1993) put forth virtually as a substitute for Relativized Minimality of Rizzi (1990), is in fact superior to Relativized Minimality. As

we can easily verify once again, the ungrammaticality of Kinyarwanda (1b) and Chimwiini (37b) cannot be handled by Relativized Minimality, since there is no potential antecedent-governor in an A'-specifier position that would block the A'-movement.[37]

Secondly, the above analysis provides interesting (theory-internal) evidence that objects with structural Case undergo movement, in the current framework, into the Spec of AspP in accusative languages, again supporting Minimalism. Let us reconsider, for example, (38a-b), the LF structures for Chimwiini (37a-b). (38a) is more economical than (38b) because of the NP-movement of the structural object into the Spec of AspP. Notice that there is no way for GB theory to draw a distinction between (38a) and (38b), since in that theory, Case assignment to objects is done under government by verbs within the VP. Thus, extraction in Bantu applicatives provides yet another piece of evidence for the assumption that objects raise into the Spec of AspP for structural Case-checking (see also Hornstein 1994, 1995, Lasnik 1993, and Takahashi 1993).

Thirdly, the present account reinforces the view, held in the Minimalist Program or in the principles-and-parameters tradition in general, that linguistic variation reduces to differences in the lexicon. It has been shown that the interlinguistic as well as intralinguistic variation in terms of Theme extraction in applicatives stems from the morphological/semantic properties of applicative morphemes and prepositions. Nonetheless, the claim that only functional elements, as opposed to substantive elements such as verbs and nouns, can be parameterized (Chomsky 1991, 1993, Borer 1983, Fukui 1986) seems too strong: it is prepositions, affixal or nonaffixal, and affixal verbs (like the Kinyarwanda instrumental applicative morpheme) that are ultimately responsible for deciding whether or not Theme can be extracted in a given applicative. It appears then that UG can parameterize not only functional categories but also substantive categories.

Finally, the success of the economy account implies that the revised notion of

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[37] Even if we assume that argument traces with referential θ-roles must be antecedent-governed, an assumption that is explicitly denied in Rizzi 1990.

reference set is empirically justified further and that, as argued in Chapter 3, the MLC must be taken to be an economy condition independent of Attract, contra Chomsky (1995).

CHAPTER 5

BEYOND A CLAUSE

5.0. Introduction

In Chapters 2, 3 and 4, we were primarily concerned with chain formation within a single clause. But movement can also take place out of a clause. The purpose of this chapter is to examine long-distance (transclausal) dependencies created by movement and see if they are amenable to the same kind of treatment as the one developed in the previous chapters. It is argued that they indeed are, showing that the present analysis has a wide range of empirical coverage and therefore gains further support.

The organization of this chapter is as follows. In section 5.1. I examine "classic" successive cyclic movement from the present perspective. It is claimed that successive cyclicity is ensured by the MLC as an economy condition, but only with the modified notion of reference set adopted in this thesis. Section 5.2. discusses the so-called *Wh*-Agreement (Chung 1982, 1994) observed in Western Austronesian languages such as Chamorro and Tagalog. It has been argued that *Wh*-Agreement provides striking confirmation that *wh*-movement applies successive cyclically (Chung 1982, 1994). Contrary to this widely accepted view, I argue that *Wh*-Agreement is a morphological reflex of antipassivization, a GF changing process, rather than successive cyclicity *per se*. More specifically, it is a reflex of Case/EPP-driven "free rides" *wh*-movement is required to take, given the MLC and the notion of reference set advocated here. This characterization of *Wh*-Agreement naturally explains the systematic differences between *Wh*-Agreement in Tagalog-type languages and "*Wh*-Agreement" in Irish-type languages. Section 5.3. consists of brief discussion of the predictions that the present analysis makes with regard to the interaction between hyper/super-raising-to-object and extraction. This section is necessarily sketchy because of the lack of relevant data. But there is at least one

language in which the predictions seem to be borne out, *i.e.*, Quechua.

5.1. Successive Cyclicity

It is well-known since Chomsky (1973) that movement applies in a successive cyclic fashion. In the tradition of *(Revised) Extended Standard Theory*, the successive cyclic nature of movement operations has been accounted for by the Subjacency Condition (Chomsky 1973, 1977).

Thus, the following English examples are assumed to be derived in the way indicated:

(1) John$_i$ seems $[t''_i$ to be likely $[t'_i$ to $[t_i$ pass the exam$]]]$.

(2) What$_i$ did John say $[t''_i$ Mary thought $[t'_i$ Bill had $[$bought $t_i]]]$?

(1) is an example of successive cyclic NP-movement, (2) an example of successive cyclic *wh*-movement.

Although successive cyclicity in English is not directly observable and requires rather elaborate arguments (see Ross 1967, Chomsky 1973, 1977, Chomsky and Lasnik 1977 among many others), other languages provide more transparent evidence that movement operates in this fashion. One of the most direct pieces of evidence comes from languages like Afrikaans, where each "copy" of the moved *wh*-phrase in the Spec of CP can be pronounced. Observe the following examples from Afrikaans (du Plessis 1977):

(3) a. **Waaroor** dink jy **waaroor** dink die bure
whereabout think you whereabout think the neighbors
waaroor stry ons die meeste?
whereabout argue we the most
'What do you think the neighbors think we are arguing about the most?'

b. **Met wie** het jy nou weer gese **met wie** het Sarie
with who did you now again said with who did Sarie
gedog **met wie** gaan Jan trou?
thought with who go Jan marry
'Whom did you say again Sarie thought Jan was going to marry?'

In (3) the *wh*-phrase has been extracted from the most deeply embedded clause. As shown above, each Spec of CP is occupied by the fronted *wh*-phrase. (3) can be explained by assuming (a) that *wh*-movement is successive cyclic, (b) that movement leaves a copy rather than a trace (Chomsky 1993), and (c) that Afrikaans, unlike English, allows intermediate copies to be pronounced.[1]

Another similar kind of evidence for the successive cyclic property of *wh*-movement is found in such languages as Irish (Chung and McCloskey 1987, McCloskey 1979, 1990). Consider the following Irish examples (based on McCloskey 1990):

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[1] According to McDaniel (1989:569, fn. 5), *wh*-word copying similar to (3) is also found in some dialects of Yugoslav Romani as well as German dialects from the Cologne region. She gives the following examples ((i) from German, and (ii) from Romani):

(i) Wen glaubt Hans wen Jakob gesehen hat?
whom thinks Hans whom Jakob see has
'Whom does Hans think Jakob saw?'

(ii) Kas o Demìri mislinola kas i Arìfa dikhl̆a?
whom Demir thinks whom Arifa saw
'Whom does Demir think Arifa saw?'

Incidentally, no language pronounces *wh*-word copies in a VP-adjoined position, as far as I am aware, suggesting that the *Barriers*-style derivation of *wh*-movement (Chomsky 1986a) is incorrect. Conceptually speaking, VP-adjunction of *wh*-phrases has no place within the Minimalist framework; it will not satisfy the definition of Attract. See Cinque 1990 and Lasnik and Saito 1992 for problems with the *Barriers* system.

(4) a. an rud **aL** shíl mé **aL** dúirt tú **aL** dhéanfá
the thing COMP thought I COMP said you COMP do-COND-2SG
'the thing that I thought you said you would do'

b. *an rud **aL** shíl mé **gur** dúirt tú **aL** dhéanfá
the thing COMP thought I COMP said you COMP do-COND-2SG
('the thing that I thought you said you would do')

(4a-b) are examples of relativization, where the Theme argument of the most deeply embedded clause has been extracted long-distance. We saw in (3) above that Afrikaans indicates successive cyclicity with respect to the moved *wh*-phrase itself. Irish, on the other hand, exhibits it in terms of the distribution of complementizers. Thus, in (4a) the same *wh*-complementizer *aL* must introduce every clause in which *wh*-movement has applied.[2] Failure to meet this condition results in ungrammaticality, as in (4b), for example, where the complementizer of the intermediate clause is not *aL* but *gur*, the normal (past) subordinating complementizer. Data like (4) offer further evidence for the cyclic application of *wh*-movement.[3]

Similarly, there are languages where NP-movement leaves marks of its successive cyclicity. One such langauge is Kipsigis (Nilotic) whose basic word order is VSO (Jake and Odden 1979). Consider the following pair from Kipsigis:

(5) a. Mɔ́cè Mù:sá [kɔ́-tûl Kíplàŋàt **pè:ndɔ́**].
wants Musa 3SG.SUB-cut Kiplangat **meat**
Lit. 'Musa wants (that) Kiplangat cut the meat.'

b. Mɔ́cè Mù:sá **pè:ndɔ́** [kɔ́-tûl Kíplàŋàt].
wants Musa **meat** 3SG.SUB-cut Kiplangat
Lit. 'Musa wants the meat$_i$ (that) Kiplangat cut t_i.'

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[2] Irish uses the complementizer *aN*, which I put aside here, when the Spec of CP is occupied by a *wh*-operator binding a resumptive pronoun (McCloskey 1979, 1990).

[3] For more arguments from other empirical domains, see among others Kayne and Pollock (1978) for French and Torrego (1984) for Spanish. See also McDaniel 1989 for "partial" *wh*-movement in German and Romani, based on which the same points this section makes can be made. *Wh*-Agreement in languages like Chamorro, which has been put forth as evidence for successive cyclicity of *wh*-movement (Chung 1982, 1994), will be discussed in the next section.

(5a) shows that the verb *mɔ́cè* 'want' takes a sentential complement in Kipsigis. (5b) illustrates the super-raising version of (5b), which is well-formed in Kipsigis. Along the lines suggested in section 2.4. in Chapter 2, I assume that in this language, the (inherent) Case feature of the CP gets erased when checked, and thus the CP directly θ-marked by the verb does not constitute a barrier for NP-movement under the revised version of the EPP (see (22) below). In (5b) the logical object *pè:ndɔ́* 'meat' has overtly raised past the logical subject *Kíplàŋàt* into the matrix clause (see Ura 1994 for a recent proposal on various raising constructions within the Minimalist framework).[4]

Consider further the following Kipsigis examples of super-raising (based on Jake and Odden 1979):

(6) a. Ɔ́-mɔ́c-í:n |kɔ̀-yây-ín Kíplàŋàt
1SG.SUB-want-2SG.OBJ 3SG.SUB-make-2SG.OBJ Kiplangat
|kɔ̀-tîl-ín Mù:sá||.
3SG.SUB-cut-2SUB.OBJ Musa
Lit. 'I want you$_i$ (that) Kiplangat make t'_i (that) Musa cut t_i.'

b. *Ɔ́-mɔ́c-í:n |kɔ̀-yây Kíplàŋàt
1SG.SUB-want-2SG.OBJ 3SG.SUB-make Kiplangat
|kɔ̀-tîl-ín Mù:sá||.
3SG.SUB-cut-2SUB.OBJ Musa
(Lit. 'I want you$_i$ (that) Kiplangat make (that) Musa cut t_i.')

In (6) the Theme of the most deeply embedded clause, *i.e.*, the *pro* 'you' has raised (overtly) all the way to the matrix structural object position, where it is assumed to check its accusative Case. As shown in (6a), the agreements on the verbs indicate that the raising takes place in a successive cyclic fashion through the specifiers of functional

[4] Ura (1994) holds that super-raising is allowed in a given language if the T in the language can project multiple specifiers, providing an escape hatch for super-raising (cf. the definition of Attract). Thus, he claims that there is a correlation between the possibility of multiple subject constructions and the possibility of super-raising. At the moment, I do not know whether Kipsigis has multiple subject constructions. If Ura's account is correct, when super-raising is overt, as in (5b), the raising of the embedded subject must be overt, too. If his generalization is true, it must be captured somehow under the present analysis, but I will not make an attempt here.

projections; each verb must bear the second person object agreement which, under the present assumption, is tied with the functional category Asp (Travis 1991, forthcoming). If the raising skips its potential landing site, ungrammaticality results, as in (6b) where the verb of the intermediate clause fails to bear the agreement morphology. Thus, the situation in (6b) is analogous to that in (4b).

Now the question is: How can we ensure the kind of successive cyclic application of movement illustrated in (4) and (6) within the framework of Minimalism? Specifically, how can we rule out examples like Irish (4b) and Kipsigis (6b)?

The key to the answer seems obvious enough; the MLC, which was originally designed to demand that movement cannot skip a potential landing site, replacing Rizzi's (1990) Relativized Minimality (Chomsky and Lasnik 1993). I would like to point out, however, that under Chomsky's (1994, 1995) notion of reference set, we cannot really exclude examples like (4b) and (6b) as a violation of the MLC (whether it is taken to be part of the definition of Attract or an economy condition). The reason is as follows. Let us take the Irish pair in (4). I assume that the complementizer *aL* is two-way ambiguous with respect to its feature specification; it is either |+strong| or |+WH, +strong|. To derive well-formed (4a), it must be that the intermediate Comps have only strong features, while the top Comp has both strong and *wh*-features. Otherwise, the derivation in question would converge but only as gibberish. Notice that according to Chomsky's (1994, 1995) notion of reference set, recapitulated in (7) along with the notion of numeration in (8), (4a) and (4b) do not belong to the same reference set and therefore do not compete.

(7) *Reference Set*:
A set of derivations that share the same numeration.

(8) *Numeration*:
A set of pairs (l, i), where l is an item of the lexicon and i is its index, understood to be the number of times that i is selected.

This is simply because the arrays of lexical items contained in (4a) and (4b) are not identical; (4b) but not (4a) has the complementizer *gur* in its initial numeration. Thus let us concentrate on the reference set determined by the numeration of (4b). Recall that Chomsky (1995) adopts the local interpretation of reference set, under which we consider only continuations of the derivation already constructed. Consider (9), which illustrates how (4b) is derived.

(9) a. [do you *OP*]
b. [$C_{[+strong]}$ [do you *OP*]]
c. [OP_i C [do you t_i]]
d. [C [said you [OP_i C [do you t_i]]]]
e. [$C_{[+WH,\ +strong]}$ [thought I [C [said you [OP_i C [do you t_i]]]]]]
f. [OP_i $C_{[+WH]}$ [thought I [C [said you [t'_i C [do you t_i]]]]]]

I assume that relativization in Irish involves movement of null operators with the feature [+WH] (see McCloskey 1990 for an argument for the null operator analysis). Suppose that we have constructed (9a). The next move is to select a complementizer from the numeration and merge it with (9a). In (4b) the complementizer with a strong feature is selected. As soon as the complementizer is introduced into the phrase marker, as in (9b), its strong feature must be eliminated by attracting the null operator, as in (9c). This attraction satisfies Chomsky's (1995) definition of Attract, given in (10).

(10) *Attract*:
K attracts F if F is the closest feature that can enter into a checking relation with a sublabel of K.

Suppose now that we have reached the stage in (9d) for (4b), where the complementizer without a strong feature is merged at the root. Since the complementizer lacks a strong

feature, it does not trigger overt attraction. In (9e) the complementizer with the features [+WH, +strong] is inserted into the matrix Comp position. It triggers attraction of the null operator, as in (9f). Notice that this attraction does not violate the definition of Attract, for the null operator certainly is the closest element that enters into a checking relation with the complementizer. Notice also that (9f) converges, with all the uninterpretable formal features successfully eliminated. In brief, under Chomsky's (1995) system, there is nothing wrong with the derivation in (9) and hence with the Irish example in (4b). The same remark holds true if the complementizer *gur* appears in a different Comp position.[5]

How can we deal with the ill-formedness of (4b)? I suggest that what is wrong with Chomsky's system is (a) its determination of the reference set and (b) its lack of the MLC as an economy condition. Let us adopt the revised notion of reference set defended in the preceding chapters on the basis of data independent of successive cyclicity. It is given in (11).

(11) *Reference Set*:
A set of derivations that arise from *non-distinct* numerations.

Recall that (11) is interpreted derivationally in terms of the operation Select. The notion of non-distinctness is defined as follows:

(12) *Non-Distinctness*:
Numerations N and N' are *non-distinct* if and only if there is a one-to-one correspondence C between their members, such that if (l, n) $\in$ N and (l', n') $\in$ N' and (l, n) corresponds to (l', n') in C then l and l' have the same *interpretable* features and $n = n'$.

[5] The version of (4b) where *gur* appears in the highest Comp position may be excluded on independent grounds, probably as a violation of the identification requirement that holds between the null operator and its antecedent.

Remember that the most important aspect of the modified notion of reference set in (11) is that it allows us to ignore uninterpretable features such as phonological features, Case features, the ϕ-features of non-nominals, strong features. In view of (11), (4a) and (4b) arise from the same reference set, for the sole difference between them regarding the complementizers *aL* and *gur* in the intermediate clause is immaterial; *aL* has an uninterpretable strong feature, while *gur* does not.[6]

The MLC as an economy condition is formulated in (13):

(13) *Minimal Link Condition* (MLC):
Derivation D blocks derivation D' if there exist chain links CL $\in$ D and CL' $\in$ D' such that CL and CL' are *comparable* and CL is shorter than CL'.

The relevant notions used in (13) are given below:

(14) *Chain Link Comparability*:
Chain links CL and CL' are *comparable* if and only if derivations D and D' belong to the same reference set, such that if CL $\in$ D and CL' $\in$ D' then items of the lexicon $l \in$ CL and $l' \in$ CL' have the same *interpretable* features, and K and K' attracting l and l' are selected from numerations N and N' at the same point.

(15) *Length of Chain Link*:
Length L of chain link CL is the number of maximal projections that dominate the tail but not the head.

The modified definition of Attract is repeated below for convenience:

(16) *Attract*:
K *attracts* F if F is the closest feature that can enter into a checking relation with an *intrinsic* sublabel of K.

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[6] It may be that *gur* has an uninterpretable feature that must match with the feature specification of T, *i.e.*, [+past].

Now we are comparing the following converging derivations for (4a-b) (irrelevant details suppressed):

(17) a. $[_{CP}\ OP_i\ [_{TP}$ thought I $t_V\ [_{CP}\ t''_i\ [_{TP}$ said you $t_V\ [_{CP}\ t'_i\ [_{TP}$ do you $t_V\ t_i]]]]]]$

b. $*[_{CP}\ OP_i\ [_{TP}$ thought I $t_V\ [_{CP}\ [_{TP}$ said you $t_V\ [_{CP}\ t'_i\ [_{TP}$ do you $t_V\ t_i]]]]]]$

The first *wh*-chain links in (17) are identical and thus equally economical. The second *wh*-chain link in (17a), which is formed in accord with the definition of Attract, does not have a comparable counterpart in (17b) due to chain link comparability; in (17b) there is no chain link whose head occupies the intermediate Spec of CP. But the *wh*-chain links formed by attraction from the highest Comp in (17) are comparable. Since the last *wh*-chain link is shorter in (17a) than in (17b), the MLC in (13) correctly rules out the latter in favor of the former. In effect, the second instance of *wh*-movement in (17a) counts as a "free ride" for the last instance of *wh*-movement. The situation in (17) is different from that in extraction in antipassives and applicatives examined in the previous chapters in that here it is *wh*-movement that counts as a "free ride," while in the previous cases, it was Case/EPP-driven movement.

Even with the assumption that (17a) and (17b) belong to the same reference set, Attract cannot explain the contrast between (17a) and (17b), precisely because it cannot perform transderivational comparisons.

Note that (17b) is more economical than (17a), as far as the Minimal Feature Condition (MFC), repeated below from Chapter 3, is concerned:

(18) *Minimal Feature Condition* (MFC):
Derivation D blocks derivation D' if D and D' belong to the same reference set and the number of features in numeration N of D is less than the number of features in numeration N' of D'.

The reason is that the numeration of (17a) contains three strong features in the Comps, whereas that of (17b) contains two such features. But recall that I argued for the following:

(19) The MFC is overridden by the MLC.

Section 3.5. in Chapter 3 dealt with the extraction of the Agent in antipassives which neutralizes the Specificity Effect on the clause-mate Theme. This phenomenon was analyzed as an instance of the MFC overridden by the MLC in constraining uninterpretable Case/oblique features. (4) represents another instance of the MFC overridden by the MLC, but this time as it applies to uninterpretable strong features.

At this point, it is instructive to reconsider well-formed overt super-raising, which prompts a revision of (19). Observe the following pair from Kipsigis similar to (5):

(20) a. Mɔ́cè Mù:sá [kɔ̀-tûl-án Kíplàŋàt].
want Musa 3SG.SUB-cut-1SG.OBJ Kiplangat
Lit. 'Musa wants (that) Kiplangat cut me.'

b. Mɔ́c-ɔ́:n Mù:sá [kɔ̀-tûl-án Kíplàŋàt].
want-1SG.OBJ Musa 3SG.SUB-cut-1SG.OBJ Kiplangat
Lit. 'Musa wants me$_i$ (that) Kiplangat cut t_i.'

In (5) the DP that undergoes super-raising is a third-person singular nominal, which does not trigger agreement. In (20), on the other hand, the super-raised DP is the agreement-triggering first-person singular *pro*. Given the concept of reference set in (11), (20a-b) compete with each other. Their structures at Spell-Out would be (21a-b).

(21) a. $[_{CP}$ want $[_{TP}$ M.$_i$ $[_{PrP}$ t_i $[_{AspP}$ $[_{VP}$ t_V $[_{CP}$ cut $[_{TP}$ K.$_j$ $[_{PrP}$ t_j $[_{AspP}$ me$_k$ $[_{VP}$ t_V t_k]]]]]]]]]]

b. $[_{CP}$ want $[_{TP}$ M.$_i$ $[_{PrP}$ t_i $[_{AspP}$ me$_k$ $[_{VP}$ t_V $[_{CP}$ cut $[_{TP}$ K.$_j$ $[_{PrP}$ t_j $[_{AspP}$ t'_i $[_{VP}$ t_V t_i]]]]]]]]]]

To allow the super-raising in (21b), I must assume that the Agent raises overtly into the Spec of TP (see also footnote 4). If the Agent in the embedded clause does not check its Case in overt syntax, the matrix Asp would not be able to attract the logical object of the embedded clause. This is because the Agent with an unerased Case feature would count as the closest feature that can satisfy the "inner" EPP imposed by the Asp. The revised version of the EPP is given below:

(22) *Extended Projection Principle* (EPP):
EPP = D/C$_{[\text{unerased Case}]}$-feature

To capture the V-initial word order in Kipsigis, I assume that the verb raises overtly up to Comp in the language.

As far as the MLC is concerned, (21a-b) are equally economical. The link (me$_i$, t_i) in (21a) and the link (t'_i, t_i) in (21b) are the same in length. The relative cost of the link (me$_i$, t'_i) in (21b) is nil, since it does not have any comparable chain in (21a); the Asp in (21a) does not attract a DP. However, the MFC would rule out (20b) in favor of (20a) for the following reason. (20a) and (20b) use the same number of structural Case features, *i.e.*, three structural Case features. The difference is that the embedded Asp happens to have a Case feature in (20a) but not in (20b). In (20a) super-raising cannot take place, since nothing requires it. In (20b), on the other hand, it is forced by the matrix Asp with a Case feature. The apparent optionality of raising in (20) is thus attributable to the two options of inserting into the embedded clause either the Asp with a Case feature or the Asp without a Case feature.

But how about the number of strong features and ϕ-features of verbal elements? It appears that there are more of these in (20b) than in (20a). (20a) contains three strong features on the matrix T and the embedded T and Asp, while (20b) contains four strong features on the matrix and embedded Ts and Asps. Furthermore, the former has only one

object agreement on the embedded verb, while the latter has two object agreements on the embedded and matrix verbs. Then the present analysis seems to wrongly predict that the kind of super-raising illustrated in (20b) can never be derived.[7]

How can we remedy this situation? The problem appears to be with the lack of statement about what features enter into the calculation of cost with respect to the MFC. In this light, I propose to modify (19) in the following way:

(23) Features that contribute to minimization of chain links do not enter into the MFC.

The idea is that the strong features that trigger "free rides" are virtually "costless," because we get so much in return by using them. Given (23), (20a) and (20b) are equally economical in terms of the number of strong features. They both contain three strong features from the viewpoint of the MFC. In particular, the strong feature of the embedded Asp in (20b) which motivates the "free ride" does not enter into the calculation of the "cost."

It remains to deal with the ϕ-features of verbal elements. Notice that they do not contribute to minimization of chain links in any way, since they cannot attract, being optional (see (16)). Given that optional features play only a marginal role in the computational system, it would be natural to assume (24).

(24) Optional features do not enter into economy.

With (24), the MFC is simply not applicable to the ϕ-features of non-nominals Then we can disregard the agreement on the verb in (20).

In short, given (23) and (24), (20a) and (20b) are equally economical with respect

[7] The (false) prediction also holds of "hyper-raising" (Ura 1994). See Section 6.3. below for a brief discussion of hyper-raising.

to the MFC, a welcome result. (23) and (24) help us to deal with the fact that super-raising (along with hyper-raising, see footnote 7) is in principle possible in natural language.

Returning now to the Kipsigis super-raising examples in (6), it should be clear how the present account deals with them. The derivations for (6a-b) are given in (25a-b) respectively (only relevant parts shown).

(25) a. $[_{CP}$ want I $[_{AspP}$ you$_i$ t_V $[_{CP}$ make K. $[_{AspP}$ t''_i t_V $[_{CP}$ cut M. $[_{AspP}$ t'_i t_V $t_i]]]]]]]]]

b. *$[_{CP}$ want I $[_{AspP}$ you$_i$ t_V $[_{CP}$ make K. $[_{AspP}$ t_V $[_{CP}$ cut M. $[_{AspP}$ t'_i t_V $t_i]]]]]]]]]

Given the notion of reference set in (11) (but not the one in (7)), (6a) and (6b) compete for economy purposes despite their difference in terms of the Asp in the intermediate clause. In particular, the Asp in question has a strong feature and ϕ-features in (6a) but has no such features in (6b). This difference, however, is irrelevant in determining the reference set. Also, it is ignorable for the purpose of the MFC, in light of (23) and (24). The MLC correctly excludes (25b), since the chain link formed by the matrix Asp attracting the second-person singular *pro* is shorter in (25a) than in (25b) thanks to the "free ride," which creates the intermediate chain link (t''_i, t'_i), in the former. (25a) exemplifies the case where NP-movement counts as a "free ride" for the succeeding NP-movement.

Let us now pause and consider what the above analysis of successive cyclicity says about Procrastinate. Take (25) once again. Given that (25a) and (25b) belong to the same reference set, the second overt raising in (25a) violates Procrastinate; in (25b) such raising does not take place. In spite of this, (25a) counts as more economical than (25b) in terms of the MLC, as we have seen. To put it differently, Procrastinate is overridden by the MLC. This statement is highly reminiscent of (19)—the MFC is overridden by the

MLC. Thus I would like to argue that this aspect of Procrastinate should be reduced to the MFC, which requires that the number of strong features that induce overt movement be as few as possible in competing derivations.[8]

There is another aspect of Procrastinate that must be captured, *i.e.*, only strong features induce pre-Spell-Out movement. As mentioned in Chapter 1, Chomsky (1995) attempts to derive this property of Procrastinate from the economy condition in (26).

(26) F carries along just enough material for convergence.

According to Chomsky (1995), LF raising is "cheaper" in light of (26), since it raises features but not categories, being free from the danger of crashing at PF.

As I argued in Chapter 3 and will argue again later in this chapter, there is evidence for covert category raising. As already noted in Chapter 3, if my claim in this regard is correct, then we cannot resort to the economy condition in (26) to ensure that covert raising is preferred over overt raising.

Thus I would like to suggest an alternative. One obvious alternative relies on the fact that movement introduces a new node into a phrase-marker. What we would like to say is that overt movement is more costly than covert movement, since it creates an extra node earlier than is necessary. This is essentially what Safir's (1992) *Structural Economy Principle* states: At any point in a derivation, a structural description employs as few nodes as grammatical principles and lexical selection require.

Under Chomsky's (1995) theory of bare phrase structure, the operation Merge takes

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[8] Bošković (1993) argues based on superiority phenomena that *wh*-movement of logical objects must proceed via the Spec of AgroP even in languages which otherwise prohibit overt "object shift," violating Procrastinate (see also Branigan 1992, Borer 1995). If this factual evaluation is correct, it would receive a natural interpretation under the MFC; the use of a strong feature that induces overt NP-movement is tolerated only when it leads to a "free ride" for succeeding *wh*-movement. This is essentially one of the two ways Bošković (1993) considers to explain the observation in question. However, it should be pointed out that Bošković's account crucially depends on the assumption that the AgroP is located above the logical subject position, and thus is incompatible with the phrase structure assumed here. For an alternative account of superiority effects within the Minimalist framework, see Hornstein 1995, chap.7.

two syntactic objects α and ß, and combines them into another syntactic object of the form $\{\gamma\ \{\alpha, ß\}\}$, where γ is the *label* of the newly created object. Adapting Safir's (1992) proposal, let us assume the economy condition in (27):

(27) *Minimal Label Condition* (MLAC):
Derivation D blocks derivation D' if D and D' belong to the same reference set and the number of labels employed in D is less than the number of labels employed in D'.

Like other economy conditions, (27) is taken to be able to apply across non-distinct derivations, selecting among convergent ones.[9] Given that (27) constrains phrase structure, built by the derivational operation Merge, it applies derivationally (but transderivationally). It guarantees that in languages like Tagalog where the T does not have a strong feature, the raising of the absolutive DP does not take place before Spell-Out. If the raising takes place overtly before Spell-Out, the derivation has to employ one more label than the one without the overt raising at the time when Spell-Out applies. With (27) assumed, we can capture the observation that only strong features trigger overt movement without recourse to (26).

Since Procrastinate is overridden by the MLC, we need (28) analogous to (23).

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[9] (27) provides a theory-internal reason not to assume movement of ergative Agent into the "outer" Spec of PrP for Case-checking (Chapter 1, subsection 2.2.2.). Consider the following Malagasy examples repeated from Chapter 3:

(i) a. Mividy ny vary ny lehilahy.
buy(AT) the rice the man
'The man bought the rice.'
b. Vidin' ny lehilahy ny vary.
buy(TT) the man the rice.
'The man bought the rice.'

(ia-b) belong to the same reference set. They are equally economical in terms of the MLC and the MFC (see Chapter 3). If we assume that the ergative Agent *ny lehilahy* 'the man' in transitive (ib) raises into the "outer" Spec of PrP, it would be wrongly expected that (ib) is blocked by antipassive (ia) in terms of the MLAC. This is because (at least at LF) (ib) would have one more label than (ia) due to the ergative raising.

(28) Labels that contribute to minimization of chain links do not enter into the MLAC.

(23) and (28) can be collapsed into (29).

(29) Elements that contribute to minimization of chain links are not counted for purposes of economy.

One may well wonder why (29) should hold. Again, the possible rationale behind (29) would be that chains are so central to the computational system that their minimization must be achieved, if possible, even at the expense of compromising economy conditions other than the MLC.

At this point, it is worth considering expletive constructions that motivated Chomsky (1995) to maintain Procrastinate as an economy condition. Observe (30).

(30) a. There seems to be someone in the room.
b. *There seems someone to be in the room.

Chomsky's (1995) analysis of the contrast based on Procrastinate (30) goes as follows. Suppose that Merge has created the following phrase-marker:

(31) $[_{\gamma}$ to be $[_{\beta}$ someone in the room]]

What needs to be done next is to fill the Spec of γ to satisfy the EPP. At this stage in derivation, we have two choices. One is to select *there* from the numeration and put it in the Spec of γ by Merge, as in (32).

(32) $[_{\gamma}$ there to be $[_{\beta}$ someone in the room]]

The other is to raise *someone* already present in the phrase-marker into the Spec of γ by Attract, yielding (33).

(33) $[_{\gamma}$ someone$_i$ to be $[_{\beta}\ t_i$ in the room]]

The first option respects Procrastinate by delaying the raising of *someone*, while the second option violates Procrastinate.

Let us consider the continuations of (32) and (33). After the insertion of *there* in (32), it raises into the matrix structural subject position, as shown in (34).

(34) $[_{\delta}$ there$_i$ seems $[_{\gamma}\ t_i$ to be $[_{\beta}$ someone in the room]]]

This derivation converges. Under Chomsky's (1995) analysis, *there* is a "pure" expletive in the sense that it has only the categorial D-feature. In (34) *there* satisfies the EPP in the matrix clause only. Thus the Case and ϕ-features of its associate *someone* are assumed to raise and adjoin to the matrix T at LF, eliminating the uninterpretable Case and ϕ-features of the T.

(35) is derived by computing (33) further.

(35) $[_{\delta}$ there seems $[_{\gamma}$ someone$_i$ to be $[_{\beta}\ t_i$ in the room]]]

In (35) *there* is merged at the root, meeting the EPP. Crucially, this derivation converges, too, under Chomsky's (1995) system. As in the case of (34), the matrix T attracts the Case and ϕ-features of *someone* at LF.

Both (34) and (35) converge. Here Chomsky makes another crucial assumption, *i.e.*, that they compete for economy. As noted above, (34) but not (35) obeys Procrastinate. Thus, given that Procrastinate is an economy condition that selects among convergent

derivations, the contrast between (30a) and (30b) is explicable in these terms.

Note that the contrast in (30) cannot be explained by the MFC and the MLAC. Since both (30a) and (30b) contain the same number of uninterpretable features, *i.e.*, two strong features of the Ts, one Case feature of the matrix T, one oblique Case feature of the P, and one affixal feature of *there*, they are equally economical in terms of the MFC. They are also equally economical in terms of the MLAC, since they use the same number of nodes in their derivations.

This may seem to indicate that Procrastinate cannot be reduced to the MFC and the MLAC after all. But under the present analysis, (30b) is ruled out as a crashed derivation for reasons having nothing to do with Procrastinate. In section 2.3. in Chapter 2, I pointed out that Chomsky's claim that *there* is a "pure" expletive is problematic. I concluded following Belletti (1988) and Lasnik (1991) that *there* has a Case feature as well as a D-feature and that its associate receives inherent Case. Let us continue to assume that inherent Case assignment is an optional process. Then there are two derivations to consider, *i.e.*, the one where the unaccusative verb *be* assigns inherent Case, and the one where it does not. (30a) illustrates the first situation. Since *someone* has its inherent Case checked *in situ*, it cannot satisfy the EPP given in (22). Thus *there* must be selected from the numeration and inserted into the Spec of TP in the embedded clause. Then it raises into the matrix Spec of TP, successfully eliminating the strong and Case features of the matrix T. (30b) is the second situation. Since *someone* has an unchecked (say, nominative) Case, it can satisfy the EPP required by the T in the embedded clause.[10] Then to exhaust the numeration, *there* is inserted in the matrix Spec of TP. Now (30b) is excluded as a violation of FI; the Case feature of *someone* in the embedded Spec of TP survives until LF.

In short, data like (30) do not justify the idea that Procrastinate is needed

[10] If the choice of inserting *there* in the embedded Spec of TP is taken, we would get the same surface string as (30a). But the derivation crashes, because the Case feature of *someone* is unchecked.

independently of the MFC and the MLAC on this analysis.

To summarize this section, I have argued that successive cyclicity is guaranteed by the MLC as a non-local economy condition, in combination with the revised notion of reference set.[11] Thus, the successive cyclic nature of movement provides further justification for the MLC in (13) and the present notion of reference set. I have also argued that Procrastinate should be replaced by the MFC and the MLAC.

5.2. *Wh*-Agreement

The preceding section considered successive cyclicity. We saw that *wh*-movement in languages like Irish leaves morphological reflexes along its path, providing one of the most striking empirical motivations to believe that movement applies successive cyclically. In this connection, it is worth noting that there is a superficially similar phenomenon that has been argued to bear on the issue of successive cyclicity, *i.e.*, what Chung (1982, 1994) calls "*Wh*-Agreement" in languages like Chamorro. Relevant facts from Chamorro can be summarized as follows (see Chung 1982, 1993, 1994 for a wide range of data).

First, if the logical subject of a realis transitive clause is extracted, the infix *-um-* shows up on the verb, replacing the ergative agreement. Consider (36).

(36) Ha-fa'gasi si Juan i kareta.
3SG.ERG-wash UNM-Juan the car
'Juan washed the car.'

[11] One might ask whether a language could have a [+WH, +strong] Comp but lack a [+strong] Comp. If this is a possibility, *wh*-movement in the language would not apply in a successive cyclic fashion. One relevant language in this respect may be Duala (Bantu), where the marker *no* shows up only in a clause headed by a [+WH, +strong] Comp, giving a superficial flavor of non-successive cyclicity (Epée 1976). But it may be that a [+strong] Comp in Duala has no phonological realization. I leave this question open. In what follows, however, I assume that *wh*-movement is successive cyclic.

Observe (37) where the Agent in (36), a realis transitive sentence, has been extracted. In (37) the verb must bear the "*Wh*-Agreement" morpheme *-um-*.

(37) a. *Hayi ha-fa'gasi i kareta?
who 3SG.ERG-wash the car
('Who washed the car?')

b. Hayi f-**um**-a'gasi i kareta?
who AT-wash the car
'Who washed the car?'

Secondly, if the logical object of a transitive clause is extracted, the verb may optionally be nominalized by the use of the infix *-in-*, as in (38b). (38a) shows that the logical object can also be directly extracted without triggering any change of the verbal morphology.

(38) a. Hafa ha-fahan si Maria?
what 3SG.ERG-buy UNM-Maria
'What did Maria buy?'

b. Hafa f-**in**-ahan-ña si Maria?
what NMLZ-buy-3SG.POSS UNM-Maria
'What is the thing that Maria bought?'

Thirdly, if an "oblique-marked" NP is to be extracted in examples like (39), the verb obligatorily undergoes "bare nominalization," as in (40).[12]

(39) Hu-punu' i lälu' ni niús.
1SG.ERG-kill the fly OBL-newspaper
'I killed the fly with the newspaper.'

(40) Hafa puno'-mu ni lälu'?
what kill-2SG.POSS OBL-fly
'What is the thing that you killed the fly with?'

[12] Recall that the "oblique marker" *ni* is the combined form of *nu* and the determiner *i*.

Finally, "*Wh*-Agreement" morphology is also observed in long extraction. For instance, consider (41) taken from Chung 1994.[13]

(41) a. Hayi **mu**-na'mänman si Juan [na un-paniti]?
who AT-surprise UNM-Juan COMP 2SG.ERG-punch
'Who did it surprise Juan that you punched?'

b. *Hayi n-**in**-a'mänman si Juan [na un-paniti]?
who PASS-surprise UNM-Juan COMP 2SG.ERG-punch
('Who did it surprise Juan that you punched?')

In (41) where the Theme has been extracted out of the sentential subject,[14] the matrix verb must bear the morpheme *-um-*. Other morphemes such as the "passive" morpheme *-in-* (Topping 1973, Cooreman 1987) (see (42)) cannot be attached to the matrix verb, hence the ungrammaticality of (41b).

(42) H-**in**-atsa i lamasa ni lahi.
PASS-lift the table OBL-man
'The table was lifted by the man.'

Then, there appear to be (at least) two kinds of *-in-* in Chamorro; one is the nominalizing *-in-*, as in (38b), and the other the "passive" *-in-*, as in (41b) and (42).

Chung (1982, 1994) proposes to analyze the morpheme *-um-* and the nominalizing morpheme *-in-* as agreeing with extracted *wh*-phrases. She assumes that whenever extraction takes place, it triggers *Wh*-Agreement. Thus, even in cases like (38a) and (40) where there is no overt realization of *Wh*-Agreement, she maintains that the verb bears a null *Wh*-Agreement morpheme.

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[13] According to Cooreman (1987), the morpheme *-um-* undergoes metathesis, as in (41a), when it attaches to stems that begin with a liquid or nasal.

[14] Chamorro does not obey the Subject Condition. As mentioned in footnote 29 in Chapter 3, the lack of Subject Condition violations in Chamorro would be explained if the CED applies derivationally.

Chung (1994:13) presents the following rule for *Wh*-Agreement:[15]

(43) *Wh-Agreement*:
An A'-bound trace that is free within the minimal m-command domain of I^0 shares its Case feature with I^0.

Chung claims that the above extraction data can be explained by (43). In (37), (38), and (40), the variables are free within the IP, resulting in *Wh*-Agreement, overt or covert. Under her account, what triggers the appearance of *-um-* in (41) is the *wh*-trace in the intermediate Comp; the Case feature of the CP is transferred to the head C, which in turn transfers that feature to the *wh*-trace under a Spec-head agreement. Thus, data like (41a) have been taken to be strong evidence for the successive cyclic nature of *wh*-movement (Chung 1982, 1994).

Dukes (1993), however, points out several problems with Chung's analysis. First, (43) fails to account for the fact that the morpheme *-um-* shows up in infinitival complements of certain control verbs (Topping 1973, Chung 1982:49 fn. 5, Cooreman 1987), as shown below ((44a) is from Topping 1973, and (44b) from Chung 1982). Since *wh*-movement is not involved in (44), no unified analysis of the infix *-um-* is possible on Chung's account.[16]

(44) a. Malägu' gui' b-**um**-isita si Rita.
want 3SG.ABS AT-visit UNM-Rita
'He wants to visit Rita.'

b. Hu-chagi h-**um**-atsa i lamasa.
1SG.ERG-tried AT-lift the table
'I tried to lift the table.'

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[15] In Chung 1982, "*Wh*-Agreement" is characterized as verbs agreeing in grammatical function with moved *wh*-phrases.

[16] But see Chung 1994:9-11 for an attempt to make sense of the presence of the "*Wh*-Agreement" morpheme in non-extraction contexts like (44). See also Aoun 1985, Introduction for a brief discussion of *Wh*-Agreement from the viewpoint of *Generalized Binding*. Thanks to Sandra Chung (personal communication) for bringing the latter reference to my attention.

Secondly, the characteristics of the morpheme *-um-* and the nominalizing morpheme *-in-* are so different that it is not likely that they are part of the same grammatical system. As noted above, the appearance of *-um-* is obligatory in (37), while that of *-in-* is only optional in (38). It seems that Chung's analysis cannot account for the differences between *-um-* and nominalizing *-in-*. The same kind of objection can be raised about the nominalization involved in extraction of oblique-marked DPs.

Thirdly, Chung's account crucially relies on the use of a good deal of zero morphology, which has no independent empirical motivation.

Finally, the rule for *Wh*-Agreement in (43) is Chamorro-particular. As always, it is desirable to derive seemingly language-particular rules from general principles of grammar whenever possible.

I would like to point out that as a matter of fact, there is a more fundamental problem with Chung's rule given in (43); it does not explain exactly *what kind of Case* an A'-bound trace must have. It turns out that in the above well-formed questions without nominalization, the extracted elements all bear absolutive Case (under the present analysis).[17] An adequate theory of *Wh*-Agreement must explain why this should hold.

Recall that we have already discussed the Chamorro morpheme *-um-* in Chapter 3. The claim there was that the morpheme in question is an antipassive morpheme, an Agentive Antipassive morpheme in particular. As noted in Chapter 3 (footnote 42), our treatment of *-um-* as an antipassive morpheme immediately accounts for the fact that it appears in control structures like (44); the antipassive morpheme prevents the logical object from raising into the Spec of TP within the infinitival clause, which in turn allows the PRO to check its null Case (Chomsky and Lasnik 1993) in the Spec of TP.

Under the present economy account, (37a) and (37b) belong to the same reference

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[17] Though it is not true that only absolutive DPs can be extracted in Chamorro, as we have seen in Chapter 4. Note that Chung has to assume that null *Wh*-Agreement morphemes appear on the applied verbs in the Chamorro examples of extraction discussed in Chapter 4.

set and thus compete with each other. Their relevant structures are given in (45).

(45) a. *$[_{CP}$ OP_i $[_{TP}$ the car_j washed $[_{PrP}$ t_i Pr $[_{AspP}$ Asp $[_{VP}$ t_V $t_j]]]]]$

b. $[_{CP}$ OP_i $[_{TP}$ t'_i AT-washed $[_{PrP}$ t_i Pr $[_{AspP}$ Asp $[_{VP}$ t_V the car$]]]]]$

(45a) is blocked by (45b) in terms of the MLC, since the *wh*-chain link in the latter is shorter than that in the former.

The structure for well-formed (38a) is given in (46).

(46) $[_{CP}$ OP_i $[_{TP}$ t'_i bought $[_{PrP}$ Maria Pr $[_{AspP}$ Asp $[_{VP}$ t_V $t_i]]]]]$

Obviously, the *wh*-chain link in (46) is the shortest possible, since it originates from the structural subject position. In this way, the present analysis explains why the extracted elements in data like (37b) and (38a) must bear absolutive Case.

As for (38b) and (40), I suggest that the *wh*-word in them is a predicate predicated of the nominalized clause. In (38b) the morpheme *-in-* turns the verbal clause into a passive nominal. In (40) the nominalization is obligatory, since (semantically) oblique elements cannot be directly extracted in Chamorro (Chung 1982). Notice that whatever the proper derivation of nominalization may be, (38a) and (38b) do not belong to the same reference set, because the latter but not the former includes the nominalizing infix *-in-*. Hence, they converge independently of each other.

Then, the economy account suggests that Case-related *Wh*-Agreement (as opposed to nominalizing *Wh*-Agreement, of which I do not have an explicit analysis to offer here) is not a morphological reflex of successive cyclicity *per se*, contra Chung (1994). Rather, it is a reflex of minimization of the length of *wh*-chain links.

How about long-distance extraction in data like (41)? Before returning to (41), let us consider some relevant data on long-distance extraction from Tagalog, which I managed to arrange in a rather systematic way.[18] As we saw in Chapter 3, Chamorro and Tagalog behave in basically the same way in terms of the interaction between extraction and antipassivization (though they behave differently with respect to applicatives, as we saw in Chapter 4). Then one would reasonably expect that they behave in basically the same way with respect to long-distance extraction as well, given that the "*Wh*-Agreement" morpheme *-um-* in Chamorro is really an antipassive morpheme. This expectation is fulfilled, as we will see below.[19] It will be argued that the economy account developed so far extends naturally to such extraction.

Consider first the following paradigm from Tagalog:

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[18] The Tagalog data in this section are due to Natividad del Pilar (personal communication).

[19] As is expected, similar facts on long-distance extraction are found in other Western Austronesian languages like Cebuano (Bell 1976), Bahasa (Indonesia and Malaysia) (Hung 1987), and Malagasy (Keenan 1972). Some Bahasa data considered in the next chapter. It is perhaps worth noting that Tagalog-type *Wh*-Agreement in long-distance extraction is also found outside Austronesian. For example, in Kwakwala, a Wakashan language of British Columbia, argument extraction targets only structural subjects, and in the case of long-distance extraction, the embedded clause must be the structural subject of the matrix clause (Anderson 1984). This is shown in (i) (In Kwakwala, the determiner appears as a clitic attached to the preceding word).

(i) ʔəmqʷadz-i-s axixsdə-səw-aʔus [q-ən ts'u-suʔ-s-ga k'utəla]?
who-CLT-2POSS want-PASS-2POSS COMP-I give-PASS-INST-the fish
'Who do you want me to give the fish to?'

I suspect that the syntax of Kwakwala is ergative and that what is glossed as the "passive" morpheme in (i) is really the transitive marker. If so, Kwakwala is amenable to the present economy account, just as the above Austronesian languages are.

(47) a. **Nag**-sabi si Pedro na b-**um**-ili si Linda ng kotse.
said(AT) ABS-Pedro COMP bought(AT) ABS-Linda INH-car
'Pedro said that Linda bought a car.'

b. **Nag**-sabi si Pedro na b-**in**-ili ni Linda ang kotse.
said(AT) ABS-Pedro COMP bought(TT) ERG-Linda ABS-car
'Pedro said that Linda bought the car.'

c. S-**in**-abi ni Pedro na b-**um**-ili si Linda ng kotse.
said(TT) ERG-Pedro COMP bought(AT) ABS-Linda INH-car
'Pedro said that Linda bought a car.'

d. S-**in**-abi ni Pedro na b-**in**-ili ni Linda ang kotse.
said(TT) ERG-Pedro COMP bought(TT) ERG-Linda ABS-car
'Pedro said that Linda bought the car.

(47a-d) exemplify the canonical biclausal structures in Tagalog. Since the matrix verb and the embedded verb each take two arguments in (47), four combinations of topic morphemes are possible. (47a-d) exhaust the four possibilities. In (47a-b), where the verb *sabi* 'say' is antipassivized, the matrix structural subject is the absolutive Agent *Pedro*. In (47c-d), on the other hand, it is the whole embedded clause; this can be seen by the fact that the matrix Agent gets ergative Case, indicating that the embedded clause is the structural subject. The assumption here is that except for peculiar cases such as the recent past construction (see Chapter 3), the Spec of TP must be occupied by some material by LF in Tagalog due to the feature of the T responsible for the EPP. In (47a) and (47c), where the verb *bili* 'buy' is antipassivized, the structural subject in the embedded clause is the Agent *Linda*, while in (47b) and (47d), it is the Theme *kotse* 'car'.

Here one must ask why (47a-d) are all well-formed. Note that under the current version of reference set, (47a) competes with (47c), and (47b) with (47d). In light of the MFC, we would wrongly expect that (47a) should block (47c), and (47b) (47d). The reason has to do with the number of structural Case features used in the matrix clause. In the Agent Topic constructions in (47a-b), only one structural Case feature of the T is used, and the CP is assumed to get inherent Case from the matrix verb. In the Theme Topic constructions in (47c-d), on the other hand, two structural Cases seem to be used;

one is the ergative Case of the Asp assigned to the Agent, the other the absolutive Case of the T assigned to the CP. Then the MFC would dictate that the Theme Topic constructions should be blocked by the more economical Agent Topic constructions, contrary to fact.

But recall from Chapter 2 that CPs differ from DPs in that they do not have to get Case. Suppose that the Tagalog lexicon contains two kinds of finite T, *i.e.*, one with a Case feature and the other without a Case feature. If this is correct, there is a possibility that the CPs in (47c-d) do not have Case. In other words, it is possible that only one structural Case (of the Asp) is utilized in (47c-d). Then (47a) and (47b) tie (47c) and (47d) respectively with regard to the MFC, correctly predicting the well-formedness of (47a-d).

Is there any independent evidence that the Case of finite T is optional in Tagalog? The answer is positive. The evidence comes from "hyper-raising" (Ura 1994). Hyper-raising is a label for a set of constructions where the logical subject of the tensed embedded clause undergoes raising into the matrix clause. Consider the following Tagalog minimal pair (see Dell 1981, Kroeger 1993).

(48) a. Inasah-an ko [na awitin ni Linda ang pambansan.awit].
expect(LT) 1SG.ERG COMP sing(TT) ERG-Linda ABS-national anthem
'I expect that Linda will sing the national anthem.'

b. Inasah-an ko ang pambansan.awit [na awitin ni Linda].
expect(LT) 1SG.ERG ABS-national anthem COMP sing(TT) ERG-Linda
Lit. 'I expect the national anthem$_i$ that Linda will sing t_i.'

(48a), similar to (47d), involves no raising. (48b), on the other hand, involves hyper-raising; the structural subject of the tensed embedded clause *pambansan.awit* 'national anthem' has been raised into the matrix clause. It is assumed here that the embedded CP does not block the raising, for its inherent Case feature gets erased when checked against the inherent Case feature of the matrix verb. (48b) shows that Tagalog has finite T

without a Case feature. If the Case assignment by finite T were obligatory in Tagalog, as it is in English, nothing motivates the raising in (48b); the descriptive generalization is that a DP, once its Case feature is checked, cannot raise further for Case-checking or checking of a D-feature.[20]

Therefore, I assume that the T in the Theme Topic constructions in (47c-d) lacks a Case feature, which accounts for the well-formedness of all of the examples in (47).

Before proceeding to long-distance extraction, it is instructive to observe examples like those in (49) based on (47).

(49) a. Sino ang **nag**-sabi na b-**um**-ili si Linda ng kotse?
who ANG said(AT) COMP bought(AT) ABS-Linda INH-car
'Who is the one that said that Linda bought a car?'

b. Sino ang **nag**-sabi na b-**in**-ili ni Linda ang kotse?
who ANG said(AT) COMP bought(TT) ERG-Linda ABS-car
'Who is the one that said that Linda bought the car?'

c. *Sino ang s-**in**-abi na b-**um**-ili si Linda ng kotse?
who ANG said(TT) COMP bought(AT) ABS-Linda INH-car
('Who is the one that said that Linda bought a car?')

d. *Sino ang s-**in**-abi na b-**in**-ili ni Linda ang kotse?
who COMP said(TT) COMP bought(TT) ERG-Linda ABS-car
('Who is the one that said that Linda bought the car?')

In (49) the Agent of the matrix clause has been extracted. The extraction is legitimate if the Agent Topic or antipassive morpheme appears on the matrix verb, as in (49a-b), while it is illegitimate if the verb is in the transitive form, as in (49c-d). The derivations for (49a-d) are given in (50a-d) respectively (irrelevant details omitted).

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[20] There are questions about (48) left open here. For instance, why is it that the Locative Topic morpheme appears on the matrix verb? As has been noted in the literature, topic morphology in Tagalog can be idiosyncratic (see for example Schachter and Otanes 1976). What triggers the overt movement in (48b) and what is the landing site? One possible answer would be that the movement is into the matrix Spec of AspP, checking the strong D-feature of the Asp.

(50) a. $[_{CP}\ OP_i\ [_{TP}\ t'_i$ said(AT) $[_{PrP}\ t_i$ Pr $[_{AspP}$ Asp $[_{VP}\ t_V\ [_{CP}$...bought(AT)...]]]]]]

b. $[_{CP}\ OP_i\ [_{TP}\ t'_i$ said(AT) $[_{PrP}\ t_i$ Pr $[_{AspP}$ Asp $[_{VP}\ t_V\ [_{CP}$...bought(TT)...]]]]]]

c. *$[_{CP}\ OP_i\ [_{TP}\ [_{CP}$...bought(AT)...$]_j$ said(TT) $[_{PrP}\ t_i$ Pr $[_{AspP}$ Asp $[_{VP}\ t_V\ t_j]]]]]$

d. *$[_{CP}\ OP_i\ [_{TP}\ [_{CP}$...bought(TT)...$]_j$ said(TT) $[_{PrP}\ t_i$ Pr $[_{AspP}$ Asp $[_{VP}\ t_V\ t_j]]]]]$

In antipassive (50a-b) the tail of the *wh*-chain is in the matrix Spec of TP, and the embedded clause is assumed to stay within the VP. In (50c-d), on the other hand, the matrix Spec of TP is occupied by the embedded clause, which I assume raises covertly not for Case but for the EPP.[21] Thus I depart from Chomsky (1995) in maintaining that the EPP is operative not only in overt syntax but also in covert syntax. The contrast in (50) is parallel to that in (45) for Chamorro (37) in relevant respects. (50c) is blocked by (50a), and (50d) by (50b) for reasons that should be familiar by now. Note that (50a) and (50c) do not compete with (50b) and (50c), because the Theme in the embedded clause is nonspecific in the former two but specific in the latter two. The reason for this has already been discussed in Chapter 3. The interpretative difference means that the comparison domain is determined in the way described above. Note also that the ungrammaticality of (50c-d) lends further support to the assumption that the matrix structural subject in examples like (47c-d) is indeed the entire embedded clause.

With this in mind, let us consider the examples in (51), where the Agent of the embedded clause has undergone long-distance extraction.

[21] If the matrix T has a Case feature in (50c-d), they doubly violate the MLC and the MFC.

(51) a. *Sino ang **nag**-sabi si Pedro na b-**um**-ili ng kotse?
who ANG said(AT) ABS-Pedro COMP bought(AT) INH-car
('Who is the one that Pedro said that bought a/the car?')

b. *Sino ang **nag**-sabi si Pedro na b-**in**-ili ang kotse?
who ANG said(AT) ABS-Pedro COMP bought(TT) ABS-car
('Who is the one that Pedro said that bought the car?')

c. Sino ang s-**in**-abi ni Pedro na b-**um**-ili ng kotse?
who ANG said(TT) ERG-Pedro COMP bought(AT) INH-car
'Who is the one that Pedro said that bought a/the car?'

d. *Sino ang s-**in**-abi ni Pedro na b-**in**-ili ang kotse?
who ANG said(TT) ERG-Pedro COMP bought(TT) ABS-car
('Who is the one that Pedro said that bought the car?')

Given the notion of reference set adopted here, all the derivations in (51) get compared with each other, when the Theme of the embedded clause is construed as specific.[22] When, on the other hand, the Theme of the embedded clause is nonspecific, only (51a) and (51c) compete with each other. The relevant derivations for (51) are given in (52).

(52)a. *$[_{CP}$ OP_k $[_{TP}$ Pedro$_i$ said(AT) $[_{PrP}$ t_i $[_{AspP}$ $[_{VP}$ t_V $[_{CP}$ t''_k $[_{TP}$ t'_k bought(AT) t_k...]]]]]]]

b. *$[_{CP}$ OP_k $[_{TP}$ Pedro$_i$ said(AT) $[_{PrP}$ t_i $[_{AspP}$ $[_{VP}$ t_V $[_{CP}$ t'_k $[_{TP}$ bought(TT) t_k...]]]]]]]

c. $[_{CP}$ OP_k $[_{TP}$ $[_{CP}$ t''_k $[_{TP}$ t'_k bought(AT) t_k...]]$_j$ said(TT) $[_{PrP}$ Pedro $[_{AspP}$ $[_{VP}$ t_V t_j]]]]]

d. *$[_{CP}$ OP_k $[_{TP}$ $[_{CP}$ t'_k $[_{TP}$ bought(TT) t_k...]]$_j$ said(TT) $[_{PrP}$ Pedro $[_{AspP}$ $[_{VP}$ t_V t_j]]]]]

Let us first focus on the interpretation where the Theme is specific. Under this interpretation, (52a-d) belong to the same reference set, as noted above. It is clear from the discussion in Chapter 3 that the derivations in (52b) and (52d), in which the embedded verb is transitive, are doomed, for they fail to take a "free ride" within the

[22] Recall from Chapter 3 that extraction of the Agent, as in (51a) and (51c), lifts the Specificity Effect imposed on its clause-mate Theme. In (51b) and (51d), the absolutive Theme is obligatorily specific.

embedded clause. That leaves us with (52a) and (52c), where the embedded clause is antipassivized, allowing the null operator to raise into the Spec of TP for its absolutive Case to be checked and thereby contributing to minimizing the length of the *wh*-chain link. At the point where the *wh*-chains in (52a) and (52c) are formed, they are identical in length and hence equally economical. The crucial difference between them is that in (52a), the embedded clause remains within the VP, whereas in (52c), it raises into the Spec of TP in the covert component. As a consequence, the *wh*-chain link headed by the null operator in the matrix Spec of CP becomes shorter in (52c). The MLC, as an economy condition, correctly draws the distinction between (52a) and (52c).

The derivations under the second interpretation where the Theme in the embedded clause is nonspecific can be explained in the same way. (52a) and (52c) are evaluated with respect to one another, and the latter is rejected by the MLC.

Thus, as in the case of the Tagalog extraction of possessors discussed in Chapter 2, the paradigm in (51) demonstrates that categories can be raised covertly; if it is only the Case feature of the embedded C that raises and adjoins to the matrix T at LF, we would erroneously predict that (51a) and (51c) are both well-formed, since the mere feature raising would in no way shorten the length of the *wh*-chain link. In addition, (51) clearly shows that the MLC is more than a strictly derivational economy condition.

Next, consider the examples in (53), where the Theme in the embedded clause in (47) has been extracted.

(53) a. *Ano ang **nag**-sabi si Pedro na b-**um**-ili si Linda?
what ANG said(AT) ABS-Pedro COMP bought(AT) ABS-Linda
('What is the thing that Pedro said that Linda bought?')

b. *Ano ang **nag**-sabi si Pedro na b-**in**-ili ni Linda?
what ANG said(AT) ABS-Pedro COMP bought(TT) ERG-Linda
('What is the thing that Pedro said that Linda bought?')

c. *Ano ang s-**in**-abi ni Pedro na b-**um**-ili si Linda?
what ANG said(TT) ERG-Pedro COMP bought(AT) ABS-Linda
('What is the thing that Pedro said that Linda bought?')

d. Ano ang s-**in**-abi ni Pedro na b-**in**-ili ni Linda?
what ANG said(TT) ERG-Pedro COMP bought(TT) ERG-Linda
'What is the thing that Pedro said that Linda bought?'

Of the four competing derivations in (53), only (53d), in which both of the two verbs are transitive, yields a grammatical output. (53a-d) have the structural representations given in (54a-d).

(54)a. *$[_{CP}$ OP_k $[_{TP}$ $Pedro_i$ said(AT) $[_{PrP}$ t_i $[_{VP}$ t_V $[_{CP}$ t'_k $[_{TP}$ bought(AT)...$t_k]]]]]]]$

b. *$[_{CP}$ OP_k $[_{TP}$ $Pedro_i$ said(AT) $[_{PrP}$ t_i $[_{VP}$ t_V $[_{CP}$ t''_k $[_{TP}$ t'_k bought(TT)...$t_k]]]]]]]$

c. *$[_{CP}$ OP_k $[_{TP}$ $[_{CP}$ t'_k $[_{TP}$ bought(AT)...$t_k]]_j$ said(TT) $[_{PrP}$ Pedro $[_{VP}$ t_V $t_j]]]]]$

d. $[_{CP}$ OP_k $[_{TP}$ $[_{CP}$ t''_k $[_{TP}$ t'_k bought(TT)...$t_k]]_j$ said(TT) $[_{PrP}$ Pedro $[_{VP}$ t_V $t_j]]]]]$

The ill-formedness of (54a) and (54c), where the embedded verb bears the Agent Topic morpheme, comes as no surprise, because they fail to take advantage of the possible "free ride" within the embedded clause. (54b) and (54d), on the other hand, do take the "free ride." Again, what makes (54d) more optimal than (54b) is the covert raising of the embedded CP into the matrix Spec of TP. The higher *wh*-chain link in (54d) becomes shorter than that in (54b) owing to the covert raising. The economy account of (52) also explains (54) in a straightforward way.

Recall from Chapter 3 that Tagalog has a construction dubbed the recent past construction. The construction is illustrated below:

(55) Kabibili lang ni Juan ng tela.
buy(RPAST) just ERG-Juan INH-cloth
'Juan has just bought some/the cloth.'

In this particular construction, there is no absolutive structural subject, as shown in (55). The lack of the structural subject, I suggested, would be due to the lack of Case and EPP features on the T.

Now, consider the following biclausal structures where the matrix verb is in the recent past:

(56) a. Kasasabi lang ni Pedro na b-**um**-ili si Linda ng kotse.
say(RPAST) just ERG-Pedro COMP bought(AT) ABS-Linda INH-car
'Pedro has just said that Linda bought a car.'

b. Kasasabi lang ni Pedro na b-**in**-ili ni Linda ang kotse.
say(RPAST) just ERG-Pedro COMP bought(TT) ERG-Linda ABS-car
'Pedro has just said that Linda bought the car.'

In (56a) the embedded bears the Agent Topic morpheme, while in (56b) it bears the Theme Topic morpheme. What should be noted for the purpose of the present discussion is that in both (56a) and (56b), the embedded clause stays within the VP throughout the derivation, whether or not it gets inherent Case.

What prediction does the economy account make about long-distance extraction in recent past constructions like (56)? In the above paradigms in (47) and (50), the long-distance extraction must take place out of the embedded clause occupying the matrix structural subject position at LF. Since there is no way for the embedded clause to raise into the matrix Spec of TP in (56), relative economy would predict that extraction can

take place out of the VP-internal embedded clause in (56), being the only legitimate option. This prediction is borne out. Consider the following examples:

(57) a. Sino ang kasasabi lang ni Pedro na b-**um**-ili ng kotse?
who ANG say(RPAST) just ERG-Pedro COMP bought(AT) INH-car
'Who is the one that Pedro has just said that bought a/the car?'

b. *Sino ang kasasabi lang ni Pedro na b-**in**-ili ang kotse?
who ANG say(RPAST) just ERG-Pedro COMP bought(TT) ABS-car
('Who is the one that Pedro has just said that bought the car?')

In these examples, the Agent of the embedded clause in (56) has been extracted into the matrix clause. The derivations for (57a-b) are given below (the adverbial *lang* is ignored):

(58) a. $[_{CP}\ OP_i\ [_{TP}$ say(RPAST) $[_{PrP}$ Pedro $[_{AspP}\ [_{VP}\ t_V\ [_{CP}\ t''_i\ [_{TP}\ t'_i$ bought(AT) t_i...]]]]]]]

b.*$[_{CP}\ OP_i\ [_{TP}$ say(RPAST) $[_{PrP}$ Pedro $[_{AspP}\ [_{VP}\ t_V\ [_{CP}\ t'_i\ [_{TP}$ bought(TT) t_i...]]]]]]]

The reason for the ill-formedness of (58b), where the Theme Topic morpheme appears on the embedded verb, should be clear. What is noteworthy here is that (58a) is well-formed in spite of the fact that the extraction proceeds in exactly the same way as that in ill-formed (49a) in relevant respects. The well-formedness of (58a) is precisely what the economy analysis predicts, for it is the most economical among the competing derivations. (58a) shows that there is no absolute ban on extraction out of clauses that stay within the VP.

Extraction of the embedded Theme in (56) can be explained in the same manner. The relevant pair is found in (59).

(59) a. *Ano ang kasasabi lang ni Pedro na **b-um**-ili si Linda?
what ANG say(RPAST) just ERG-Pedro COMP bought(AT) ABS-Linda
('What is the thing that Pedro has just said that Linda bought?')

b. Ano ang kasasabi lang ni Pedro na b-**in**-ili ni Linda?
what ANG say(RPAST) just ERG-Pedro COMP bought(TT) ERG-Linda
'What is the thing that Pedro has just said that Linda bought?'

The structures for (59a-b) are provided in (60a-b) respectively.

(60) a. *$[_{CP}\ OP_i\ [_{TP}$ say(RPAST) $[_{PrP}$ Pedro $[_{VP}\ t_V\ [_{CP}\ t'_i\ [_{TP}$ bought(AT)$\ldots t_i]]]]]]$

b. $[_{CP}\ OP_i\ [_{TP}$ say(RPAST) $[_{PrP}$ Pedro $[_{VP}\ t_V\ [_{CP}\ t''_i\ [_{TP}\ t'_i$ bought(TT)$\ldots t_i]]]]]]$

The ungrammaticality of (60a), in which the embedded verb bears the Agent Topic morpheme, needs no explanation. As in the case of (58a), the long-distance extraction out of the VP-internal complement clause, being the most economical, is legitimate in (60b), although the same kind of extraction in (54a) is blocked by the availability of more economical (54d).

The analysis advocated here also explains long-distance extraction of adjuncts. Consider (61), in which the adjunct *saan* 'where' has been extracted:

(61) a. Saan **nag**-sabi si Pedro na b-**um**-ili ang tao ng damit?
where said(AT) ABS-Pedro COMP bought(AT) ABS-man INH-dress
'Where did Pedro say *t* that the man bought a dress?'

b. Saan **nag**-sabi si Pedro na b-**in**-ili ng tao ang damit?
where said(AT) ABS-Pedro COMP bought(TT) ERG-man ABS-dress
'Where did Pedro say *t* that the man bought the dress?'

c. Saan s-**in**-abi ni Pedro na b-**um**-ili ang tao ng damit?
where said(TT) ERG-Pedro COMP bought(AT) ABS-man INH-dress
'Where did Pedro say *t* that the man bought a dress?'
'Where did Pedro say that the man bought a dress *t*?'

d. Saan s-**in**-abi ni Pedro na b-**in**-ili ng tao ang damit?
where said(TT) ERG-Pedro COMP bought(TT) ERG-man ABS-dress
'Where did Pedro say *t* that the man bought the dress?'
'Where did Pedro say that the man bought the dress *t*?'

These examples are all grammatical, but there is an interesting interpretative contrast, as indicated by the above glosses. In particular, (61a-b) are unambiguous, permitting only the matrix reading of *saan* 'where', while (61c-d) are ambiguous between the matrix and embedded readings. Thus, the former two can only be interpreted as asking the location where Pedro's utterance took place, whereas the latter two have another reading as well, in which the place where the man bought a/the dress is inquired. (62a-d) are the structural representations for (61a-d) where the adjunct has been extracted out of the embedded clause.

(62) a. *$[_{CP}$ where$_k$ $[_{TP}$ Pedro$_i$ said(AT) $[_{PrP}$ t_i $[_{VP}$ t_V $[_{CP}$ t'_k $[_{TP}$...bought(AT)...t_k]]]]]]

b. *$[_{CP}$ where$_k$ $[_{TP}$ Pedro$_i$ said(AT) $[_{PrP}$ t_i $[_{VP}$ t_V $[_{CP}$ t'_k $[_{TP}$...bought(TT)...t_k]]]]]]

c. $[_{CP}$ where$_k$ $[_{TP}$ $[_{CP}$ t'_k $[_{TP}$...bought(AT)...t_k]]$_j$ said(TT) $[_{PrP}$ Pedro $[_{VP}$ t_V t_j]]]]

d. $[_{CP}$ where$_k$ $[_{TP}$ $[_{CP}$ t'_k $[_{TP}$...bought(TT)...t_k]]$_j$ said(TT) $[_{PrP}$ Pedro $[_{VP}$ t_V t_j]]]]

It should be fairly clear how (61) can be explained. As we saw above, in the cases under consideration, long extraction is allowed only if the embedded clause occupies the matrix Spec of TP at LF. In (62c-d) this is the case, and hence the embedded reading is possible. In (62a-b), where the embedded clause does not raise into the Spec of TP, such reading is not available. More specifically, (62a) is blocked by (62c), and (62b) by (62d); in the former two, the Theme in the embedded clause is nonspecific, while in the latter two, it is specific (see Chapter 3).

Nothing, however, prevents the matrix interpretation in (61). The derivations for the matrix interpretation do not compete with those for the embedded interpretation, given that the reference set is determined derivationally in the way suggested in Chapter 3. This is because once the adjunct *wh*-phrase gets selected from the numeration and inserted into the embedded clause, as in (62), the remaining numeration becomes distinct from the one leading to the matrix interpretation, which still contains the adjunct *wh*-phrase. Under the matrix construal of the adjunct *wh*-phrase, competing (61a) and (61c) have the identical *wh*-chain link and thus are equally economical. The same is true of (61b) and (61d).

Having established that the analysis developed in this thesis accounts naturally for long-distance extraction in Tagalog, let us now go back to the leftover question about the Chamorro examples in (41), which are reproduced below.

(41) a. Hayi **mu**-na'mänman si Juan [na un-paniti]?
who AT-surprise UNM-Juan COMP 2SG.ERG-punch
'Who did it surprise Juan that you punched?'

b. *Hayi n-**in**-a'mänman si Juan [na un-paniti]?
who PASS-surprise UNM-Juan COMP 2SG.ERG-punch
('Who did it surprise Juan that you punched?')

The derivations for (41a) and (41b) are as follows:

(63)a. $[_{CP}\ OP_k\ [_{TP}\ [_{CP}\ t''_k\ [_{TP}\ t'_k$ punched t_k...]]$_i$ AT-surprised $[_{PrP}\ t_i\ [_{AspP}\ [_{VP}\ t_V$ Juan]]]]]
|_____||_____|

b.*$[_{CP}\ OP_k\ [_{TP}$ Juan$_j$ PASS-surprised $[_{PrP}\ [_{CP}\ t''_k\ [_{TP}\ t'_k$ punched t_k...]] $[_{AspP}\ [_{VP}\ t_V\ t_j]]]]]$
|_____||_____|

The major difference between Chamorro (41) on the one hand and the Tagalog long-distance extraction data examined above on the other hand is that in (41), the extraction takes place out of the sentential logical subject generated in the Spec of PrP, not out of the sentential logical object generated in the complement of the verb. Given the revised notion of reference set, (63a-b) belong to the same reference set (the "passive" morpheme *-in-* in (41b), like the morpheme *-um-* in (41a), is assumed to be generated in the Asp (Baker 1992b)). In (63) the *wh*-movement proceeds in exactly the same way within the sentential subject. The crucial difference is that the clausal subject raises covertly into the Spec of TP in antipassive (63a), but stays in the Spec of PrP in "passive" (63b) where it may perhaps get oblique Case (which has no morphological realization, cf. (29)). As a result, the upper *wh*-chain link becomes shorter in (63a) than in (63b) in covert syntax, making (63a) more economical than (63b) in terms of the MLC. In this way, the MLC explains *Wh*-Agreement in Chamorro.[23]

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[23] Chung (1991, fn. 4) suggests that if the psych verb in (41b) bears the third-person singular ergative agreement agreeing with the sentential subject instead of the "passive" morpheme, (41b) would be ruled out independently by the animacy restrictions in Chamorro described by Chung (1981). Chung (1991:86) gives the following pair of examples similar to that in (41):

(i) a. Hayi na lahi um-istotba si Jose [ni b-um-isita i haga-ña]?
who LK boy AT-disturb UNM-Jose COMP AT-visit the daughter-3SG.POSS
'What boy does it disturb Jose visited his daughter?'

b. *Hayi na lahi ha-istotba si Jose [ni b-um-isita i haga-ña]?
who LK boy 3SG.ERG-disturb UNM-Jose COMP AT-visit the daughter-3SG.POSS
('What boy does it disturb Jose visited his daughter?')

According to Chung (1991), (ib), where the verb *istotba* 'disturb' bears the ergative agreement, is excluded by the animacy restrictions, while (ia) is not. The proposed restrictions state that when a transitive clause contains an animate absolutive, it cannot have an inanimate ergative. However, there seem to be exceptions to them, as in (ii), repeated from Chapter 2 (Chung 1982:54).

(ii) Ha-istotba hām [na malāgu' i lahi-nmami ni kareta].
3SG.ERG-disturb 1PL.ABS COMP want the son-1PL.POSS OBL-car
'It disturbs us that our son wants the car.'

Here let us briefly consider the role of "referentiality" in Chamorro extraction. Chung (1994) has found that *Wh*-Agreement in Chamorro is sensitive to the referentiality of extracted elements in the sense of Cinque (1990) (see also Rizzi 1990). More specifically, a *wh*-moved element triggers *Wh*-Agreement only optionally if it is referential. Compare (41) with the following example (Chung 1994:19):

(64) Hafa na bistidu n-in-a'mänman hämyu [na ha-chuli' si Maria]?
what LK clothes PASS-surprise 2PL.ABS COMP 3SG.ERG-take UNM-Maria
'Which dress did it surprise you that Maria took?'

In (41) where the nonreferential *wh*-phrase has been extracted, the *Wh*-Agreement on the matrix verb is obligatory. In (64), on the other hand, where the *wh*-phrase is referential, the matrix verb does not bear the expected *Wh*-Agreement morpheme *-um-*, though the counterpart of (64) with the *Wh*-Agreement is also grammatical (Chung 1994).

Let us assume following Cinque 1990 that referential *wh*-phrases have the ability to license null resumptive pronouns (cf. Chung 1994:39 fn. 28). This assumption would immediately account for the optionality of *Wh*-Agreement in examples like (64); the version with *Wh*-Agreement and the one without it would not compete with each other, since the latter contains one extra element in its initial numeration, namely, a resumptive *pro*. In examples like (41), the resumptive pronoun strategy is not open, and thus the derivation with *Wh*-Agreement always counts as the most economical, blocking the other derivations.[24]

Then, what we can say about (i) is the following: only for those speakers of Chamorro who accept (ib) without the *wh*-extraction, (ib) is blocked by more economical (ia) in terms of the MLC.

[24] As Sandra Chung (personal communication) reminded me, in Chamorro, even when a referential DP is extracted, the verb in the clause from which the extracted element originates must bear *Wh*-Agreement (Chung 1994). Thus, in (64), for example, the verb *chuli'* 'take' must be transitive and cannot bear the morpheme *-um-*. It seems reasonable to say that resumptive *pros*, being referential, must occupy the Spec of TP (*i.e.*, the "topic" position in ergative languages) at LF and hence receive absolutive Case, which results in "fake" *Wh*-Agreement. Even if this speculation is correct, facts about long-distance extraction of referential oblique elements must still be dealt with. Moreover, Sandra Chung has pointed out a potential problem with it; the topic construction in Chamorro appears to indicate that null resumptive

Summarizing, it has been shown that *Wh*-Agreement is not a morphological spell-out of successive cyclicity *per se*, contrary to Chung's claim (1982, 1994). Rather, it is a reflex of "free rides" that *wh*-movement takes advantage of in an effort to minimize its chain.

The claim that *Wh*-Agreement in languages like Chamorro and Tagalog is a morphological reflex of the minimization of *wh*-chain links by maximizing Case/EPP-driven "free rides" neatly accounts for the fact that it differs in a systematic way from "*Wh*-Agreement" in languages like Irish. Although the two types of "*Wh*-Agreement" are both constrained by the MLC, Irish-type "*Wh*-Agreement" is a genuine reflex of successive cyclic Comp-to-Comp movement.

There are two marked differences. One has to do with "*Wh*-Agreement" morphology itself. Chamorro-type *Wh*-Agreement, which I have argued is really antipassive morphology associated with the functional category Asp, is tied with the Case system, while Irish-type "*Wh*-Agreement" is tied with the complementizer system. This difference follows naturally from the present analysis.

The other has to do with what I called the reversed argument/adjunct asymmetries in Chapter 3. There we observed that only arguments require certain *Wh*-Agreement or Topic morphemes in short-distance extraction in Tagalog. The same seems true of Chamorro, as far as Case-related (as opposed to nominalizing) *Wh*-Agreement is concerned (cf. Topping 1973, Chung 1991, 1993, 1994). Thus, in the following Chamorro example of adjunct extraction, no *Wh*-Agreement appears on the verb (Chung 1994:28):

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pronouns do not trigger (fake) *Wh*-Agreement. It may be that the nature of the antecedent of a null resumptive *pro* (whether it is a *wh*-phrase or not) is crucial.

(65) Sa' hafa na ma-dingu Sa'ipan?
because what COMP 3PL.ERG-leave Saipan
'Why did they leave Saipan?'

In sharp contrast, Irish-type "*Wh*-Agreement" is triggered not only by arguments but also by adjuncts. This can be seen in such examples as (66) from Irish (McCloskey 1979).

(66) Ar an aonach **aL** chonaic me é.
on the market COMP saw I him
'It was at the market that I saw him.'

In the cleft construction in (66), the PP adjunct *ar an aonach* 'on the market' has been extracted and triggers the appearance of the *wh*-Comp *aL*. As argued in Chapter 3, Chamorro/Tagalog-type *Wh*-Agreement is sensitive only to argument extraction, precisely because it is a morphological spell-out of Case features; argument DPs can potentially take advantage of Case/EPP-driven "free rides" by choosing the right kind of *Wh*-Agreement, but adjuncts, being unable to receive Case or to satisfy the EPP, cannot do so in the first place. Irish-type "*Wh*-Agreement," which has nothing to do with Case or the EPP, is expectedly insensitive to the distinction between arguments and adjuncts. The present account offers a principled reason why Chamorro and Irish differ in this respect.

5.3. Hyper/Super-Raising-to-Object

In Chapters 3 and 4, where GF changing antipassives and applicatives were examined, we discussed how Case/EPP-driven movement of some element serves as a "free ride" for *wh*-movement of that element in situations where relative comparison in terms of economy is at work. In the case of antipassives and applicatives, the "free ride" in question takes place within a single clause. But we know that NP-movement is not

principle be transclausal, as in raising constructions, which we might view as a species of GF changing. Then, from the perspective I have been advocating in this thesis, it is only natural to think that in certain circumstances, raising out of a clause counts as a "free ride" for *wh*-movement. And these circumstances are precisely those where the concept of reference set dictates that relative comparison be made among derivations arising from non-distinct numerations.

There are two kinds of raising constructions with respect to the landing site of the raised nominal. One is raising-to-subject, in which the raised nominal ends up in the structural subject position or the Spec of TP. Consider the following pair:

(67) a. It seems [(that) John is intelligent].
b. $John_i$ seems [t_i to be intelligent].

(67b) is a classic example of raising-to-subject, where *John*, being unable to check its Case within the infinitival embedded clause, raises into the matrix Spec of TP. In (67a) *John* checks its Case within the tensed embedded clause, and the matrix Spec of TP is occupied by the expletive *it*.

The other case to consider is raising-to-object, in which the raised nominal ends up in the structural object position. This construction can be illustrated by the *Exceptional Case-Marking* (ECM) construction in (68b).

(68) a. I believe [(that) John is intelligent].
b. I believe $John_i$ [t_i to be intelligent].

The assumption here is that in (68b) *John* within the infinitival embedded clause raises into a non-θ structural Case position—the Spec of AspP in the present framework—in the matrix clause (see Lasnik and Saito 1991, Chomsky 1993, Koizumi 1993, 1995). In

(68a), as in (67a), *John* gets nominative Case within the tensed clause.

Notice that although (67a) and (67b) are in some sense synonymous, they do not compete for economy purposes. This is because they arise from distinct numerations. (67a) contains the expletive, while (67b) does not. Moreover, the embedded T is [+present] in (67a) but infinitival in (67b). Since no comparison between (67a) and (67b) is possible, (69a-b) are both well-formed.

(69) a. Who$_i$ does it seem [t_i is intelligent]?
b. Who$_i$ t'_i seems [t_i to be intelligent]?

In (69) the logical subject of the embedded clause has been extracted. If (69a-b) were comparable, it would be wrongly predicted that (69b) should block (69a), for the *wh*-chain link is shorter in the former than in the latter.

A similar remark applies to the pair in (68). Again, (68a-b) express more or less the same thing, but they are not evaluated with respect to each other. The crucial difference between them lies in the nature of the T in the embedded clause; it is [+present] in (68a) but infinitival in (68b). The well-formedness of (70a-b), in which the logical subject of the embedded clause has undergone *wh*-movement, comes as no surprise.

(70) a. Who$_i$ do you believe [t_i is intelligent]?
b. Who$_i$ do you believe t'_i [t_i to be intelligent]?

In (70), as in (69), the raised (b) sentence creates the shorter *wh*-chain link. Nonetheless, (70a) is not blocked by (70b), because they do not belong to the same comparison domain.

Note that from the present point of view, the revised concept of reference set in particular, it is raising-to-object rather than raising-to-subject that is interesting. Consider

the pair in (67) once again. Only a little reflection suffices to realize that there is no way in which some construction and its raising-to-subject equivalent form a basis of comparison for the purpose of economy. This is because the non-raising construction must contain an expletive element that fills the matrix structural subject position, as in (67a). The raising construction, as in (67b), on the other hand, must not contain such an expletive, since, otherwise, what will happen is either that no derivation will be generated (when the numeration is not exhausted) or that the derivation will crash (when the Case feature of some nominal in the embedded clause remains unchecked). Therefore, the non-raising version and the raising version can never be compared due to their difference in terms of expletives, which, having categorial features, do matter for the purpose of the reference set.[25]

Raising-to-object, in contrast, is potentially interesting. The reason is that neither the non-raising version nor the raising version contains an expletive, as in (68). Suppose that there was no difference in interpretable features between (68a) and (68b), but there still was raising in (68b). Then (68a) and (68b), in this alleged situation, would arise from non-distinct numerations and hence would compete with each other; the Case/EPP differences that would be responsible for the absence of raising in (68a) and the presence of raising in (68b) are immaterial.

Now the question is: Do we actually find such a situation in natural language? The answer turns out to be positive. The situation just described is exactly the one we encounter in what Ura (1994) calls hyper-raising. Above we saw an example of hyper-raising in Tagalog. What we are interested in here is hyper-raising-to-object (see footnote 25). As an illustration, observe the following pair from Quechua, an Andean Equatorial language (based on Cole and Hermon 1981):

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[25] This is true of hyper/super-raising-to-subject (Ura 1994), where the kind of tense difference observed in (67) is irrelevant.

(71) a. Maria cri-n [**Francisco** cay-pi ca-j-ta].
Maria believe-3 **Francisco** this-in be-PRES.NMLZ-ACC
'Maria believes (that) Francisco is here.'

b. Maria **Francisco-ta** cri-n [cay-pi ca-j-ta].
Maria **Francisco-ACC** believe-3 this-in be-PRES.NMLZ-ACC
Lit. 'Maria believes Francisco$_i$ (that) t_i is here.'

The Quechua pair in (71) resembles the English pair in (68). But there is a crucial difference between them. Unlike in (68), the tense specification in the embedded clause is exactly the same, *i.e.*, [+present] in (71). In (71a) the subject of the embedded clause *Francisco* stays within the embedded clause, where it gets nominative Case from the T. (71b) is an example of hyper-raising. In (71b) *Francisco* raises into the matrix structural object position, where it checks its accusative Case, despite the fact that the morphological shape of the embedded T is identical to that in (71a). This raising takes place overtly, as one can tell from the word order in (71b); the raised DP precedes the matrix verb. Note that in (71) the clausal complement gets accusative Case. I take this to indicate that its inherent Case is checked and erased within the matrix VP. If so, the CP does not count as the closest element that can check the strong feature of the matrix Asp in (71b) (see the EPP in (22)), allowing NP-movement out of it in principle.

But what drives the raising in (71b)? Ura (1994) argues that in languages like Quechua that permit hyper-raising, the T, even if it is tensed, can be void of a Case feature.[26] This proposal accounts for the apparent optionality of raising in (71). When we happen to use the T with a Case feature in the embedded clause, (71a) is derived. When we happen to use the T without a Case feature instead, (71b) is derived. The derivations of (71a-b) would be as follows (I abstract away from the verb-final character of Quechua for exposition):

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[26] Ura (1994) claims that there is a correlation between hyper-raising and *pro*-drop; if a language allows hyper-raising, it also allows null subjects, and if a language disallows null subjects, it also disallows hyper-raising. This correlation is argued to be explained by the theory of *pro* where in languages with hyper-raising, *pro* can be licensed only by the ϕ-features of T.

(72) a. $|_{TP}$ Maria$_i$ $|_{PrP}$ t_i $|_{AspP}$ $|_{VP}$ believe $|_{TP}$ Francisco$_j$ $|_{PrP}$ t_j $|_{AspP}$ $|_{VP}$ is here$|||||||$
$|\_\_\_\_\_|$

b. $|_{TP}$ Maria$_i$ $|_{PrP}$ t_i $|_{AspP}$ Francisco$_j$ $|_{VP}$ believe $|_{TP}$ t'_j $|_{PrP}$ t_j $|_{AspP}$ $|_{VP}$ is here$|||||||$
$|\_\_\_\_\_||\_\_\_\_|$

In (72a) *Francisco* moves into the lower Spec of TP.[27] In (72b) it raises first into the lower Spec of TP, but the position is not a Case position. Thus, it must raise further into the matrix Spec of AspP. It is important to see that unlike English (68a-b), (72a-b) arise from non-distinct numerations and thus compete for the purpose of economy; the difference between (72a) and (72b) has to do with Case/strong features, which are not interpretable at LF and hence are ignored. The MLC favors neither of (72a-b) over the other. This is because the comparable NP-chain links within the embedded clause are the same in length and equally economical in (72). Also, the chain (*Francisco*$_j$, t'_j) in (72b) has no comparable chain in (72a). The MFC rules out neither of (72a-b), since the number of relevant uninterpretable formal features used in them is the same. Note that the strong feature of the embedded T in (72b), which triggers the "free ride" for the raising into the matrix clause, can be ignored for reasons discussed above. Therefore, (72a-b) are equally economical.

Given that the non-raising construction, as in (71a), and its hyper-raising-to-object counterpart, as in (71b), compete due to the revised concept of reference set, the present economy account predicts that the subject in the embedded clause must undergo raising before it can be *wh*-extracted. This prediction is borne out. Consider the following Quechua examples (Cole and Hermon 1981):

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[27] Here I assume that the T has a strong feature in Quechua.

(73) a. ***Pi-taj** Maria cri-n [aicha-ta micu-shca-ta]?
who[NOM]-WH.Q Maria believe-3 meat-ACC eat-PAST.NMLZ-ACC
('Who$_i$ does Maria believe (that) t_i ate meat?')

b. **Pi-ta-taj** Maria cri-n [aicha-ta micu-shca-ta]?
who-ACC-WH.Q Maria believe-3 meat-ACC eat-PAST.NMLZ-ACC
Lit. 'Who$_i$ does Maria believe t'_i (that) t_i ate meat?'

(73b) is the hyper-raising-to-object counterpart of (73a). One can tell this from the fact that in (73b) the *wh*-phrase *pi* 'who' bears accusative Case, as indicated by the accusative-marker *ta*, while in (73a) it bears nominative Case, which has no morphological realization. The derivations of (73a-b) are shown in (74a-b) respectively.

(74) a.*$[_{CP}$ who$_j$ $[_{TP}$ Maria$_i$ $[_{PrP}$ t_i $[_{AspP}$ $[_{VP}$ believe $[_{CP}$ t''_j $[_{TP}$ t'_j $[_{PrP}$ t_j $[_{AspP}$ meat$_k$ $[_{VP}$
t_k ate

b. $[_{CP}$ who$_j$ $[_{TP}$ Maria$_i$ $[_{PrP}$ t_i $[_{AspP}$ t''_j $[_{VP}$ believe $[_{CP}$ $[_{TP}$ t'_j $[_{PrP}$ t_j $[_{AspP}$ meat$_k$ $[_{VP}$
t_k ate

Since we have seen above that pairs like (71) without *wh*-extraction are equally economical, it must be that the contrast in grammaticality in (73) is caused by the *wh*-movement. So let us focus on the *wh*-chain links in (74), which are indicated by the connecting lines. The link (t''_j, t'_j) in (74a) does not have a comparable link in (74b). The link (who$_j$, t''_j) in (74a) and the link (who$_j$, t''_j) in (74b) are comparable with each other, because they are both formed by the matrix C attracting the *wh*-phrase. The MLC asserts that (74a) should be blocked by (74b), which is indeed the case. Data like (73) seem to give further support to the present analysis.

It is worth pointing out that the contrast in (73) is problematic for the ECP, even though it may seem to be a subject/object asymmetry of kind that the ECP aims to explain. In particular, there is nothing wrong with the *wh*-chain in (74a) whose tail

occupies the embedded Spec of TP at LF (the intermediate *wh*-trace in (74a) disappears, as required by FI). The Spec of TP is properly head-governed, as hyper-raising can take place out of that position. Regarding antecedent government, the embedded CP is not a barrier in (74). Moreover, there is no element in an A'-specifier position that would invalidate the *wh*-chain.

To sum up, the present framework predicts that there is an interaction between hyper-raising-to-object and extraction. More specifically, the logical subject in the embedded clause must raise into the structural object position in the matrix clause when it is to undergo extraction. This prediction is borne out by the above Quechua data. A natural question to ask is: Does this analysis extend to languages other than Quechua that have been argued to have hyper-raising-to-object (see Ura 1994)? Other things being equal, those languages should pattern with Quechua. This is one area where no careful research has been done, to my knowledge. Here I must leave the question open for future investigation.

It is certainly worthwhile to mention that the present analysis also predicts that the similar kind of interaction should be observable in super-raising-to-object. Let us consider once again the following Kipsigis pair, recapitulated from section 5.1.:

(20) a. Mɔ́cè Mù:sá [kɔ̀-tìl-án Kíplàŋàt].
want Musa 3SG.SUB-cut-1SG.OBJ Kiplangat
Lit. 'Musa wants (that) Kiplangat cut me.'

b. Mɔ́c-ɔ́:n Mù:sá [kɔ̀-tìl-án Kíplàŋàt].
want-1SG.OBJ Musa 3SG.SUB-cut-1SG.OBJ Kiplangat
Lit. 'Musa wants me$_i$ (that) Kiplangat cut t_i.'

Recall that the non-raising version, as in (20a), and its super-raising version, as in (20b), compete for economy, because they arise from non-distinct numerations. Given the present line of analysis, it is predicted that the logical object of the embedded clause must take a "free ride" by super-raising when it is extracted. At this moment, I do not have

any relevant information regarding extraction in super-raising-to-object (see Ura 1994 for a list of languages that may have super-raising). This is another area of research which I believe deserves vigorous inquiry. But again, I have to leave the prediction open for future scrutiny here. If it proves correct, the present analysis would gain further support. Also, the superiority of the economy account over the ECP would be directly established; what is extracted in relevant cases (but not in hyper-raising-to-object) would be a logical object, which the ECP predicts to be the most extractable.

5.4. Summary

To recapitulate the main points of this chapter, it has been argued that the very successive cyclic nature of movement provides further justification for the modified notion of reference set and the current version of the MLC as an economy condition defended in Chapters 3 and 4. In examining successive cyclicity, I suggested the possibility that Procrastinate is reducible to the MFC and the MLAC. It has also been argued that *Wh*-Agreement in languages like Chamorro and Tagalog is an instance of a GF changing process, *i.e.*, antipassive, interacting with *wh*-extraction. The differences between Chamorro/Tagalog and Irish in terms of *wh*-movement have received a principled account from the present perspective. Furthermore, I have discussed the possible interactions between hyper/super-raising-to-object and extraction in a tentative way.

CHAPTER 6

OBJECT PREPOSING

6.0. Introduction

In the preceding chapters, it has been shown that the present economy approach explains extraction facts that have remained problematic within GB theory. In this chapter, I will extend the economy account to some more extraction facts which have defied a unified account in the GB framework.

In Chapter 2, I suggested that syntactic ergativity is closely tied to the functional category Asp (Travis 1991, forthcoming). In particular, it was suggested there that syntactic ergativity is attributable to the defectivity of the Asp, which makes structural Case-checking in the Spec of AspP unavailable. The defective Asp can take part in structural Case-checking only with the mediation of another functional head, *i.e.*, the Pr (Bowers 1993). As a consequence, it checks ergative Case of the external argument generated in the Spec of PrP.

In fully syntactically ergative languages like Dyirbal and Tagalog, this property of Asp is not associated with any particular aspect, but Asp is always defective. But in some languages, the defectivity of Asp is associated with perfectivity or realis mood. These are split ergative languages such as Chamorro. In fully accusative languages, Asp is never defective.

Notice that there is a fourth logical possibility mentioned only in passing in Chapter 2 in connection to the discussion of Dzamba. In principle, nothing prevents languages from having a defective Asp not related to particular aspect or mood in their lexicon.

Are there any languages where this possibility is realized? I reply to this question in the affirmative. Here I first consider two genetically unrelated languages; Bahasa (Malaysia and Indonesia) from Austronesian and Dzamba from Bantu. As we will see

below, they share a strikingly similar construction, which one may call *Object Preposing* (Chung 1976a,b), which can be regarded as a special kind of passive-like GF changing construction. It will be shown that the interaction between Object Preposing and *wh*-extraction, which cannot be explained by the ECP, receives a natural account under the present economy approach.

After examining Bahasa and Dzamba, I go on to briefly consider impersonal constructions in Romance, drawing on examples from Spanish. These constructions are known to permit a kind of Object Preposing. It will be pointed out that they also exhibit the kind of interaction between Object Preposing and extraction observed in Bahasa and Dzamba, exactly as the present account predicts.

Then, the account developed here gains further empirical support.

6.1. Object Preposing in Austronesian

As pointed out in Chapter 4, the syntax of Bahasa (Malaysia and Indonesia) differs from, say, that of Tagalog in that it shows accusativity in certain constructions.

Bahasa has a syntactic process which I call Object Preposing following Chung (1976a,b). Consider the pair in (1) (Hung 1987).

(1) a. Ali **mem**-ukul anjing itu.
Ali TR-hit dog the
'Ali hit the dog.'

b. Anjing itu Ali pukul.
dog the Ali hit
'The dog Ali hit.'

(1a) is an example of a transitive sentence in Bahasa. Its transitivity is indicated by the presence of the transitive morpheme *mem-*. (1b) is the version of (1a) where Object Preposing has applied. Object Preposing has the following three superficial

characteristics: (a) the surface word is Preposed Object-Subject-Verb, (b) the verb bears no morphology, and (c) the Subject is limited to a pronoun, clitic, or proper name (Guilfoyle *et al.* 1992).[1]

The most important characteristic of Object Preposing, however, is that it targets objects only, hence its name. But crucially, it does not apply to just any objects; it affects structural objects but not inherently Case-marked objects (Chung 1976a). Observe the following examples of Object Preposing (Chung 1976a):

(2) a. Buku itu saya kirim(-kan) kepada-mu.
book the I send(-KAN) to-you
'The book I sent to you.'

b. Ikan itu saya masak untuk perempuan itu.
fish the I cook for woman the
'The fish I cooked for the woman.'

The well-formedness of (2a-b) is hardly surprising. The specific logical objects in (2a-b), being unable to receive inherent Case, must raise into some structural Case position.[2] In (2a-b) they are forced to raise into the structural subject position or the Spec of TP.

As discussed in Chapter 4, applicative constructions in Bahasa are derived by Preposition Incorporation. Thus in these constructions, the applied object receives structural Case, while the thematic object receives inherent Case. Accordingly, Object Preposing cannot affect the logical objects in the applicative versions of (2a-b), as shown

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[1] The dialect reported by Chung (1976a,b) differs from the one reported by Hung (1987) and Sie (1988) in that only pronominal logical subjects, either clitic or non-clitic, permit Object Preposing.

[2] Nonspecific logical objects, being eligible for inherent Case, cannot be preposed, as shown in (i) (Hung 1987).

(i) *Anjing Ali pukul.
dog Ali hit
('A dog Ali hit.')

(i) is highly reminiscent of the fact that the logical object must be specific in the Theme Topic construction in Tagalog. The economy account of the Specificity Effect presented in Chapter 3 automatically extends to Bahasa data like (i) and Object Preposing in Dzamba below, which affects specific DPs only.

in (3) (Chung 1976a).

(3) a. *Buku itu saya kirim-**i** kau.
book the I send-APPL you
('The book I sent you.')

b. *Ikan itu saya masak-**kan** perempuan itu.
fish the I cook-APPL woman the
('The fish I cooked the woman.')

The applied objects receiving structural Case, on the other hand, can undergo Object Preposing.

(4) a. Wanita itu saya kirim-**i** surat itu.
woman the I send-APPL letter the
'The woman I sent the letter.'

b. Perempuan itu saya masak-**kan** ikan itu.
woman the I cook-APPL fish the
'The woman I cooked the fish.'

Thus, Object Preposing exclusively affects VP-internal arguments needing structural Case. One may regard Object Preposing as a special kind of GF changing passive construction where the Agent does not get demoted. I suggest that it is closely related to the functional category Asp in the same way as the ergative construction is. More specifically, I argue that it is triggered by a defective Asp, which makes Case-checking in its specifier position unavailable. As a result, "structural objects" are obliged to raise into the structural subject position. Logical subjects in Object Preposing constructions get ergative Case in the Spec of PrP. Thus, the structures for (1a-b) at Spell-Out look like the following:

(5) a. $|_{TP}$ Ali$_i$ T $|_{PrP}$ t_i hit $|_{AspP}$ the dog$_j$ Asp $|_{VP}$ t_V t_j||||

b. $|_{TP}$ the dog$_j$ T $|_{PrP}$ Ali hit $|_{AspP}$ t'_j Asp $|_{VP}$ t_V t_j||||

In transitive accusative (5a), the Agent and the Theme raises into the Spec of TP and the Spec of AspP respectively. In "passive" (5b), the Theme first raises into the Spec of AspP, satisfying the "inner" EPP, and then into the Spec of TP, where it checks its nominative Case. To account for the word order, I assume that the verb raises overtly only up to the Pr in Bahasa.

As we have seen in Chapter 2, the raising of the Theme over the Agent in (5b) satisfies the definition of Attract, given the EPP in (7).

(6) *Attract*:
K *attracts* F if F is the closest feature that can enter into a checking relation with an *intrinsic* sublabel of K.

(7) *Extended Projection Principle* (EPP):
EPP = D/C$_{[\text{unerased Case}]}$-feature

The reason is that in (5b) the Theme is the closest DP that can enter into a checking relation with the T; the Agent, whose Case gets erased in the Spec of PrP, cannot check the Case feature or the strong D-feature of the T.

The present analysis accounts for the fact that the transitive marker *mem-*, which I take to be a morphological realization of the non-defective Asp, never appears in Object Preposing. The general association of the morpheme *mem-* with aspect is suggested by the fact that its attachment to an intransitive verb (under lexically determined conditions) results in addition of a sense of continuity or duration (Chung 1976a:68, fn. 19). The complementary distribution of the transitive marker and the null "Object Preposing marker" follows if we assume that the latter is indeed one form of Asp, a defective one

in particular.

The claim that Object Proposing is a species of passive or ergative construction gains further support from the optional cliticization of the logical subject to the verb. The cliticized logical subject can be in a special proclitic form (Chung 1976b, Sie 1988). Consider the following examples of Object Preposing (Sie 1988:354):

(8) a. Rumah itu sudah (a)ku-beli.
house the PERF I-buy
'I have bought the house.'

b. Rumah itu sudah (eng)kau-beli kah?
house the PERF you-buy Q
'Have you bought the house?'

In (8a), for instance, the first-person singular logical subject is expressed by the proclitic *(a)ku-* as opposed to the regular pronoun *saya* in (2) and (4). From the present perspective, the availability of the proclitic form in Object Preposing makes sense if we consider it to be a kind of ergative agreement. In fact, Sie (1988) argues precisely for treating it as a special kind of agreement. Thus I assume that logical objects in Object Proposing receive structural ergative Case in the specifier of the PrP, to which the defective Asp with a structural Case feature adjoins.

The derivations (1a) and (1b) compete with each other, given the notion of reference set in (9), defended throughout this thesis.

(9) *Reference Set*:
A set of derivations that arise from *non-distinct* numerations.

The notions of numeration and non-distinctness are recapitulated below:

(10) *Numeration*:
A set of pairs (l, i), where l is an item of the lexicon and i is its index, understood to be the number of times that i is selected.

(11) *Non-Distinctness*:
Numerations N and N' are *non-distinct* if and only if there is a one-to-one correspondence C between their members, such that if (l, n) $\in$ N and (l', n') $\in$ N' and (l, n) corresponds to (l', n') in C then l and l' have the same *interpretable* features and n = n'.

The reason why (1a) and (1b) get evaluated with respect to each other should be clear; they share the same set of sets of interpretable features and their difference in terms of Case and defectivity of Asp, which are uninterpretable, can be ignored.

Now let us reconsider (5a-b), the structures for (1a-b), to see why neither of them blocks the other. The relevant economy conditions are the MLC and the MFC. The first condition is given in (12).

(12) *Minimal Link Condition* (MLC):
Derivation D blocks derivation D' if there exist chain links CL $\in$ D and CL' $\in$ D' such that CL and CL' are *comparable* and CL is shorter than CL'.

The following notions enter into the MLC in (12):

(13) *Chain Link Comparability*:
Chain links CL and CL' are *comparable* if and only if derivations D and D' belong to the same reference set, such that if CL $\in$ D and CL' $\in$ D' then items of the lexicon $l \in$ CL and $l' \in$ CL' have the same *interpretable* features, and K and K' attracting l and l' are selected from numerations N and N' at the same point.

(14) *Length of Chain Link*:
Length L of chain link CL is the number of maximal projections that dominate the tail but not the head.

The MFC is provided below.

(15) *Minimal Feature Condition* (MFC):
Derivation D blocks derivation D' if D and D' belong to the same reference set and the number of features in numeration N of D is less than the number of features in numeration N' of D'.

Now, the chain link (the dog_j, t_j) in (5a) is comparable with the chain link (t'_j, t_j) in (5b). They are equal in cost, for their length is the same. Neither the chain link (Ali_i, t_i) in (5a) nor the chain link (the dog_j, t'_j) in (5b) has a comparable chain link due to the notion of chain link comparability in (13). Therefore, (5a-b) are equally economical as far as the MLC is concerned.

(5a-b) are also equally economical in terms of the MFC, which requires a derivation to use as few uninterpretable formal features as possible. In (5) the uninterpretable formal features we ought to worry about are the Case features.[3] Since both (5a) and (5b) contain two structural Case features, neither of them blocks the other.

In brief, the cost of deriving (5a) and that of (5b) are the same under the present analysis, and the well-formedness of both (5a) and (5b) is expected.

Note incidentally that the possibility of Object Preposing, as in (1b), demonstrates that Attract cannot apply across derivations. If Attract applied in such a way as to choose between (5a) and (5b), one would incorrectly predict that (5b) cannot be generated; the T must attract the closest element that can enter into a checking relation with it, *i.e.*, the Agent *Ali* in the Spec of PrP. Again, we are led to the conclusion that Attract, being a formally defined operation, is inherently intraderivational. The same point can be made based on Object Preposing in Bantu and Romance to be dealt with below.

Given that Object Preposing is an ergative construction (*i.e.*, a passive construction without demotion of the Agent), Bahasa, though it shows some degree of accusativity due to its non-defective Asp, is expected to behave like fully ergative languages in terms of

[3] The defectivity of the Asp, which is taken to be an optional feature, is not relevant to the MFC (see Chapter 5, section 5.1.).

argument extraction. More specifically, it is predicted that structural objects in Bahasa basic transitive structures cannot be directly extracted, since there are alternative ergative structures where logical objects can take advantage of "free ride" into the structural subject position before they are extracted. This prediction is borne out. Thus, Hung (1987) presents the descriptive generalization that extraction of arguments must "pass through" the Spec of TP in Bahasa (see Chapter 3, footnote 19).[4] Observe the following examples (Hung 1987):

(16) a. Siapa yang **mem**-baca buku itu?
who COMP TR-read book the
'Who is the one that read the book?'

b. *Siapa yang buku itu baca?
who COMP book the read
('Who is the one that read the book?')

(17) a. *Apa yang Ali **mem**-baca?
what COMP Ali TR-read
('What is the thing that Ali read?')

b. Apa yang Ali baca?
what COMP Ali read
'What is the thing that Ali read?'

In (16) and (17), the (a) examples are basic transitive clauses, as indicated by the presence of the transitive morpheme *mem-*, whereas the (b) examples are those of Object Preposing, as indicated by the fact that the verb bears no morphology. As (16) shows,

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[4] Chung (1976a) argues that accusative-marked objects can be directly relativized in the dialect of Bahasa she studies, citing examples like the following:

(i) Ada seorang anak perempuan yang saya ingin kamu men-emui.
there a child female COMP I want you TR-meet
'There is a girl who I want you to meet.'

In (i) the verb *(t)emui* 'meet' retains the transitive marker *men-* in spite of the fact that its logical object has been relativized. I speculate that (i) contains a null resumptive pronoun (cf. the brief discussion of "referentiality" in Chamorro in Chapter 5). If so, (i) does not compete with its equivalent without the transitive marker, where *wh*-movement takes place via Object Preposing. This is because they arise from distinct numerations. If this speculation is on the right track, we are left with ill-understood conditions under which null resumptive pronouns are licensed in Bahasa (cf. Keenan 1972, Chung 1982).

one must use the accusative structure in order to extract the logical subject.[5] (17) shows that the logical object can be extracted in the Object Preposing construction but not in the transitive accusative construction.

This curious extraction pattern can be accounted for in terms of the version of the MLC in (12). Let us consider the relevant structures for (16) and (17) provided in (18) and (19) respectively (with the *wh*-chains indicated).

(18) a. $|_{CP}\ OP_i\ |_{TP}\ t'_i\ T\ |_{PrP}\ t_i$ TR-read $|_{AspP}$ the book$_j$ Asp $|_{VP}\ t_V\ t_j|||||$

b. *$|_{CP}\ OP_i\ |_{TP}$ the book$_j$ T $|_{PrP}\ t_i$ read $|_{AspP}\ t'_j$ Asp $|_{VP}\ t_V\ t_j|||||$

(19) a. *$|_{CP}\ OP_j\ |_{TP}$ Ali$_i$ T $|_{PrP}\ t_i$ TR-read $|_{AspP}\ t'_j$ Asp $|_{VP}\ t_V\ t_j|||||$

b. $|_{CP}\ OP_j\ |_{TP}\ t'_j$ T $|_{PrP}$ Ali read $|_{AspP}\ t'_j$ Asp $|_{VP}\ t_V\ t_j|||||$

In (18) and (19), I assume that extraction in Bahasa, like that in Tagalog, involves null operator movement. (18a-b) compete for economy, given the notion of reference set in (9), and so do (19a-b). The MLC in (12) maintains that (18a) blocks (18b), which is indeed the case, since the *wh*-chain link in the former is shorter than that in the latter. (19a) is blocked by (19b), for the length of the *wh*-chain link is shorter in the latter than in the former. It is worth pointing out that the ill-formedness of (17a), where the properly head-governed thematic object has been extracted, poses a problem for the ECP.

Let us next observe the following examples, where the logical subject of the embedded clause has been extracted into the matrix clause (Hung 1987):

[5] Voskuil's (1991) account of extraction in Bahasa, based on the idea of expletive-argument CHAINs (Chomsky 1986b), does not extend to examples like (16b). It also fails to explain long-distance extraction (see (20) and (22) below).

(20) a. *Siapa yang John **men**-ganggap [**mem**-baca buku itu]?
who COMP John TR-believe TR-read book the
'Who is the one that John believed read the book?')

b. *Siapa yang John **men**-ganggap [buku itu baca]?
who COMP John TR-believe book the read
('Who is the one that John believed read the book?')

c. Siapa yang John anggap [**mem**-baca buku itu]?
who COMP John believe TR-read book the
'Who is the one that John believed read the book?'

d. *Siapa yang John anggap [buku itu baca]?
who COMP John believe book the read
('Who is the one that John believed read the book?')

The observation here is that the extraction must take place out of the structural subject, as in the case of Tagalog (see Chapter 5). In (20a-b) the matrix structural subject is the logical subject *John*, as signalled by the presence of the transitive morpheme on the matrix verb. In (20c-d) it is the whole embedded clause (see below), as demonstrated by the bare form of the matrix verb, with *John* receiving covert ergative Case.

Since both the T and the Asp have strong features in Bahasa, their Specs must be filled overtly. Then a question arises as to what occupies the Spec of TP and the Spec of AspP in (20). I assume that in (20) the matrix clause contains an expletive *pro*, analogous to English *it*, which is associated with the embedded clause. In (20c-d), the *pro* gets inserted into the Spec of AspP and subsequently raises into the Spec of TP where it checks its nominative Case. In (20a-b), it gets inserted to the Spec of AspP where it checks its accusative Case. This postulation of the expletive *pro* allows us to explain why the embedded clause appears at the right edge of the sentence in an "extraposed" position.

The crucial difference between (20c) and (20d) within the embedded clause is that the extracted Agent raises in the Spec of TP in (20c) for Case/EPP purposes but remains in the Spec of PrP in (20d).

Of the competing derivations in (20), (20c) is the only legitimate derivation, and the rest are excluded. Assuming that the expletive *pro* must be replaced by its associate CP

for reasons of Full Interpretation (FI),[6] (20a-d) have the following derivations:

(21)a.*$[_{CP}\ OP_k\ [_{TP}\ J._i\ [_{PrP}\ t_i$ TR-believe $[_{AspP}\ [_{CP}\ t''_k\ [_{TP}\ t'_k\ [t_k$ TR-read book$]]]_j\ [_{VP}\ t_V\ t_j]]]]]$

b.*$[_{CP}\ OP_k\ [_{TP}\ J._i\ [_{PrP}\ t_i$ TR-believe $[_{AspP}\ [_{CP}\ t'_k\ [_{TP}$ book $[t_k$ read$]]]_j\ [_{VP}\ t_V\ t_j]]]]]$

c. $[_{CP}\ OP_k\ [_{TP}\ [_{CP}\ t''_k\ [_{TP}\ t'_k\ [t_k$ TR-read book$]]]_j\ [_{PrP}$ J. believe $[_{AspP}\ [_{VP}\ t_V\ t_j]]]]]$

d.*$[_{CP}\ OP_k\ [_{TP}\ [_{CP}\ t'_k\ [_{TP}$ book $[t_k$ read$]]]_j\ [_{PrP}$ J. believe $[_{AspP}\ [_{VP}\ t_V\ t_j]]]]]$

The ill-formedness of (21b) and (21d) is expected, since the extracted Agent fails to take a Case/EPP-driven "free ride" within the embedded clause. The crucial difference between (21a) and (21c) is that the embedded clause undergoes covert raising into the matrix Spec of TP in (21c) but not in (21a), making the higher *wh*-chain link shorter. The MLC, as an economy condition, correctly explains the paradigm in (20). Notice that (21c) does not violate the CED (Huang 1982), if the condition applies strictly derivationally, as suggested in passing in Chapters 3 and 5. At the time the extraction takes place overtly in (21c), the embedded clause occupies a VP-internal position properly head-governed by the verb.

The MLC-based economy account also explains the following paradigm where the logical object of the embedded clause has been *wh*-extracted into the matrix clause (Hung 1987):

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[6] See Tanaka (1995) for an argument that *it* must be replaced by its associate CP at LF in English, contrary to McCloskey (1991).

(22) a. *Apa yang John **men**-ganggap [Ali **mem**-baca]?
what COMP John TR-believe Ali TR-read
('What is the thing that John believed Ali read?')

b. *Apa yang John **men**-ganggap [Ali baca]?
what COMP John TR-believe Ali read
('What is the thing that John believed Ali read?')

c. *Apa yang John anggap [Ali **mem**-baca]?
what COMP John believe Ali TR-read
('What is the thing that John believed Ali read?')

d. Apa yang John anggap [Ali baca]?
what COMP John believe Ali read
'What is the thing that John believed Ali read?'

The extraction of the logical object is legitimate, as in (22d), only if the extracted element is the structural subject of the embedded clause and the embedded clause in turn is the structural subject of the matrix clause. That both the embedded and the matrix clauses involve Object Preposing is indicated by the lack of the transitive morphology on both the embedded and the matrix verbs. Now we are comparing the following competing derivations for (22a-d):

(23)a. *$[_{CP}\ OP_1\ [_{TP}\ J._i\ [_{PrP}\ t_i$ TR-believe $[_{AspP}\ [_{CP}\ t''_1\ [_{TP}\ A._k\ [t_k$ TR-read $t'_1\ t_1]]]_j\ [_{VP}\ t_V\ t_j]]]]]$

b. *$[_{CP}\ OP_1\ [_{TP}\ J._i\ [_{PrP}\ t_i$ TR-believe $[_{AspP}\ [_{CP}\ t''_1\ [_{TP}\ t'_1\ [A.$ read $t_1]]]_j\ [_{VP}\ t_V\ t_j]]]]]$

c. *$[_{CP}\ OP_1\ [_{TP}\ [_{CP}\ t''_1\ [_{TP}\ A._k\ [t_k$ TR-read $t'_1\ t_1]]]_j\ [_{PrP}\ J.$ believe $[_{AspP}\ [_{VP}\ t_V\ t_j]]]]]$

d. $[_{CP}\ OP_1\ [_{TP}\ [_{CP}\ t''_1\ [_{TP}\ t'_1\ [A.$ read $t_1]]]_j\ [_{PrP}\ J.$ believe $[_{AspP}\ [_{VP}\ t_V\ t_j]]]]]$

(23a) and (23c) are excluded, because their *wh*-chain links in the embedded clause are longer than those in (23b) and (23d). (23b) is blocked by (23d). The *wh*-chain link headed by the null operator in the matrix Comp is shorter in (23d) than in (23b) thanks to the covert raising of the embedded clause into the matrix structural subject position.

In light of the MLC, (23d) is the optimal derivation, a correct result. Again, the extraction of the logical object in (22) is arguably problematic for the ECP.

In short, the general approach taken here straightforwardly explains the interaction between Object Preposing or "passives" and *wh*-movement in Bahasa.

It is worth pointing out that the present analysis also explains why regular passives with the demotion of external arguments do not interact with *wh*-extraction in the way Object Preposing does. Consider the following pair from Kinyarwanda, an accusative language (Kimenyi 1980):

(24) a. Umugabo y-a-boon-ye umugóre.
man SP-PAST-see-ASP woman
'The man saw the woman.'

b. Umugóre y-a-boon-y-w-e n'ûmugabo.
woman SP-PAST-see-ASP-PASS-ASP by man
'The woman was seen by the man.'

(24a) is an active sentence, whereas (24b) is its passive counterpart, where the verb bears the passive morpheme *-w-*. In (24b) the internal argument of the verb *umugóre* 'woman' has become the structural subject, and the external argument *umugabo* 'man' has been demoted to the status of oblique, as indicated by the presence of (the reduced form of) the preposition *na*.

Note that Kinyarwanda (24a-b), unlike Bahasa (1a-b), do not belong to the same reference set, since they arise from distinct numerations; (24b) but not (24a) contains the passive morpheme, which is an argument "absorbing" the external θ-role (Baker 1988a, 1992b, Baker *et al.* 1989), and the preposition. The passive morpheme, associated with the Asp, is assumed to have the interpretable categorial feature [+N]. The preposition also has the categorial features [-N, -V] (presumably, together with some semantic features). Then, the demotion of the external argument in a passive, as in (24b), makes it impossible to compare the passive with its active counterpart, as in (24a). Accordingly,

(24a) and (24b) converge without being evaluated with each other.

Given that (24a-b) do not compete for economy purposes, it is hardly surprising that *wh*-movement of the internal argument in (24b) does not block that in (24a), as shown in (25) (based on Kimenyi 1980):

(25) a. N-a-boon-ye umugóre umugabo y-a-boón-ye.
I-PAST-see-ASP woman man SP-PAST-see-ASP
'I saw the woman that the man saw.'

b. N-a-boon-ye umugóre y-a-boón-y-w-e n'ûmugabo.
I-PAST-see-ASP woman SP-PAST-see-ASP-PASS-ASP by man
'I saw the woman that was seen by the man.'

(25a) contains the active sentence in (24a), (25b) the passive sentence in (24b). The relevant portions of the structural representations for (25a-b) would be as follows:

(26) a. $|_{CP}\ OP_j\ |_{TP}\ man_i\ saw\ |_{PrP}\ t_i\ Pr\ |_{AspP}\ t'_j\ Asp\ |_{VP}\ t_V\ t_j|||||$

b. $|_{CP}\ OP_j\ |_{TP}\ t''_j\ saw(PASS)\ |_{AspP}\ t'_j\ Asp\ |_{VP}\ t_j\ t_V\ |_{PP}\ by\ man|||||$

In (26a) the null operator first raises into the Spec of AspP for Case/EPP reasons. Then it undergoes *wh*-movement into the Spec of CP. In (26b), on the other hand, the null operator checks its nominative Case in the Spec of TP, for the Case of the Asp has been "absorbed" by the passive morphology. Although the *wh*-chain link is shorter in (26b) than in (26a), (26b) does not block (26a), because they are not comparable in the first place.

In this regard, the Kinyarwanda pair in (25) contrasts sharply with the Bahasa pair in (17). The active sentence in (17a) and its "passive" counterpart in (17b) are subject to relative comparison, crucially because the "passive" in (17b) does not involve the demotion of the external argument. The *wh*-chain link is shorter in (17b) than in (17a)

(see the structures in (20)), and therefore (17b) excludes (17a).

It is perhaps worth pointing out that in split ergative languages, an accusative construction can never be compared with an ergative construction, since they are always interpreted differently with regard to aspect or mood. Observe the following examples from Chamorro (based on Chung 1982):

(27) a. Pära u-fahan si Maria i kareta.
FUT 3SG.NOM-buy UNM-Maria the car
'Maria is going to buy the car.'

b. Ha-fahan si Maria i kareta.
3SG.ERG-buy UNM-Maria the car
'Maria bought the car.'

(27a-b) differ minimally in terms of mood. The example in (27a) is in the irrealis mood, showing the nominative-accusative agreement pattern. In contrast, the example in (27b) is in the realis mood, showing the ergative-absolutive agreement pattern.

It should be obvious that (27a-b) do not belong to the same reference set; they have different interpretations with respect to mood. In particular, the numeration of (27a) but not that of (27b) contains the future tense marker. This interpretative distinction suffices to put (27a) and (27b) in two different comparison domains.

In this light, the well-formedness of (28a-b) is expected (Chung 1982).

(28) a. Hafa pära u-fahan si Maria?
what FUT 3SG.NOM-buy UNM-Maria
'What is Maria going to buy?'

b. Hafa ha-fahan si Maria?
what 3SG.ERG-buy UNM-Maria
'What did Maria buy?'

(28a) is based on irrealis (27a), while (28b) is based on realis (27b). In both of (28a-b)

the internal argument of the verb *fahan* 'buy' has been extracted. The structures for (28a-b) are given below:

(29) a. $[_{CP}\ OP_j\ [_{TP}\ Maria_i$ FUT-buy $[_{PrP}\ t_i\ Pr\ [_{AspP}\ t'_j\ Asp\ [_{VP}\ t_V\ t_j]]]]]$

b. $[_{CP}\ OP_j\ [_{TP}\ t_j$ bought $[_{PrP}\ Maria\ Pr\ [_{AspP}\ Asp\ [_{VP}\ t_V\ t_j]]]]]$

In accusative (29a) the null operator checks its Case in the Spec of AspP, whereas in ergative (29b) it checks its Case in the Spec of TP. The *wh*-chain link is shorter in (29b) than in (29a), but this is of no significance, since (29a) and (29b) do not compete for economy purposes. Hence neither of them blocks the other.

Languages like Bahasa differ from split ergative languages in that an accusative construction and its ergative counterpart belong to the same reference set, as we have already seen. This is because the Asp in these languages can be either non-defective or defective while maintaining the same meaning.

6.2. Object Preposing in Bantu

Let us next consider some relevant data from Dzamba, a Bantu language spoken in Zaire.[7] Observe first the following examples of the regular transitive sentence from Dzamba (based on Bokamba 1976):

[7] According to Bokamba (1976), Likila and Lingala pattern with Dzamba in relevant respects. Facts similar to those presented below from Dzamba are found also in KiLega (Kinyalolo 1991) and Swahili (Barrett-Keach 1985).

(30) a. oPɔsɔ a-tom-áki i-mu-nkanda.
Pɔsɔ SP(NCL1)-send-IMPERF the-NCL3-letter/book
'Pɔsɔ sent the letter/book.'

b. oPɔsɔ a-bang-áki i-zi-tɔkɔ lɔɔme.
Pɔsɔ SP(NCL1)-order-IMPERF the-NCL5-mat today
'Pɔsɔ ordered the mat today.'

The basic word order in Dzamba, as in many other Bantu languages, is SVO. In Dzamba the verb obligatorily agrees with the structural subject in person, number, and class-gender (except for special cases; see (34a) below). Thus, in (30) the verb bears the subject prefix *a-* which agrees with the nominative structural subject *oPɔsɔ*. The specific Theme in (30) receives accusative Case. Dzamba, like other Bantu languages, shows accusativity in clauses like (30a-b).

According to Bokamba's (1976) description, Dzamba has a transformational operation which he calls "topicalization." It is markedly different from topicalization found in languages like English. The following English-type topicalization is ungrammatical in Dzamba:[8]

(31) a. *I-mu-nkanda oPɔsɔ a-tom-áki.
the-NCL3-letter/book Pɔsɔ SP(NCL1)-send-IMPERF
('The letter/book Pɔsɔ sent.')

b. *I-zi-tɔkɔ oPɔsɔ a-bang-áki lɔɔme.
the-NCL5-mat Pɔsɔ SP(NCL1)-order-IMPERF today
('The mat Pɔsɔ ordered today.')

(31a) and (31b) would be obtained by applying English-type topicalization to (30a) and (205b) respectively, but they are ill-formed, unlike their English counterparts (see Chomsky 1977, Baltin 1982, Lasnik and Saito 1992 among others).

[8] (31a-b) would be grammatical if the object agreement prefix appears on the verb, forming left dislocated constructions (Bokamba 1976).

Consider the following examples of well-formed "topicalization" in Dzamba introduced in Chapter 2:

(32) a. I-**mu**-nkanda **mu**-tom-áki oPɔsɔ.
the-NCL3-letter/book SP(NCL3)-send-IMPERF Pɔsɔ
'The letter/book Pɔsɔ sent.'

b. I-zi-tɔkɔ zi-bang-áki oPɔsɔ lɔɔme.
the-NCL5-mat SP(NCL5)-order-IMPERF Pɔsɔ today
'The mat Pɔsɔ ordered today.'

(32a) and (32b) are the "topicalized" versions of (30a) and (30b). They are peculiar in two respects. First, unlike in the basic transitive sentence, the logical subject follows the verb. Secondly, the "topicalized" logical object triggers the subject agreement. In (32a) the agreement between the logical object and the verb is indicated by the morpheme *mu-*, while in (32b) it is indicated by the morpheme *zi-*. Notice that the Dzamba examples in (32) are strikingly similar to the Bahasa example in (1b) except that the logical subject in (32) follows the verb, while the one in (1b) precedes the verb.

As I suggested in Chapter 2, I propose to analyze the raising of the object into the structural subject position in (32a-b) as forced by the (null) defective Asp. Thus "topicalization" in Dzamba is derived in the same way as Object Preposing in Bahasa. The structures of, say, (30a) and (32a) at Spell-Out are assumed to be (33a) and (33b) respectively (the NP-chains shown).

(33) a. $[_{TP}$ Pɔsɔ$_i$ sent $[_{PrP}$ t_i Pr $[_{AspP}$ the letter$_j$ Asp $[_{VP}$ t_V $t_j]]]]$

b. $[_{TP}$ the letter$_j$ sent $[_{PrP}$ Pɔsɔ Pr $[_{AspP}$ t'_j Asp $[_{VP}$ t_V $t_j]]]]$

In (33a) the regular Asp with a Case feature is chosen in the initial numeration, making the Spec of the AspP a structural Case position, while in (33b) the optional feature

[+defective] is added to the Asp in forming the numeration, making the Spec of the AspP a non-Case position. In (33a) the specific Theme, which cannot get inherent Case within the VP, raises into the Spec of AspP, where it checks its accusative Case, and the Agent raises into the Spec of TP, where nominative Case-checking takes place. In (33b) the Theme has raised into the Spec of the TP via the Spec of AspP, which is evidenced by the fact that it triggers the subject agreement. The Agent stays in the Spec of the PrP, where it gets covert ergative Case. Since the verb raises overtly to the T in Dzamba, in examples like those in (32), the Agent follows the verb.

Under (9), (33a-b) belong to the same reference set. (33a-b) are both well-formed for the same reason that (5a-b) are both well-formed; they are equally economical with regard to the MLC and the MFC.

Since Dzamba is like Bahasa in possessing in its lexicon the feature [+defective] which can be added to the Asp, it is predicted to behave in the same way as Bahasa in terms of argument extraction. To be more specific, economy predicts that argument extraction must take place out of the structural subject position. Intriguingly, this prediction is borne out. First, let us consider the examples of subject relativization in (34) (Bokamba 1976).

(34)a. O-mo-to ó-kpa-áki i-mu-ndɔndɔ a-kim-ɾ.
the-NCL1-person REL-take-IMPERF the-NCL3-jug SP(NCL1)-flee-IPAST
'The person who took the jug just fled.'

b. I-zi-kengɛ ɾ-zì-bung-ɾ o kalaːi zï-ɓa-áki za-nga.
the-NCL5-slate REL-SP(NCL5)-lose-IPAST at school SP(NCL5)-be-IMPERF of-me
'The slate which is lost at school was mine.'

As expected, the logical subject occupying the structural subject position can be relativized. As pointed out by Bokamba (1978), there is a neutralization of agreement prefixes in subject relativization when a [+human] DP is relativized. This is why the verb in the relative clause in (34a), where *o-mo-to* 'the person' is relativized, does not

bear agreement morphology. The example in (34b) is more transparent; its verb in the relative clause agrees with the extracted [-human] DP, *i-zi-kɛngɛ* 'the slate'.

Let us next consider relativization of logical objects. Relevant examples are given in (35) (Bokamba 1976).

(35)a. *l-**mu**-ndɔndɔ Pɔsɔ a-tom-áki lɔɔme mu-bung-í.
the-NCL3-jug Pɔsɔ SP(NCL1)-send-IMPERF today SP(NCL3)-lose-IPAST
('The jug which Pɔsɔ sent today is lost.')

b. I-**mu**-ndɔndɔ í-**mu**-tom-áki Pɔsɔ lɔɔme mu-bung-í.
the-NCL3-jug REL-SP(NCL3)-send-IMPERF Pɔsɔ today SP(NCL3)-lose-IPAST
'The jug which Pɔsɔ sent today is lost.'

(35a) shows that the logical object cannot be directly extracted, contrary to what the ECP would predict. As exemplified in (35b), where the verb *tom* 'send' agrees with the DP *i-mu-ndɔndɔ* 'the jug', the logical object must undergo "topicalization" before it can be relativized. The structures for (35a-b) are provided in (36a-b) respectively, where the *wh*-chains are indicated.

(36) a. *$[_{CP}$ OP_j $[_{TP}$ Pɔsɔ$_i$ sent $[_{PrP}$ t_i Pr $[_{AspP}$ t'_j Asp $[_{VP}$ t_V $t_j]]]]]$

b. $[_{CP}$ OP_j $[_{TP}$ t_j sent $[_{PrP}$ Pɔsɔ Pr $[_{AspP}$ t'_j Asp $[_{VP}$ t_V $t_j]]]]]$

The ill-formedness of (36a) is explicable in terms of the economy account advocated in this thesis. Given the revised reference set in (9), (36a-b) are subject to relative comparison for economy. Moreover, (36a) is blocked by more economical (36b) in terms of the MLC in (12); the *wh*-chain links in (36) are comparable and the length of the *wh*-chain link is shorter in (36b) than in (36a). In effect, the "topicalization" or Object Preposing in (36b) counts as a "free ride" for the succeeding *wh*-movement due to the notion of chain link comparability in (13).

Summing up, the present economy account extends automatically to the Dzamba extraction facts discussed above.[9]

6.3. Object Preposing in Romance

In sections 6.1. and 6.2., we considered Object Preposing in Austronesian and Bantu. There is another kind of similar phenomenon noted in the literature, *i.e.*, so-called Object Preposing in Romance impersonal constructions, which has often been viewed as a peculiar kind of "passive" (Rizzi 1982, Belletti 1982, Burzio 1986, Cinque 1988 among others).

Romance languages have clitics which are used to form impersonal constructions. Let us examine the pair in (37) from Spanish.[10]

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[9] Kinyarwanda has a syntactic process similar to "topicalization" in Dzamba—what Kimenyi (1980) calls "Object-Subject Reversal." Observe the following Kinyarwanda pair (Kimenyi 1980:141):

(i) a. Umuhuûngu a-ra-som-a igitabo.
boy SP-PRES-read-ASP book
'The boy is reading the book.'
b. Igitabo cyi-ra-som-a umuhuûngu.
book SP-PRES-read-ASP boy
'The book is being read by the boy.'

(ia) represents the basic transitive clause, while (ib) represents the "reversed" clause, where the logical object triggers the subject agreement.

Given pairs like (i), one may think that the present economy account would predict that argument extraction must target structural subjects in Kinyarwanda. But this prediction is not borne out: one can, for example, directly extract the logical object in (ia) (Kimenyi 1980; see also Chapter 4). This fact, however, does not falsify the economy analysis (indeed, it might be used to argue for the analysis). As pointed out by Kimenyi (1980:145-146), the "reversed" object cannot be extracted (for reasons that are not clear to me). Thus, the extraction of the logical object in (ib) is illegitimate. If it leads to a crashed derivation, then the direct extraction of the object in (ia) would count as the most economical.

[10] The Spanish examples in (37) and (39) are due to Joyce Garavito (personal communication).

(37) a. Se leerá algunos artículos.
SE will-read(SG) a few articles
'One will read a few articles.'

b. Algunos artículos se leerán.
a few articles SE will-read(PL)
'One will read a few articles.'

In Spanish, the impersonal clitic is *se*. The impersonal construction comes in two variants. In (37a) the verb bears the singular agreement. In (37b), on the other hand, the verb agrees with the "preposed" plural logical object. Thus, the preposed object is arguably in the structural subject position (see Burzio 1986 for the structural subject status of preposed objects in Italian).

Here I will adopt a (rather freely) modified version of Cinque's (1988) analysis of the *si* impersonal construction in Italian (see also Zushi 1995 for recent discussion). The alternation between (37a) and (37b) is supposed to be due to the dual nature of the impersonal clitic *se*.[11] I assume that in (37a), the *se* is generated under the T and identifies the Agent *pro* as arbitrary, acting like agreement. The finite T must always discharge its nominative Case in Spanish, and hence the *pro* checks its nominative Case in the Spec of TP. The nonspecific DP *algunos artículos* 'a few articles' receives inherent Case within the VP. In (37b), on the other hand, the *se* is assumed to be generated under the Caseless Asp. (37b) is similar to standard ergative constructions in that the Agent *pro* in the Spec of PrP is licensed by the Asp, *se* in particular. This time the *pro* identified exclusively by *se*, I assume, is without Case. Thus I assume partly following Ura (1994) that in certain situations, *pro* does not have to get Case (even in *pro*-drop Romance

[11] Under Cinque's (1988) analysis, there are two types of impersonal *si* in Italian; one is an argument, the other a nonargument. In Cinque's terms, *se* is a nonargument in (37a), while it is an argument in (37b), both generated under the T. The present reanalysis accounts for the θ-theoretic difference between the two types of impersonal clitics noted by Cinque (1988), given the assumption that the Asp can bear a Case feature (or is present) only when there is a functional head Pr right above it, whose Spec hosts an external argument (cf. Noonan 1992). This is in essence a structural reinterpretation of (the half of) Burzio's (1986) generalization, which states that only verbs that assign an external θ-role can assign accusative Case.

languages like Spanish). The logical object takes the option of not receiving inherent Case (Chapter 2) and raises overtly into the Spec of TP, where it checks its nominative Case. The derivations for (37a-b) are as follows.

(38) a. $[_{TP}$ *pro*$_i$ se will-read(SG) $[_{PrP}$ t_i Pr $[_{AspP}$ Asp $[_{VP}$ t_V a few articles]]]]

b. $[_{TP}$ a few articles se will-read(PL) $[_{PrP}$ *pro* Pr $[_{AspP}$ Asp $[_{VP}$ t_V t_j]]]]

Under the present notion of reference set, these derivations compete for economy, sharing the same set of sets of interpretable features. They are equally economical in terms of the MLC; there is no comparable pair of NP-chain links in (38) and thus the MLC applies only vacuously. They are also equally economical with respect to the MFC; they both use one strong feature and one structural Case feature of the T. Therefore, (37a-b) are both well-formed.

Given that (37a-b) belong to the same reference set, the present economy account predicts that the alternation observed in (37) should no longer be possible once we extract the logical object. This is because, within the current framework, the NP-movement of the logical object in the Object Preposing in (37b) should count as a "free ride" as far as *wh*-extraction is concerned. Thus, the prediction is that (37b) but not (37a) allows the extraction in question. This prediction is indeed correct, as the following minimal pair based on (37a-b) demonstrates:

(39) a. *Cuántos artículos se leerá?
how many articles SE will-read(SG)
('How many articles will one read?')

b. Cuántos artículos se leerán?
how many articles SE will-read(PL)
'How many articles will one read?'

(39b) but not (39a) involves Object Preposing, as one can tell from the agreement on the verb; the verb in (39b) agrees with the extracted object, while that in (39a) does not. The derivations for these sentences are given below:

(40) a. *$|_{CP}$ what articles$_j$ $|_{TP}$ *pro*$_i$ se will-read(SG) $|_{PrP}$ t_i Pr $|_{AspP}$ Asp $|_{VP}$ t_V t_j|||||

b. $|_{CP}$ what articles$_j$ $|_{TP}$ t'_j se will-read(PL.) $|_{PrP}$ *pro* Pr $|_{AspP}$ Asp $|_{VP}$ t_V t_j|||||

The *wh*-chain links indicated above are comparable with each other. (40a) without Object Preposing is blocked by (40b) with Object Preposing, since the length of the *wh*-chain link in the latter is shorter than that in the former. Thus the economy account covers Object Preposing in Romance as well.

6.4. Summary

To summarize this chapter, it has been shown that the economy account developed in the previous chapters is successful in explaining the interaction between Object Preposing (or a special "passive" construction) and *wh*-extraction observed in unrelated languages and hence gains further support. The interaction in question is predicted, because Object Preposing is a species of ergative construction with no demotion of an external argument, which, under the present analysis, gets compared with its corresponding non-ergative construction (*i.e.*, an antipassive or accusative construction), if any.

The present analysis thus explains the hitherto unexplained observation that Tagalog-type *Wh*-Agreement is found only in cases where we find ergative constructions. This observation can be highlighted by split ergative languages like Chamorro without Object Preposing; in Chamorro, the "*Wh*-Agreement morpheme" *-um-* (see Chapters 2 and 4)

shows up only in ergative realis clauses but not in accusative irrealis clauses.

The main point of this chapter is that once we know where to look, we can realize that the kind of economy phenomenon such as *Wh*-Agreement dealt with here is in fact abundant in natural language and that there is nothing exotic about it, contrary to what has often been expressed in the literature.

CHAPTER 7

CONCLUSIONS

The preceding chapters have consisted of analyses of particular constructions of interest in particular languages. Let us now try to put the results attained there in broader perspective and see what implications they have for the theory of language.

Now we are ready to return to the major questions I started this study with. They are repeated below:

(1) What explains interactions between GF changing and *wh*-movement?

(2) a. What is the nature of the reference set?

b. What is the nature of the economy conditions?

The question in (1) has been the central concern throughout this thesis. I have examined the relevant data pertaining to (1) from a number of languages. The discussions in the preceding chapters have led to the conclusion that the interactions in question are best explained in terms of one of the leading ideas espoused in the Minimalist Program of Chomsky (1993, 1994, 1995), *i.e.*, the notion of relative comparison among competing derivations. To be more specific, I have claimed that the Minimal Link Condition (MLC), as an economy condition, coupled with the revised notion of reference set and the notion of chain link comparability, accounts for why GF changing processes such as antipassive, applicative, and Object Preposing (unusual "passive") interact with *wh*-movement in the way they do. To the extent that this conclusion is correct, this thesis provides significant empirical support for the general framework of Minimalism.

The attempt to answer (1) has proved to be beneficial in answering the questions in (2), which any theory of economy should address. In reply to (2a), I have argued that the

reference set must make crucial reference to the notion of Interpretability (Chomsky 1995). In particular, it has been argued that this should be defined in terms of the non-distinctness of numerations, which allows us to ignore uninterpretable features (*i.e.*, uninterpretable formal features and phonological features). If this idea is on the right track, it entails that Interpretability has a profound influence throughout the syntactic computation. Reinterpreting Chomsky's (1995) local interpretation of the reference set from the present viewpoint, I have maintained that the reference set is determined derivationally; a set of derivations that arise from non-distinct numerations at each step of selection of lexical items. As has been noted by Chomsky (1995), a derivational characterization of the reference set has the effect of reducing the problem of the computational complexity.

Also, the revised notion of the reference set has allowed us to derive the kind of interlinguistic as well as intralinguistic variation investigated above in terms of extractability solely from morphological properties; those of antipassive morphemes, which I analyzed as associated with the functional category Asp and those of applicative morphemes, which can be either of the category P or of the category V. Moreover, the distribution of the Specificity Effect (SE) in antipassives has been shown to be reducible to the lexical properties of antipassive morphemes. This is certainly a welcome result for familiar reasons. But as already pointed out, the claim that only functional elements can be parameterized (Borer 1983, Fukui 1986, Chomsky 1991, 1993) seems too strong in light of the facts surrounding applicatives. Then we are led to the view that UG can parameterize not only functional categories but also substantive categories.

With regard to (2b), I have asserted contra Chomsky (1994, 1995) that economy conditions such as the MLC, the Minimal Feature Condition (MFC), and the Minimal Label Condition (MLAC), which select among derivations leading to convergence, can apply in a transderivational manner. Empirical arguments were based on such phenomena as *wh*-extraction in languages like Tagalog, the distribution of the SE in antipassives, and

successive cyclicity. The exact stage of derivation at which these economy conditions are operative is determined by the nature of syntactic objects they are concerned with. The MLC, which constrains chain links, applies at stages where chains are found. The MFC, which deals with features, applies as early as numerations are formed. The MLAC, concerned with phrase structure, is necessarily derivational, since Merge is a derivational operation.

Chomsky (1994, 1995) advocates the strictly derivational view on the computational system. My answer to (2b) is a clear departure from the Minimalist Program outlined in Chomsky 1993, 1994, 1995. But in my view, it is not necessarily non-Minimalist. Derivational operations such as Attract are inherently local, and they are also absolute and inviolable. Economy conditions, on the other hand, are inherently non-local, and they are also relative in the sense that they are potentially violable conditions. The picture of the computational system I am depicting is an attractive one; what we have is an effective division of labor between derivational operations on the one hand and economy conditions on the other within the computational system.

In addition to answering the major questions given in (1) and (2), I have made specific proposals at various points about the secondary questions that arose in the course of the discussion. For instance, I proposed based on ergative constructions that the definition of Attract and the Extended Projection Principle assumed in Chomsky (1995) need modification. I also proposed that there exists covert category raising, contra Chomsky (1995). In relation to this proposal, the possibility to derive Procrastinate from the MFC and the MLAC has been mentioned. Furthermore, the dichotomy of antipassives (Absolutive Antipassive versus Agentive Antipassive) has been argued to be a result of the tension between the MLC and the MFC. As for *Wh*-Agreement, the present treatment of *Wh*-Agreement has been shown to account for the systematic differences between Tagalog-type *Wh*-Agreement and Irish-type "*Wh*-Agreement."

As always, many questions remain open. This thesis by no means is a comprehensive

study of all the possible interactions between GF changing and *wh*-movement. Thus as sketched in a preliminary way, the analysis developed here predicts interesting interactions between hyper/super-raising-to-object and *wh*-extraction. It remains to be seen whether the prediction turns out to be correct. Moreover, if the present analysis is indeed on the right track, it is expected to have more applications outside the empirical domains discussed in this thesis.

As Chomsky (1995) emphasizes, the Minimalist Program is a programmatic approach filled with a lot of uncertainties, not an articulated theory. Thus it is expected to undergo quite a number of modifications in the future. It is hoped that the modifications presented here are a step forward and constitute part of the momentum for pursuing the Minimalist Program, which does seem to have something interesting to say about the nature of language if I have been successful at all.

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