

CROSSING AND NESTED PATHS:
NP MOVEMENT IN ACCUSATIVE AND ERGATIVE LANGUAGES

by

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ABSTRACT

This thesis develops a theory of syntactic ergativity based on the Case feature requirements which motivate NP movement. In Chapter 1, I present an Ergative Parameter derived from the Case features of two functional heads, T(ense) and Tr(ansitivity). In an ergative language, the Case features of the higher T(ense) are strong, requiring movement to its SPEC at s-structure. In an accusative language, the Case features of the lower Tr(ansitivity) are strong, forcing s-structure movement to its SPEC. Economy Principles determine that it is always the subject, generated in SPEC VP, which raises to the SPEC of T or Tr (depending on the language) at s-structure. At LF, the object raises to the remaining SPEC position. This results in two types of movement: "Crossing Paths" in accusative languages, and "Nested Paths" in ergative languages. The two paths reflect the different Case and agreement patterns found in the two language types, as each functional head is associated with a particular Case: nominative/absolute with T, and accusative/ergative with Tr. In an intransitive clause, the subject raises to SPEC TP in both types of languages.

Chapter 2 investigates consequences of the proposed theory for NP movement and verb raising in accusative languages. The topics relating to NP movement include expletives in SPEC TP, the EPP in infinitival clauses, and raising constructions in English. I also discuss verb fronting in V2 and VSO languages, proposing that this movement is required by a [finite] feature in C.

In chapter 3, I provide evidence for my claim that ergativity involves the raising of the object (O) and intransitive subject (S) to SPEC TP, the position of transitive (A) and intransitive (S) subjects in accusative languages. I discuss properties shared by O/S in an ergative language, and A/S in an accusative language, such as the availability for relativization.

In Chapter 4, I investigate syntactic and semantic properties which group together S and A in both language types, claiming that they involve the notion of highest s-structure argument, and thematic roles. Chapter 5 discusses various issues pertaining to ergativity.

Thesis Supervisor: Kenneth L. Hale
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This thesis is dedicated to my parents, for always encouraging and expecting the best in me.

ABBREVIATIONS

1,2,3	first, second, third person
A,Abs	Absolutive
Abl	Ablative
Acc	Accusative
Agr	Agreement
Agt	Agent
All	Allative
AP	Antipassive
Art	Article
asp	aspect
AT	Agent-Topic
Aux	Auxiliary
Circ	Circumstantial
cl	clitic
Cmp	Completive
Comp	Complementizer
Cpr	Comparative
d	dual
Dat	Dative
Def	Definite
Dem	Demonstrative
Det	Determiner
dir	directional
Dir1	toward speaker
ds	directional suffix
Dts	Derived transitive verb suffix
Dyn	Dynamic
E,Erg	Ergative
Emph	Emphatic
f	feminine
Fin	Finite
Foc	Focus
Fut	Future
G,Gen	Genitive
GT	Goal-Topic
Instr	Instrumental
Irr	Irrealis
Imp	Imperative
incomp	incompletive
Ind	Indicative

Iness	Inessive
Intr	Intransitive
Loc	Locative
m	masculine
N,Nom	Nominative
Neg	Negation
Nfin	Nonfinite
Noml	Nominalizer
Nonfut	Nonfuture
p,pl	plural
perf	perfect
pers	personal article
Part	Participial
Pass	Passive
pat	patient
Poss	Possessive
Pot	Potential
Pred	Predicate
Pres	Present
Prog	Progressive
Pro	Pronominal
Purp	Purposive
Q	Question
R,Refl	Reflexive
rec	recent past
Rec.dep	Recent dependent past
Rel	Relativizer
RN	Relational Noun
RP	Resumptive Pronoun
s,sg	singular
Sbj	Subjunctive
suff	suffix
Top	Topic
Tns	Tense
Tr	Transitive
verb.suff	verbal suffix
Voc	Vocative

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CHAPTER 1. TWO TYPES OF MOVEMENT: CROSSING AND NESTED PATHS

1.1 Introduction

Since Chomsky (1981), the structural notion of "government" has defined the relation between a subject NP and an Infl node associated with nominative Case. The standard view on accusative Case was that it was assigned by the verb to the NP it governed within the VP. In Pollock (1989), it was proposed that IP (formerly S) be separated into two projections, T(ense)P and Agr(eement)P, reflecting the dual nature of this inflectional category. He provided evidence from verb movement in French and English that an intermediate position between IP and VP (i.e., AgrP) was necessary.¹ However, as noted by Chomsky (1991), this AgrP projection could be analyzed as the category associated with object agreement, unifying Pollock's structural requirements for such a position, and Kayne's (1989) proposal of an object agreement position for French past participles. For subject agreement, Chomsky proposed a second AgrP projection above TP.

In this thesis, I adopt Chomsky's (1991, 1992) proposal that both subject and object Case and agreement involve a SPEC-head relation between

¹But see Iatridou (1990) for arguments against the existence of an Agr position between T and V.

a functional head and its specifier. I also assume the VP-internal subject hypothesis, where subjects are generated within a maximal VP projection (Bennis 1986, Fukui 1986, Fukui and Speas 1986, Kitagawa 1986, Kuroda 1986, and Koopman and Sportiche 1987, among others). Since Case and agreement are associated only with functional categories, the subject and object NPs in the VP must raise to the specifier positions of the functional categories.

A principles-and-parameters approach to language, where rules and construction-specific principles do not exist (e.g., Chomsky 1981, 1991), predicts the possibility of two types of NP movement: "Crossing Paths", where the subject raises to the higher projection, and the object, to the lower; and "Nested Paths", where the subject raises to the lower projection, and the object, to the higher. Although it has been assumed that Crossing Paths is the only possible movement (see Chomsky 1992), in this thesis, I propose that Nested Paths is a viable alternative, and is the one found in ergative languages.

The two movement paths result from the Ergative Parameter I present in the following section. This parameter accounts for the different Case-marking patterns of transitive clauses in accusative and ergative languages. In an accusative language, transitive subjects are marked with nominative Case, and objects, with accusative Case. In an ergative language, the transitive

subject is marked with ergative Case, and the object, with absolutive Case.² In this chapter, I discuss how the existence of these two Case systems is predicted within a principles-and-parameters approach.

In section 1.2, I present the structure I propose for clauses universally, which consists of a thematically complete VP, and two functional projections, T(ense)P and Tr(ansitivity)P. In section 1.3, I introduce a system of morphological features based on Chomsky (1992), and present a modified system in accordance with the analysis of this thesis. In section 1.4, I present my Ergative Parameter based on feature requirements, and Economy Principles, to account for the two types of movements. Section 1.5 consists of a discussion of verb raising, and section 1.6, a discussion of object raising. In section 1.7, I discuss the role of the Tr projection. Finally, in section 1.8, I demonstrate how the Ergative Parameter and Economy Principles apply to the derivation of various types of clauses.

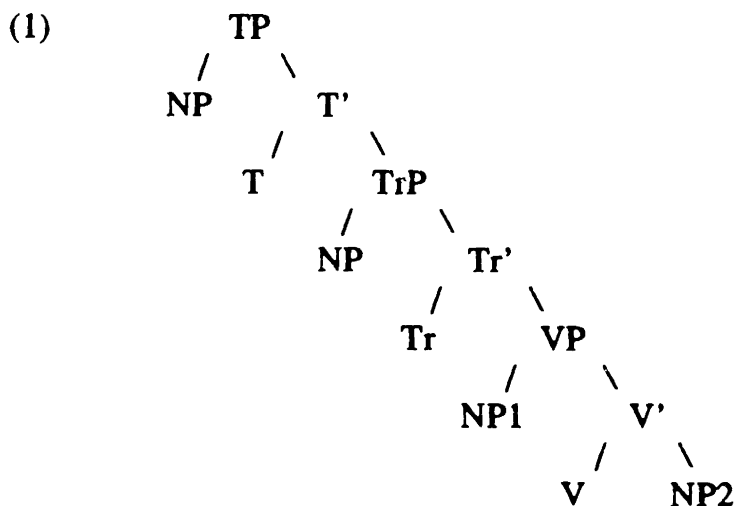
Chapter 2, I discuss consequences of the feature system for NP movement and verb raising in accusative languages. The topics covered in this chapter include expletives, raising, and infinitival constructions. In Chapter 3, I provide evidence for my proposal that ergativity is a syntactic, and not simply morphological, phenomenon. In Chapter 4, I investigate

²A language may exhibit ergativity in the verbal agreement system as well as, or instead of, visible Case-marking on arguments. I will use the term "Case" to include both Case which appears on NPs, and Case that is reflected in the agreement on the verb.

syntactic and semantic properties which group together transitive and intransitive subjects in both accusative and ergative languages. Chapter 5 consists of an overview of various issues in ergativity.

1.2 The Structure of Clauses

I propose the following structure for matrix clauses universally:



The two functional projections are T(ense)P and Tr(ansitivity)P. I assume that one functional projection is sufficient for Case and agreement.³ In an accusative language, T is associated with nominative Case and agreement, and Tr, with accusative Case and agreement. In an ergative language, T and Tr are associated with absolutive and ergative

³See section 1.3.2 below for a discussion of the role of functional projections in Case and agreement.

Case/agreement, respectively.

"Nominative", "accusative", "absolutive" and "ergative" are simply names used to identify the Cases which occur in the two types of languages. I consider T to be associated with the unmarked Case in both language types, and Tr, with the marked Case. The unmarked Case is the form generally used for citation, and the most likely to be morphologically null.⁴ These properties are shared by the nominative in accusative languages, and the absolutive in ergative languages. In contrast, accusative and ergative are usually the marked Cases morphologically. In this thesis, I will refer to both nominative and absolutive as simply *Nominative* (with capital N). However, in order to distinguish between the two types of languages, I will refer to the marked Case as either "accusative" or "ergative".

Agreement does not project its own category, but is rather analyzed as a SPEC-head relation between a verb and its argument, mediated by T or Tr. I assume that the verb undergoes head-to-head movement, adjoining to Tr, and then the complex raises to T. When V adjoins to one of the functional heads, it enters into a SPEC-head agreement relation with the NP in the specifier position (see section 1.3.2).

T has the feature [\pm tense], and Tr, the feature [\pm trans]. Neither [-tense] T nor [-trans] Tr is associated with Case. When T is [-tense], there are two

⁴I discuss the unmarked Case in more detail in section 5.2.

options for a lexical NP in SPEC TP: either it is PRO, which does not require Case, or it raises to SPEC CP, where its Case requirements can be met by a [+finite] C. I discuss the feature [\pm finite] in sections 2.4 and 2.5 below. In an intransitive clause, where Tr is [-trans], the subject moves to SPEC TP for Case reasons in both accusative and ergative languages. Therefore, it is only in the transitive paradigm that the two types of languages exhibit different movement paths.

1.3 Morphological Features

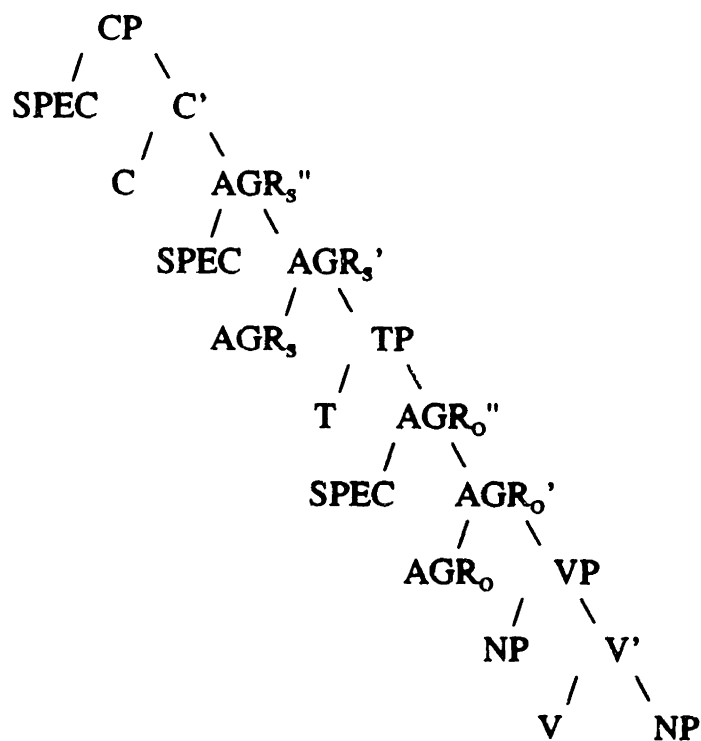
In this section, I first present Chomsky's (1992) system of morphological features, in order to familiarize the reader with the concepts underlying the feature system. I then present my modified version of Chomsky's system, in accordance with the analysis of this thesis.

1.3.1 Chomsky (1992)

In Chomsky's (1992) "minimalist" program for linguistic theory, a linguistic expression consists of legitimate objects which are interpretable at PF and LF. A legitimate object is defined as a chain $CH = (\alpha_1, \dots, \alpha_n)$, where CH is a head, an argument, an adjunct, or an operator-variable construction.

The basic structure of a clause assumed in Chomsky (1991,1992) is shown in (2):

(2)



There are two AGR projections, for subject and object agreement, and a TP for tense. Both agreement and structural Case are considered to be manifestations of the SPEC-head relation between an NP and an AGR head. However, since Case properties depend on features of T and V, T must raise to AGR_s, and V, to AGR_o, forming two adjunction structures. The SPEC-head and head-head relations are considered to be the core configurations for inflectional morphology.

Chomsky (1992) assumes that operations (Move α) are driven by morphological necessity, i.e., the need to have legitimate objects by checking features. The features of NPs include Case and ϕ -features. T and AGR have both N- and V-features, which are checked with properties of the NP in SPEC AGR, and properties of the V adjoined to AGR, respectively.

An element α is inserted from the lexicon with all its morphological features, which must be checked with the features of AGR. If the features match, then AGR disappears, as AGR has only a mediating role to ensure that NP and V are properly paired. If the features conflict, then AGR remains and the derivation will crash when SPELL-OUT applies (see below), as AGR is not a legitimate object at PF. The checking procedure may take place anywhere, i.e., before or after LF-movement.

The operation SPELL-OUT switches the derivation to the PF component. It may apply anywhere in the course of a derivation. In this thesis, I use the familiar term "s-structure" to refer to the part of the derivation before SPELL-OUT applies. Operations which apply before SPELL-OUT are referred to as s-structure operations, and those which apply after SPELL-OUT, LF operations.

Chomsky claims that variation in language is restricted to morphological properties at PF which determine where in the course of a derivation SPELL-OUT applies. He distinguishes between "strong" features,

which are visible at PF, and "weak" features, which are invisible at PF. Strong features that are not checked before SPELL-OUT (i.e., survive to PF) are illegitimate objects, and will cause the derivation to crash. The difference between French and English verb raising is accounted for by adopting Pollock's (1989) idea that French has "strong" AGR, forcing overt raising, while English, which has "weak" AGR, does not require overt raising for convergence.

Morphological properties also account for variation in NP movement, another derivational operation. Chomsky discusses the difference between SVO languages like English, and VSO languages like Irish. Raising of NPs is dependent on the N-features of T and AGR. SVO languages with overt NP movement have strong N-features, requiring the NP to raise before SPELL-OUT. In VSO languages, where N-features are weak, raising does not occur until after SPELL-OUT (i.e., at LF).⁵

In the following section, I present a modified version of Chomsky's (1992) feature system.

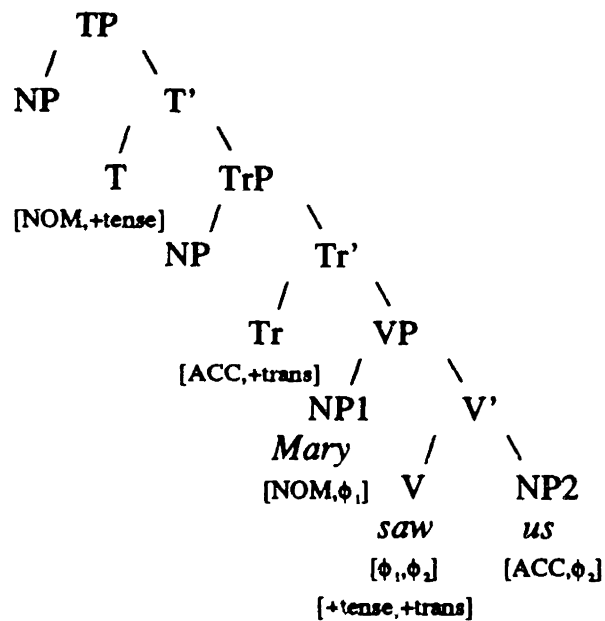
⁵See section 2.4 for an alternative analysis of VSO languages.

1.3.2 A Modified System of Features

In the structure of clauses proposed in (1) above, there are two functional projections, TP and TrP. I propose that T has a tense feature [\pm tense], and a Case feature, Nominative. Tr has a transitivity feature [\pm trans], and a Case feature, accusative/ergative. These correspond to the V- and N-features of the functional heads in Chomsky (1992). NPs have ϕ -features such as person, number, gender, etc., as well as Case features. Verbs have the features [\pm tense], [\pm trans], and ϕ -features corresponding to their arguments. A [+trans] verb has two sets of ϕ -features, and an intransitive verb, only one. Agreement does not constitute a separate projection, as in Chomsky (1992), but involves the checking of ϕ -features of an NP and a verb. When the verb adjoins to a functional head, it forms a SPEC-head configuration with the NP in the SPEC position.

Consider the structure in (3) for the sentence *Mary saw us*:

(3)

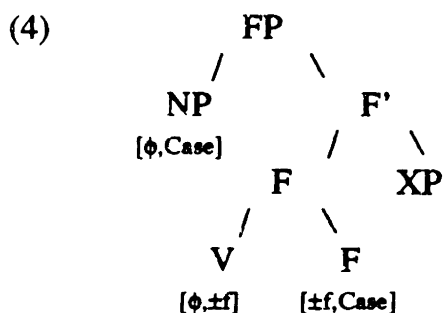


The NP *Mary* has the Case feature NOM, and the ϕ -features [3rd person], [singular], [feminine], etc. *Us* has the Case feature ACC, and the ϕ -features [1st person], [plural], etc. The verb *saw* has two sets of ϕ -features corresponding to *Mary* and *us*, and the features [+tense] and [+trans]. Since morphological features are realized as inflectional morphemes, it seems reasonable that the verb would have the collection of features shown in (3).⁶

The functional heads T and Tr play a mediating role in my system, although in a different way than the AGRs in Chomsky (1992). It is

⁶Subject agreement and [\pm tense] features appear on auxiliaries or modals, if they are present, rather than on the verb. Let us assume that such elements head a lexical projection between TP and TrP, e.g., AuxP/ModP. Li's (1990) analysis of improper head movement, in which a lexical head which has adjoined to a functional head is prohibited from subsequently adjoining to a lexical head, would prevent the verb from raising to Aux/Mod once it has adjoined to Tr. It is thus Aux/Mod which raises to T, and checks the features of T and the NP in SPEC TP.

assumed that elements checking features must be in a SPEC-head configuration. To check the ϕ -features of an NP and a verb, the verb raises and adjoins to a functional head F, and the NP raises to the SPEC of F:



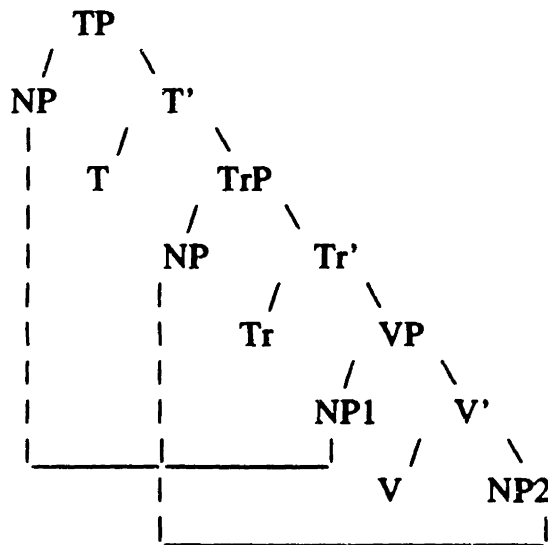
In this structure, both the Case features of F and the NP, and the agreement features of V and the NP, are checked in a SPEC-head configuration. The $[\pm f]$ features of F and V are checked in a sister relation. Following Chomsky (1992), I assume that functional heads disappear after their features have been checked and matched.

In a feature *checking* system, categories are not necessarily derived with the correct features. A derivation will converge only if there is feature matching between NPs, functional heads and the verb. In an accusative language, the features of the subject NP must match those of T and V, and the features of the object, with those of Tr and V. In an ergative language, on the other hand, the features of the *object* must match those of T and V, while the features of the subject matches those of Tr and V.

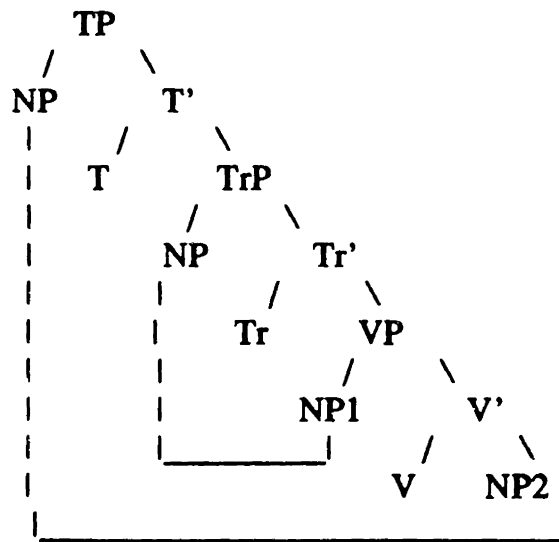
Given my claim that Case features are an invariable part of functional

heads, the reverse matching of NPs with T and Tr in accusative and ergative languages cannot result from T/Tr having different Case features in the two languages. I propose that the two Case patterns result from the different movement paths of the NPs. In an accusative language, the subject moves to SPEC TP, and the object, to SPEC TrP (Crossing Paths). In an ergative language, the movement is reversed: the object raises to SPEC TP, and the subject, to SPEC TP (Nested Paths). The two types of paths are illustrated in (5) and (6) below:

(5) Crossing Paths



(6) Nested Paths



In the next section, I propose an Ergative Parameter based on morphological features which ensures that only the correct derivation is permitted in each language type.

1.4 The Ergative Parameter and Economy Principles

Various parameters have been proposed to explain the differences between accusative and ergative languages, e.g., de Rijk (1966), Marantz (1984), Levin and Massam (1985), Bobaljik (1992).⁷ In the present analysis, the differences originate in the movement of NPs. The Ergative Parameter

⁷I discuss these analyses (and others) in section 5.1.

proposed below is stated in terms of features, which are responsible for all operations, including NP movement.

(7) *Ergative Parameter*

In an accusative language, the Case features of T are strong.
In an ergative language, the Case features of Tr are strong.

The strength of features determines whether the features are checked at s-structure or LF. As discussed above, strong features are not legitimate objects at PF, and therefore must be checked at s-structure. In an accusative language, the strong Case features of T require overt movement to SPEC TP at s-structure. In an ergative language, the strong features of Tr require SPEC TrP to be filled at s-structure.

The two types of movements (i.e., Crossing and Nested Paths) found in accusative and ergative languages is the result of the interaction of the Ergative Parameter stated in (7) and the following Principles of Economy:⁸

(8) *Principles of Economy for NP Movement*

1. *Closest Available Source*: At each level of a derivation, a target must take the closest available source NP.
2. *Closest Featured Target*: At each level of a derivation, a source NP must move to the closest featured target.
3. *Procrastinate*: An operation must be done as late as possible.

⁸Economy Principles were introduced in Chomsky's 1987 class lectures, and have been further developed in Chomsky (1991, 1992).

According to the first principle, at each level of a derivation, the closest available NP moves to the target position. The *target* is the SPEC position of a functional head which requires its Case features to be checked. At s-structure or LF, a target takes an NP to satisfy its Case feature requirements. This NP must satisfy two criteria: (i) it must be the closest NP to the target *before any* movement at that level, and (ii) it must be available for movement by not already having its Case features checked.

The first criterion determines that it is always the subject which raises at s-structure to the SPEC of the functional head with the strong features, as it is closer to the target than the object. My definition of *closest* is based on the number of A-positions between the source and target, where an *A-position* is a position in which an argument may appear. These include the SPECs of TP and TrP, and any argument position in the VP.⁹ Consider the Crossing Paths structure in (5) above. The closest NP to the target SPEC TP is the subject, which crosses only one A-position, SPEC TrP. The object would cross two A-positions, SPEC VP and SPEC TrP. Similarly, in (6), the closest NP to the target SPEC TrP is the subject.

The notion of "closest" at any given level applies to an NP before any movement has taken place *at that level*. Suppose that both T and Tr have strong Case features in (9), requiring movement to their SPECs at s-structure:

⁹It does not, however, include SPEC CP (see 2.4 below).

(9) T, Tr, [_{VP} NP₁ V NP₂]

The closest NP to both T and Tr is NP₁, the subject. However, this NP₁ cannot satisfy the feature requirements of both functional heads simultaneously. Therefore, unless something else is inserted in SPEC TP to satisfy T, the derivation will crash.¹⁰

The second criterion, i.e., availability, permits movement only of NPs which have not had their features checked.¹¹ The Principle of Closest Available NP applies cyclically, first at s-structure, and then at LF. In determining the source NP at s-structure, all NPs are in principle available, as no feature checking has yet occurred. At LF, however, NPs which have had their features checked at s-structure are no longer available. For example, in the structure of ergative languages in (6) above, although the subject in SPEC TP is closer to the target in terms of distance, since it is not available for further movement (at LF), it does not count as the "closest available NP". Thus, it is the object which raises to SPEC TP to satisfy the Case feature requirements of T.

At any one level, then, there will be neither Crossing nor Nested Paths

¹⁰In section 2.3, I discuss *it*-insertion in raising constructions, which I claim is a last-resort strategy like *do*-insertion.

¹¹The same notion is captured in Chomsky's (1992) Principle of Last Reson.

(i.e., the result of both the subject and object raising), but only independent movements of subjects to functional SPECS.

The Principle of Closest Featured Target ensures that an NP raises to the closest featured target, where *featured target* is defined as a SPEC position that is required to be filled for Case reasons, i.e., its head must check its Case features with an NP in its SPEC. This principle prohibits an NP from skipping over a featured SPEC position to a further one. Consider the following examples from an accusative language:

- (10) a. T_s Tr_P [_{VP} NP₁ V NP₂]
b. T_s . . . T_o [_{VP} NP₁ V NP₂]

In (10a), SPEC TrP is not a featured target at s-structure, as its Case features need not be checked until LF. In (10b), however, the SPECS of both Ts are featured targets at s-structure, as their Case features must be checked.

The third principle, Procrastinate (Chomsky 1992), captures the idea that LF-operations are less costly than overt movement. Chomsky explains that "LF-operations are a kind of 'wired-in' reflex, operating mechanically beyond any directly observable effects" (p. 43). According to this principle, objects should not raise until LF. As long as the object moves to a position which satisfies its own Case requirements and those of a functional head, the

derivation will be legitimate. However, once the subject has raised, the only possible place for the object to move to (which satisfies all requirements), is the other specifier position.

1.5 Verb Raising

In Chomsky (1992), it is claimed that the strength of the V-features of AGR determines whether a language has overt verb raising, as in French, or raising at LF, as in English. In the analysis proposed here, T and Tr do not have "V-features". Rather, the features related to V are [\pm tense] and [\pm trans], which are inherent features of the functional heads. I propose that these features, which are morphologically realized as affixes, are parameterized with respect to the level (i.e., s-structure or LF) at which they need to be checked. This accounts for the linguistic variation in the level at which verbs raise. If the tense or transitivity feature does not require checking at s-structure, by the principle of Procrastinate, verb raising does not occur until LF.

The affixal requirements of T and Tr are entirely separate from the strength of Case features, which controls NP movement. The dissociation between the factors governing verb and NP movement entails that verbs and NPs move at the level required for convergence, independently of one another. In French, for example, the subject raises to SPEC TP at s-structure,

as does the verb to T. The object does not raise to SPEC TrP until LF. The verb, on its way to T at s-structure, must first adjoin to Tr. However, at this point in the derivation, the object is still in the VP, and not in SPEC TrP. In order for the Case and agreement features of the object to be checked, the verb and Tr must leave their features with the trace. I assume that in the unmarked case, features may be checked through traces.¹²

In English, where the verb does not raise until LF, the ϕ -features of the subject in SPEC TP cannot be checked until the verb has raised to T. Only the Case features of the subject are checked at s-structure. Thus, features are not necessarily checked at the level at which movement takes place. In French, the verb raises at s-structure, but it does not check the ϕ -features of the object until LF. In English, the subject raises to SPEC TP at s-structure, but its ϕ -features are not checked until LF.

1.6 Object Raising

The present analysis determines that in all languages, the subject raises at s-structure to satisfy the feature requirements of T or Tr, while the object, by the Principle of Procrastinate, does not raise until LF. In this section, I discuss object raising at s-structure in the Germanic languages. In these

¹²See the following section, where it is proposed that in object shift languages, the trace of a verb cannot check Case features.

languages, there is a phenomenon known as *object shift*, where an object raises to an intermediate position between SPEC VP and SPEC TP (see, for example, Holmberg 1986, Déprez 1989, and Vikner 1991). In the mainland Scandinavian languages (e.g, Swedish, Danish, Norwegian), object shift applies only to weakly stressed and unexpanded pronouns (11), while in Icelandic, it applies (optionally) to full NPs as well (12):

(11) Swedish

- a. varför läste_i studenterna den, inte alla t_i t_j
 why read the students it not all
 'why didn't all the students read it?'
 (Holmberg 1986:165)
- b. *varför läste_i studenterna artikeln, inte alla t_i t_j
 why read the students the article not all
 'why didn't all the students read the article?'
 (Holmberg 1986:166)

(12) Icelandic

hvers vegna lasu_i stúdentarnir greinina, ekki allir t_i t_j
 why read the students the article not all
 'why didn't all the students read the article?'
 (Holmberg 1986:166)

Déprez (1989), adopting the clausal structure proposed in Chomsky (1992),¹³ proposes that object shift involves A-movement to the specifier of

¹³Déprez uses the version of Chomsky (1992) originally published in Laka and Mahajan (1989).

Agr_oP.¹⁴ She provides as evidence Holmberg's (1986) observations that the trace of the shifted object exhibits properties of an NP-trace (A-movement) rather than a variable (A'-movement). Following Déprez, I propose that objects raise to SPEC TrP.

Object shift occurs only if the main verb has raised out of the VP (to C), suggesting that overt verb raising creates an environment in which feature checking must take place at s-structure. I propose that object shift results from the condition that certain NPs (i.e., pronouns in mainland Scandinavian, all NPs in Icelandic) cannot check their Case features with the features of a verbal trace. When the verb raises at s-structure to Tr, and subsequently to T and C, it leaves a copy of its Case features with the trace in Tr (and T). An object raising to SPEC TrP at LF checks its Case features with those of the trace, if it can. If it cannot, as in the case of mainland Scandinavian pronouns and Icelandic NPs, it must raise to SPEC TrP at s-structure, at the same time as the verb raises to Tr.¹⁵

Such a move does not violate Procrastinate, as waiting until LF will result in a nonconvergent derivation. However, if the verb remained in the VP at s-structure, raising the object would result in a violation of

¹⁴Déprez claims that only full NPs raise to SPEC Agr_oP, and that pronominal object shift involves head movement to Agr_o.

¹⁵In Icelandic, object shift of full NPs is actually optional, suggesting that in some cases they *can* check their features with those of a trace. Pronouns, on the other hand, obligatorily raise.

Procrastinate:

(13) Swedish

*varför har studenterna den_i inte läst t_i
why have the students it not read
'why haven't the students read it?'
(Holmberg 1986:176)

Movement to the SPEC of T, which has strong features, has precedence over movement to SPEC TrP, as only the former is required to satisfy Case requirements. By the definition given in 1.4 above, only SPEC TP is a "featured target".

1.7 The Tr Projection

In this section, I discuss the role of the Tr projection, which is associated with the transitivity of a clause. I first present evidence of the structural requirements of Tr, proposing an account of transitivity in terms of number of arguments. I then propose an alternative view of transitivity, which captures the same facts in a less restrictive way, and is thus more in accordance with the principles-and-parameters approach assumed in this dissertation.

The head of TrP, Tr, has the Case feature accusative/ergative, and a [\pm trans] feature which is checked with the corresponding feature of the verb.

TrP appears to be a purely structural necessity, i.e., it is required only as a position to which an NP can raise to check its Case and ϕ -features. It is evident that the [\pm trans] of Tr is concerned only with the syntactic, and not semantic, notion of "transitivity." I refer to "syntactic transitivity" as the presence of two direct, NP arguments in the VP. "Semantic transitivity" involves the presence of an agent and a patient, as determined by the argument structure of the verb. A verb such as *hit* has both an agent and patient argument, both generated in the VP. The syntactic transitivity of such verbs, indicated by the [+trans] feature of Tr, is matched by their semantic transitivity. Passive and antipassive constructions, on the other hand, involve both an agent and patient, but consist of a single argument in the VP. It is the presence of only one direct argument which determines the [-trans] value of Tr. Unergative and unaccusative verbs match in syntactic and semantic transitivity, as they involve only one argument in the VP, either an agent or a patient.

"Syntactic transitivity" may be captured by a mechanism which counts the number of arguments. In the various types of clauses discussed above (i.e., transitive, unergative, etc.), the value of Tr depends on the number of arguments in the VP. However, in bi-clausal structures involving ECM verbs, the inventory of NPs which are considered as arguments must be extended to include the subject of the embedded verb.

Consider the following ECM construction:

- (14) a. John believes [Mary to have won the race]
b. *Mary believes [PRO to have won the race]

Standard analyses have assumed that ECM verbs take IP complements, and assign accusative Case to the embedded subject. Case assignment takes place under government, as shown by the ungrammatical (14b), with PRO in a governed position.

Within the system of Case adopted here, where Case assignment is a feature checking process between a functional head and its specifier, ECM is interpreted as the raising of the embedded subject to the SPEC of the projection dominating VP (Chomsky 1992). In my system, the position to which the subject raises is SPEC TrP of the matrix clause. In order for the derivation to converge, Tr must be [+trans], allowing the embedded subject to check its Case features with those of Tr. The definition of syntactic transitivity must therefore be modified to refer to the number of arguments (or traces) the Tr governs.¹⁶ If it governs only one argument, then it has the value [-trans]; if it governs two, then it is [+trans].¹⁷

¹⁶I use the notion of government presented in Chomsky (1986a:9): *α governs β iff α commands β and there is no γ , γ a barrier for β , such that γ excludes α* , where CP, but not IP, is a barrier.

¹⁷In double object constructions, Tr is [+trans], as it governs the subject and both objects. Since my analysis permits only one Tr projection for each VP, the other object would have to get Case lexically, perhaps by a null P. Even with a double object construction consisting of two VPs, as in Larson (1988), there is only one TrP projection. See Li (1990) for evidence that functional heads cannot intervene between two lexical

Shown in (15) below is a more detailed structure of (14a) above:

(15) John_i T. Tr. [_{VP}t_i believes [_{TP}Mary_j T. Tr. [_{VP}t won the race]]]

The matrix Tr governs two NPs: (i) the trace of *John*, and (ii) the embedded subject *Mary*, which has raised from the lower VP to the embedded SPEC TP at s-structure.¹⁸ Following a suggestion by Alec Marantz (p.c.), I assume that the value of Tr is determined at the level at which it becomes "active", i.e., checks its Case features. In an accusative language, this level is LF, while in an ergative language, it is s-structure. In (14a), since Tr is not active until LF, *Mary*, which has raised to NP2 at s-structure, counts as a governed NP.

Control verbs like *try* in (16) below take CP complements:

(16) a. *John tried [Mary to win the race]
b. Mary tried [PRO to win the race]

The CP acts as a barrier to government, blocking government of the embedded subject in SPEC TP by Tr. Tr therefore governs only one NP (the matrix subject *John*), and has the value [-trans]. Only (16b), with a PRO subject, is grammatical, as PRO does not require Case.

A counting mechanism such as this seems deviant in a principle-based

heads which are to be incorporated.

¹⁸In section 2.2 below, I discuss the EPP, which motivates the raising of *Mary* to SPEC TP.

linguistic system. I propose an alternative approach to determining the value of Tr, involving free generation of [\pm trans]. Other principles of the grammar will determine whether or not a derivation with a certain value for Tr converges. For example, with a verb such as *hit*, a derivation with [+trans] Tr would converge as long as the NPs in the VP raised to their proper SPEC positions (determined by the Ergative Parameter and Economy Principles). If Tr were [-trans], the derivation would fail, as one of the NPs would not be able to check its features. Similarly, a derivation with [-trans] Tr and one argument would converge, while [+trans] Tr with one argument would fail, as either T or Tr would not be able to check its features.

A potential problem with this approach, however, is that the insertion of *it* or *there* might save the derivation, predicting the following to be grammatical:

(17) **it/there* T, Tr. [_{VP}the man laughed]

It/there is inserted in SPEC TP at s-structure, and *the man* raises to SPEC TrP at LF. In section 2.1, I discuss expletive *it* and *there*, and show that examples such as (17) will not be derived.

The contrast between ECM verbs as in (14) above, and control verbs as in (16), is still explained by the TP/CP distinction. The embedded subject in an ECM construction raises to the matrix SPEC TrP from the embedded

SPEC TP position. The embedded subject of a control verb, however, is prevented from doing the same. One way to explain this is in terms of barrierhood: the trace in SPEC TP will not be properly governed, as CP is a barrier to government (cf. Chomsky 1986a).¹⁹

1.8 NP Movement in Accusative and Ergative Languages

In this last section, I demonstrate how the Ergative Parameter and Economy Principles apply to the derivation of various clause types: transitive clauses, intransitive clauses, and bi-clausal structures.

¹⁹Tr, unlike T, appears not to have a semantic interpretation, but is required purely for structural reasons. It has been claimed, however, that transitivity involves more than the presence of two arguments. Hopper and Thompson (1980), for example, assert that transitivity is associated with several components, all concerned with the effectiveness with which an action takes place, e.g., the telicity and punctuality of the verb, the volitionality and agency of the subject, realis or irrealis mode, and the degree of affectedness and individuation of the object. It is not clear, though, how such properties are captured syntactically.

Tenny (1987, 1989) discusses the relation between a verb's direct internal arguments and the aspectual property of delimitedness, proposing that the internal argument 'measures out' over time the event described by the verb. She suggests that aspect constitutes an independent syntactic category between IP and VP, the same position as my TrP. However, since her notion of "aspect" is determined by the semantic relation between a verb and its arguments, associating TrP with Tenny's AspP is problematic. One problem concerns unaccusative verbs, which involve one internal argument with the aspectual properties of a direct object (i.e., it measures out the event), but the syntax of a subject, raising to SPEC TP. Another problematic issue involves transitive verbs which do not have the semantics of being delimited events. These verbs include stative verbs such as *know* and *believe*. The object of *know*, and the complement clause of *believe*, are not event delimiters. It is thus not possible to translate Tenny's system into mine, as she is concerned with the d-structure representation of objects, and not the s-structure notion of transitivity.

1.8.1 Transitive Clauses

In this section, I demonstrate the interaction of the Ergative Parameter and Economy Principles in transitive clauses. Let us consider first accusative languages. According to the Ergative Parameter, the Case features of T are strong, requiring overt NP raising to SPEC TP. Given the principle of Closest Available Source, only the subject may move. The object raises to SPEC Tr at LF, resulting in Crossing Paths.

Shown in (18) below are example of derivations in English. I will be concerned only with s-structure movement, i.e., movement of the subject NP.²⁰

- (18) a. T_i [John saw Mary]
b. John_i T_i [t_i saw Mary]
c. *Mary_i T_i [John saw t_i]

In (18b), the subject, which is the closest NP to the target, raises to SPEC TP. (18c) is ungrammatical, as the object, *Mary*, is not the closest NP.

In an ergative language, the Case features of Tr are strong, requiring that they be checked at s-structure. It is the subject which moves to SPEC TrP, as it is the closest NP to the target. The object moves at LF to SPEC

²⁰As discussed in 1.3 above, I assume that NPs and verbs are generated with their morphological structure intact. Thus, in (18) and all subsequent examples, NPs are marked for Case even if they have not actually moved to Case positions at s-structure, and verbs are marked for tense, transitivity and agreement, regardless of whether or not they have overtly raised.

TP, resulting in Nested Paths. Examples (19)-(21) below are from the Inuit, Mayan and Polynesian languages, respectively. Inuktitut (Inuit) is an SOV language, and Mam (Mayan) and Niuean (Polynesian) are VSO.

In (19), the subject, *Jaani*, raises to SPEC TrP, while the object, *tuktu* 'caribou', and the verb, *malik-* 'follow', remain in the VP:

(19) Inuktitut

Jaani_i-up [t_i tuktu malik-p-a-a] Tr.
 John-Erg caribou(Nom) follow-Ind-Tr-3sE.3sN
 'John followed the caribou'

In the following example from Mam, the subject, *Cheep* 'José', raises to SPEC TrP, and the verb, *tx'ee7ma* 'cut', raises to T:

(20) Mam

ma ø-jaw t-tx'ee7ma-n_v Cheep_{NP} Tr. [t_{NP} t_v tze7]
 rec 3sN-dir 3sE-cut-ds José tree
 'José cut the tree'

(England 1983:201)

The same movements occur in Niuean: the subject, *tama* 'child', raises to SPEC TrP, and the verb, *kitia* 'see', raises to T.

(21) Niuean

ne kitia_v he tama_{NP} Tr. [t_{NP} t_v e moa]
 Past see Erg child Nom chicken
 'the child saw the chicken'

(Seiter 1979:33)

1.8.2 Intransitive Clauses

In a clause with an intransitive verb, the [-trans] Tr does not have Case features. Therefore, only one position, SPEC TP, is available for Case-checking. In an accusative language, raising to this position occurs at s-structure, as required by the Ergative Parameter. In an ergative language, the intransitive argument does not raise until LF.²¹ Except for the level at which Case features are checked, Case checking is identical in the two types of languages. In the following subsections, I discuss the Case system in various intransitive clauses, i.e., unergative, unaccusative, passive and antipassive.

1.8.2.1 Unergatives

An unergative verb has one argument in SPEC VP. This NP, being the closest (and only) argument, raises to SPEC TP:

- (22) a. T, [John sang]
b. John_i T, [t_i sang]

In an ergative language, the NP in an intransitive clause does not raise

²¹It may be the case that in ergative languages, the intransitive actually raises at s-structure. This would require the Ergative Parameter to be modified so that in an ergative language, the Case of Tr is checked at s-structure when Tr is [+trans], but the Case of T is checked when T is [-trans]. Until I have evidence that the intransitive subject *must* raise at s-structure, I will assume the simpler version of the Ergative Parameter, as stated above.

until LF, as the s-structure requirement for raising applies only to Tr. Shown in (23)-(25) are examples of unergative verbs in Inuktitut, Mam and Niuean. In (24) and (25), the verb raises to T at s-structure.

(23) Inuktitut

[Jaani pisuk-p-u-q] T.
 John (Nom) walk-Ind-Intr-3sN
 'John walked'

(24) Mam

ma \emptyset -beet_v-T. [xu7j t_v]
 rec 3sN-walk woman
 'the woman walked'

(England 1983:145)

(25) Niuean

kua mohe_v-T. [a ia t_v] he fale
 Perf sleep Nom he in house
 'he has slept in the house'

(Seiter 1979:63)

1.8.2.2 Unaccusatives

A VP with an unaccusative verb consists of an object, and no subject. The object, being the only (and thus closest) NP, raises to SPEC TP at s-structure in an accusative language:

- (26) a. T [arrived the man]
 b. the man_i T [arrived t_i]

The object of an unaccusative verb raises to SPEC TP at LF in ergative languages. In the following examples from Mayan and Inuit, I give an alternate transitive form for each unaccusative verb. The fact that these verbs occur in both transitive and intransitive paradigms suggests that in their intransitive form, they are unaccusative, and not unergative.

(27) Jacaltec (Mayan)

- a. x-ø-'ich-i munil
 asp-3sN-begin-Intr work
 'the work began'
- b. ch-ø-aw-ich-e munil
 asp-3sN-2sE-begin-Tr work
 'you begin the work'

(Craig 1977:288-9)

(28) West Greenlandic

- a. napi-v-u-q
 break-Ind-Intr-3sN
 'it is broken'
- b. napi-v-a-a
 break-Ind-Tr-3sE.3sN
 'he broke it'

(Fortescue 1984:85)

In the Polynesian languages, the class of stative verbs occur with "stative agents", which are interpreted as directly or indirectly causing the state described by the verb (Chung 1978, Seiter 1979). Many of these verbs belong to the class of unaccusatives in other languages. I analyze them here as unaccusative verbs which do not have transitive equivalents. The agent of

these verbs must be oblique, as in the passive.

(29) Samoan

na lavea le tama:loa i le masini
past hurt Nom man Agt the machine
'the man was hurt by the machine'

(Chung 1978:29)

(30) Niuean

malona tuai e kapiniu e: i a Maka
break perf Nom dish this Agt pers Maka
'this dish got broken thanks to Maka'

(Seiter 1979:31)

1.8.2.3 Passives

I assume that in passive clauses, the agent is base-generated as an oblique VP-adjunct, and the specifier of the VP is not projected. In the derivation of a passive clause in an accusative language, the sole object argument raises to SPEC TP.

- (31) a. T_i was [seen John]
b. John_i T_i was [seen t_i]

In an ergative language, the patient NP remains in the VP at LF:

(32) Inuktitut

tuktu malik-tau-v-u-q (Jaani-mit)
caribou(Nom) follow-Pass-Ind-Intr-3sN (John-Abl)
'the caribou was followed (by John)'

(33) Tzotzil

7i-maj-at li Xun-e
Cmp-hit-Pass the Xun-cl
'Xun was hit'

(Aissen 1987:62)

The Polynesian languages (e.g., Tongan, Samoan) do not have a passive construction (see section 5.1.3.1).

1.8.2.4 Antipassives

I adopt Baker's (1988) analysis of the antipassive construction as an instance of noun incorporation. Baker proposes that the antipassive morpheme is generated in the direct object position, and incorporates with the verb. The oblique patient argument is an adjunct associated with the thematic role of Patient, similar to the Agent adjunct of passive clauses. If we assume that incorporation occurs prior to s-structure (i.e., in the lexicon), then we can account for the intransitivity of the antipassive construction. Shown in (34)-(35) are examples of antipassives in Inuit and Dyirbal (North Queensland, Australia):

(34) Inuit

tuttu-mik taku-nnip-p-u-q
caribou-Instr see-AP-Ind-Intr-3sN
'he saw a caribou'

(Fortescue 1984:86)

(35) Dyirbal²²

Numa buɾal-Na-n'u yabu-gu
father (Nom) see-AP-Nonfut mother-Dat
'father saw mother'

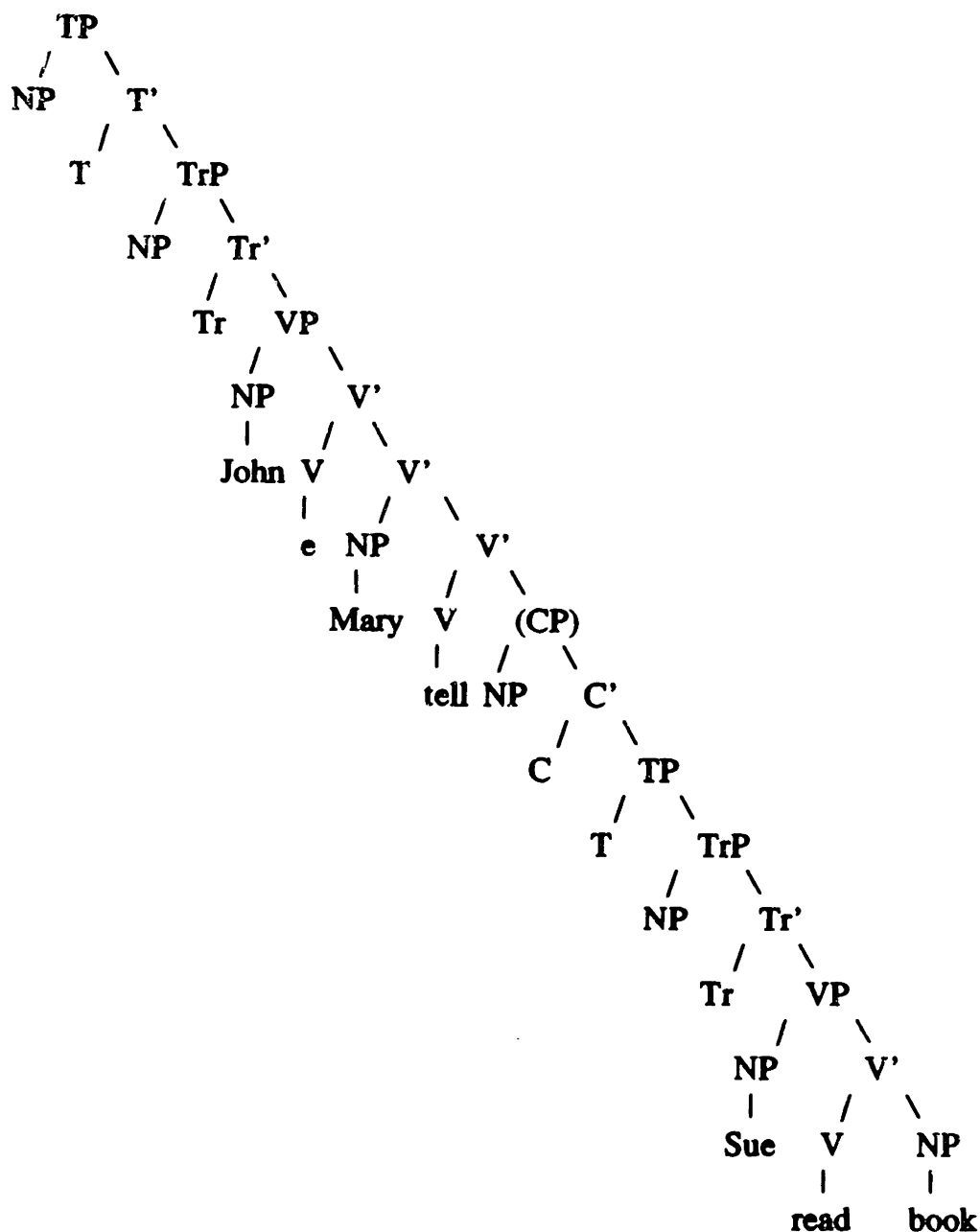
(Dixon 1979:63)

1.8.3 Bi-clausal Structures

In this section, I discuss bi-clausal structures where the matrix clause is [+trans]. I propose that such constructions have the "double object" structure shown in (36):

²²I use the symbol /N/ to symbolize a velar nasal.

(36)



When the complement clause is [+tense], the subject and object NPs in both the matrix and embedded clauses check their Case features within their respective clauses. In the following example from English, both matrix and embedded subjects raise to the SPEC TP of their clauses at s-structure, as

they are the closest source NP to their respective Ts:

- (37) a. T_i Tr_j [John told Mary that [T_i Tr_j [Sue read the book]]]
b. John_i T_i Tr_j [t_i told Mary that [Sue_j T_i Tr_j [t_j read the book]]]

At LF, the objects raise to their respective SPEC TrPs.

In an ergative language, the matrix subject raises to the higher SPEC TrP, and the embedded subject, to the lower SPEC TrP. At LF, the two objects raise to the closest SPEC TP (the higher and lower ones, respectively).

Examples from West Greenlandic Inuit are shown in (38):

(38) West Greenlandic

- a. Juuna-p miiraq nassuiaaffi-g-a-a
Juuna-Erg child(Nom) explain.to-Ind-Tr-3sE.3sN

[Pavia immi-nit angi-niru-sinnaa-nngi-ts-u-q
[Pavia(Nom) self-Abl big-Cmpr-can-Neg-Part-Intr-3sN]

'Juuna_i explained to the child [that Pavia_j couldn't be taller than self_{i,j}}']
(Bittner, in prep.:125)
- b. ugarvigi-ssa-v-a-kka friir-
say.to-Fut-Ind-Tr-1sE.3pN be.free.from.school-

t-u-tit
Part-Intr-2sN

'I shall tell them that you are free from school today'
(Fortescue 1984:41)

In the Mayan and Polynesian languages, I know of no cases of double object clausal constructions, where the matrix clause has both a Patient argument and a clause as complements. However, a bi-clausal construction commonly found in ergative languages involves an expletive *pro* object in the matrix clause, which is coindexed with the complement clause. That the matrix clause is transitive is indicated by ergative and Nominative agreement on the verb, with the Nominative agreement always third person singular.

The following examples are from West Greenlandic, Jacaltec (Mayan) and Niuean. In each of these cases, the NPs in the matrix and embedded clauses check their Case features in their respective clauses, as in the examples above.

(39) West Greenlandic

a. ilisima-v-a-a urni-ssa-giga
 know-Ind-Tr-3sE.3sN come.to-Fut-Part.1sE.3sN
 'he knew (it) I would come to him/her'

b. nalunngil-at arvini(q)-pingasu-nut atua-
 know-Ind.2sE.3sN eight-All study-

lir-pugut
 begin-Ind.1pN

'you know (it) we started to study at eight o'clock'
 (Fortescue 1984:36)

(40) Jacaltec

a. x-ø-(y)-al naj chubil xc-ach y-il naj
 asp-3sN-3sE-say cl/he that asp-2sN 3sE-see cl/he
 'he said (it) that he saw you'

- b. x-ø-aw-abe tato ch-in to-j hecal
 asp-3sN-2sE-hear that asp-1sA go-fut tomorrow
 'you heard (it) that I will go tomorrow'
 (Craig 1977:232)

(41) Niuean

- a. iloa e Stan kua fakatau tuai e koe e falaoa
 know Erg Stan Perf buy Perf Erg you Nom bread
 'Stan knows (it) you bought the bread'
- b. ne kitia he kau kaiha: kua mate tuai e moli:
 Pst see Erg group thief Perf die Perf Nom lamp
- he fale
 in house
- 'the thieves saw (it) that the lamp in the house had
 gone out'
 (Seiter 1979:126)

In this chapter, I proposed an analysis of NP movement to account for the difference between accusative and ergative languages. I presented my Ergative Parameter and Economy Principles, and demonstrated how they interact in deriving various types of clauses. In the next chapter, I discuss some consequences of the system for accusative languages.

CHAPTER 2: NP MOVEMENT AND VERB RAISING IN ACCUSATIVE LANGUAGES

This chapter contains two topics of investigation in accusative languages: NP movement, and verb raising. In the first three sections, I discuss issues relating to the Ergative Parameter and NP movement. In section 2.1, I examine non-argument elements (i.e., expletives) in SPEC TP. Section 2.2 consists of a discussion of infinitival clauses, where movement is required to SPEC TP for non-Case reasons. In section 2.3, I demonstrate how the Ergative Parameter and Economy Principles interact in raising constructions in English.

In the last two sections, I investigate the consequences of the feature system proposed in chapter 1 to verb movement. Section 2.4 discusses verb fronting in V2 and VSO languages, and in section 2.5, I discuss the "inflected infinitive" in Portuguese and Italian. I claim that both these phenomena involve a [\pm finite] feature in C.

2.1 The Content of SPEC TP

According to the Ergative Parameter, in an accusative language, the Case features of T must be checked at s-structure, requiring overt NP movement to SPEC TP. In section 1.8 above, I discussed straightforward

cases of argument movement (i.e., VP subject or object) to SPEC TP. In this section, I examine two other kinds of elements which may appear in SPEC TP: overt expletives (*it* and *there*), and expletive *pro*.

2.1.1 Overt Expletives

In non-null subject languages such as English, Dutch and Norwegian, an overt element is required in SPEC TP at s-structure. Consider the following examples:

(1) English

- a. it snowed last night
- b. it is true that John is intelligent
- c. there arrived three speakers into the hall

(2) Dutch

- a. het regent
it rains
- b. het is goed dat jij gekomen bent
it is good that you came
- c. er is een jongen gekomen
there is a boy came

(Vikner 1991:226)

(3) Norwegian

- a. det regner
it rains

b. det er godt at du er kommet
it is good that you came

c. det er kommet en gutt
there came a boy

(Vikner 1991:225)

Expletive NPs are assumed to be non-thematic, "dummy" elements whose presence satisfies some syntactic requirement. There are two types of expletives, pleonastic *it*, and presentational *there*. Languages such as English and Dutch distinguish the two types morphologically, whereas Norwegian and French, for example, have only one form for the two types. In this section, I discuss the two kinds of expletives, and propose that expletive insertion is a last-resort strategy.

It and *there* expletives exhibit different properties. *There* must be linked to a postverbal argument (e.g., *three speakers* in (1c) above), while *it* can occur as the sole NP with weather verbs (in (a)), or be linked to an extraposed clause (see (b)). *It* triggers third singular verbal agreement, whereas in *there*-constructions, agreement is triggered by the postverbal NP.

It has been proposed that *it* and *there* differ in argumenthood: *it* is an argument, while *there* is not (e.g., Hoekstra 1983, Bennis 1986, Vikner 1991). Bennis (1986), for example, claims that Dutch *het* 'it' is not a dummy pronoun, but is a referential pronoun base-generated in object position (and raises to the subject position). The presence of *het* is dependent on whether or not the verb selects a propositional thematic role. The assignment of a

propositional thematic role to *it* expletives is also assumed by Chomsky (1986b) and Vikner (1991), but in subject, and not object, position.

I propose that *it* is not an argument, but is a non-thematic element inserted to satisfy the feature requirements of [+tense] T. Since *it* is a pronominal with independent features, T can check its features with those of *it*. *It*-insertion is similar to English *do*-support, where *do* is inserted in the modal position in the overt syntax.¹ Both these processes involve a last-resort strategy, occurring after all other s-structure movement. Chomsky (1991) observes that *do*-support may appear to be more economical than verb raising, as it involves no movement. Similarly, the inserted *it* could be interpreted as a closer source NP than an NP generated in the VP. However, Chomsky claims that principles of Universal Grammar are applied wherever possible, with language-particular rules such as *do*-support used only to "save" a representation which otherwise would be uninterpretable. He argues that UG principles are "less costly" than language-particular principles, being "wired-in" rather than acquired. Thus, both *do*-support and *it*-insertion, which are language-specific requirements, are applied only when universal movement options are not available.²

¹One difference, however, is that *do* is a pure dummy element, while *it* has ϕ -features.

²See section 2.3 below for the interaction of Economy Principles and *it*-insertion in English raising constructions.

Consider next examples of presentational *there*:

- (4) a. there were many imposters in the room
b. there arrived many guests
c. there seem to be ghosts in the house

There differs from *it* in being associated with a postverbal argument which triggers agreement on the matrix verb. Various theories have been proposed to account for this relation. Chomsky (1981) suggested that *there* and the NP were related by superscripting, a different kind of indexing from binding-related subscripting. Nominative Case was transmitted by *there* to the NP with which it was coindexed.

In Chomsky (1986b), it was claimed that *there*, being semantically empty, was prohibited from appearing at LF by the Principle of Full Interpretation. It was thus replaced by the postverbal argument, with which it was linked at D-structure. In Chomsky (1991), this proposal was modified to permit *there* at LF, in the form of an affix to which the postverbal NP attaches.

Recent analyses, adopting Belletti's (1988) proposal of partitive Case, do not assume a Case relation between *there* and the postverbal argument (e.g., Chomsky 1991, Vikner 1991, Lasnik 1992).³ Vikner (1991), for example, states the association in terms of chains and antecedent government,

³Belletti (1988) proposes that partitive Case is an inherent Case assigned optionally by unaccusative verbs. Lasnik (1992) assumes that the verb *be* assigns partitive Case as well.

based on the requirement that an expletive be linked to a theta-marked argument.

Bennis (1986) and Moro (1991) argue against a "dummy" interpretation of *there*. Bennis, investigating the expletive *er* 'there' in Dutch, assumes that there is no direct association between the expletive element and the postverbal NP. He claims that *er* is an adverbial PP which is adjoined to a position left of the subject. This adjunction is motivated by pragmatic principles, i.e., conditions on presupposition.

In Moro (1991), *there* is analyzed as a predicative NP generated in the small clause complement of a copula or unaccusative verb. Its relation with the postverbal NP is one of predication. *There* raises to SPEC IP (claimed to be an A'-position) in (5a), parallel to the raising of the predicative NP in (5b).

- (5) a. *there*_i was [_{sc}some book t_i]
b. the culprit_i is [_{sc}John t_i]

I propose that *there*, like *it*, is inserted as a last-resort strategy to satisfy the Case requirements of [+tense] T. By adopting Belletti's (1988) proposal that partitive Case is assigned inherently by the verb, we can eliminate the need for Case transmission. However, to account for the agreement between the matrix verb and the postverbal NP, we must assume that ϕ -features are transmitted from the NP to the expletive *there*.

2.1.2 Expletive *pro*

In null-subject languages, the SPEC TP position normally filled by *it* or *there* contains a null, expletive pronoun, which I assume is *pro*. Consider the examples from Italian in (6) below. In (6a), *pro* is inserted as a last-resort strategy at s-structure to satisfy the Case requirements of [+tense] T. (6b-c) involve an unaccusative verb and a postverbal NP, and in (6c), the clause is embedded under a raising verb. I assume that *pro* has nominative Case, and the postverbal subject, partitive Case (Belletti 1988).

(6) Italian

a. *pro* piove
(it) rains

(Rizzi 1982, Ch.4:143)

b. all'improvviso *pro* è entrato un uomo dalla
suddenly (there) entered a man from the
finestra
window

(Belletti 1988:9)

c. *pro* sembrano essere arrivati tre
(there) seem to have arrived three
ragazzi
boys

(Belletti 1988:24)

In the Romance languages, there is a phenomenon known as "subject inversion", where the subject appears postverbally, with nominative Case, in

clauses with unergative and transitive verbs:⁴

- (7) a. ha telefonato Gianni
has telephoned Gianni
'Gianni has telephoned'
(Italian; Rizzi 1982, Ch.4:132)
- b. trajo una carta para mí el criado
brought a letter for me the servant
'the servant brought a letter for me'
(Spanish; Bennis 1986:295)
- c. à qui donnera ce cadeau ton frère
to whom will give that present your brother
'to whom will your brother give that present?'
(French; Bennis 1986:295)

Various theories have been proposed to account for nominative subjects in postverbal position. The analyses fall into two categories. Proponents of the first position (e.g., Chomsky 1982, Rizzi 1982, Burzio 1986, Belletti 1988) assume that there is an empty non-argument element in subject position (i.e., SPEC IP), which is assigned Case leftward by Infl. This Case is then transmitted in a chain configuration to the postverbal subject, which adjoins to the VP. Such an analysis is consistent with the theory presented in this thesis, where SPEC TP must be filled at s-structure, even if by an empty expletive element. *Pro* does not actually replace the trace left by the subject.

⁴Belletti (1988:17) claims that (i) is an example of subject inversion, since the postverbal argument does not exhibit the definiteness effect associated with partitive Case:

(i) è arrivato Gianni
arrived Gianni

Rather, the empty category is redefined as a non-argument *pro*, as it is not A- or A'-bound by a c-commanding element.⁵

The alternative position assumes that SPEC IP/TP need not be generated. I do not adopt the views of the associated theories (e.g., Den Besten 1985/1989, Bennis 1986, Borer 1986), since I assume that SPEC TP is universally generated. Bennis (1986) proposes that Italian, Spanish and French have the structure in (8), where the postverbal subject is generated as the right specifier of VP:

(8) [_{IP} Infl [_{VP} [_{V'} V O] S]

Case is assigned to the subject rightward by Infl.

Borer (1986) also assumes direct Case-marking to the postverbal subject. However, in her analysis, *Gianni* in (7a) above is base-generated as a VP adjunct. According to her theory of I(nflectional)-identification, it is the coindexing of Infl and an NP (i.e., I-identification) which is obligatory, and not the structural relation between Infl and its specifier.

Den Besten (1985/1989) introduces the notion of chain government to account for Case assignment to inverted subjects.⁶ According to his definition

⁵Alec Marantz (p.c.) suggests that the expletive *pro* may be base-generated in SPEC TP, and the postverbal subject generated in a right-projected SPEC VP. This would require Case transmission from the expletive to the NP, similar to that in *there* constructions.

⁶Den Besten (1985/1989) uses chain government not for inverted subjects in Romance, but to account for nominative Case assignment in the Dative-Nominative inversion

of chain government, a verb which has no Case-assigning property may inherit this property from a governor.

2.2 [-tense] and the EPP

According to the Ergative Parameter, the Case features of T are strong in an accusative language, requiring movement to SPEC TP at s-structure. Until now, I have been assuming that the only motivation for NP movement is feature checking. A source NP raises to a SPEC XP position in order to check its Case features with those of the head, X. In this section, I will address the issue of what happens when the head of the target position does not have Case features. This is the case when Tr is [-trans], or T is [-tense]. Since the feature possibilities of Tr were discussed in section 1.7 above, in this section, I focus on [-tense] T.

I assume that [-tense] T, like [-trans] Tr, does not have Case features. If the motivation for NP movement is strictly Case checking, then no element should ever appear in the SPEC of [-tense] T. However, the following

construction in Dutch. In (i), the dative object in (NP,S) position precedes the nominative subject in VP object position (p. 228):

- (i) dat onze buurman iets verschrikkelijks overkomen is
 that to our neighbor something terrible happened has
 'that something terrible has happened to our neighbor'

examples illustrate that this is not the case. In (9a), PRO appears in SPEC TP, and in (9b) and (9c), there is a lexical NP in that position:

- (9) a. John tried [_{CP} [_{TP} PRO to leave early]]
b. John believes [_{TP} Mary to have left]
c. [_{CP} for [_{TP} Mary to stay]] would be a good idea

In (9a-c), the subject of the VP, PRO or *Mary*, raises to SPEC of [-tense] T. These examples demonstrate that NP movement does not occur only for Case reasons. Consider the PRO in (9a). Following standard analyses, in which PRO cannot be governed at s-structure, and thus is never assigned Case (e.g., Chomsky 1981), I assume that PRO does not have Case features. Therefore, PRO moves to SPEC TP not for Case reasons, but to avoid being governed by the verb.

In (9b-c), a lexical NP, *Mary*, appears in the SPEC of the embedded [-tense] TP. This movement is temporary, as *Mary* must move further on at LF to SPEC TrP in (9b), and SPEC CP in (9c), to satisfy its Case requirements. These examples suggest that there is some requirement, independent of Case, that SPEC TP be filled at s-structure. This is reminiscent of the Extended Projection Principle (EPP), which states that all clauses must have a subject (Chomsky 1982). Shown in (10) is a modified statement of Chomsky's EPP:⁷

⁷I restrict the EPP to accusative languages for now, as it is not clear that SPEC TP must be filled at s-structure in ergative languages.

(10) *The Extended Projection Principle*

SPEC TP must be filled at s-structure.

It would be desirable to derive the EPP from other principles, and not have it as a stipulation. I will discuss two attempts made in this direction, but I conclude that they are not satisfactory, and thus will leave (10) as a stipulative observation for now.

Chomsky (1990 class lectures) and Chomsky and Lasnik (to appear) attempt to derive the EPP from the feature requirements of T. In order to account for PRO in subject position in (9a), they introduce "null" Case, a phonetically null, structural Case associated with PRO. Null Case is checked by INFL (T or AGR_s) when a clause is [-tense]. PRO, being a "minimal" NP argument lacking independent phonetic referential or other properties, is the only NP that can bear null Case.

The relation of null Case with [-tense] is a natural occurrence in a system where Case is associated with specific functional categories. However, the restriction of null Case to PRO makes it different from other Cases, which are freely generated on NPs in the lexicon, and are checked in the syntax. If null Case were like other structural Cases, it should be possible for an overt subject NP to be inserted from the lexicon with this Case, and be checked in SPEC TP with [-tense] T. However, examples such as (9b-c), where *Mary* has accusative Case, demonstrate that lexical NPs in SPEC TP of

[-tense] T do not have null Case. It appears that null Case has an independent restriction that it be associated only with other phonologically null elements.

Chomsky and Lasnik claim that positing a null Case unifies the behaviour of PRO with other arguments, in that all arguments move to satisfy Case feature requirements. However, the examples in (9b-c) demonstrate two ways in which null Case differs from other structural Cases. First of all, the accusative Case features of *Mary* in SPEC TP do not match the null features of T. Secondly, *Mary* can, and must, move from SPEC TP, a Case position, in order to check its Case features elsewhere. In fact, this movement from [-tense] SPEC TP is not restricted to lexical NPs, but applies to PRO as well (Alec Marantz, p.c.):⁸

(11) John tried [PRO_i to appear [t_i to have left]]

Assuming a null Case theory unifies the motivation for movement (i.e., to check Case features), eliminating the need for the EPP. However, it creates a disjunction in the properties of structural Case, which I consider an undesirable result.

The second possibility is to modify the Ergative Parameter to the following: *In an accusative language, SPEC TP must be filled at s-structure.*

⁸The movement of PRO in this example is predicted by the EPP in (10), as the intermediate clause, with *appear*, must have a subject.

In an ergative language, SPEC TrP must be filled at s-structure. There would no longer be a correlation between feature requirements and NP movement, but it appears that such a strict correspondence does not exist anyway. A problem with this approach, however, is that such a parameter would not hold for ergative languages. Overt movement to SPEC TrP would be obligatory only when Tr was [+trans], and not when it was [-trans]. The parameter would have to distinguish between transitive and intransitive clauses in ergative languages, an unsatisfactory consequence: *In an accusative language, SPEC TP must be filled at s-structure. In an ergative language, SPEC TrP must be filled at s-structure when Tr is [+trans].*

Although I have been assuming that intransitive subjects in ergative languages do not raise to SPEC TP until LF, if there is evidence that they actually move at s-structure, then the following would have to be added to the parameter: *When Tr is [-trans], SPEC TP must be filled at s-structure.*

Since both approaches have undesirable consequences, I will accept the EPP as stated in (9), and preserve the assumptions that [-tense] does not have Case features, and that PRO cannot be governed. Since movement to SPEC of [-tense] T is not required to satisfy Case requirements, it is not considered to be a featured target position.⁹

⁹As defined in section 1.4 above, a *featured target* is a SPEC position which must be filled to satisfy Case feature requirements.

2.3 Raising

In this section, I discuss the application of the Ergative Parameter and Economy Principles presented in Chapter 1 to raising constructions in English.¹⁰ I demonstrate that the facts of raising can be accounted for by the principles of Closest Available Source and Closest Featured Target, and the EPP.

Raising constructions involve two Ts:

(12) T_i seems [T_j to [John be intelligent]]

In (12), the SPEC of boths Ts must be filled at s-structure, requiring the closest available source NP. The closest available NP to both SPEC TPs is *John*. However, in this case, it is possible for *John* to move to both SPECs without violating any principles. Since the lower T has no Case features, *John* is free to move from that SPEC position to the matrix SPEC TP. Moreover, since the lower SPEC TP is not a featured target, *John* is fulfilling the requirement that it move to the closest featured target (i.e., the matrix SPEC TP). It does not matter that *John* moves to other targets along the way, as long as it moves to only the closest *featured* target.

Consider the examples in (13), with a transitive embedded clause. In

¹⁰Ergative languages appear not to have the type of raising found in English, where an NP raises out of an embedded clause to check its Case features with the matrix T.

(13b), the correct derivation, *John* raises at s-structure to the lower SPEC TP, and then to the matrix SPEC TP. At LF, the object *many races* raises to SPEC TrP.

- (13) a. T_i seems [T_i to Tr_i [John win many races]]
b. John_i T_i seems [t_i T_i to Tr_i [t_i win many races]]
c. *many races_i T_i seems [t_i T_i Tr_i to [John win t_i]]
d. *John_i T_i seems [many races_i T_i to Tr_i [t_i win t_i]]

In (13c), it is the object, and not the subject, which raises to the two SPEC TPs. Such movement is not legitimate, as the object is not the closest source NP. Direct movement of *John* to the higher SPEC TP, and *many races* to the lower SPEC TP, as in (13d), is also not grammatical. The Economy Principles rule out this type of movement, where "Crossing Paths" occurs at s-structure (see section 1.4 above).

The same movements apply when the lower VP is passive. *John* moves from the object position, through the lower SPEC TP, to the higher one (14b):

- (14) a. T_i seems [T_i to have been [e beaten John]]
b. John_i T_i seems [t_i T_i to have been [e beaten t_i]]

Consider next the case where both the higher and lower Ts are [+tense], and thus have Case features:

- (15) T_i seems that [T_i [John is intelligent]]

In (15), both Ts require their Case features to be checked at s-structure, but there is only one available source NP, *John*. By the Principle of Closest Featured Target, *John* must move only to the lower SPEC TP. The Case requirements of the matrix T are satisfied by *it*-insertion:¹¹

(16) *it* T, seems that [John_i T, [t_i is intelligent]]

Consider next an example where the embedded clause is transitive:

- (17) a. T, seems that [T, Tr, [Harry watched the race]]
 b. *it* T, seems that [Harry_i T, Tr, [t_i watched the race]]
 c. *Harry_i T, seems that [*it* T, Tr, [t_i watched the race]]
 d. *Harry_i T, seems that [the race, T, Tr, [t_i watched t_j]]
 e. *the race, T, seems that [*it* T, Tr, [Harry watched t_j]]
 f. *the race, T, seems that [Harry_i T, (*it*) Tr, [t_i watched t_j]]

The only grammatical derivation is (17b), where *Harry* raises to the lower SPEC TP (Closest Featured Target), and the Case requirements of T are satisfied by the expletive *it*. *The race* raises to SPEC TrP at LF to check its features. In (17c) and (17d), *Harry* raises directly to the higher SPEC TP. These derivations are ruled out by the Principle of Closest Featured Target, as the lower SPEC TP is a closer featured target. In (17c), the lower T is satisfied by the expletive *it*, and in (17d), by the object *many races*.

¹¹See section 2.1.1 above for an analysis of *it*-insertion as a last resort strategy.

Movement of the object to the higher SPEC TP, as in (17e) and (17f), is also ruled out, since the subject, *Harry*, is a closer available source, and the lower SPEC TP is a closer featured target.

A similar structure is derived when the VP is passive. The most economical derivation consists of *John* raising to the lower SPEC TP, and *it* inserted in SPEC TP:

- (18) a. T_i seems that [T_i [*e* was beaten John]]
 b. it T_i seems that [John_i T_i [*e* was beaten t_i]]

I now turn to constructions which involve two raising clauses (one of them may be passive). In (19), the matrix T is [+tense], and the lower two are [-tense]. The only possible derivation is (19b), where the embedded subject, *John*, raises to the highest SPEC TP, moving first through both lower SPEC TPs to satisfy the EPP.

- (19) a. T_i seems [T_i to be likely [T_i Tr_i John to win]]
 b. John_i T_i seems [t_i T_i to be likely [t_i T_i Tr_i t_i to win]]
 c. *it T_i seems [John_i T_i to be likely [t_i T_i Tr_i t_i to win]]
 d. *John_i T_i seems [it T_i to be likely [t_i T_i Tr_i t_i to win]]

In (19c), *John* stops at the intermediate SPEC TP, and the matrix T is satisfied by the expletive *it*. This derivation is illegitimate, as *John* cannot check its Case features with those of [-tense] T. (19d) is ungrammatical, as

raising *John* directly to the highest SPEC TP violates the Principle of Closest Featured Target. Moreover, the expletive cannot check its Case features.

In the examples in (20) below, the two highest Ts are [+tense]. The correct derivation is (20b), where *Mary* raises through the lowest [-tense] SPEC TP to the SPEC of the intermediate clause, where it has its Case features checked. The requirements of the highest T are met by the expletive *it*.

- (20) a. T_i seems [T_i is likely [T_i Tr. *Mary* to sing]
 b. it T_i seems [*Mary*_i T_i is likely [t_i T_i Tr. [t_i to sing]
 c. *it T_i seems [it T_i is likely [*Mary*_i T_i Tr. [t_i to sing]
 d. **Mary*_i T_i seems [it T_i is likely [t_i T_i Tr. [t_i to sing]

In (20c), *Mary* cannot have its Case checked with [-tense] T. (20d) is not a legitimate derivation, as the intermediate SPEC TP is a closer featured target for *Mary* than the matrix SPEC TP.

Let us now consider cases where the lowest clause is tensed. In (21), all three clauses are tensed, while in (22), the intermediate clause is untensed. In both cases, the only grammatical derivation is the one consisting of *Mary* raising to the closest featured target position (i.e., the SPEC of the most embedded TP), where it can have its Case checked ((21b) and (22b)).¹²

¹²In (22b), the SPEC position of the intermediate [-tense] T is not filled, violating the EPP. I propose that *it* is inserted in that SPEC position, and subsequently raises to the matrix SPEC TP to satisfy Case requirements. *It*-insertion is still "last resort" in that if it did not occur at that point, the derivation would crash. However, the insertion of *it* here

- (21) a. T_i seems [T_i is likely [T_i Tr. [Mary sang]]
 b. it T_i seems [it T_i is likely [Mary_i T_i Tr. [t_i sang]]
 c. *it T_i seems [Mary_i T_i is likely [it T_i Tr. [t_i sang]]
 d. *Mary_i T_i seems [it T_i is likely [it T_i Tr. [t_i sang]]

In (21c), *Mary* moves to the intermediate clause, and in (21d), it moves to the highest one. Neither of these is the closest target. Similarly, in (22c), the matrix SPEC TP is not the closest target:

- (22) a. T_i seems [T_i to be likely [T_i Tr. [Mary sang]]
 b. it T_i seems [T_i to be likely [Mary_i T_i Tr. [t_i sang]]
 c. *Mary_i T_i seems [T_i to be likely [it T_i Tr. [t_i sang]]

In this section, I have demonstrated how the Ergative Parameter and Economy Principles and EPP account for raising in English.

2.4 Verb Fronting Languages: V2 and VSO

In this section, I discuss two instances of verb fronting, which occurs in two types of languages: *verb second (V2)*, and *verb-initial (VSO)*. The V2

occurs not to satisfy Case requirements, but to satisfy the EPP.

As pointed out by Alec Marantz (p.c.), the occurrence of *it* in small clauses such as *I consider it obvious that...* suggests that the EPP is not restricted to SPEC TP, but is required in any SPEC position involving predication.

phenomenon is found in the Germanic languages, where the verb raises from the VP to the second position in the clause.¹³ In VSO languages, such as Irish and Arabic, the verb appears in clause-initial position. In the following discussion, I unify the movement of the verb in V2 and VSO languages, claiming that in both cases the verb moves to C, triggered by a [-finite] feature in C.

2.4.1 The Feature [\pm finite] in C

2.4.1.1 V2 Languages

Following Den Besten (1983/1989), Travis (1984), Holmberg (1986), Platzack (1986a,b), Taraldsen (1986a,b), and Vikner (1991), among others, I assume that in V2 languages, the verb raises to C, and is preceded by some element in SPEC CP. Shown in (23)-(25) are examples of V2 in declarative clauses in Danish, Icelandic and German:

(23) Danish

- a. [_{CP}Peter har [_{IP}ofte drukket kaffe om morgenen]]
Peter has often drunk coffee in morning-the
'Peter has often drunk coffee in the morning'

¹³See Vikner (1991) for a thorough review and discussion of the V2 literature.

- b. [_{CP}kaffe har [_{IP}Peter ofte drukket om morgenen]]
 coffee has Peter often drunk in morning-the
 (Vikner 1991:57)

(24) Icelandic

- [_{CP}Helgi hefur [_{IP}trúlega keypt bókina]]
 Helgi has probably bought book-the
 'Helgi has probably bought the book'
 (Vikner 1991:59)

(25) German

- [_{CP}die Kinder haben [_{IP}diesen Film gesehen]]
 the children have this film seen
 'the children have seen this film'
 (Vikner 1991:59)

Most analyses assume that in V2 languages, C has some property not found in other languages. Haider (1986), for example, proposes that C contains Infl, forcing the verb to raise to C to merge with Infl. It has also been suggested that C has tense and agreement features, e.g., De Haan and Weerman (1986) and Tomaselli (1990) (discussed in Vikner 1991). Holmberg (1986), adopting Kayne's (1982) observation that there is a connection between verbs and predicates, proposes that predicates must be headed by a [+V] element. He claims that in V2 languages, C has the default value, [+V]. Since CP is a predicate, the verb is required to move to C, giving CP a [+V] head.

Platzack (1986a,b) proposes a Tense feature separate from Infl in C, which assigns nominative Case. Koopman (1984) also assumes nominative

Case assignment by C. Holmberg and Platzack (1990), and Platzack and Holmberg (1989) propose that C contains a finiteness operator, [+F], which does not itself assign Case, but is licensed only if it governs an element with nominative Case.

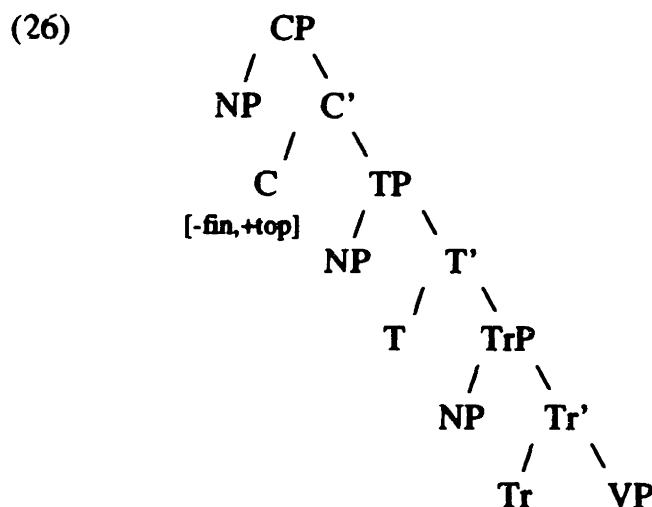
Based on these ideas, I propose that C contains a [\pm finite] feature associated with nominative Case. This feature may be interpreted as a separate tense feature, as in Platzack (1986a,b), Den Besten (1985), or Raposo (1987).¹⁴ Den Besten (1985) claims that there is no Infl in German or Dutch, and that nominative Case is always assigned by a [+Tense] Comp. I assume, however, that all languages have both an Infl (i.e., T) and a Comp. Let us suppose that [\pm finite] C is in some sense an extended projection of TP. Semantically, it shares with T the notion of "tenseness" or "finiteness". Syntactically, it exhibits properties similar to T with respect to Case. This feature differs from Case features, for example, in that it is not randomly generated on NPs in the lexicon, to be checked later. Instead, it is an inherent part of the C.

I propose that, analagous to the [\pm tense] feature, [+finite] has nominative Case features, but [-finite] does not. Moreover, I claim that in V2

¹⁴Raposo (1987) discusses the inflected infinitive in Portuguese, which I claim has the feature [+finite] in C. See section 2.5 below.

languages, C has the feature [-finite].¹⁵ The obligatoriness of movement to the SPEC CP position can be accounted for if we assume that in addition to the [-finite] feature, C has the feature [+topic], which is a strong feature requiring checking at s-structure. Since Case features are not checked in SPEC CP with [-finite] C, SPEC CP is not a featured target. Therefore, any XP could move to this position without violating the Principle of Closest Featured Target.

The structure I propose for matrix V2 clauses is shown in (26):



The s-structure movement of V to C cannot be correlated with the strength of the [\pm tense] feature in T. If this were possible, we would expect all V2 (and VSO) languages to have strong [tense] features, as the overt V-to-

¹⁵English is the only Germanic language which does not have V2 in declarative clauses, suggesting that it lacks the [-finite] feature. It exhibits V2 in matrix questions, however, since it has a [+wh] feature.

C movement indicates that the [finite] features of C are strong. However, in Danish, verb raising to T does not occur until LF, unless the verb continues on to C. This suggests that there is an independent requirement that the verb raise to C at s-structure. I propose that the [-finite] feature is always strong in V2 and VSO languages, requiring checking at s-structure, and is not subject to parametric variation.

2.4.1.2 VSO Languages

Consider the following examples from Irish and Arabic.¹⁶ In Arabic, an alternate SVO order is possible (28b).

(27) Irish

bhéarfaidh mé an t-airgead do Chaoimhín i nDoire
give-Fut I the money to Kevin in Derry

inniu
today

'I'll give Kevin some money today'
(McCloskey 1990:201)

(28) Arabic

a. raʔaa al-rajul-u saalim-an
saw Def-man-Nom Salim-Acc
'the man saw Salim'

¹⁶I use Irish and Arabic as sample VSO languages.

b. al-rajul-u raʔaa saalim-an
Def-man-Nom saw Salim-Acc
'the man saw Salim'

(Demirdache 1989:7)

I adopt the V-to-C analysis for VSO languages, assuming that the verb raises to C, as in V2 languages. Verb-fronting analyses have been previously proposed by, among others, Emonds (1981), Harlow (1981) and Sproat (1985).

Since Pollock (1989) and Chomsky (1991), the proliferation of inflectional categories has provided a wider range of landing sites for the verb. However, analyses which adopt this framework, such as Demirdache (1989) and Bobaljik and Carnie (1992), still assume that the verb raises to the topmost functional head. Demirdache (1989), for example, proposes the structure *TP-AgrP-AgrP* for Arabic, and suggests that the verb raises to T.¹⁷ Bobaljik and Carnie (1992), adopting the *AgrP-TP-AgrP* structure of Chomsky (1991), propose that the verb in Irish raises to the higher Agr. Both these analyses are similar to the one I adopt in assuming that the verb raises to the highest of three functional categories. The difference is that in my system, the highest category is CP, typically associated with A'-movement. This is consistent with my analysis, since I assume that the XP which appears in SPEC CP is a topic.

¹⁷Demirdache (1989) cites the 1987 manuscript version of Pollock (1989), and the 1989 version (in Laka and Mahajan 1989) of Chomsky (1991).

In Arabic, there is an alternation between VSO and SVO orders (cf. (28a-b)). In (28a), the postverbal subject may be either specific or non-specific, whereas in (28b), the preverbal subject must be specific. Furthermore, the verb agrees with the postverbal subject in (28a) only in person and gender, and not number, while in (28b), it agrees in all three features with the preverbal subject. Demirdache (1989) proposes that in SVO examples like (28b), the subject is base-generated in SPEC CP (i.e., SPEC TP in her system), and is assigned default nominative Case. Moreover, this subject is linked to a resumptive pronoun in SPEC TP (her AgrP). This pronoun is reanalyzed as agreement features, and cliticizes onto the verb in C.

Demirdache observes that other arguments may appear in SPEC CP with nominative Case (see (29)), suggesting that the base-generation of topics in this position is not limited to subjects. The topic must be linked to an argument in TP, realized as a resumptive pronoun on the verb.

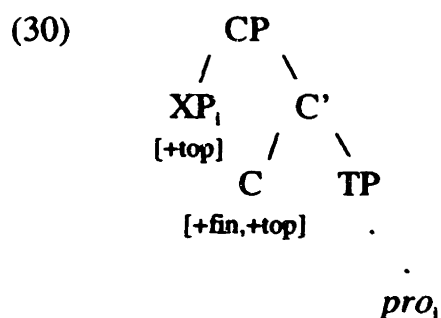
(29) Arabic

a. al-kitaab-u istaraa-hu saalim-un
 the-book-Nom bought-it Salim-Nom
 'the book, Salim bought it'

b. ad-daar-u wajada fii-haa saalim-un kitaab-an
 the-house-Nom found in-it Salim-Nom book-Acc
 'the house, Salim found a book in it'

(Demirdache 1989:9)

I propose that in clauses with nominative topics, C has the feature [+finite], associated with nominative Case. In addition, it has the feature [+topic], which matches the [+topic] feature of the base-generated element. The structure of these clauses is shown in (30):



Arabic also exhibits a construction similar to that of V2 languages, where a topic NP appears in SPEC CP bearing its original Case (cf. (23b) above, where *kaffe* presumably has accusative Case):

(31) Arabic

al-kitaab-a kataba-(hu) saalim-un
 Def-book-Acc wrote-(it) Salim-Nom
 'Salim wrote the book'

(Demirdache 1989:38)

I propose that the clause in (31) has the structure shown in (26) above (where C has the features [-finite] and [+topic]), which was suggested for V2 languages.

Irish does not exhibit a VSO/SVO alternation in matrix clauses. It seems that C in Irish never has a [+topic] feature motivating movement to its

SPEC.

2.4.2 V2 in Embedded Clauses

One argument against the V-to-C analysis is that in embedded clauses, V2 or VSO order may appear with an overt complementizer. Following Vikner (1991), I allow for CP-recursion. I do not assume, however, that CPs may be randomly generated. There appears to be a limit of two CPs, although Vikner gives a marginal example of three successive Cs in Danish. The fact that all analyses must assume four functional projections suggests that many of the differences between, for example, my analysis and that of Bobaljik and Carnie (1992), may reduce simply to the labelling of functional categories.

2.4.2.1 V2 Languages

The Germanic languages differ in whether or not V2 is permitted in embedded clauses with a complementizer. In German and Dutch, for example, V2 is prohibited when a complementizer is present. Consider the German example in (32) below. (32a), an example of V2 without the complementizer *daß*, is grammatical, as is (32b), with *daß* but no V2. (32c) demonstrates that *daß* and V2 together result in ungrammaticality:

(32) German

- a. er sagt [_{CP}die Kinder haben [_{IP}diesen Film gesehen]]
he says the children have this film seen
- b. er sagt [_{CP}daß [_{IP} die Kinder diesen Film gesehen
he says that the children this film seen
haben]]
have
- c. *er sagt [_{CP}daß [_{CP}die Kinder haben [_{IP}diesen Film
he says that the children have this film
gesehen]]]
seen

(Vikner 1991:77)

Following Holmberg (1986) and Vikner (1991), among others, I assume that in these languages, the complementizer and the fronted verb cannot co-occur because they occupy the same position, C. In (32) above, the verb *sagen* 'say' selects a CP complement. The head of CP can be either [-finite], as in (32a), or [-wh], as in (32b).

Some German and Dutch verbs are restricted to selecting only [-wh] CPs, prohibiting V2 in their complement clause. The verb *bewiese* 'prove' in German, for example, takes only a [-wh] complement, as in (33a), and not a [-finite] CP (33b):

(33) German

- a. Holmes bewies, [_{CP}da [_{IP}Moriarty nur das Geld
Holmes proved that Moriarty only the money
gestohlen hatte]]
stolen had

- b. *Holmes bewies, [_{CP}dieses Geld [_{IP}hatte Moriarty
Holmes proved this money had Moriarty
gestohlen]]
stolen

(Vikner 1991:83)

In the other Germanic languages (i.e., Danish, Faroese, Norwegian, Swedish, Icelandic and Yiddish), embedded V2 is permitted only with a complementizer present (Vikner 1991). I adopt Vikner's proposal that the embedded clause in these languages involves CP-recursion. The higher CP is headed by a [\pm wh] feature, and the lower one, by the feature [-finite].^{18,19}

Vikner observes that in one group of languages, which include Danish, Faroese, Norwegian and Swedish, V2 may occur only if the clause is embedded under certain matrix verbs (as in German). In the following example from Danish, V2 is permitted when CP is embedded under *påstod* 'claim' (34a), but not when embedded under *beklager* 'regret' (34b):

(34) Danish

- a. Watson påstod [at [disse penge havde [Moriarty
Watson claimed that this money had Moriarty
stjålet]]]
stolen

(Vikner 1991:82)

¹⁸For an alternative analysis, see Diesing (1990) and Santorini (1989) for Yiddish, and Rögnvaldsson and Thráinsson (1988) for Icelandic. They assume that the verb raises to I, and topics, to SPEC IP.

¹⁹David Pesetsky (p.c.) offers an interesting alternative, where the [-wh] complementizer is generated in the SPEC of CP.

- b. *Johan beklager [at [denne bog har [jeg læst]]]
 John regrets that this book have I read
 (Vikner 1991:84)

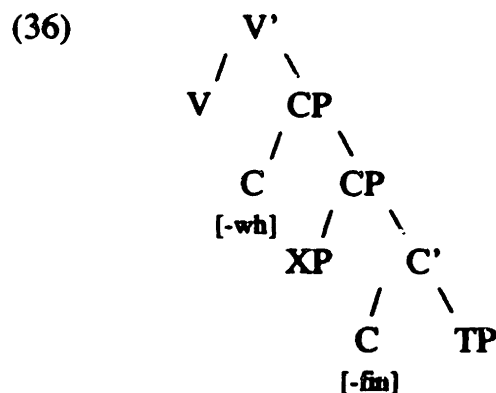
However, as shown in (35b), V2 is not obligatory:

(35) Danish

- a. vi ved [_{CP}at [_{CP}Peter har [_{IP}ofte drukket kaffe]]]
 we know that Peter has often drunk coffee
- b. vi ved [_{CP}at [_{IP}Peter ofte har drukket kaffe]]
 we know that Peter often has drunk coffee
 (Vikner 1991:58)

In Icelandic and Yiddish, the possibility of V2 is not dependent on the matrix verb. All verbs which take a sentential complement exhibit V2 in the embedded clause.

Shown in (36) is the nested CP structure:



The following table illustrates the types of complement clauses permitted in the various V2 languages. V represents verbs which take CP complements, and V_a and V_b are subsets of V.

(37)		V	CP	CP
	Germ, Dutch	V _a	-wh/-fin	-
		V _b	-wh	-
	Dan, Far, ...	V _a	-wh	(-fin)
		V _b	-wh	-
	Icel, Yidd	all	-wh	-fin

It appears that, except for German and Dutch, complement-taking verbs select a [-wh] CP. If the verb has an additional property that it select a [-finite] CP (or TP), it can do so only by 'remote control' (Vikner 1991), mediated by the [-wh] C. In other words, structural constraints require these verbs to select a [-wh] CP, but their semantic requirements are met by the further embedded CP. In German and Dutch, there is no such syntactic requirement, so that the verb can select either a [-wh] or [-finite] CP.

2.4.2.2 VSO Languages

In Irish and Arabic, we find the VSO order following the complementizer:

(38) Irish

dúirt sé gur bhuail tú é
 said he Comp struck you him
 'he said that you struck him'

(McCloskey 1990:205)

(39) Arabic

man_i yuriidu zayd-un ?an yaqra?-a t_i l-kitaab-a
who want.3ms Zayd-Nom that read.3ms-subj Def-book-Acc
'who does Zayd want that read the book?'

(Demirdache 1989:45)

In these languages, the complementizer is followed by a [-finite] CP, triggering verb fronting. This is the same structure as that in (36) above for V2 languages.

2.4.3 Questions: [+wh] in C

2.4.3.1 Matrix Questions

Consider the following examples of V2 in matrix questions (from Vikner 1991:55-59):

(40) a. Swedish

har han verkligen gjort det här
has he really done this

b. Danish

hvad har børnene set
what have the children seen

c. German

warum haben die Kinder den Film gesehen
why have the children the film seen

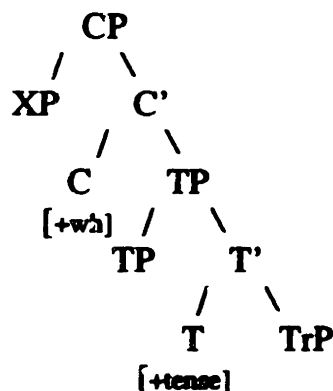
This type of V2 is also found in English:

(41) English

- a. when does the store open?
- b. what will you tell her?

Following standard analyses (e.g., Chomsky and Lasnik 1977, Huang 1982, Lasnik and Saito 1984), I assume that matrix questions consist of a CP headed by a [+wh] element. Rizzi (1990b) claims that this type of V2 phenomenon, with a [+wh] element, is different from V2 in declarative clauses. He suggests that V2 in questions results from the requirement that a [+wh] X° have a *wh*-phrase in its specifier position, and that each *wh*-phrase be in the specifier position of a [+wh] X°. The *wh*-phrase is thus forced to move to SPEC CP, and the verb raises to C to acquire the [+wh] feature.

(42)



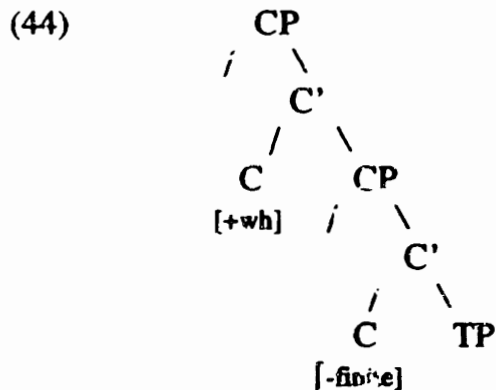
In Arabic, matrix questions are formed in the same way as in V2 languages, with the *wh*-element raising to SPEC CP, and the verb fronted to C:

(43) Arabic

- a. maaḍaa, istaraa saalim-un t_i ʔamsi
what bought.3ms Salim-Nom yesterday
'what did Salim buy yesterday?'
- b. ʔayna, raʔaa saalim-un xaalid-an t_i
where saw.3ms Salim-Nom Khalid-Acc
'where did Salim see Khalid?'

(Demirdache 1989:42)

There is evidence that in Irish, questions are not formed with the structure in (42) above. McCloskey (1979, 1990) argues that *wh*-questions and focus clefts have the form of relative clauses. I propose that all clauses in Irish must contain a [-finite] CP, ruling out structures like (42), where there is only a [+wh] C. Potentially, questions in Irish could have the structure in (44), with both a [+wh] and [-finite] C:



However, there appears to be a constraint against the co-occurrence of [+wh] and [-finite] CPs:

(45) *CP Feature Co-occurrence Constraint*

The co-occurrence of [+wh] and [\pm finite] CPs is prohibited.

This constraint is found not only in Irish, but in embedded questions in all V2 and VSO languages (see the following subsection), and in inflected infinitives in Portuguese (section 2.5).

Vikner (1991) proposes an explanation for this constraint in his discussion of embedded questions in V2 languages. His account is based on relativized minimality (Rizzi 1990a): a topic in the SPEC of the [-finite] CP would block antecedent government between the *wh*-element in the higher SPEC CP and its trace in the TP. However, this explanation would not apply in a VSO language such as Irish, where there is no topic in the lower SPEC TP. Therefore, it seems that the constraint results from a structural or semantic restriction on the structure itself. For example, perhaps [+wh] can only select (or be a projection of) TP, or the semantics of the [+wh] feature is incompatible with a [\pm finite] clause. I will leave (45) simply as an observation for now, and will not attempt a more definitive explanation for the constraint.

2.4.3.2 Embedded Questions

It has been observed that V2 does not occur in embedded questions:

(46) a. German

*ich wei nicht [_{CP}warum [_{CP}im Zimmer ist
I know not why in the room has

[_{IP}die Kuh gestanden]]]
the cow stood

b. Danish

*jeg ved ikke [_{CP}hvorfor [_{CP}i værelset har
I know not why in the room has

[_{IP}koen stået]]]
the cow stood

(Vikner 1991:86)

The examples in (46) involve the structure in (44) which, as discussed above, is not permitted.

Vikner (1991) discusses two exceptions to the observation that V2 is not permitted in embedded questions. The first involves the *wh*-element *far* 'why' in Yiddish:

(47) Yiddish

ikh veys nit [_{CP}far vos [_{CP}in tsimer iz [_{IP}di ku
I know not why in the room has the cow

geshtanen]]]
stood

(Vikner 1991:86)

Since V2 is possible only with *far*, and no other *wh*-elements, Vikner suggests that *far* is base-generated in SPEC CP. In his analysis, the base-

generation of *far* eliminates the minimality violation, as there is no movement involved. If this is true, then it suggests that this [+wh] feature is somehow different, in that it does not motivate movement to its SPEC. Perhaps this feature is additionally exceptional in that it *can* select a [-finite] CP.

Another instance of V2 occurring in embedded questions is with expletive subjects in the SPEC of the embedded CP. Consider the following example from Icelandic:²⁰

(48) Icelandic

Jón vissi ekki [_{CP}hvernig [_{CP}Tað [_{TP}hefðu komist
John knew not how there had come

svona margir í mark]]]
so many in goal

(Rögnvaldsson and Thráinsson 1990:31)

Standard analyses of Icelandic *Tað*-insertion assume that this element is base-generated in the topic position (e.g., Thráinsson 1979, Zaenen 1980, Rögnvaldsson and Thráinsson 1990).²¹ However, the semantics of an expletive seem to argue against a "topic" interpretation of SPEC CP,

²⁰I use /T/ to represent a voiceless, interdental fricative.

²¹Vikner (1991) suggests that the expletive is in an A, and not A', position, permitting the *wh*-element to move over it without violating minimality. Following Rizzi (1991), he assumes that an A-position is one which is assigned a thematic role, or is the specifier of an X⁰ with ϕ -features. SPEC CP counts as an A-position when V+I raises to C, as the features in the complex head agree with the NP in its SPEC. In (48), the topic in SPEC CP has no thematic role, and does not agree with the features in C, making the SPEC an A'-position.

suggesting that this position is not the same as that which occurs with V2. Perhaps this type of CP is able to be selected by the [+wh] C. These proposals are rather tentative, and will not be explored further in this dissertation.

2.5 The Inflected Infinitive in Portuguese and Italian

2.5.1 The [+finite] feature in C

In this section, I discuss the "inflected infinitive" found in Portuguese (Raposo 1987) and Italian (Rizzi 1982, Ch.3). This phenomenon is characterized by a Case-marked subject in the infinitival clause, and, in Portuguese, by inflection on the infinitival verb.²² Shown in (49) is an example from Portuguese:

(49) Portuguese

- a. o Manel pensa [_{CP}ter-em_i [_{NP}os amigos t_i levado
the Manel thinks to.have-Agr his friends taken
o livro]
the book

'Manel thinks that his friends have taken the book'
(Raposo 1987:98)

²²I use the term "inflected infinitive" for Italian as well, although the infinitival verb shows no overt agreement.

b. eu lamento [_{CP}ter-em_i [_{IP}os deputados t_i trabalhado
 I regret to.have-Agr the deputies worked
 pouco]
 little

'I regret that the deputies have worked little'
 (Raposo 1987:87)

Raposo (1987) claims that the [-tense] Infl of infinitival constructions can assign nominative Case to its SPEC if it is itself Case-marked. He proposes that in (49), Infl is assigned Case by raising to C. The matrix verb assigns nominative Case to CP, which percolates down to the Infl in C. It is, however, odd that the Case assigned to C is nominative Case, as verbs are normally associated with accusative Case.²³

²³Although I have discussed only examples of Case-marking related to C, Raposo demonstrates other ways in which Case may be assigned in Portuguese. Consider the following example of an inflected infinitive in an extraposed subject clause:

(i) pro_i será difícil [_{CP}eles aprovar-em a proposta]_i
 be difficult they(Nom) to.approve-Agr the proposal
 'it will be difficult for them to approve the proposal'
 (Raposo 1987:86)

Raposo proposes that in (i), the extraposed clause is coindexed with a null expletive *pro* in the subject position of the matrix clause. The Nominative Case assigned to *pro* is transmitted via CHAIN formation to the coindexed extraposed clause. This Case percolates down to the lower Infl, i.e., the head of the extraposed clause.

In the following example, Infl is assigned Case by the preposition *de* 'of':

(ii) nós lamentamos [_{CP}o facto de [_{CP}eles ter-em recebido pouco
 we regret the fact of they to.have-Agr received little
 dinheiro]
 money

'we regret the fact that they have received little money'
 (Raposo 1987:97)

In (iii), the matrix verb assigns Case to Infl:

Infinitival subjects with nominative Case have also been observed in Italian, but without agreement on the infinitival verb:²⁴

(50) Italian

suppongo [non esser la situazione suscettibile di
I.suppose not to.be the situation susceptible of

ulteriori miglioramenti
further improvements

'I suppose the situation not to be susceptible to
further improvements'

(Rizzi 1982, Ch.3:79)

Rizzi proposes that in (50), Aux raises to Comp, and assigns nominative Case to the NP in SPEC IP.

In both systems, C has a crucial role in the assignment of nominative Case to the subject in SPEC IP. According to Raposo (1987), the Case assigned to CP by the verb percolates to Infl when Infl raises to C. In Rizzi's system, Aux in Comp can assign nominative Case to the subject under government.

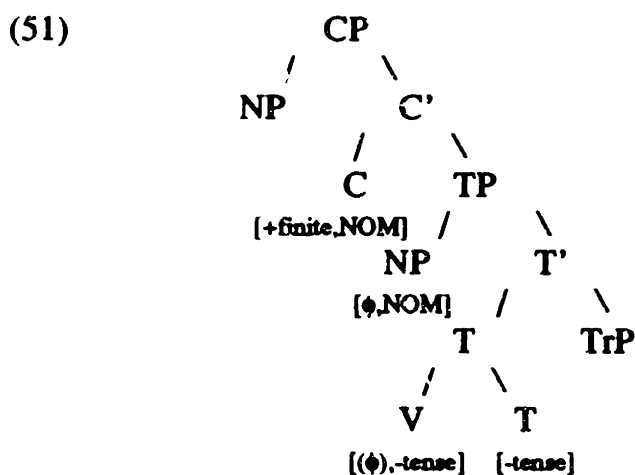
(iii) nós lamentamos [eles ter-em recebido pouco dinheiro]
we regret they to.have-Agr received little money
'we regret that they have received little money'

(Raposo 1987:96)

²⁴Rizzi (1982, Ch.3) claims that this construction is highly marked, and occurs in formal, literary situations. Case-assigning infinitives with *wh*-elements, which are not marked, will be discussed in section 3.6.4.1 below. I claim that these constructions are relative clauses.

I propose that nominative Case in these special cases is associated directly with C, and not the matrix verb or Aux. More specifically, C contains the feature [+finite] which, like [+tense], is associated with nominative Case. As discussed in section 2.4.1 above, the [_{CP}finite] CP is an extended projection of TP, with semantics related to the notion of tense. This is similar to Raposo's analysis, where the C in inflected infinitival constructions dominates an abstract TENSE operator, which is different from the [+tense] feature of Infl. Raposo claims that when this operator is present, the CP forms a semantically tensed domain, with a time frame independent of (although not necessarily distinct from) the time frame of the matrix clause.²⁹

The structure I propose for infinitival clauses with Case/agreement is shown in (51):



²⁹Ortiz de Urbina (1989) discusses Case-marking in tenseless complements in Basque. He also assumes exceptional Case-marking by an element in C, although in his system, this element is unrelated to tense.

C has both [+finite] and Case features. Since feature checking occurs in a SPEC-head relation, the NP in SPEC TP must raise to SPEC CP (either at s-structure or LF).

We must still account for the difference between Portuguese and Italian with respect to agreement. In Portuguese, the infinitive is inflected for the subject, while in Italian, it is not. I propose that this is the result of parametric variation in the morphological properties of the verb. In a language such as Italian, when a verb has the feature [-tense], it lacks a set of ϕ -features (i.e., those of the subject). On the other hand, in Portuguese, the verb has both sets of features. However, even in Portuguese, which has agreement with [-tense], there are no ϕ -features corresponding to PRO:

(52) Portuguese

será difícil [PRO aprovar a proposta]
 be difficult approve the proposal
 'it will be difficult to approve the proposal'
 (Raposo 1987:86)

It is difficult to show that there *cannot* be agreement with PRO, as (53), with a null subject and agreement, is grammatical. Although Raposo interprets the empty element in this case as *pro*, and not PRO, he does not have theory-external evidence for this interpretation.

(53) Portuguese

será difícil [pro aprovar-em a proposata]
 be difficult approve-Agr the proposal

'it will be difficult to approve the proposal'
(Raposo 1987:93)

One could argue that (52) and (53) both involve PRO, and that in (52), Portuguese has not chosen the option to have two sets of ϕ -features, whereas in (53), it has chosen that option. On the other hand, the examples could both involve *pro*, with the same agreement options chosen.²⁶

2.5.2 [+wh] and Inflected Infinitives

Raposo (1987) observes that the inflected infinitive does not occur when there is a *wh*-element or null operator in an embedded SPEC CP:

(54) Portuguese

a. *eu não sei [quem [eles convidar-em para o jantar]]
I not know who they invite-Agr for the dinner
'I don't know who they invited for dinner'

b. *esses relógios são difíceis de [Op_i arranjar-mos t_i]
those watches are difficult repair-Agr
'those watches are difficult to repair'

(Raposo 1987:103-4)

This restriction on the co-occurrence of [+wh] and [+finite] CPs is the same as that found with [+wh] and [-finite] in V2 and VSO languages (see

²⁶ Up to now, we have been assuming that languages universally have subject and object agreement, even if they are phonologically null. However, given the possibility of language variation in the presence of agreement with [-tense], we may question whether languages may also choose to not have other kinds of agreement, e.g., object agreement.

section 2.4 above). This is another example of the CP Feature Co-occurrence Constraint shown in (45) above.

The difference between languages with and without inflected infinitives lies in whether or not C in the language has the feature [+finite]. This is not a common feature, as languages which have inflected infinitives are highly marked. The present discussion has centered on accusative languages. In the next chapter, I examine infinitival constructions in ergative languages, where this phenomenon appears to be more widespread.

This chapter explored several topics relevant to accusative languages: the content of SPEC TP and s-structure, the EPP, raising, V2 phenomenon, verb-initial languages, and inflected infinitives. In the next chapter, I investigate the consequences of my theory for ergative languages.

CHAPTER 3. EVIDENCE FOR SYNTACTIC ERGATIVITY

The basic criterion for defining an ergative language is the grouping together of the intransitive subject and object with respect to Case and agreement. Since Case and agreement are morphological properties, this criterion alone could be an indication of "morphological ergativity," i.e., ergativity restricted to the morphological level at which Case and agreement are realized.

The status of ergativity as a syntactic phenomenon has been the source of much discussion in the literature (e.g., Anderson 1976b, Comrie 1978, Dixon 1979, Levin 1983, Marantz 1984). It is generally assumed that syntactically ergative languages are rare, perhaps limited to a few languages such as Dyirbal. Evidence for syntactic ergativity involves phenomena other than Case and agreement which treat the intransitive subject and object as a natural class, excluding the transitive subject. The fact that all languages exhibit certain semantic and syntactic properties which group together the transitive and intransitive subjects (see Chapter 4) has led to the assumption that in most languages, ergativity does not extend beyond morphology to the syntax.

In the preceding chapters, I presented a syntactic explanation for the distinction between accusative and ergative languages. I proposed an Ergative

Parameter based on the Case feature requirements of T and Tr. Although Case (and agreement) are realizations of morphological properties, the operation *Move* α , which provides the mechanism for feature checking, is syntactic.

In this chapter, I present evidence for my analysis of syntactic ergativity. In sections 3.1 and 3.2, I discuss verbal agreement and scope facts, which provide evidence for the two movement paths resulting from the Ergative Parameter proposed in section 1.2. In section 3.3, I investigate non-finite clauses in Mayan, where only intransitive infinitives are permitted. Section 3.4 examines Case and agreement in non-finite clauses, the well-known "inflected infinitive" found in Portuguese and Italian. I extend my analysis of inflected infinitives from section 2.5 to ergative languages such as Lezgian, Inuit and Abkhaz. Section 3.5 contains a comment on deverbal nominals, which are commonly found in both accusative and ergative languages to express non-finite events. In section 3.6, I discuss the prominence of SPEC TP in relative clause constructions in both accusative and ergative languages.

3.1 Verbal Agreement

Bittner (1991b) observes that verbal agreement with accusative and ergative arguments appears closer to the verb than Nominative agreement. She suggests that this pattern is derived by the order of head incorporation, where functional categories which are closer to the verb structurally, show agreement closer to the verb morphologically. Shown in (1) and (2) are examples from accusative languages which exhibit both subject and object (i.e., Nominative and accusative) agreement. In these Bantu and Muskogean examples, the accusative (object) agreement is closer to the verb than Nominative (subject) agreement.

(1) Bantu

a. Chi-Mwi:ni

ni-m-pele Ja:ma kujá
1sN-3sA-gave Jama food
'I gave Jama food'

(Marantz 1984:240; in Kimenyi 1980)

b. Haya

a-ka-bi-n' ómwáana
3sN-Past-3pA-give child
'he gave them to the child'

(Hyman and Duranti 1982:221)

(2) Muskogean

a. Chickasaw

has-sa-shoo-tok
2pN-1sA-hug-past
'you all hugged me'

(Payne 1982:33)

b. Choctaw

is-sa-sso-h
2sN-1sA-hit-verb.suff
'you hit me'

(Ulrich 1986:237)

In the following ergative languages, ergative (subject) agreement is closer to the verb than Nominative (object) agreement.

(3) Mayan

a. Tzutujil

n-e7-a-kamsa-aj
incomp-3pN-2sE-kill-suff
'you kill them'

(Dayley 1985:83)

b. Jacalteco

ch-in ha-mak an
asp-1sN 2sE-hit 1p
'you hit me'

(Craig 1977:70)

(4) Abkhaz

narà š°aré š°-aa-bò-yt'
we you.pl 2pN-1pE-see-fin
'we see you'

(Howitt 1979:104)

(5) Inuktitut

Jaani-up taku-j-a-anga
John-Erg see-Part-Tr-3sE.1sN
'John sees me'

In both accusative and ergative languages, the agreement associated with Tr (i.e., accusative or ergative) is closer to the verb than the Nominative agreement of T. By the Head Movement Constraint (Travis 1984), the verb adjoins first to Tr, and then to T.¹ At each functional node, the verb checks its agreement and tense/transitivity features. I propose the following Principle of Feature Checking to account for the relation between the syntactic tree and verbal morphology.² According to this principle, the order of agreement feature reflects the hierarchy of functional categories in syntactic structure.³

(6) *Principle of Agreement Feature Checking*

Agreement features which are closer to the verb are checked first.

The verbal morphology of accusative and ergative languages reflects the two movement paths proposed for the two types of languages. When the

¹More specifically, the verb adjoins to Tr, and then the [V-Tr] complex raises and adjoins to T, resulting in the complex [V-Tr-T].

²This principle applies only to agreement features, and not to the features [\pm tense] or [\pm trans].

³See also Fabb (1984), Travis (1984) and Baker (1988) for discussion on the relation between syntactic movement and the morphological structure of words.

verb raises to Tr and then T, it checks the agreement features of different NPs in SPEC TrP and SPEC TP in the two language types. In an accusative language, the verb first checks the features of the object in SPEC TrP, and then the features of the subject in SPEC TP, resulting in object agreement appearing closest to the verb. In an ergative language, the features of the subject in SPEC TrP are checked first, and thus appear closest to the verb.⁴

Up to now, I have dealt only with cases where the morphology clearly reflects syntactic structure. In the following examples from Inuktitut, the portmanteau morpheme for subject and object agreement gives no indication of the syntactic structure which derives the morphological form:

(7) Inuktitut

- a. taku-v-a-ra
see-Ind-Tr-1sE.3sN
'I see him/her/it'
- b. taku-v-a-vut
see-Ind-Tr-1pE.3sN
'we see him/her/it'

However, other person and number morphemes are more easily recognizable.

In the following examples, we can identify the second person singular

Nominative morpheme as *(t)it*:

⁴In this system of feature checking, morphemes are affixed randomly to the verb in the lexicon (see Fabb (1984) for a similar idea). The Head Movement Constraint restricts verb raising to the order Tr and T, and the Principle of Agreement Feature Checking establishes that the hierarchy of functional projections matches the linear order of affixes on the verb.

(8) Inuktitut

- a. malik-p-a-git
follow-Ind-Tr-1sE.2sN
'I follow you'
- b. malik-p-a-atit
follow-Ind-Tr-3sE.2sN
'he/she/it follows you'

Noyer (1992) proposes that affixes and syntactic atoms (X^0 s) are isomorphic only in the unmarked case, and develops a theory to account for deviations in the mapping from the output of syntax to the input to phonological form. Processes which alter strings of X^0 s in the mapping procedure include *fusion* (illustrated in (7) above), and *splitting*, of morphological elements.

3.2 The Scope of the Nominative Argument

In this section, I discuss scope facts which suggest that in both accusative and ergative languages, the Nominative argument is structurally higher than the accusative/ergative one. The following discussion is based mostly on work by Bittner (1987,1988,1990,in prep.)

The central claim made by Bittner is that a Nominative argument has default wide scope relative to any sentential operator. Although languages may exhibit ambiguities in scope interpretation, if only one reading is

possible, it will be the one where the Nominative argument takes wide scope.

Consider the example from West Greenlandic Inuit in (9a). The semantic interpretation, shown in (9b), demonstrates that the Nominative object has scope over the modal verb and the subject:

(9) West Greenlandic

a. atuartut ilaat ikiur-tariaqar-
of.students one.of.them(Nom) help- must-

p- a- ra
Ind-Tr-1sE.3sN

'I must help one of the students'

b. for some x [x is one of the students & it is necessary
that (I help x)]

(Bittner 1987:205)

The same scope facts are observed in Basque. The semantic representation in (10b) is Bittner's interpretation of Levin's (1983) example (10a).

(10) Basque

a. ez dut ikusi ikaslea
Neg 3sN.have.1sE see student (Nom)
'I didn't see a/the student'

(Levin, 1983:316)

b. x is a student & not (I saw x)

(Bittner, 1987:227)

Bittner demonstrates that in Polish, an accusative language, it is the Nominative subject which obligatorily takes wide scope with respect to sentential operators. The example in (11a) has the interpretation given in (11b):

(11) Polish

- a. *moi dwaj koledzy zawsze beda dobrymi kucharzami*
 my two friends always will.be good cooks
 'my two friends will always be good cooks'
- b. *Mietek and Piotr, who are my friends now, will always*
 be good cooks

(Bittner, 1987:228)

Similar facts have been observed in Japanese, where a Nominative quantifier unambiguously has wide scope over an accusative one (in the canonical word order). The following example, taken from Takizawa (1987), is attributed to Kuroda (1970) and Hoji (1985):

(12) Japanese

daremo-ga dareka-o aisitei-ru
everyone-Nom someone-Acc love-Pres
'everyone loves someone'

(Takezawa 1987:47)

Bittner (1988) proposes that the default scope interpretation of a clause is identical to its s-structure representation, and that alternative readings result from LF movement. Her analysis, however, would not work within my

system, since I assume that object raising to SPEC TP occurs at LF. At s-structure, the object remains in a position lower than both the subject and any sentential operators.

Although I do not have an alternative proposal, I will use the data presented above as evidence that at some level of representation, the subject in an accusative language, and the object in an ergative language, are in SPEC TP.

3.3 The Absence of Transitive Infinitives in Mayan

The system of Nested Paths for ergative languages prohibits the usual type of uninflected infinitive with a transitive verb. In these languages, the subject raises to SPEC TrP, and the object, to SPEC TP. A convergent derivation requires feature matching between the subject and Tr, and the object and T. In an infinitival clause, the [-tense] T lacks Case features. The raising of a lexical object to SPEC TP will result in an illegitimate derivation, as the Case features of the object will not be checked. The only NP which is permitted in SPEC TP is PRO, which does not have Case features. A transitive infinitive with a PRO subject will be ruled out, since the ergative Case features of [+trans] Tr will not be checked.

Intransitive infinitives, on the other hand, result in convergent derivations, since the PRO subject, which has no Case features, raises to SPEC TP, whose [-tense] T head also lacks Case features.

In this section, I discuss infinitival clauses in the Mayan languages, which clearly exhibit a transitive/intransitive contrast with respect to infinitives. Only intransitive infinitives appear as complements to control verbs, and as purpose clauses. With transitive complements, a gerundive nominal is used.⁵

Craig (1977) observes that in Jacaltec, control is restricted to subjects of intransitive verbs in both object and subject control constructions. The following examples are of object control in an intransitive infinitival clause, where the verb is uninflected for person, and is suffixed with the irrealis suffix *-oj*.

(13) Jacaltec

- a. xc-ach w-iptze munlah-*oj*
asp-2sN 1sE-force to work-Irr
'I forced you to work'

(Craig 1977:312)

- b. ch-oN s-chej ya' way-*oj*
asp-1pN 3sE-order cl/he to sleep-Irr
'he orders us to sleep'

(Craig 1977:317)

⁵In other ergative languages such as Inuit, Abkhaz and Lezgian, both transitive and intransitive non-finite clauses are expressed in the same way, either with an "inflected infinitive" (see section 3.4 below), or a deverbal nominal (section 3.5).

When the embedded verb is transitive, it must appear in an aspectless embedded clause, marked with verbal agreement:

(14) Jacaltec

a. x-ø-(y)-iptze naj ix hin s-col-o'
asp-3sN-3sE-force cl/he cl/her 1sN 3sE-help-fut
'he forced her to help me'

b. ch-oN s-chej ya' hach cu-tzaba an
asp-1pN 3sE-order cl/he 2sN 1pE-grab 1p
'he orders us to grab you'

(Craig 1977:321)

This form is also used with intransitive complements:

(15) Jacaltec

xc-ach w-iptze ha-munlayi
Asp-2sN 1sE-force 2sE-work
'I forced you to work'

(Craig 1977:312)

In these structures, both transitive and intransitive subjects have ergative Case, and the object, Nominative Case. Although it has been claimed that such Case marking indicates split ergativity within Mayan (e.g., Larsen and Norman 1980, England 1983), this type of split is unique in that the Case on the subject is ergative, and not Nominative. In an accusative Case-marking system, subjects have Nominative Case. I propose that these constructions are not sentential, but nominal (gerunds). Ergative Case appears here in its nominal (genitive) use, as in the marking of the possessor in possessive

constructions:

(16) Jacaltec

ha-mam
2sE-father
'your father'

(Craig 1977:106)

The clause in (18) can be roughly glossed as *I forced you your working*.

Transitive infinitives are also prohibited in subject control constructions:

(17) Jacaltec

- a. choche naj caNalw-oj
like cl/he dance-Irr
'he likes to dance'
- b. *ch-in to col-o' hach
asp-1sN go help-Fut 2sN
'I go to help you'

(Craig 1977:320)

In Tzutujil, infinitival complements occur with verbs like *maj* 'begin'.

When the complement of such verbs is intransitive, the infinitival form may be used:

(18) Tzutujil

x-ø-qaa-maj xa7iim
Asp-3sN-1pE-begin to.eat
'we began to eat'

(Dayley 1985:393)

With a transitive complement, a gerund must be used. Unlike Jacaltec,

however, it appears that gerunds are intransitive in Tzutujil. In the following example, a transitive complement is put into the passive:

(19) Tzutujil

a. x-ø-qaa-maj r-chojy-iik (ja chee7)
Asp-3sN-1pE-begin 3sE-cut-Pass the tree)
'we began its-being-cut (the tree)'

b. x-ø-qaa-maj ki-ch'ejy-ik
Asp-3sN-1pE-begin 3pE-hit-Pass
'we began their being hit'

(Dayley 1985:393)

Dayley (1985) observes that an overt patient noun may be used only when it is indefinite or referentially non-specific, suggesting that the noun is incorporated:⁶

(20) Tzutujil

x-ø-qaa-maj choyoj chee7
Asp-3sN-1pE-begin to.cut trees
'we began to cut trees'

(Dayley 1985:393)

⁶Craig (1977:244) discusses object incorporated infinitival in Jacalteco:

(i) loko' ixim Xwu txoNbal
to.buy corn I.do market
'buying corn is what I am doing in the market'

She states that in such constructions, the verb is transitive, marked by the transitive irrealis suffix *o'/a'*. It is immediately followed by a generic noun with no noun classifier. Although the embedded verb has transitive markers, she does not consider the construction to be transitive, since she makes the following remark: "There is no form of transitive infinitival complement sentence in the language." Suppose that in (i), the verb is marked with the transitive suffix *o'* before incorporation. After the noun incorporates, it no longer needs structural Case, making the clause intransitive in the sense that only one argument requires Case checking.

Infinitival constructions are also used as purpose clauses in Tzutujil. As predicted, only intransitive adverbial purpose clauses are permitted. In (21a-b), the verb is unergative, in (21c), it is passive, and (21d) consists of an incorporated noun:

(21) Tzutujil

- a. ja wxaayiil b'enaq pa waraam
 the my.wife 3sN.has.gone to sleep
 'my wife has gone to sleep'
- b. inin chaaq'a7 xinpit pa ya7aaneem
 I at.night 1sN.came to water
 'I came to water at night'
- c. xatb'e pa ch'ejyik
 2sN.went to hit.Pass
 'you went to be hit'
- d. ja nata7 b'enaq pa tikoj chiij
 the my.father 3sN.has.gone to plant cotton
 'my father has gone to plant cotton'

(Dayley 1985:381)

In Mam, the patient of a transitive infinitive occurs as an oblique NP introduced by the relational noun *-ee*:

(22) Mam

- a. n-chi ku7 teen xjaal belaara-l t-e jun weech
 Prog-3pN dir be person watch-Inf 3s-RN/pat one fox
 'the people began to watch the fox'
- b. o chi e7x xjaal laq'oo-l t-ee
 Past 3pN go person buy-Inf 3s-RN/pat
 'the people went to buy it'

(England 1983:299-300)

Now consider the following example of object control, where the patient of the embedded clause is not expressed as an oblique phrase:

(23) Mam

ma tz'-ok t-lajo-7n Kyel tx'eema-1 sii7
Rec 3sN-dir 3sE-obligate-ds Miguel cut-Inf wood
'Miguel obliged him to cut wood'

(England 1983:300)

England states that the relational noun is omitted in (19) because it is clear that *sii7* 'wood' is an expected patient of the verb *tx'eema* 'cut'. If the patient in these cases is always indefinite and non-referential, then we might interpret it to be incorporated, as in the other Mayan languages discussed above.

In the Mayan languages, infinitival complement clauses are permitted only when the clause is intransitive. The intransitivity of the clause may be derived by passivization, antipassivization, or object incorporation. Transitive complements require the use of gerunds or some other verbal form.

3.4 The Inflected Infinitive in Ergative Languages

Many ergative languages (e.g., Lezgian, Inuit, Abkhaz, Dyirbal) have transitive non-finite clauses which, unlike the intransitive infinitives in Mayan, appear with Case-marked lexical arguments and/or agreement. I claim that

such clauses are the ergative counterpart to the "inflected infinitive" found in accusative languages such as Portuguese and Italian. In my analysis of inflected infinitives in section 2.5 above, I proposed that C contains a [+finite] feature and Nominative Case features. The Nominative (non-PRO) argument which cannot check its Case features with [-tense] T raises to SPEC CP (at s-structure or LF) and checks its features with those of C.⁷ In this section, I discuss this analysis for inflected infinitives in ergative languages.

When C has the feature [+finite], a lexical NP in SPEC TP can check its Case features with those of C. In accusative languages, it is the infinitival subject (transitive and intransitive) which is exceptionally Case-marked, since this is the NP which raises to SPEC TP. In an ergative language, the intransitive subject and object raise to SPEC TP and are exceptionally Case-marked. This implies that transitive infinitives are permitted in ergative languages when exceptional Case-marking is available. In the following subsections, I discuss four ergative languages in which transitive, inflected non-finite clause are found: Lezgian (Nakho-Daghestanian), Abkhaz, Inuit and Dyirbal.

⁷I call this "exceptional Case-marking" by C.

3.4.1 Lezgian

Consider the examples in (24) below. In (24a-b), the non-finite verb is intransitive, and there is Nominative Case on the subject. In (24c), the verb is transitive, and both ergative and Nominative Case appear in the non-finite clause:

(24) Lezgian

- a. didedi-z [ktab stold-a xa-na] k'an-zawa
mother-Dat book(Nom) table-Iness be-Nonfin want-Pres
'Mother wants the book to be on the table'
- b. [am taxsirly tusir-di] askara ja
she(Nom) guilty be.Neg-Nfin clear be
'it is clear that she is guilty'
- c. didedi-z [gagadi ktab qacu-na] k'an-zawa
mother-Dat boy(Erg) book(Nom) buy-Nfin want-Pres
'Mother wants the boy to buy a book'

(Haspelmath, p.c.)

The Case features of [+finite] C are checked with those of the argument which was in SPEC TP, i.e., the subject in the intransitive (24a-b), and the object in the transitive (24c). The transitive subject is not affected by C, as it checks its features with those of Tr.

3.4.2 Abkhaz

Exceptional Case-marking is also observed in Abkhaz:

(25) Abkhaz

s-y°èza de-z-ba-r+c à-kalak' [a-]ax'
my(II)-friend 3_sN(I)-1_sE(III)-see-Nfin Art-town [it-]to

s-co-yt'
1_sN-go-Fin

'I am going to town to see my friend'
[Lit.: 'my friend him-I-see town it-to I go']
(Hewitt 1979:42)

Hewitt (1979) claims that this verb form is not the masdar (infinitive), but the non-finite future, one of many "non-finite tense" forms used in subordinate clauses. There is a non-finite form corresponding to each finite tense form, e.g., present, aorist, future, perfect, etc. However, the morphological similarity between this verb form and the masdar (i.e., the suffix *-r*) suggests that it is in fact the masdar form with ergative and Nominative agreement. This agreement reflects the Case of Tr (ergative), and exceptional Case from C (Nominative).

3.4.3 Inuit

Non-finite *-llu* clauses in Inuit also involve exceptional Case-marking

by C.⁸ Consider the examples from West Greenlandic in (26). The verb in the embedded clause is intransitive in (26a), and transitive in (26b):

(26) West Greenlandic

- a. [ilinniartitsisug qunguju-llu-ni] miqqat
 teacher (Nom) smile-llu-4sN children (Nom)

qiviar-p-a-i
 turn.towards-Ind-Tr-3sE.3pN

'the teacher_i smiling, (he_i) turned towards the children'

- b. [Juuna-p miqqat taku-llu-git] qungujup-
 Juuna-Erg children (Nom) see-llu-3pN smile-

p-u-q
 Ind-Intr-3sN

'Juuna_i seeing the children, (he_i) smiled'
 (Bittner, p.c.)

As in Lezgian and Abkhaz, there is both ergative and Nominative Case-marking in the non-finite clause. The ergative Case is associated with Tr, and the Nominative Case, with C.⁹

⁸The *-llu* morpheme indicates "contemporative" mood (Fortescue 1984).

⁹Suppose the *-llu* clauses were analyzed as nominals or gerunds, rather than verbal clauses. Unlike gerundive constructions in other ergative languages such as Mayan and Abkhaz, the subject of the nominal in West Greenlandic would have nominative Case. Moreover, (26b) would be analyzed as a doubly possessed nominal, interpreted as *Juuna's [children's seeing]*. However, we do not find possessive agreement on the verbal element, such as that found with *-niq* nominals (gerunds):

(i) anguti-p tuqun-nir-a
 man-erg kill-Nom-his
 'the killing of the man'

(Fortescue 1984:46)

In addition to Case, there is agreement in the embedded clause. Agreement, however, is only with the Nominative argument. In these clauses, ergative agreement is somehow defective. It is not required for interpretation, however, as *-llu* constructions always involve obligatory coreference between the matrix and embedded subjects.¹⁰ In (22b), even without the overt NP *Juunap*, the third singular ergative features of the embedded subject would be recoverable from the features of the matrix subject. The Nominative agreement features of the embedded intransitive subject in (22a) are also recoverable, but those of the object in (22b) are not. Nominative agreement is always realized overtly, whether or not it is necessary for interpretation.

The *-llu* clause also occurs as the complement of certain verbs, e.g., *niriursui*- 'promise':

(27) West Greenlandic

- a. [aggi-ssa-llu-tit] niriursui-v-u-tit
 come-Fut-Nfin-2sN promise-Ind-Intr-2sN
 'you promised to come'
- b. [miiqqaat ikiu-ssa-llu-git] niriursui-v-u-tit
 children(Nom) help-Fut-Nfin-3pN promise-Ind-Intr-2sN
 'you promised to help the children'
 (Bittner, in prep.:53)

Therefore, the analysis proposed here involving ECM appears more promising.

¹⁰This is indicated by third person reflexive agreement. If the antecedent were first or second person, the corresponding first or second person agreement would appear on the verb (see (27)), as reflexive agreement is available only with third person.

In these examples as well, there is coreference between the higher and lower subjects.¹¹ However, they do not involve control of PRO, as PRO is not permitted in SPEC TP, a Case position. I claim that these examples are instances of obligatory *pro* binding.^{12,13}

3.4.4 Dyirbal

In this section, I discuss three constructions in Dyirbal which involve non-finite clauses: control constructions, topic chains and purposive clauses. I assume that these constructions involve control of *pro* in SPEC TP. That the null element is *pro* and not PRO is illustrated by the following example, in

¹¹Maria Bittner (p.c.) suggests that lexical NPs are permitted as subjects only in adjunct clauses, since their appearance in a complement clause would result in a Condition C violation.

¹²Obligatory binding of *pro* (or "controlled *pro*") in finite clauses has been reported for various accusative languages, e.g., Spanish (Suñer 1984), Modern Persian (Hashemipour 1988) and Saramaccan (Byrne 1985). See also Borer (1989).

¹³Obligatory binding by an *object* in Inuktitut involves complements in the participial, and not contemporative *-llu*, mood:

(i) nakursa-kkut naapip-p-a-vut umiar-tik
 doctor&family meet-Ind-Tr-1pE.3pN boat.their(refl)

amu-li-r-aat
 pull.up-begin-Part-3pE.3sN

'we came across the [doctor and his family]_i (they_i) pulling
 their (skin) boat up'

(Fortescue 1984:38)

which an overt Case-marked element *bayi* 'there = the (one)' appears in the embedded, non-finite clause:

(28) Dyirbal

bayi yara walmanyu [bayi bagun
there (Nom) man (Nom) get up-Pres/Past there (Nom) there (Dat)

dyugumbilgu balgalngaygu]
woman (Dat) hit-AP-Purp

'the man got up to (he) hit the woman'

(Cooreman 1988:729)

It is not clear whether control clauses in Dyirbal involve complement clauses, as in English, or coordination with identity of arguments, as in topic chain or purposive constructions. Dixon (1991) claims that Dyirbal does not have complement structures, only clause linking and relative clauses.

Clauses may be linked to a matrix clause only if the two share a Nominative argument, i.e., an intransitive subject or object. Consider the following control construction:

(29) Dyirbal

balan yibi₁ baNgul yaraNgu Nanban [pro₁ yanu-li]
f (Nom) woman (Nom) m-Erg man-Erg ask go-Purp
'the man asked the woman₁ [pro₁ to go]'

(Dixon 1991:44)

In (29), the Nominative object of the matrix clause, *yibi* 'woman', controls the subject *pro* of the intransitive infinitive.

When the controlled argument is the subject of a transitive verb (i.e., is ergative), the verb must be put into the antipassive form:

(30) Dyirbal

naja bayi yara₁ Nanba-n [pro₁ wugal-Na-nyu
I (Nom) there.m (Nom) man ask-Past give-AP-Past

ba-gu-m jigarrin-gu ba-Nu-n yibi-Nu]
there-Dat-m cigarette-Dat there-Gen-f woman-Gen

'I asked the man₁ [pro₁ to give the cigarette to the woman]'

(Dixon 1991:44-45)

Dyirbal is exceptional in permitting control of an object *pro*:

(31) Dyirbal

a. Nad'a bayi yara₁ giga-n
I (Nom) there (Nom) -m man (Nom) tell-Past

[pro₁ gubiNgu mawa-li]
doctor-Erg examine-Purp

'I told the man₁ that the doctor examine pro₁'
(Comrie 1981:112)

b. bay-i yara₁ ba-nggu-n yibi-nggu
there (Nom) -m man (Nom) there-Erg-f woman-Erg

yajijarra-n [pro₁ ba-nggu-l gubi-ggu baga-li]
threaten-Past there-Erg-m shaman-Erg spear-Purp

'the woman threatened the man₁ that the shaman would spear pro₁'

(Dixon 1991:46)

In (31a-b), the *pro* object raises to the embedded SPEC TP at s-structure in

order to be controlled by the matrix object.¹⁴

Dyirbal has been characterized as a rare example of a syntactically ergative language (e.g, Levin 1983, Marantz 1984), as it exhibits properties, such as control of object, not found in other ergative languages. I propose that what differentiates Dyirbal from ergative languages such as Inuit and Mayan is that it is subject to the EPP (see section 2.2 above). This would explain why we find control of objects in this language. It also implies that intransitive subjects must raise to SPEC TP at s-structure.

Further evidence for overt object raising in Dyirbal comes from the OSV order in transitive clauses. Although word order is relatively free (compare (31a) and (31b)), it is claimed that OSV is the "normal order" (Dixon 1979).¹⁵

Topic chains involve a sequence of clauses in which a Nominative argument of one clause is coreferenced with a Nominative argument in another (Dixon 1972). In (32a), the object in the first clause is the same as the intransitive subject *pro* in the second. In (32b), the intransitive subject in the first clause is identified with the object *pro* in the second.

¹⁴See section 4.3.4 for my position on control and binding.

¹⁵Evidence from word order, however, is admittedly weak, as the OSV order may involve object preposing or scrambling.

(32) Dyirbal

- a. bayi yaṛa_i baŋgun dugumbiṛu balga-n [pro_i
m(Nom) man(Nom) f-Erg woman-Erg hit-Past

baniṛu]
come.here

'woman hit man_i and pro_i came here'

- b. bayi yaṛa_i baniṛu [pro_i baŋgun dugumbiṛu
m(Nom) man(Nom) come.here f-Erg woman-Erg
balga-n]
hit-Past

'man_i came here and woman hit pro_i'

(Dixon 1972:130)

In (33), the transitive subject in the embedded clause becomes a derived intransitive subject with Nominative Case by antipassivizing the verb:

(33) Dyirbal

bayi yaṛa_i baniṛu [baḡun dugumbilḡu pro_i
m(Nom) man(Nom) come.here f-Dat woman-Dat

balḡalNa-Nu]
hit-AP

'man came here and pro_i hit woman'

(Dixon 1972:130)

Another type of clause linkage involves the purposive construction, where the first event occurs as a necessary preliminary to the second, or the implicated action in the second clause is a natural consequence of the first (Dixon 1972:68). The verb in the second clause appears with the purposive

inflection *-i* or *-gu*, depending on the conjugation of the verb. As with the topic chains discussed above, a Nominative argument in a purposive clause is coreferenced with another Nominative NP in the matrix clause. In (34a), the two arguments are an intransitive subject and an object, and in (34b), two objects.¹⁶

(34) Dyirbal

- a. bayi yaɾa₁ walmaɾu [pro₁ wayɾki-li]
 m(Nom) man(Nom) get.up go.uphill-Purp
 'the man₁ got up pro₁ to go uphill'
- b. balam miraɾ₁ baŋgul yaɾaŋgu dimbaɾu [pro₁ Ninda
 m(Nom) bean m-Erg man-Erg bring you(Nom)
 babi-li]
 scrape-Purp
 'man brought beans₁ so that you should scrape pro₁'
 (Dixon 1972:68)

3.5 Deverbal Nominals

The use of deverbal nominals (i.e., gerunds and nominalizations) to express non-finite events is common in both accusative and ergative languages. In the Mayan languages, where there is no exceptional Case-

¹⁶The pronominal subject *Ninda* 'you' in the embedded clause is marked with Nominative Case rather than ergative Case because Dyirbal exhibits split ergative Case marking dependent on the pronominal/full NP distinction. Pronouns exhibit an accusative Case-marking pattern, but are syntactically ergative. Thus *Ninda* 'you' in (34b), although marked Nominative, behaves like an ergative argument.

marking, gerunds are used to express transitive non-finite events (see section 3.3 above). However, gerunds are not restricted to transitive clauses, and may be used for intransitive clauses as well.

In Abkhaz, gerundive nominals are represented by the *masdar*. In the citation *masdar* form, the verb appears with the suffix *-ra* and the prefix *-a*. Nominative and ergative agreement never appear in the *masdar*; the only agreement is the possessive, which is also found with indirect objects. The example in (35a) is consists of an unergative *masdar* verb. The possessive agreement cross-references the intransitive subject. In (35b), the verb is passivized, shown by patient agreement, with the agent in an instrumental phrase:¹⁷

(35) Abkhaz

- a. larà 1-ca-rà
 she her (Gen)-go-Nfin¹⁸
 'her going'
- b. sarà sè-la be-ba-ra
 I me-by you (Gen)-see-Nfin
 'my seeing you' (Lit.: 'your seeing by me')
- (Hewitt 1979:112)

¹⁷Unlike Tzutujil, the passive infinitive does not have overt passive morphology. This is similar to passive nominals in English, where the passive morpheme is phonologically null (see Murasugi 1990):

(i) the destruct-Pass-Nom by the enemy

¹⁸What I gloss as *Gen(itive)* is the Case found with indirect objects and possessives. Hewitt (1979) refers to this as *Column II* agreement, as it appears in the second prefix position.

Shown in (36) are examples of the masdar used in purpose clauses:

(36) Abkhaz

- a. àamta a-ga-ra-[a-]zè a-š°q'è
time it (Gen)-waste-Nfin-[it-]for Art-book

s-à-px'o-yt'
1sN-3sG-read-Fin

'I am reading the book in order to waste time'

- b. s-y°èza ye-ba-ra-[a-]zè à-kalak'
me (Gen)-friend he (Gen)-see-Nfin-[it-]for Art-town

[a-]ax' s-co-yt'
[it-]to 1sN-go-Fin

'I am going to town to see my friend'

[Lit.: 'my friend his-seeing it-for the town it-to I go']

(Hewitt 1979:42-3)

In Inuit, gerunds have a special nominal morpheme, *-niq*, which nominalizes the verb. These gerunds behave like possessed nominals, with ergative agreement on the subject, and possessive agreement on the nominal:

(37) West Greenlandic

- a. piniartu-p tiriannia-mik aallaa-nnin-nir-a
hunter-Erg fox-Instr shoot-AP-Nom1-3sE.s
'the hunter's shooting of a/the fox'

(Fortescue 1984:213)

- b. tiriannia-p aalaa-niqar-nir-a piniartu-mit
fox-Erg shoot-Pass-Nom1-3sE.s hunter-Abl
'the fox's shooting by the hunter'

(Bittner, p.c.)

It appears that deverbal nominals are used universally to express non-finite events. In addition, a language may have infinitival constructions, with the option of exceptional Case-marking of the NP in SPEC TP by a [+finite] C. In English and Mayan, exceptional Case-marking is not available. Languages which do have exceptional Case-marking include the accusative languages Portuguese and Italian, and the ergative languages Lezgian, Abkhaz, Inuit and Dyirbal.

3.6 The Prominence of SPEC TP: Relative Clause Constructions

In the previous sections, I presented evidence from nonfinite clauses in ergative languages for my syntactic analysis of ergativity. I demonstrated that transitive infinitival clauses are not permitted in ergative languages unless there is ECM to the object in SPEC TP by the [+finite] feature of C. In this section, I provide further support for syntactic ergativity by investigating relative clause constructions in accusative and ergative languages.

3.6.1 Introduction

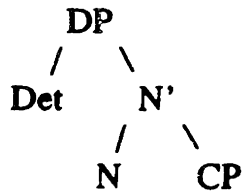
Shown in (38) are examples of subject and object relativization in English:

- (38) a. the boy [who saw the dog]
 b. the dog [which the boy saw]

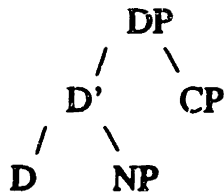
I will refer to *boy* and *dog* as the *relative head*, and the bracketed constituent as the CP of the relative clause.

Various proposals have been presented regarding the structure of relative clauses (see, among others, Chomsky 1965, 1973; Stockwell, Schachter and Partee 1973; Fukui and Speas 1986; Abney 1987; Browning 1987; Demirdache 1991; Law 1991). These proposals differ in where they assume the relative head to be. Some examples are shown in (39):

- (39) a. Stockwell, Schachter and Partee (1973)



- b. Abney (1987)



The exact structure of the relative clause is not of concern here, as what is crucial to the following discussion is the relation between the relative head and the CP, and the internal structure of the CP itself.

Relative clauses are assumed to involve predicate structure, with an "open position" created by operator movement (e.g., Chomsky 1980, 1981; Safir 1986; Browning 1987; Law 1991). In Williams' (1980) terms, a relative clause is a complex predicate containing a "predicate variable". The predicate variable cannot be replaced by a lexical NP, as the creation of a predicate structure requires a variable. Theories adopting the predication analysis differ in their assumptions regarding the method of coindexation between the relative head and the operator in SPEC CP, the motivation for movement to SPEC CP, and the nature of the operator itself.

Safir (1986), for example, claims that the relation is one of binding (i.e., "R-binding", a type of A-binding) between the operator and the relative head. He accounts for the movement of the operator by proposing a locality condition on R-binding, which states that a locally R-bound element is the structurally highest element in COMP.

Browning (1987) proposes that the relative head and the operator in SPEC CP are linked by an "agreement chain", mediated by C, the head of the relative clause. Movement of the operator to SPEC CP is required to set up the agreement chain, and license the predicate relation. Browning assumes that the null operator is actually the null pronominal, *pro*.

Law (1991) discusses the correspondence between the syntax and semantics of relative clauses. He assumes that the operator in SPEC CP is

the syntactic counterpart to the lambda-operator in the semantic representation. The operator raises to SPEC CP so that it can c-command the clause corresponding to the predicate over which it lambda-extracts.

I am not committed to a particular theory of relative clauses, but I do assume that the relative head and the element in SPEC CP are coindexed via predication. Moreover, adopting Demirdache's (1991) proposal that resumptive pronouns in relative clauses are instances of *wh*-movement at LF, I claim that in the cases to be discussed, which do not involve resumptive pronouns, movement to SPEC CP occurs at s-structure.

In the following sections, I investigate relative clause constructions in accusative and ergative languages, and propose an explanation for the correlation between SPEC TP and the potential for relativization. I propose that the availability of arguments for relativization depends on whether T is [+tense] or [-tense]. When T is [+tense], any argument may be relativized, as Case is checked within the TP (section 3.6.2). However, when T is [-tense], the Nominative NP in SPEC TP must move to SPEC CP, to check its Case features with those of [+finite] T (section 3.6.3). It is in these cases that the restriction of relativization to Nominative arguments is observed. Since it is the Nominative argument which needs to check its features, this is the argument which raises to SPEC CP, creating the proper predication relation with the relative head.

I will first introduce some terminology to clarify the notions "transitive subject", "intransitive subject" and "object", as the changing of grammatical function due to (anti)passivization is crucial in the following discussion of relative clause constructions. A verb projects arguments within its VP. An unergative verb projects a specifier, and a transitive verb, both a specifier and a complement. To refer to the arguments in the VP, I will use the terms *A(gent)*, *S(ubject)* and *O(bject)*, first introduced in Dixon (1979) and now standard in the ergativity literature.¹⁹ *A* refers to the transitive subject, *S*, to the intransitive subject, and *O*, to the object.

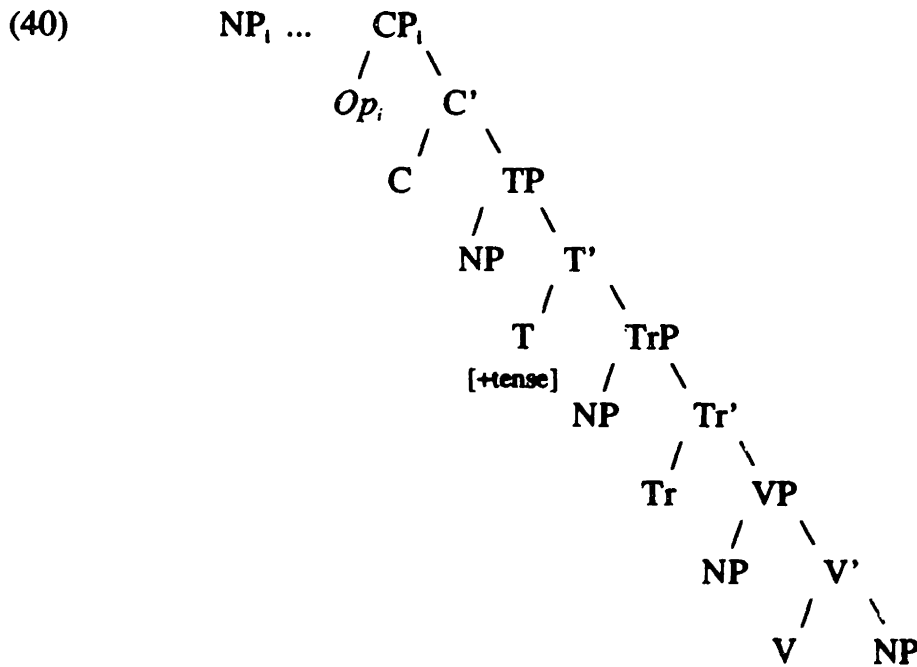
These terms are a mixture of semantic (thematic) and grammatical roles, but are necessary in order to distinguish transitive from intransitive subjects. I use these terms strictly to refer to arguments in the VP, independently of their eventual position after NP movement. As discussed in section 1.8.2 above, I assume that passive and antipassive structures have an underlying thematically complete VP. Thus, both types of clauses will have *A* and *O* arguments. The difference between these clauses and a simple transitive clause is that the former are syntactically intransitive, resulting in only one of the arguments raising to SPEC TP. In a regular transitive clause, *A* raises to SPEC TrP or SPEC TP, depending on the language type, and *O* raises to the other SPEC position.

¹⁹The term *P(atient)* is also used for the object.

In discussing passive and antipassive constructions, Dixon (1979) (and others following his lead) refers to the A argument being "placed in surface S function." This captures the notion that A moves to the same position as S at s-structure. In this thesis, I will use Dixon's expression, as well as referring to the actual raising of A to SPEC TP. I will also call the subject argument of a passive or antipassive construction a "derived S".

3.6.2 Relative Clauses with [+tense] T

Consider the following structure of a relative clause with [+tense] T:



When T is [+tense], as in (40), subjects and objects can check their Case features in SPEC TP and SPEC TrP. Subsequent movement to SPEC CP thus constitutes A'-movement, resulting in an operator-variable relation between the element in SPEC CP, and the trace in either SPEC TP or SPEC TrP. The operator in SPEC CP is coindexed via predication with the relative head.

Even if the Case position (i.e., SPEC TP or SPEC TrP) does not need to be filled until LF, the s-structure requirements on predication force movement to this Case position (and then to SPEC CP) at s-structure. The first movement does not violate Procrastination, as it is necessary for a convergent derivation.

With [+tense] T, then, either the subject or object may be relativized, i.e., there is no restriction on which NP can be coindexed with the relative head. This is true in the general case. However, in section 3.6.4.1 below, I discuss Indonesian and Malagasy, where only S and A can be relativized, even though the relative clause is [+tense]. The generalization, then, is that unless there are independent restrictions on which arguments may be relativized, when a relative clause is [+tense], both the Nominative and accusative/ergative arguments may be relativized. In order to accommodate the exceptional cases (such as Indonesian and Malagasy), I state my claim as follows:

- (41) If both the Nominative and accusative/ergative arguments can be relativized, the CP in the relative clause is [+tense].

I provide examples below of relative clauses involving [+tense] T, where S, A and O arguments (i.e., both Nominative and ergative/accusative) may be relativized.²⁰

3.6.2.1 Accusative Languages

In this subsection, I present examples of [+tense] relative clauses in various languages. Shown in (42a-c) are examples of S, A and O relativization in English.

- (42) a. the boy_i [who e_i laughed]
b. the person_i [who e_i watched a movie]
c. the girl_i [I like e_i]

The following examples are from Japanese:

(43) Japanese

- a. [e_i warat-ta] otokonoko
 laugh-Past boy
 'the boy who laughed'

²⁰In the discussion below, I am only concerned with the relativization of S, A and O arguments, and not with, for example, objects of prepositions. The fact that I do not mention the other types does not necessarily imply that they are not permitted in the language.

- b. [e₁ eiga-o mi-ta] hito
 movie-Acc saw-Past person
 'the person who saw a movie'
- c. [watashi-ga e₁ mi-ta] eiga
 I-Nom see-Past movie
 'the movie I saw'

An interesting case is the Philippine language Pukapukan, which employs two relativization strategies, referred to as *deletion* and *pronominalization* in Chung (1978). The deletion strategy involves the standard operator-variable relation between the relative head and the element in SPEC TP, and is used with S and A (the Nominative arguments). The pronominalization strategy, which involves a resumptive pronoun, is used for relativizing the O (accusative) argument. According to Demirdache (1991), resumptive pronouns in relative clauses are instances of *wh*-movement at LF. Thus, the two strategies reflect the level at which relativization occurs: s-structure (deletion), and LF (pronominalization). In the following examples, S and A relativize at s-structure (44a-b), while O relativizes at LF, leaving a resumptive pronoun (44c). In other words, Nominative and accusative arguments relativize at different levels.²¹

²¹In the next subsection, I discuss relativization in Tongan, an ergative Polynesian language which also relativizes Nominative and non-Nominative arguments at different levels. However, since this language is ergative, it is S and O which relativize at s-structure, and A which relativizes at LF.

(44) Pukapukan

- a. te wui ta:ngata [na lo:mamai mai o la:tou
the pl people Past come.pl from pl their

konga mamao]
place distant

'the people who came from their distant places'

- b. ko te kuli: te:nei [na kakati i te ta:ne mo:mona]
Pred the dog this past bite Acc the man fat
'this is the dog who bit the fat man'

- c. te taima [na maka ai au]
the time Past leave RP I
'the time that I left'

(Chung 1978:335-6)

3.6.2.2 Ergative Languages

In ergative languages, it is more common to find relative clauses with [-tense] T than with [+tense] T. The Mayan languages, however, have tensed relative clauses. Consider the following examples from K'iche'. (45a) involves relativization of S. (45b) is ambiguous between an A and O reading due to the VSO word in the relative clause:

(45) K'iche'

- a. x-ø-inw-il ri ixoq [(ri) x-ø-kam-isa-n]
Asp-3sN-1sE-see Det woman Det Asp-3sN-get.drunk-Perf
'I saw the woman who got drunk'

(Larsen 1987:43)

b. k-o-tze'n ri ala [ri x-ø-u-tz'uma-j ri
 asp-3sN-smile Det boy who asp-3sN-3sE-kiss-DS Det
 ali]
 girl

'the boy who kissed the girl smiles' or
 'the boy whom the girl kissed smiles'

(Sam-Colop 1988:44)

In (46), the antipassive form of the verb is used to disambiguate the clause in (45b). The only meaning available in (46) is the one where the derived S has been relativized, as objects of antipassives cannot be relativized:

(46) K'iche'

k-ø-tze'n ri ala [ri x-ø-tz'uma-n ri ali]
 asp-3sN-smile Det boy who asp-3sN-kiss-AP the girl
 'the boy who kissed the girl smiles'
 *'the boy whom the girl kissed smiles'

(Sam-Colop 1988:45)

Mam is another Mayan language which permits relativization of all three arguments. Like K'iche', it also has an antipassive variant for transitive clauses. However, relative clauses with and without the antipassive verb have different meanings in Mam. The antipassive form implies that the action in the relative clause occurred before the action in the main clause (47a). The use of an active transitive form implies that the two actions occurred simultaneously (47b).

(47) Mam

- a. ma-a7 w-il-a tii-xiinaq [sa (=x-ø-tzaj) tzyuu-n
Rec-Emph 1sE-see-1s big-man Rec.dep-3sN-dir grab-AP

ky-e xjaal]
3s-RN/pat person

'I saw the gentleman who had grabbed the people' (I saw him later on)

- b. ma-a7 w-il-a tii-xiinaq [xhi (=x-chi) tzaj
Rec-Emph 1sE-see-1s big-man Rec.dep-3pN dir

t-tzyu-7n xjaal]
3sE-grab-ds person

'I saw the gentleman who was grabbing the people'
(I saw him at the time he was doing it)

(England 1983:216-7)

In other Mayan languages such as Jacaltec, only S and O may be relativized. When relativizing A, the verb appears in the antipassive form, putting the A in surface S function. Shown in (48a-c) are relative clauses with S, O and derived S as the head noun, respectively.

(48) Jacaltec

- a. x-ø-w-il naj [x-ø-to ewi]
asp-3sN-1sE-see cl/him asp-3sN-go yesterday
'I saw the man who went yesterday'

- b. x-ø-w-il te' tx'at [x-ø-a-watx'e]
asp-3sN-1sE-make cl/the bed asp-3sN-2sE-make
'I saw the bed that you made'

- c. x-ø-w-il naj [x-ø-watx'e-n]
asp-3sN-1sE-see cl/him asp-3sN-make-AP
'I saw the man who made this'

(Craig 1977:196-7)

The use of the antipassive in K'iche' (for disambiguation) and Mam (semantic distinction) suggests that the antipassive is used for pragmatic and semantic reasons. I claim that the obligatory use of the antipassive in Jacalteco is not the result of a structural constraint against relativizing A, as we find in the [-tense] relative clauses discussed in the next section, but is due to semantic factors.

In Tongan, an ergative Polynesian language, relativization of Nominative arguments (i.e., S and O) occurs at s-structure, while the ergative argument, A, relativizes at LF, leaving a resumptive pronoun.²² However, there is some overlap in the arguments which relativize at s-structure. For example, a third person singular S, and A, may relativize at either s-structure or LF. (49a) and (49b) demonstrate the s-structure relativization of O and third singular S, respectively. In (49c), A relativizes at LF.

(49) Tongan

a. na'a mau fufuu'i 'a e tamaiki fe: fine [ko ia
 Past we hide Nom the children women Pred that

na'a ne tuli]
 Past he chase

'we hid the girls who he was chasing'

(Chung 1978:230)

b. 'oku mau lolotonga kumi 'a e tamasi'i [na'e hola]
 Prog we Prog search Nom the child Past run

'we're looking for the boy who ran away'

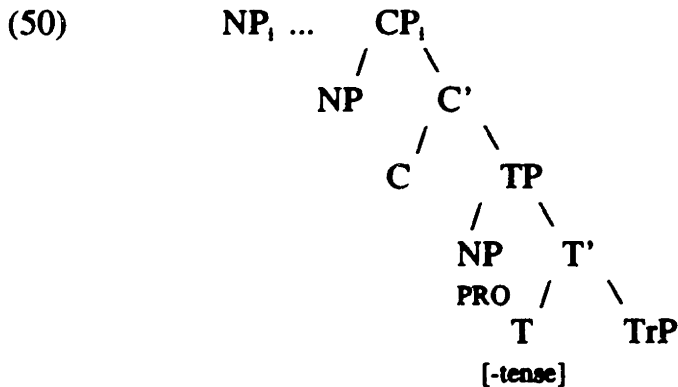
(Chung 1978:38)

²²See the discussion of Pukapukan in the previous subsection.

- c. tokaange ha tangata ['oku ne 'ilo hono 'uhingá]
 doubtless a person Prog RP know its meaning
 'there is someone, no doubt, who knows the meaning of it'
 (Churchward 1953:220; in Chung 1978:225)

3.6.3 Relative Clauses with [-tense] T

When T is [-tense], it has no Case features. Let us first consider the case where there is a PRO in SPEC TP:



A clause with the structure in (50) permits both subject and object relativization ((51) and (52), respectively):

- (51) a. I need a man_i [PRO_i to fix the sink]
 b. I found someone_i [PRO_i to sing at the wedding]
 c. the pamphlets_i [PRO_i to be distributed] are here

- (52) a. the pamphlets_i [PRO to distribute t_i] are here
 b. Montreal is a nice place_i [PRO to visit t_i]

In (51a), the relativized argument is A, in (51b), it is S, and in (51c), it is a derived S from passivization. Shown in (52) are examples of object relativization.

The presence of PRO in SPEC TP results in all Case requirements being satisfied in the TP. Movement to SPEC CP is thus A'-movement, which is not restricted to Nominative arguments. In (52), the operator originating in object position raises to SPEC TrP, where it checks its Case features, and then moves to SPEC CP. I propose that (51) involves an operator which has no Case features, like PRO.²³ Since the Case/non-Case distinction exists with lexical NPs, it is not surprising that we find it with operators as well.²⁴

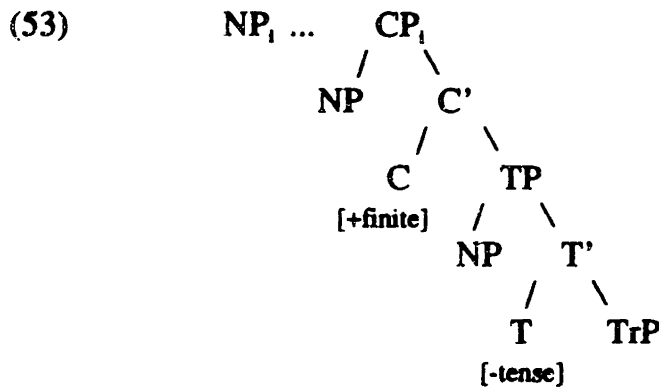
Now consider the case where the structure in (50) does not contain a PRO in SPEC TP. A non-PRO element is permitted in SPEC TP only if it can check its Case features with another functional head. I propose that the C in a relative clause, in addition to being empty or having a [\pm wh] feature, may contain the feature [+finite]:

²³It has previously been proposed that the null operator in purpose clauses and *tough*-constructions is PRO.

²⁴An argument against the Caseless operator analysis is given by the example in (i), which may be considered to have the same predication relation as a relative clause, but does not involve a CP:

(i) the man_i [PRO_i red in the face]

I thank Alec Marantz (p.c.) for this example.



This [+finite] feature was introduced in sections 2.4 and 2.5 above in the context of Case-marked topics in Arabic (section 2.4.1.2), and inflected infinitives in Portuguese and Italian (section 2.5). [+finite] C has Nominative Case features, which must be checked with an NP in its SPEC. Thus, a derivation with [+finite] C will be grammatical if it occurs with [-tense] T, permitting the NP which cannot check its Case features with T, to raise to SPEC CP and check its features with C.^{25,26}

²⁵When [+finite] C occurs with [+tense] T, an NP must be base-generated in SPEC CP. Otherwise, the Principles of Closest Available Target and Closest Featured Source (from section 1.4 above) will be violated, as [+finite] C and [+tense] T are both featured targets, and require their SPECs to be filled at s-structure.

A similar conflict would arise with [+finite] C and [-tense] T, and PRO in subject (i.e., SPEC VP) position. Since both C and T require their SPECs to be filled at s-structure, raising is possible only if one NP moves to both positions. PRO cannot move to SPEC CP, since C will not be able to check its Case features.

I assume that an expletive cannot be inserted in SPEC CP to resolve the conflict. Perhaps expletive insertion is restricted to A-positions.

²⁶It appears that we do not find just [-finite] CP in relative clauses. Since the feature [-finite] is associated with verb fronting, it seems to have different properties from the C associated with relative clauses. VSO languages like Irish and Arabic construct relative clauses with a complementizer, i.e., there is another CP level above the [-finite] CP.

Since relative clauses require an "open position", the NP in SPEC CP must be an operator (empty or *wh*), PRO or *pro*. The type of element that appears in SPEC TP depends on the content of C. When C is empty, as in (54a) below, or has the feature [-wh], as in (54b), the operator is empty, as neither the operator nor C has features requiring checking in a SPEC-head relation with C. When C has [+wh] features, the operator in its SPEC also has [+wh] features (see (54c)).

- (54) a. the man [_{CP}O_i e [_{TP}John saw t_i]]
 b. the man [_{CP}O_i that [_{TP}John saw t_i]]
 c. the man [_{CP}who_i +wh [_{TP}John saw t_i]]

Now consider the case where C is [+finite], as in (53) above. Since the NP in its SPEC has Case features, it must be *pro*.

With [+finite] C and [-tense] T, the NP in SPEC TP raises to SPEC CP to satisfy Case requirements. The other argument receives Case in SPEC TrP. When the Nominative element in SPEC TP moves to SPEC CP, it is coindexed with the relative head. This accounts for the following generalization:²⁷

- (55) If the CP in a relative clause is [-tense], only Nominative arguments may be relativized.

²⁷A similar observation was made by Downing (1978:396): *The verb of a relative clause may assume a nonfinite, participial form if the relative NP is the subject of its clause.*

In the following section, I discuss in more detail the correlation between only Nominative elements being available for relativization, and the CP in the relative clause being [-tense]. I demonstrate that the restriction to Nominative arguments holds in both accusative and ergative languages. However, the Nominative element has different grammatical functions in the two types of languages. In an accusative language, relativization is restricted to S and A. In an ergative language, it is restricted to S and O. This is because the restriction applies only to the SPEC TP, and not the content of that position. By the Ergative Parameter presented in section 1.4, different elements raise to SPEC TP in the accusative and ergative languages.

3.6.4 The Restriction of Relativization to Nominative Arguments

The general observation regarding relative clauses is that if a language has a restriction on which argument may undergo relativization, the Nominative NP will be free from this constraint. In Inuit, for example, only intransitive subjects and objects (and not transitive subjects) may relativize (Creider 1978; Smith 1984). These arguments are Nominative NPs occurring in SPEC TP. In Malagasy, an accusative language, only transitive and intransitive subjects (and not objects) may relativize (Keenan 1972, 1976a). Again, it is only Nominative NPs in SPEC TP which may undergo

relativization.

Keenan and Comrie (1977) attempt to formalize their observations in terms of a Noun Accessibility Hierarchy and Hierarchy Constraints. According to their Hierarchy, subjects (transitive and intransitive) are the most accessible to relativization, followed by direct objects.²⁸ The first of their constraints states that a language must be able to relativize subjects.²⁹

This constraint correlates with the claim that Nominative NPs are always relativizable, but it applies only to accusative languages, where transitive and intransitive subjects have Nominative Case. Keenan and Comrie fail to acknowledge that in ergative languages, the arguments which are most accessible to relativization are the intransitive subject and object. In

²⁸Keenan and Comrie (1977) formulate their Hierarchy as follows (p. 66):

(i) *Accessibility Hierarchy (AH)*

Subj > Direct Obj > Indirect Obj > Gen/Poss > Obj of Comparison

The discussion of this section is concerned only with the first two arguments, which both involve NPs in structural Case positions.

²⁹Shown below is the complete set of constraints (Keenan and Comrie, 1977:67):

(i) *The Hierarchy Constraints*

1. A language must be able to relativize subjects.
2. Any RC-forming strategy must apply to a contiguous segment of the AH.
3. Strategies that apply at one point of the AH may in principle cease to apply at any lower point.

See also previous footnote.

many languages (e.g., Mayan, Inuit), the transitive subject cannot be relativized at all.

The prominence of the Nominative argument is observed in other constructions as well as relative clauses, i.e., *wh*-movement, focus clefting and negation. This restriction to Nominative arguments, however, is observed only when these constructions involve an element in sentence-initial position.³⁰ For example, in the Inuit languages, where relative clauses involve fronting, but not constituent questions and NP negation do not, the restriction holds only for relativization.

I will assume that topicalization, constituent questions and negation all involve relativization in the languages to be discussed. It has been observed elsewhere that these constructions exhibit similar properties. Harries-Delisle (1978), for example, argues that all cleft sentences are underlyingly relative clauses, although the clause may have a reduced surface form. She examines various languages which use identical strategies for both focus and relative clauses (and sometimes for questions as well). For instance, a number of languages have a special tense form that occurs in relative clauses, emphatic constructions, and questions (e.g., Diola-Fogny (Senegal), Telugu (Dravidian)). In Kihung'an (Bantu), a particular negative particle is used in relative clauses, emphatic constructions and information questions. McCloskey (1979, 1990)

³⁰I will also use the term "fronting" when referring to these constructions, although there is no actual movement involved.

claims that in Irish, constituent clauses, clefts and topicalization structures have the same structure as relative clauses. Thus, I assume that in the languages discussed below, constituent questions have the form *who/whom is it that ...*, focus clefting involves the structure *it is X who ...*, and fronted negation is of the form *it is not X who...* I will use the general term *relativization* to include all forms of fronting.

3.6.4.1 Accusative Languages

Barker, Hankamer and Moore (1990) discuss relativization in Turkish, and observe that there are two strategies in the language, both involving nonfinite relative clauses. In the first case, the relative clause verb takes the suffix *-An*, and relativization is restricted to subjects (i.e., Nominative arguments):

(56) Turkish

[kabağ-I yi-yen] yılan
squash-Acc eat-Suff snake
'the snake that ate the squash'

(Barker, Hankamer and Moore 1990:2)

The second strategy, involving the suffix *-Dik*, is used to relativize objects:

(57) Turkish

[yılan-In ye-diğ-i] kabak
snake-Gen eat-suff-Poss squash
'the squash that the snake ate'

(Barker, Hankamer and Moore 1990:2)

The relativization of the object in (57) may appear to be a counterexample to the claim that when T is [-tense], only Nominative arguments may be relativized. However, an examination of the relative clause in (57) reveals that it is not a verbal clause, but a nominal clause. This is shown by the genitive Case on the subject, and the Possessive suffix on the verb. Since nominal clauses do not contain TP, there is no [-tense] T in the clause. The subject receives genitive Case from D, and is thus not Caseless.³¹

In English, there are two types of nonfinite relative clauses: participial, and infinitival. Since infinitival relative clauses were discussed in section 3.6.3 above, I focus here on participial relatives.³²

- (58) a. the boy watching television didn't hear the phone ring
b. the boy sleeping soundly ...
c. the boy (being) scolded by Mary ...
d. *the boy Mary scolding, ...
e. the boy who Mary was scolding, ...

³¹Barker, Hankamer and Moore (1990) claim that reversing the relativization strategies (i.e., using *-An* for objects, and *-Dik* for subjects), results in ungrammaticality, except in one dialect where the two strategies are in free variation.

³²I am grateful to David Pesetsky for pointing out the following facts.

The examples in (58) illustrate that reduced relative clauses with participial verbs permit only the Nominative S and A to be relativized. In (58a), the relativized argument is A, in (58b) it is S, and in (58c), it is a derived S with a passive participle. In contrast to (58d), which involves O, in (58e), where the verb in the relative clause is tensed, O relativization is permitted.

We can account for the facts in (58) if we assume that gerunds contain a [+finite] C and [-tense] T. A similar idea is pursued by Reuland (1983), who proposes that NP-*ing* constructions are tenseless finite clauses. For Reuland, the finiteness of these clauses is associated with an agreement marker which assigns Case to the subject. I propose that in the examples in (58), there is a *pro* in SPEC TP which raises to SPEC CP to check its Case features. As discussed above, raising to [+finite] C is restricted to Nominative arguments.

In the discussion of inflected infinitives in section 2.5 above, I proposed that these structures, found in Portuguese and Italian, contain a [+finite] C and [-tense] T. Let us now examine the behaviour of these two languages with respect to infinitival relative clauses.

Rizzi (1982, Ch. 3) discusses the *wh*-extractability of subjects in the inflected infinitive construction:

(59) Italian

- a. le persone, che suppongo [t_i non essere state messe al corrente delle vostre decisioni] sono molte

'the persons that I suppose [not to have been acquainted with your decisions] are many

- b. quante di queste persone possiamo ritenere [aver sempre fatto il loro dovere

'how many of these persons can we believe [to have always done their duties?'

(Rizzi 1982, Ch. 3:78)

As expected, only subjects (i.e., Nominative arguments) can raise to SPEC CP in a relative clause structure as in (59a), and in questions, as in (59b).

Consider the following example from Portuguese involving an inflected infinitive:

(60) Portuguese

o Manel pensa [ter-em os amigos levado o livro]
Manel thinks to.have-Agr his friends taken the book
'Manel thinks that his friends have taken the book'

(Raposo 1987:98)

We would expect only the Nominative subject to be relativizable, as it is the argument which raises from SPEC TP to SPEC CP to satisfy Case requirements. However, according to Pilar Barbosa (p.c.), neither the subject nor the object may be relativized. This does not contradict my claim in (55) above, as no relative construction is possible at all. It is thus irrelevant to

consider which elements can be relativized.³³

I have given several examples of [-tense] relative clauses, and shown that in these cases, only Nominative arguments may be relativized. These examples support the claim I made in (41) above, repeated in (61):

- (61) If both the Nominative and accusative/ergative arguments can be relativized, the CP in the relative clause is [+tense].

I also made a claim regarding [+tense] relative clauses, repeated in (62) from (55) above:

- (62) If the CP in a relative clause is [-tense], only Nominative arguments may be relativized.

Given the existence of languages such as Indonesian and Malagasy (to be discussed below), we must maintain (61) and (62) as one-way assertions. In these languages, relative clauses are [+tense], but only Nominative arguments may be relativized.

In Indonesian, a Western Austronesian language, if O is to be relativized, it must first become a derived S, either by passivization, or by Object Preposing. According to Chung, Object Preposing promotes O to S, and cliticizes the underlying S to the left of the verb. In (63a), the A argument has been relativized, and in (63b), the relativized argument is a

³³Barbosa does suggest, however, that relativizing the subject is "less ungrammatical" than relativizing the object.

promoted O.

(63) Indonesian

a. orang [yang me-masak daging], nama-nya Achmad
man Comp Tr-cook meat name-his Achmad
'the man who cooked the meat, his name is Achmad'

b. mobil [yang kita perbaiki] adalah Mercedes
car Comp we repair be Mercedes
'the car that we repaired was a Mercedes'

(Chung 1978:370-1)

I mentioned above that I am assuming "relative clause" to include other constructions such as constituent questions and focus clefting. Thus, we would expect that in Indonesian, *wh*-questions and focus clefting would be subject to the same restriction as with relative clauses. We find this in formal Indonesian, where *wh*-movement is restricted to S and A (64a). An O argument must become a derived S by passivizing the verb, or object preposing. In (64b), the object has been promoted to S.

(64) Indonesian

a. siapa-kah yang me-lihat kejadian itu
who-Q Comp Tr-see accident the
'who saw the accident?'

b. perempuan yang mana yang kamu lihat
girl Comp which Comp you see
'which girl did you see?'

(Chung 1978:370-1)

The same restriction holds with focus clefting. In the following examples, O must be a derived S for focus clefting:

(65) Indonesian

- a. dokter itu yang me-meriksa saya
doctor the Comp Tr-examine me
'it was the doctor who examined me'
- b. dokter itu yang saya periksa
doctor the Comp I examine
'it was the doctor that I examined'

(Chung 1978:370-1)

In informal Indonesian, however, objects may be clefted in the same way as S and A:

(66) Indonesian (informal)

- a. apa yang anak itu masak
what Comp child the cook
'what did the child cook?'

(Chung 1978:373)

Malagasy, a Malayo-Polynesian language, is similar to Indonesian in permitting only S and A relativization, although the CP in the relative clause is [+tense] (Keenan 1972, 1976a). To relativize an O argument, it must appear as a derived S in a passive or circumstantial construction.³⁴ Shown in (67a) is an example of A relativization. Relativizing O results in an

³⁴The S in a circumstantial construction is derived from an oblique argument, e.g., instrument, benefactee, location, time, etc. (Keenan, 1976a).

ungrammatical sentence (67b), while (67c) and (67d), which involve a derived S in a passive and circumstantial construction, respectively, are grammatical:

(67) Malagasy

- a. ny vehivavy [izay nividy ny vary ho an'ny ankizy]
the woman that bought the rice for the children
'the woman who bought the rice for the children'
- b. *ny vary [izay nividy ho an'ny ankizy ny vehivavy]
the rice that bought for the children the woman
'the rice that the woman bought for the children'
- c. ny vary [izay novidin' ny vehivavy ho an'ny
the rice that buy-Pass the woman for the
ankizy]
children
'the rice that was bought by the woman for the
children'

(Keenan 1972:173-4)

- d. ny vato [izay ana-san-dRaso lamba]
the stone that Circ-wash-by.Rosa clothes
'the stone where/with which clothes are washed by
Raso'

(Keenan 1976a:266)

I propose that there is some restriction in Indonesian and Malagasy, independent of the relative clause structure itself, which prevents the relativization of accusative objects. I leave for future research an investigation of what this restriction may be.

3.6.4.2 Ergative Languages

In an ergative language, it is the S and O arguments which appear in SPEC TP with Nominative Case. In languages which restrict relativization to Nominative arguments, we would expect S and O, but not A, to be relativized. In this section, I discuss two ergative languages, Inuit and Dyirbal, which have [-tense] relative clauses, and were shown above (section 3.4) to contain a [+finite] C. Although Lezgian and Abkhaz also have a [+finite] C, they do not exhibit a restriction on relativizable arguments, as they do not form relative clauses by "fronting" (i.e., there is no clause-initial relative head).

In the Inuit languages, relativization involves a relative head followed by the participial form of the verb (with ergative and nominative agreement markers).³⁵ Only S and O may undergo relativization. To relativize an A argument, the clause must first become antipassive, putting A in surface S function. Shown in (68a) and (68b) are examples from Inuktitut. In (68a), S has been relativized, and in (68b), it is O (*pro*) which is relativized. In (68c), an example from West Greenlandic Inuit, the relativized NP is the derived S of an antipassive construction.

³⁵See Creider (1978), Smith (1984) and Johns (1987) for various analyses of the relative clause in Inuit.

(68) Inuit

a. angut [imngi-lauq-t-u-q] quviasuk-t-u-q
man (Nom) sing-Past-Part-Intr-3sN happy-Part-Intr-3sN
'the man who sang is happy'

(Johns 1987:164)

b. [taku-j-a-ra] qimak-t-u-q
see-Part Tr-1sE.3sN run.away-Part-Intr-3sN
'the one who I saw ran away'

(Johns 1987:170)

c. piniartuq [nannu-mik tuqut-si-s-u-q]
hunter polar.bear-Instr kill-AP-Part-Intr-3sN
'the hunter who killed the polar bear'

(Fortescue 1984:54)

I consider the participial construction in Inuit to be [-tense], although they can appear as matrix clauses in dialects such as Inuktitut. I therefore take West Greenlandic to be the typical paradigm, where participial clauses cannot be used as main clauses.

In Dyirbal, a relative clause consists of a verb marked with the nominalizer *-Nu*, and a Case marker corresponding to the Case given to the entire nominal clause (i.e., relative head and CP). As in Inuit, only S and O may relativize. Shown in (69) are examples of O, S and derived S relativization:

(69) Dyirbal

a. Nada pina-nu yugu-Nga [yara-Ngu nudi-Nu-ra]
I (Nom) sit-Pres/Past tree-Loc man-Erg cut-Rel-Loc
'I am sitting on the tree the man felled'

(Dixon 1972:102)

b. bayi yara [miyanda-Nu] ba-Ngu-n
 there.m(Nom) man(Nom) laugh-Rel(Nom) there-Erg-f

yibi-Ngu bura-n
woman-Erg see-Past

'the woman saw the man who was laughing'

(Dixon 1991:40)

c. bayi yara [jilwal-Na-Nu ba-gu-n
 there.m(Nom) man(Nom) kick-AP-Rel(Nom) there-Dat-f

guda-gu] yanu
dog-Dat went

'the man who kicked the dog went'

(Dixon 1991:41)

In this chapter, I presented evidence from various sources for a syntactic analysis of ergativity. I discussed verbal agreement and scope facts to demonstrate the two movement paths (i.e., Crossing and Nested Paths) found in accusative and ergative languages. An investigation of infinitival constructions provided further evidence for my claim that in an accusative language, S and A are in SPEC TP, while in an ergative language, S and O appear in that position.

CHAPTER 4. THE CLASS OF "SUBJECT": TRANSITIVE AND INTRANSITIVE SUBJECTS

4.1 The Notion of "Subject"

In the preceding chapters, I presented a syntactic explanation for the distinction between accusative and ergative languages. In section 1.4, I proposed an Ergative Parameter, based on the Case features of T and Tr. This Parameter, together with the Economy Principles for NP Movement, determines the different movement paths in accusative and ergative languages.

In this chapter, I investigate syntactic and semantic properties which group together "subjects" (i.e., S and A) in both accusative and ergative languages.¹ I discuss how these properties can be accounted for within my system without abandoning my claim of syntactic ergativity. I show that "subject" properties refer either to the SPEC VP position, where S and A are generated, or to a structural configuration, where A and S are the highest

¹As discussed in section 3.6.1 above, I use the terms A, S and O to refer to the transitive subject, intransitive subject and object, respectively. A, S and O refer to the arguments in the VP, independently of the positions they eventually raise to. The term "subject" is used for the class of A and S arguments, which appear in SPEC VP.

argument in the clause at s-structure. In the first case, the properties are semantic, as they identify an argument in a thematic position (i.e., SPEC VP). The properties which are associated with hierarchical structure have been classified as syntactic.

4.2 Semantic Properties of "Subjects"

Accusative and ergative languages are identical at the level of argument structure, i.e., the thematically complete VP. Thus, we would not expect operations which identify specific positions within the VP to distinguish between the two types of languages. In this section, I discuss Agenthood, imperatives and jussive complements, which group S and A together based on semantic criteria in ergative as well as accusative languages. I claim that these properties identify the argument in SPEC VP.

4.2.1 Agenthood

A "subject" acts as the agent of the clause, if there is one (Keenan 1976b). For verbs with no Agent role, an A argument may express, for example, an Experiencer. This is shown in (1) for English, Inuktitut, Jacalteco

and Niuean.

(1) Experiencer Verbs

a. the child fears ghosts

b. Jaani-up nanuq iliragi-v-a-a
John-Erg polar bear(Nom) fear-Ind-Tr-3sE.3sN
'John fears the polar bear' (Inuktitut)

c. smam naj x'ilni
his father cl saw
'his father saw him'

(Jacaltec; Craig 1977:178)

d. kua na:kai kitia e au e pusi
Perf not see Erg I Nom cat
'I haven't seen the cat' (Niuean; Seiter 1979:14)

The observation that an Agent is always a "subject" results from the Agent role being associated with SPEC VP. Various proposals have been put forth regarding the mapping of thematic roles onto syntactic positions (e.g., Bresnan 1982; Williams 1984; Carrier-Duncan 1985; Baker 1988, Grimshaw 1990). I will not choose among them here, as the implementation of the Agent-SPEC VP association is not relevant.² When there is no Agent role, the "subject" has some other role, such as Experiencer.

²The identification of thematic roles with specific syntactic projections is also proposed in Hale and Keyser (1991). However, in their system, the projections are defined at the level of the lexical representation of argument structure.

4.2.2 Imperatives

In imperative constructions, the addressee is a "subject", as shown in

(2):

(2) West Greenlandic

- a. qaa-git aappa-ri-ssa-v-a-kkit
come-2sN.Imp companion-have.as-future-1sE.2sN.Imp
'come and be my companion'
- b. niri-guk
eat-2sE.3sN.Imp
'eat it!'
- (Fortescue 1984:25)

(3) Jacalteco

- a. pisy-aN
sit-imp
'sit!'
- b. mak hin an
hit me lp
'hit me!'
- (Craig 1977:29)

(4) Niuean

- a. o mai ke kai, ma fa:nau
come.Pl Sbj eat Voc children
'come eat, children!'
- b. ta mai ki a au e toki
bring Dir1 to Pers me Nom axe
'bring me an axe!'
- (Seiter 1979:58)

constructions involve subjects.³

The semantics of jussive verbs require coreference with the "subject" of the complement clause. However, syntactic constraints on complement structures must also be obeyed. For example, ergative languages without s-structure object raising do not allow transitive infinitives. Thus, in Jacaltec, jussive verbs take infinitival complements when the embedded clause is intransitive (see (5) above), but a tensed complement when it is transitive:

(6) Jacaltec

ch-oN s-chej ya' hach cu-tzaba a
Asp-1pN 3sE-order cl/he 2sN 1pE-grab lp
'he orders us to grab you'

(Craig 1977:321)

³The verb *tell* has another meaning equivalent to *inform*, which does not have a jussive use:

(i) the woman told John that he should get a haircut

In this context, the "subject" of the complement clause, *he*, is not obligatorily coreferential with the object of the matrix clause, *John*. The following example is from Niuean:

(ii) kua tala age e au ke he tama ke age he faiaoga e
Perf tell Dir3 Erg I to child Sbj give Erg teacher Nom

malala ki a ia
charcoal to Pers him

'I told the child to have the teacher give him the charcoal'
(Seiter, 1979:188)

In Dyirbal, which has object raising, transitive infinitives with object *pro* are allowed (see section 3.4.4). However, since the semantics of jussive verbs require coreference with a subject, only intransitive complements are permitted. In (7a), the embedded clause is intransitive, and in (7b), it is antipassive:

(7) Dyirbal

a. Nana yabu giga-n banagay-gu
 we (Nom) mother (Nom) tell.to.do-Past return-Purp
 'we told mother to return'

b. Nana yabu giga-n Numa-gu
 we (Nom) mother (Nom) tell.to.do-Past father-Dat

buṛal-Nay-gu
 see-AP-Purp

'we told mother to watch father'

(Dixon 1979:129)

With an object control verb such as *yajjarra* 'threaten', there is no semantic requirement that the controlled NP be a "subject". In (8), it is an object:

(8) Dyirbal

bay-i yara_i ba-nggu-n yibi-nggu
there (Nom) -M man (Nom) there-Erg-F woman-Erg

yajijarra-n [*pro*_i ba-nggu-l gubi-ggu бага-li]
threaten-Past there-Erg-M shaman-Erg spear-Purp

'the woman threatened the man_i [*shaman spear pro*_i]'
(Dixon 1991:46)

4.3 Hierarchical Structure

In transitive clauses in ergative languages, the A argument raises to SPEC TrP at s-structure, leaving the object in the VP. At s-structure, A thus c-commands the object. In this section, I discuss properties based on this hierarchical structure. These include control, raising and binding.

4.3.1 Reflexive Binding

One of the "subject" properties discussed by Anderson (1976b), Craig (1976) and Keenan (1976b) is the binding of an object by a "subject". The "subject" is an A or S argument, depending on how the language forms reflexives. In West Greenlandic, reflexive clauses consist of an intransitive verb, and oblique object (9). In Tzutujil (10), Niuean (11) and Abkhaz (12),

reflexives are objects of transitive verbs. In Abkhaz, there are two methods of forming reflexives, both of them involving transitive constructions.

(9) West Greenlandic

immi-nut tuqup-p-u-q
self-All kill-Ind-Intr-3sN
'he killed himself'

(Fortescue 1984:156)

(10) Tzutujil

ja kumatz qas ø-nuu-sil r-ii7
the snake really 3sE-3sN-move 3sE-self
'the snake really moves itself'

(Dayley 1985:336)

(11) Niuean

kitia he tama fifine a ia (ni:) he fakaata
see Erg child female Nom her Refl in mirror
'the girl sees herself in the mirror'

(Seiter 1979:78)

(12) Abkhaz

a. larà l-çə-l-š-we-yt'
she 3sPoss-Refl-3sE-kill-Dyn-Fin
'she kills herself'

b. we-xə ø-we-bə-yt'
2sPoss-head(self) 3sN-2sE-see-Fin
'you saw yourself'

(Hewitt 1979:77)

The crucial notion in binding is c-command: an anaphor must be bound by a c-commanding antecedent. I assume that binding is checked at s-structure, and not at LF.⁴ In the analysis proposed in this thesis, it is only at s-structure that the transitive subject in an ergative language c-commands the object. At LF, the object has raised to the higher SPEC TP position, and is no longer c-commanded by the subject.

4.3.2 Possessor Binding

In possessor binding, as in reflexive binding, the "subject" binds the object at s-structure. The following examples illustrate this in Inuktitut, Mayan, and Niuean.

(13) Inuktitut

- a. kia anaana-ni takuvaa
 who-Erg mother-3sR(Nom) see-3s.3s
 'who_i saw his_{i,/,} mother?'
- b. anaana-mi kina takuvaa
 mother-3sR.Erg who(Nom) see-3s.3s
 'who_i did his_i mother see?'

⁴But see Chomsky (1992) for arguments that binding occurs at LF.

(14) Mayan

- a. 7i-s-vok' y-osil
cp-3sE-break 3sE-land
'he₁ hoed his_{1/2} land'

(Tzotzil; Aissen 1987:135)

- b. jachin x-ø-uu-ch'ay ri r-achalaal
who asp-3sN-3sE-hit the 3sE-relative
'who₁ did his_{1/2} relative hit?'

(K'iche'; Larsen 1987:46)

(15) Niuean

- ne taute e Sione e motoka: ni: haana
Pst fix Erg Sione Nom car Refl his
'Sione₁ fixed his₁ own car'

(Seiter 1979:79)

4.3.3 Raising

Anderson (1976b) claims that raising in Tongan exhibits "subject" properties, as only a "subject" of the lower clause may raise into the matrix clause. Shown in (16b) is an example of raising with an S argument:⁵

(16) Tongan

- a. 'oku lava [ke hu: 'a mele ki hono fale]
Pres possible Tns enter Nom Mary to his house
'it is possible for Mary to enter his house'

⁵All of Anderson's Tongan examples are attributed to S. Chung. See Chung (1978) for more discussion of this construction.

- b. 'oku lava 'a mele ['o hu: ki hono fale]
 Pres possible Nom Mary Tns enter to his house
 'Mary can enter his house'

In (17), the embedded verb is transitive. Only the A argument may raise. The ungrammatical example in (17c) involves raising of O:

(17) Tongan

- a. 'oku lava [ke taa'i 'e siale 'a e fefie]
 Pres possible Tns hit Erg Charlie Nom Def woman
 'it is possible for Charlie to hit the woman'
- b. 'oku lava 'e siale ['o taa'i 'a e fefine]
 Pres possible Erg Charlie Tns hit Nom Def woman
 'Charlie can hit the woman'
- c. *'oku lava 'a e fefine ['o taa'i 'e siale]
 Pres possible Nom Def woman Tns hit Erg Charlie
 'the woman can be hit (by Charlie)'

Although raising in Tongan is restricted to "subjects", in Niuean, another ergative Polynesian language, both subjects (18b) and objects (18c) may raise:⁶

(18) Niuean

- a. to maeke [ke lagomatai he ekekafo e tama e:]
 Fut possible Sbj help Erg doctor Nom child this
 'the doctor could help this child'
 [Lit: 'it will be possible that the doctor help this child']

⁶In Samoan, as in Tongan, raising is restricted to subjects (Chung 1978).

b. to maeke e ekekafo [ke lagomatai i tama e:]
 Fut possible Nom doctor Sbj help Nom child this
 'the doctor could help this child'

c. to maeke e tama e: [ke lagomatai he
 Fut possible Nom child this Sbj help Erg
 eke:afu]
 doctor

'this child could be helped by the doctor'

(Seiter 1979:159)

An examination of this construction reveals that it differs from "English raising" in several respects. Raising verbs in English and other languages take infinitival complements. Since the embedded T, being [-tense], cannot check the Case features of a lexical NP, one of the NPs must raise to the matrix TP, where it can get its Case features checked. As discussed in section 1.4 above, the Principle of Closest Available Source dictates that it is the closest NP, i.e., a "subject", which raises.

In Tongan, raising is not required for Case reasons. In (17b) above, the raised NP *siale* 'Charlie' appears with the ergative Case associated with the embedded, and not matrix, clause. Massam (1985) proposes that these so-called raising constructions in Polynesian languages involve a CF complement with an extra A' SPEC position, to which the raised NP moves before proceeding further to the matrix clause. The optionality of raising follows from the assumption that this is a case of A' scrambling (see (17a)). A'-

movement to the SPEC position should not be restricted to "subjects". I have no explanation for this restriction in Tongan (and Samoan as well).

4.3.4 Equi-NP Deletion

In this section, I discuss Equi-NP Deletion, which is a term used to cover a variety of constructions in which an NP in a subordinate clause is morphologically null when coreferenced with an NP in the matrix clause. Such phenomena include control of PRO, obligatory *pro* binding, and coordinate coreference deletion. To investigate the claim that Equi-NP deletion applies only to "subjects", we must examine each type of deletion separately. In 4.3.4.1, I discuss control of PRO, in 4.3.4.2, binding of *pro*, and in 4.3.4.3, coordinate coreference deletion. In each case, I conclude that the deletion is not necessarily limited to "subjects", but occurs with the highest argument.

4.3.4.1 Control

In our discussion of control, it is crucial to first distinguish control of PRO from obligatory binding of *pro* (discussed in the next section). Control

involves coreference with PRO, which can appear only in the SPEC position of a [-tense] T. In an accusative language, where S and A raise to SPEC TP, control is a "subject" phenomenon. This is not the case, however, for ergative languages.

Of the ergative languages discussed in this thesis, only Mayan has been shown to have uninflected infinitives, i.e., [-tense] clauses in which the NP in SPEC TP is not exceptionally Case-marked. Since Mayan only has S PRO, it is not possible to determine whether or not control is a "subject" property, i.e., applies to A as well.

4.3.4.2 Obligatory *pro* binding

In ergative languages which have inflected infinitival clauses, we find examples of *pro* binding rather than PRO control. Obligatory *pro* binding appears to be restricted to "subjects" in both accusative and ergative languages. This "subject" property can be accounted for under an analysis where *pro* binding is considered to be an s-structure phenomenon involving the shortest binder-bindee link. A similar idea of "minimal distance" has previously been proposed for control of PRO (e.g., Rosenbaum 1967, Chomsky 1980, Huang 1984).

I assume that the obligatoriness of *pro* binding comes from the anaphoric properties of *pro*. However, *pro* differs from anaphors such as reflexives in that it cannot be bound within its clause.⁷ The dual requirement that *pro* be unbound in TP, yet bound within the next higher clause, can be captured with an additional Binding Condition as proposed in Iatridou (1986). Iatridou discusses an anaphor in modern Greek, *o idhios*, which must be free in its clause, but bound by an NP in the higher matrix clause. She proposes that this anaphor obeys Condition D, which requires an anaphor to be "bound in the whole sentence but free in the governing category". Controlled *pro* would be another anaphor obeying this binding condition.

The closest argument to a binder in the matrix clause is the highest NP in the lower clause. In both accusative and ergative languages, this is the embedded subject. In an accusative language, both S and A are in SPEC TP, the highest position in the clause. In an ergative language, S is in SPEC TP. Although A is in SPEC TrP, it is the highest argument at s-structure, as O is still in the VP.

Consider the following examples from West Greenlandic:

⁷This rules out control of object *pro* in accusative languages, and in ergative languages without overt object raising, as the closest potential antecedent would be the subject.

(19) West Greenlandic

- a. [pro_i aggi-ssa-llu-tit] pro_i niriursui-v-u-tit
come-Fut-Nfin-2sN promise-Ind-Intr-2sN
'(you_i) promised pro_i to come'
(Bittner, in prep.:51)
- b. [pro_i miiqqaat ikiu-ssa-llu-git]
children(Nom) help-Fut-Nfin-3pN

pro_i niriursui-v-u-tit
promise-Ind-Intr-2sN

'(you_i) promised to pro_i help the children'
(Bittner, in prep.:52)

Pro binding is also found in Niuean (Seiter 1979). It occurs with verbs of intention, volition, desire and command, which take sentential complements introduced by the subjunctive marker *ke*. The bound *pro* must be a subject, as shown with A in (20a), S with (20b), and O in the ungrammatical (20c).

(20) Niuean

- a. kua lali a au_i [ke ta: pro_i e fa:loku]
Perf try Nom I Sbj play Nom flute
'I_i've tried to pro_i play the flute'
- b. ne manako a laua_i [ke pro_i mamate]
Past want Nom they.du Sbj die.pl
'they_i wanted pro_i to die'

c. *kua lali lahi e kapitiga, haau [ke sake
Perf try really Nom friend your Sbj sack

e au pro_i
Erg I

'your friend_i is really trying to get me to sack (pro_i)'
(Seiter 1979:135-8)

4.3.4.3 Topic Chaining

Topic chaining is a syntactic process where clauses with a common topic are conjoined, normally with deletion of the common topic. Topic chaining in Dyirbal involves the identification of the Nominative arguments S and O (see section 3.4.4 above). However, in Kâte, an ergative language of New Guinea, topic chaining involves "subjects" (S or A) rather than only Nominative arguments (S or O) (Anderson 1976b). In this language, when clauses with common "subjects" are conjoined, all but the last clause are marked with special subordinate verb forms which do not indicate the person or number of the subject. Moreover, the "subject" appears overtly only in the last clause.⁸

⁸In coordination or topic chaining configurations, it is usually the first clause, and not the last, which contains the subject and full agreement marking.

Consider the Kâte examples in (21). (21a) consists of three clauses which share the "subject" *be7* 'pig'. Since the last clause (which contains *be7* 'pig') is intransitive, the S is marked with Nominative Case. In (21b), *be7* is marked with ergative Case, as it appears in a transitive clause.

(21) Kâte (New Guinea)

- a. [v_{ale}-l_a] [nana na-l_a] [be₇ guy fo-ve₇]
 come-Past taro eat-Past pig(Nom) sleep lie-3s.Past
 'the pig came, ate taro, and lay down to sleep'
- b. [v_{ale}-l_a] [be₇-ko nana na-ve₇]
 come-Past pig-Erg taro eat-3s.Past
 'the pig came and ate taro'

(Anderson 1976b:14)

In the following example, the two clauses share an S and an O.

Unlike in Dyirbal, the topic chaining process cannot be used:

(22) Kâte

- *[go-ki (be₇) hone-l_a] [(be₇) gesa₇ke-ve]
 you-Erg pig see-Past pig run-3s.Past
 'you saw a pig and he ran'

(Anderson 1976b:14)

The crucial difference between Kâte and Dyirbal is that Dyirbal has s-structure raising of the object. A *pro* object thus raises to SPEC TP at s-structure, making it the highest argument in the clause, and available for

binding. In Kâte, since the object remains in the VP at s-structure, it is not the highest argument, and therefore cannot be bound.

Topic chaining involving *pro* binding in the Polynesian languages is discussed in Chung (1978). Consider the following examples from Tongan:⁹

⁹Chung gives two reasons for claiming that such constructions involve a subordinate clause. First, the complementizer 'o which introduces the second clause is used only when the event described by clause is the specific result of that described by the higher clause. In true coordinate constructions with no result interpretation, the conjunction *pea* 'and' is used:

(i) Tongan

na'a nau 'cange ki ai 'a e tohi *'o/pea 'alu ia
 Past they give to Pro Nom the book and go he
 'they gave him the book and he left'

(Chung 1978:118)

Secondly, clauses introduced by 'o are not subject to the Coordinate Structure Constraint (Ross 1967), and allow NPs to be freely extracted (see (iia)). In (iib), which involves a true coordinate structure, such extraction is disallowed.

(ii) Tongan

a. ko e pi:si: na'a nau ha'u 'o 'omai ma'a-ku
 Pred the peach Past they come Comp bring for-me
 'it is the peaches that they came and brought for me'

b. *ko e ta'ahiné 'oku ou sai'ia au 'i he tamasi'i,
 Pred the girl Prog I like I at the boy

pea 'oku ke sai'ia koe ai
 and Prog you like you Pro

'it is the girl that I like the boy and you like'

(Chung 1978: 119)

(23) Tongan

pea a'e 'alu 'a e tangata ['o pro folau mama'o]
and Past go Nom the man Comp sail far
'then the man_i went (and) pro_i sailed away'
(Chung 1978:116)

Chung observes that this "Equi Rule" is restricted to "subjects". In the following examples, *pro* is A, S and O, respectively.

(24) Tongan

a. [na'e 'alu 'a e tangata_i] ['o taa'i pro, 'a
Past go Nom the man Comp hit Nom

e kuli:]
the dog

'the man_i went and pro_i hit the dog'

b. [na'a ku taa'i ia_i] ['o pro_i mate]
Past I hit him Comp die
'I hit him_i and pro_i died'

c. *[na'a ku puna atu] ['o ne pro_i ma'u]
Past I jump away Comp he catch
'I_i jumped up and he grabbed pro_i'

(Chung 1978:122)

This use of *pro* apparently occurs only with verbs of motion or directed action, and, moreover, is optional for most of the verbs. This suggests that *pro* in Tongan is not anaphoric, but pronominal, allowing lexical pronouns in the same position.

In this chapter, I have defended my claim that ergativity is a syntactic phenomenon extending beyond simply morphological Case and agreement. I discussed properties which group together the S and A arguments as a natural class, and demonstrated that they involve either the SPEC VP position, or the notion of "highest NP" in a clause at s-structure.

CHAPTER 5. ISSUES IN ERGATIVITY

In this chapter, I investigate various issues pertaining to ergativity, and how they are predicted by or accounted for within the theory presented in this thesis. In section 5.1, I begin with a discussion of other analyses of ergativity which explore the parametric variation between ergative and accusative languages. Section 5.2 investigates the "Nominative" Case associated with TP, i.e., nominative Case in accusative languages, and absolutive Case in ergative languages. In section 5.3, I discuss morphological ergativity, and in section 5.4, I investigate languages which appear to involve three functional projections for Case and agreement.

5.1 Other Analyses of Ergativity

5.1.1 Deep Structure Hypotheses

In this section, I discuss the analyses of de Rijk (1966) and Marantz (1984), which propose that the projection of arguments are reversed in accusative and ergative languages.

5.1.1.1 de Rijk (1966)

The earliest analysis within the framework of generative grammar is that of de Rijk (1966), who applies the Phrase-marker rules of Chomsky (1965) to Basque. De Rijk discusses the following two rules:

- (1) a. S --> NP + VP
b. VP --> V (NP)

In English, a subject is defined as the constituent dominated by S, and an object, as the NP dominated by the VP. In an ergative language such as Basque, sentences are generated in the same way by the rules in (1). However, the NP in (1a) consists of the intransitive subject and the object, while the transitive subject is generated by the rule in (1b).

De Rijk attributes the difference in the [VP,NP] in the two types of languages to the selectional restrictions of transitive verbs, which are reversed in accusative and ergative languages. An English verb would take, for example, a [+animate] subject and [-animate] object, while in an ergative language, the verb would take a [-animate] subject, and [+animate] object. Presumably, the selectional restrictions of intransitive verbs are the same in the two language types.

In de Rijk's analysis, the differences between accusative and ergative languages are ascribed to the transitive verb. He makes the following

statement about rule (1b), which defines transitive verbs:

- (2) For English this rule can be paraphrased as: Transitive verbs are those which must take an object ... For Basque we might paraphrase the same rule as: Transitive verbs are those which must take an ergative ... (p. 9)

This same concept is captured in my analysis by the Case features of the functional node Tr. Tr is associated with the accusative object in an accusative language, and with the ergative subject in an ergative language. In intransitive clauses, the two types of languages are identical.

My analysis differs from that of de Rijk in not equating morphological (i.e., Case-checking) properties with grammatical relations at deep structure. In de Rijk's time, movement of NPs occurred only with optional transformations such as Passive, Question Formation, etc. Therefore, in simple sentences in which such transformations did not apply, the position of NPs was identical in deep and surface structure. In order to account for the grouping together of transitive subject and object with respect to Case and agreement, these two NPs had to be base-generated in the same position, i.e., as sister of V. This idea of the reversal of subject and object at deep structure is presented in a different framework in Marantz (1984), discussed in the next section.

5.1.1.2 Marantz (1984)

The Ergative Parameter of Marantz (1984) involves the linking of arguments in semantic structure to syntactic (predicate-argument) structure. The correspondence between semantic roles and grammatical relations are reversed in ergative and accusative languages. In an accusative language, the Agent is assigned the subject function, and the Patient, the object function. In an ergative language, it is the Patient which is assigned the subject function, and the Agent, the object function.

Case-assignment is identical in the two language types. However, the opposite d-structure representation of subject and object results in the reversal of NPs (i.e., Agent and Patient) receiving specific Cases. In an accusative language, the Agent subject is assigned nominative Case, and the Patient object, accusative Case. In an ergative language, the Patient subject has nominative Case, and the Agent object, accusative (or ergative) Case. An intransitive clause has the same d-structure representation in both language types.

In Marantz' analysis, the difference between accusative and ergative languages occurs at d-structure (i.e., the level of thematic representation), and not at s-structure, where Case is assigned. In my analysis, I make the opposite assumption, where semantic representation is identical in the two

languages, and the difference lies in the application of operation Move α , which raises NPs to their Case-checking positions.

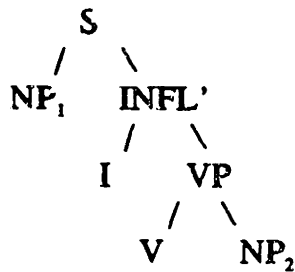
5.1.2 Obligatory Case Parameter

The two analyses discussed in this section, Levin and Massam (1985) and Bobaljik (1992), assume that Case-marking (or checking) in *transitive* clauses is identical in accusative and ergative languages. Nominative/ergative Case is assigned to the subject, and accusative/absolutive, to the object. It is in *intransitive* clauses that Case-assignment differs. In an accusative language, intransitive subjects are assigned the same Case as the transitive subject (i.e., nominative), while in an ergative language, the intransitive subject receives the Case of the object (i.e., absolutive). My theory makes the opposite assumption, namely that Case-checking is identical in intransitive clauses, and differs in transitive clauses.

5.1.2.1 Levin and Massam (1985)

Levin and Massam (1985) propose the following structure for accusative and ergative languages:

(3)



The subject is generated in NP_1 , and the object, in NP_2 . There are two Case-assigners, I and V, which are associated with an Abstract Case. In an accusative language, I assigns nominative Case, and V assigns accusative Case. In an ergative language, I is associated with ergative Case, and V, with absolutive Case. Levin and Massam propose the following conditions on Case assignment:

(4) Conditions on Case Assignment

- A. C_x must be assigned.¹
- B. C_y ($y \neq x$) can be assigned only under theta-government.
- C. Case is assigned only under government.

The parameter they propose to account for Case-marking in accusative and ergative languages is based on the value of x in (3A):

(5) Case Parameter

- a. $x = I$ (Nominative/Accusative)²
- b. $x = V$ (Ergative/Absolutive)

¹" C_x " refers to the abstract Case assigned by x .

²In their terminology, "Nominative/Accusative" refers to accusative languages, and "Ergative/Absolutive", to ergative languages.

In an accusative language, the Case of I is obligatory, while in an ergative language, the Case of V is the one which must be assigned.

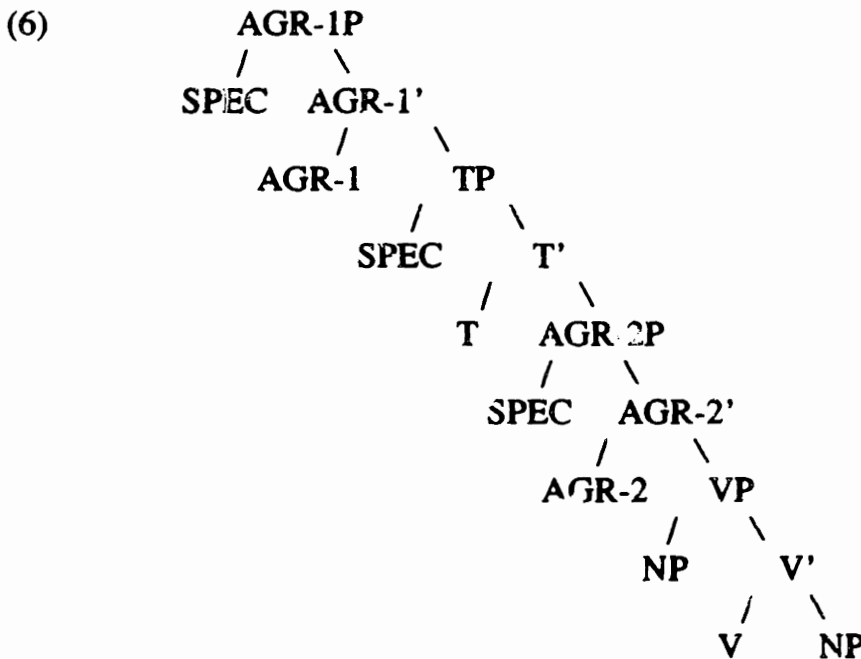
In Levin and Massam's analysis, the s-structures of clauses in accusative and ergative languages are identical (see (1) above). Consider first transitive sentences. In both types of languages, I assigns Case to the subject (nominative/ergative), and V, to the object (accusative/absolutive). Differences appear in the intransitive paradigm, when there is only one Case to assign. Accusative and ergative languages choose different Cases as the obligatory one, stated as the Case Parameter in (5): nominative (C_I) for the former, and absolutive (C_V) for the latter. Intransitive Case assignment is straightforward in accusative languages: I assigns its obligatory Case (nominative) to the subject. In an ergative language, the obligatory absolutive Case is assigned to the subject by percolating from V to I.

Levin and Massam claim that their parameter is "in accord with the relations established by Marantz (1984) where Nominative Case is equivalent to Absolutive Case" (p. 288). However, the equivalence of Case relations in the two systems differs in a fundamental way. In Marantz (1984), since the projection of arguments is reversed at d-structure in the two language types, the assignment of Case remains the same. Thus, for him, Nominative and Absolutive are equivalent structurally, in being the unmarked Case that is assigned to the grammatical subject (i.e., Agent in accusative languages,

Patient in ergative). For Levin and Massam, on the other hand, Nominative and Absolutive Case are equivalent not structurally, but conceptually, in terms of being the obligatory Case.

5.1.2.2 Bobaljik (1992)³

The notion of obligatory Case assignment is adopted in Bobaljik (1992), within a more complex system of functional projections. The structure he assumes, shown in (6), is based on Chomsky (1991,1992):



³The same analysis is assumed in Chomsky (1992), but as it is only mentioned briefly there, I will focus on the proposals and arguments presented in Bobaljik (1992).

The structure consists of two Agr projections (for subject and object agreement), a Tense projection, and arguments generated in the VP. Case is assigned by functional heads in a SPEC-head configuration, requiring both subject and object to raise out of the VP into SPEC positions. Bobaljik assumes that universally, the only possible movement for subject and object NPs in a transitive clause is "Crossing Paths", where the subject raises to SPEC AGR-1P, and the object, to SPEC AGR-2P (see also Chomsky 1992). Thus, in transitive clauses, Case assignment is identical in accusative and ergative languages.

As in Levin and Massam (1985), Bobaljik assumes that in an intransitive clause, only one of the AGRs is "active", depending on whether or not the Case associated with it, Case X, is obligatory. It is to the SPEC position of the active Agr that the intransitive subject raises. The choice of which AGR is the active one is determined by the Obligatory Case Parameter, shown in (7):

(7) Obligatory Case Parameter⁴

- a. CASE X = NOMINATIVE = ERGATIVE [:N/A language]
- b. CASE X = ABSOLUTIVE = ACCUSATIVE [:E/A language]

⁴"N/A" and "E/A" refer to "Nominative/Accusative" and "Ergative/Absolutive" (see footnote 4).

Bobaljik claims that in an accusative language, AGR1-P, associated with nominative Case, is obligatory, while in an ergative language, it is AGR2-P (associated with absolutive) which is obligatory. The intransitive subject raises to SPEC AGR1-P and SPEC AGR2-P in accusative and ergative languages, respectively.

In Bobaljik (1992) and Levin and Massam (1985), the difference in Case-marking systems in the two types of languages results from the Case (and Agr projection) that is obligatory. Bobaljik claims that there is no *a priori* reason to assume that one or the other is obligatory, justifying the parametrization of this option.

It is evident that any theory of ergativity must contain the notion of obligatoriness. In this thesis, I have proposed a theory in which these notions follow naturally from the concept of transitivity. A transitive clause has two Case-assigning positions, and an intransitive clause, only one. In both language types, the projection which is not required in an intransitive clause is TrP, the projection associated with transitivity. This is because when Tr is [-trans], it does not have Case features. As a result, the other projection, TP, is the one where Case is checked. In my system, then, the obligatoriness of TP is not the result of an arbitrary value for a "obligatory Case parameter", but follows from the value of [\pm trans].

Bobaljik (1992) presents arguments from binding in various ergative languages as evidence that the subject is in SPEC AGR1-P, and the object in SPEC AGR2-P. In all his examples, the subject binds the object. However, binding facts reveal only the hierarchical structure of a subject that c-commands an object. As discussed in section 4.3 above, if we assume that binding takes place at s-structure, then the binding facts are compatible with the system proposed in this thesis, where the subject raises to SPEC TrP at s-structure, and the object, to SPEC TP at LF.⁵

⁵Bobaljik (1992) also discusses agreement in non-finite clauses in Inuit as further evidence for his analysis. He claims that in [-tense] *-llu* constructions (i.e., infinitives and gerunds: see section 2.8.2.2 above), AGR-1 is defective, and thus unable to license Case or agreement. Since AGR2-P is not subject to such restrictions, NPs raising to its SPEC (i.e., S and O) show Case, and trigger verbal agreement. In the following example, agreement is triggered by S in (ia), and by O in (1b):

- (i) a. [niviarsiaq sikkir-¹lu-ni] kiina-¹ngua
 girl(Abs) giggle-llu-4sAbs] face-little-3sPoss
 nui-ratannguar-puq
 appear-at.last-3sAbs

'the little girl giggling, her little face appeared at last'
 (Bergsland 1955)

- b. anguti-¹rujug-¹šuaq, [PRO_i aavir-¹šuaq uniar-¹lu-gu]
 man-very-big(Abs) whale-big(Abs) trail-llu-3sAbs
 tiki-lir-suq
 come-begin-Part

'...the big man who began to come [trailing the big whale]...'
 (simplified, from Bergsland 1955)

Bobaljik presents this as evidence that S and O have raised to SPEC AGR2-P, since he claims that AGR1-P is unable to license Case and agreement. However, contrary to his claim, lexical NP subjects *are* permitted in transitive *-llu* clauses, and they appear with ergative Case:

- (ii) [Juuna_i-p miqqat taku-llu-git] pro_i qungujup-p-u-q
 Juuna-Erg children(Abs) see-llu-3pAbs smile-Ind-Intr-3sAbs
 'Juuna seeing the children, (he) smiled'

5.1.3 Nominative Object

In this section, I discuss analyses which propose that the object is assigned nominative Case, either in a passive or unaccusative construction, or by raising to SPEC IP.

5.1.3.1 Syntactic Change

Various claims have been made that the ergative construction involves a syntactic change from an accusative to ergative system (see Anderson (1976a) for a discussion of these proposals).⁶ In this section, I will discuss the proposals of Hale (1970) for Australian languages, and Chung (1978) for Polynesian.⁷

(Bittner, p.c.)

This illustrates that AGR1-P cannot be inactive, at least with respect to Case-marking. In other words, given that AGR-1 and AGR-2 do not differ in their Case-marking capacities, the examples in (i) above do not demonstrate that S and O raise to SPEC AGR2-P. See section 3.4.3 for an alternative analysis of the data.

⁶Anderson (1976a) notes that there are only two examples of changes in the opposite direction, from ergative to accusative: Georgian and Mingrelian, both Kartvelian (South Caucasian) languages.

⁷Anderson (1976a) and Comrie (1978) discuss similar analyses for Indo-Iranian.

Hale (1970), in his investigation of Australian languages, observes the similar surface structure of the passive in an accusative language (8), and the active in an ergative language (9):

(8) Accusative (Passive)

yipi wati-ngku paka-Li-ngu
woman(Nom) man-Agt hit-Pass-past
'the woman was hit by the man'

(9) Ergative

wati-ngku yipi pakaL-ngu
man-Erg woman(Nom) hit-past
'the man hit the woman'

(Hale 1970:760-1)

The patient argument, *yipi* 'woman', in both the passive accusative (8) and active ergative (9) have nominative Case, and both agents, *wati* 'man', are marked with the suffix *-ngku*.⁸ The transitive verb in (9) is conjugated with the morpheme *L*, which is associated with the passive inflection *Li* in (8). To account for the lack of passives in the ergative Australian languages, Hale hypothesizes that these languages were originally accusative, but underwent obligatory passivization. The passive is now used in an active semantic sense, and the syntactic active representation never appears on the surface.

⁸In his discussion, Hale uses artificial examples to avoid morphophonemic variation. Therefore, although the same morpheme *-ngku* is used in (8) and (9), actual languages will exhibit some variation in form.

Chung (1978) argues that the ergative systems of Tongic and Samoic-Outlier languages arose through a reanalysis of passive clauses as active transitive clauses. Her proposal differs from that of Hale (1970) in claiming that ergative Case marking arose directly through reanalysis, and not through an intermediate stage involving an obligatory Passive.

Chung argues that Proto-Polynesian had an accusative case system, where subjects were unmarked, and direct objects were marked with *i. Proto-Polynesian also had a Passive rule which promoted the direct object to subject, marked the underlying subject with the oblique preposition *e, and attached the passive suffix *-Cia to the verb. Chung claims that after the split of Proto-Polynesian into daughter languages, in Tongic and Samoic-Outlier languages, passive clauses were reanalyzed as active transitive clauses: i.e. their underlying subject was reinterpreted as a surface subject, and their underlying direct object, as a surface direct object. This reanalysis eliminated the passive, and created a new type of case marking for transitive clauses. In most languages, this new, ergative pattern replaced the older accusative pattern for canonical transitive clauses. Furthermore, Chung presents syntactic and semantic arguments that the verbal suffix -Cia found in the modern ergative Polynesian languages is a relic of an earlier passive suffix.

5.1.3.2 The Unaccusative Hypothesis: Bok-Bennema (1991)

For Bok-Bennema (1991), ergativity is characterized by the inability of transitive verbs to assign structural Case (Unaccusativity Hypothesis). She claims that ergative patterns arise as a solution to the Case problem posed by unaccusativity.⁹ In an ergative language, one way to solve the Case problem is to have an exceptional Case for the subject, so that the nominative Case normally assigned to the subject becomes free to be assigned to the direct object. In her system, I(nfl) assigns exceptional genitive (i.e., ergative) Case to transitive subjects, which move to SPEC IP. Objects raise and adjoin to I', from where they receive nominative (or absolutive) Case from I. An alternative solution is to express the agent or theme role as an oblique NP, either by passivizing or antipassivizing the clause.

Bok-Bennema assumes that accusative Case is in principle available in ergative languages. Whether or not this Case can be assigned follows from specific properties of transitive verbs, rather than from a parametric choice. To support this claim, we need evidence that accusative Case-marking in ergative languages depends on specific verbs. There are no examples, however, of ergative languages exhibiting split ergativity based on individual

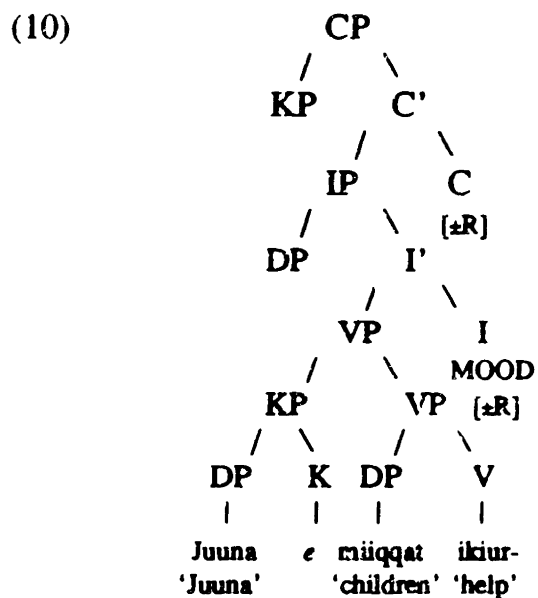
⁹Bok-Bennema claims that examples of ergativity can be found in accusative languages, when structural verbal Case-assignment is not possible (e.g., in passives, causatives and nominals).

verbs. Rather, ergativity splits occur with different types of nouns (e.g., pronouns vs. full NPs; first/second person vs. third), or depend on the tense/aspect of the verb (see section 5.3 below).

5.1.3.3 Object Raising: Bittner (in prep.)

In the system proposed by Bittner (in prep.), Case and agreement reflect relations between functional heads and the nominal phrases they govern. Her Case Filter is stated as a requirement that D be governed by K or C at s-structure. Agreement is a phonological reflex of coindexation relations between I or C and a SPEC position.

Bittner proposes the following structure for transitive clauses in West Greenlandic Inuit:



'Juuna helped the children'

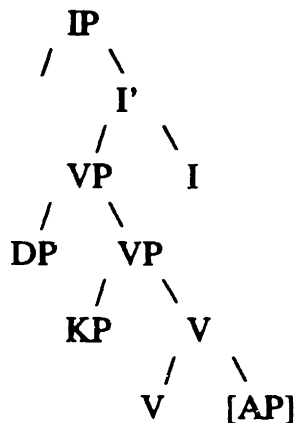
The subject is generated as a KP, and the object, as a DP. The subject, *Juuna*, satisfies the Case Filter, since its head is governed by the empty K. The realization of an empty K depends on its governor: when governed by I, as in (10), it is realized as ergative Case, whereas with a lexical governor (e.g., verb), it may be instrumental or dative. The DP object, *miiqqat* 'children', cannot satisfy the Case Filter without raising to SPEC IP (an A'-position), where it will be governed by C.

The two functional heads, I and C, contain the feature [\pm R]. In a transitive clause such as (10), I has a [\pm R] feature for the subject (which it governs), and C, for the object. When a head has the feature value [+R], the argument that it governs is coindexed with a higher subject. The [+R] feature is realized morphologically as third person reflexive agreement. When the feature is [-R], there is no coreference involved, and the feature is realized as regular third person agreement.

The basic SOV order of West Greenlandic is generated by the optional raising of the KP *Juuna* to SPEC CP.

Bittner's account of accusative languages involves an antipassive-accusative reanalysis, corresponding to the type of passive-ergative reanalysis discussed above (section 5.1.3). Consider the following structure of an accusative clause:

(11)



The subject DP must raise to SPEC IP to satisfy the Case filter. Bittner proposes that in forming an accusative construction, a nominal antipassive suffix is incorporated into the verb. The KP is marked with accusative Case, since K is realized as accusative Case when it is governed by a nominal functional head (in this case, the incorporated antipassive suffix).

5.2 Nominative and Absolutive Case

It has frequently been observed that there are many similarities between nominative Case in accusative languages, and absolutive Case in ergative languages (see, for example, Silverstein 1976, Comrie 1978, Dixon 1979, and Bittner 1991b, in prep.). In the history of research concerning ergative languages (with the exception of Inuit), these two Cases were not distinguished. Dixon (1979, 1987a) states that 'nominative' was until recently used as the complement of ergative Case (i.e., the Case of the intransitive

subject and object), as well as the complement of accusative (i.e., the Case of transitive and intransitive subjects). Because of the confusion in distinguishing language types, the term 'absolutive' was adopted from Inuit terminology. Very recently, however, there has been a trend to revert to the singular term *nominative* for both nominative in accusative languages, and absolutive in ergative languages (e.g., Bok-Bennema (1991), Bittner (1991b, in prep.)).¹⁰ In this section, I discuss various properties which the two Cases (i.e., nom/abs) have in common.

If one of the Cases is morphologically unmarked, it will be the nom/abs. Shown in (12), and (13)-(14), are examples from accusative and ergative languages, respectively.

(12) Hungarian

- a. én-ø lát-om a ház-at
 I-Nom see-1sN the house-Acc
 'I see the house'

(Kiss 1987:47)

- b. Mari-ø alud-t-ø
 Mary-Nom sleep-Past-3sN
 'Mary slept'

(Szabolcsi 1983-4:90)

¹⁰In this thesis, I use the term *Nominative* (with capital *N*) to refer to the nominative in accusative languages, and absolutive in ergative languages, which I assume are the same Case (see chapter 1). However, in this section, I will refer to this Case as "nom/abs".

(13) Inuktitut

- a. Jaani-up tuktu-∅ taku-v-a-a
John-Erg caribou-Nom see-Ind-Tr-3sE.3sN
'John saw the caribou'
- b. Jaani-∅ tukisi-v-u-q
John-Nom understand-Ind-Intr-3sN
'John understands'

(14) Mam

- a. ma ∅-jaw t-tx'ee7ma-n Cheep tzee7
rec 3sN-dir 3sE-cut-ds José tree
'José cut the tree'
(England 1983:201)
- b. ma ∅-tz'oo-x weech
rec 3sN-go.in-dir fox
'the fox went in'
(England 1983:141)

Dixon (1979) notes, however, that the parallel between nominative and absolutive Cases is not complete here, as there are a few languages (e.g., some Cushitic languages), where the nominative, and not accusative, involves an overt affix. In an ergative language, the morphologically null Case will always be the absolutive.

The nom/abs form is used for citation, unless there is a separate citation form, as in Hua (Papuan), which has a special citation suffix *-a* (Haiman 1980:228). Bittner (1991a) observes that the nom/abs form is used even if it is not the least marked. She gives an example from Polish, where the genitive form of certain plural nouns is morphologically unmarked (e.g., *kobiet-∅* 'women-Gen'), while the nominative is marked by a suffix (*kobiet-y*

'women-Nom'). The citation form is the nominative, even though it is more marked than the genitive.

In Chapter 3, I provided syntactic evidence from relative constructions that nom/abs Case is associated with TP. Bittner (1991b) discusses various syntactic properties that intransitive subjects, which have nom/abs Case and occur in SPEC TP, share in the two language types. Intransitive subjects of passive constructions, for example, can serve as an antecedent for reflexive elements (15a)-(16a), but cannot themselves be reflexive (15b)-(16b):

(15) Polish

a. Jakub_i zosta-l zaprosz-on-y przez
 Jacob(Nom) Aux-Past-3s.m invite-Pass-s.m.Nom by
 swojego_i przyjaciela
 self's friend

'Jacob_i was invited by his_i friend'

b. *swoj_i przyjaciel zosta-l zaprosz-on-y
 self's friend(Nom) Aux-Past-3s.m invite-Pass-s.m.Nom

 przez Ann_i-e
 by Ann-Acc

'self_i's friend was invited by Ann_i'

(16) West Greenlandic

a. Jaaku_i ikinngum-mi_i-nit qaaqqu-niqar-p-u-q
 Jacob(Nom) friend-self's-Abl invite-Pass-Ind-Intr-3sN
 'Jacob_i was invited by his_i friend'

b. *ikinnguti-ni_i Anna_i-mit qaaqqu-niqar-p-u-q
 friend-self's(Nom) Anna-Abl invite-Pass-Ind-Intr-3sNom
 'self_i's friend was invited by Anna_i'

(Bittner 1991b:30-1)

Moreover, the oblique agent behaves the same way in the two types of languages: it can contain a reflexive bound by the subject ((15a) and (16a)), but cannot bind any reflexive contained in the subject ((15b) and (16b)).

Based on these and other examples, such as the scope facts I discussed in section 3.2 above, Bittner concludes that considerations of simplicity and generality will favour a theory which equates nominative with absolutive Case, and that can explain the observed parallels in a non-stipulative manner.

5.3 Morphological Ergativity

The main proposal of this thesis for ergativity is that, based on the syntactic nature of the Ergative Parameter, ergative languages differ from accusative languages at the syntactic, and not simply morphological, level of representation. Chapter 3 consisted of evidence supporting my hypothesis that ergativity is a syntactic phenomenon. In this section, I investigate languages which exhibit ergativity in their Case and agreement morphology, but are syntactically accusative. I adopt Marantz' (1991) distinction between abstract "Case" and morphological "case".

5.3.1 Split Ergativity

Split ergative languages are characterized by a division in their Case-marking: some part of their morphology is based on an accusative pattern, and another part, on an ergative pattern. In this section, I discuss two factors which determine splits in language: the tense or aspect of the verb, and the semantic properties of the NPs.¹¹

In all languages which exhibit a tense/aspect split, ergative Case-marking is found with past tense or perfect aspect. Georgian has an ergative system in the aorist simple past tense (17a), and an accusative system in other tenses (17b). Hindi exhibits ergativity in the perfective aspect (18a), and accusativity in the imperfective (18b).

(17) Georgian

- a. vano-m daaxrco rezo
 Vano-Erg 3s.3s.drowned Rezo(Nom)
 'Vano drowned Rezo'
- b. vano axrcobs rezo-s
 Vano(Nom) 3s.3s.be.drowning Rezo-Acc
 'Vano is drowning Rezo'

(Bittner 1991b:21)

¹¹The descriptive information on split ergativity is taken from Comrie (1978) and Dixon (1979).

(18) Hindi

- a. raam-ne roTii khayii thii
Ram.m-Erg bread.f(Nom) eat.Perf.f be.Past.f
'Ram had eaten bread'
- b. raam roTii khataa thaa
Ram.m(Nom) bread.f(Acc) eat.Impf.m be.Past.m
'Ram (habitually) ate bread'

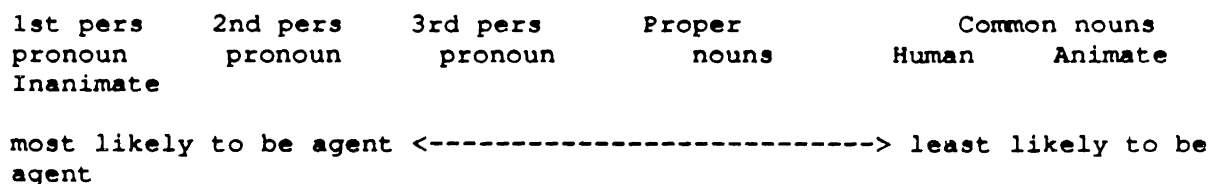
(Mahajan 1990:72-3)

Marantz (1991) claims that these languages are ergative only at the morphological level. He argues that the subject position is always licensed by tense/aspect inflection, regardless of the actual tense of the verb, and that the two patterns of Case-marking are strictly concerned with morphological "case", the realization of abstract "Case".

To account for the different cases observed in the two tense/aspect paradigms, Marantz proposes the following disjunctive hierarchy of case realization: (i) lexically governed case (e.g., quirky case), (ii) "dependent" case (accusative and ergative), (iii) unmarked case, and (iv) default case. The case that is of interest here is dependent case (iii). This case is assigned by V+I to an argument position in opposition to another position, i.e., in a transitive clause with two arguments in distinct chains. Dependent case is assigned up to the subject in an ergative language, and down to the object in an accusative language.

Another type of split ergativity is dependent on the semantic nature of the A and O arguments. Silverstein (1976) illustrates the variety of split systems based on a hierarchy of features. The hierarchy represents the potentiality of agency for a given NP. At one end of the hierarchy are [+ego] and [+tu] pronouns, i.e., first and second person pronouns, which are the most likely to be the agent of an action. At the other end of the hierarchy are [-animate] nouns, which are the least likely to be agents. Shown in (19) is a simplified version of the hierarchy presented in Dixon (1979):

(19) Hierarchy of NPs



A language exhibiting a split Case system has accusative Case-marking on NPs to the left of a certain point in the hierarchy, and ergative marking on NPs on the right. Languages vary in the exact position in the hierarchy where the split occurs. As Dixon notes, it is most natural and economical to mark a participant when it is in an unaccustomed role. In an accusative system, the marked Case on O marks NPs which are most likely to be agents. In an ergative system, the Case of A is marked, and thus is found on NPs

which are least likely to be agents.

Shown in (20) is an example from Wik-Mungkan, an Australian language of North Queensland. Wik-Mungkan shows accusative Case-marking on first and second person pronouns, and ergative Case-marking on third person pronouns and full NPs.

(20) Wik-Mungkan

- a. ku'-ng nga-ny path-ny
dog-Erg me-Acc bite-Past
'the dog bit me'
- b. ngay ku' thath-ng
I (Nom) dog (Nom) see-Past
'I saw the dog'
- c. ku' uthm
dog (Nom) die
'the dog died'

(Bittner and Hale 1992:4)

Observe that in the transitive clauses shown in (20a) and (20b), there is a mixture of accusative and ergative Case-marking systems. In (20a), both ergative and accusative Case are found in the same sentence, and in (20b), A and O both have nominative Case. In these examples, the Cases of A, O and S cannot all be structural Cases, which are associated with specific SPEC positions. Since nominative Case is associated with SPEC TP, and accusative and ergative, with SPEC TrP, in (20a) both arguments would have to raise to SPEC TrP, and in (20b), both to SPEC TP. Such movements are not

permitted, as the Case features of a functional head can only be checked once.

Following the discussion of Marantz (1991) above, I propose that languages which exhibit this type of split are also ergative only at the morphological level. However, it is not correct to simply assume that Wik-Mungkan is underlyingly accusative. We must look at other facts of the language to determine whether it is syntactically accusative or ergative.

Dyirbal, for example, exhibits the same system of split Case-marking, where first and second person pronouns follow an accusative pattern of Case-marking, while third person pronouns are Case-marked ergatively. It is clear, however, that this language is syntactically ergative, and exhibits accusativity only morphologically. First and second person pronouns behave ergatively, even though they appear with accusative case (not Case). Recall that clausal linking in this language picks out the nominative argument as the prominent one (see section 3.4.4). Shown in (21) is an example of topic chaining with first and second person pronouns:

(21) Dyirbal

- a. ngana banaga-n^yu n^yura buɾa-n
 we (Nom) return-Nonfut you (Nom) see-Nonfut
 'we returned and you saw (us)'
- b. n^yura ngana-na buɾa-n banaga-n^yu
 you (Nom) us-Acc see-Nonfut return-Nonfut
 'you saw us and returned'

(Dixon 1979:64)

In (21a), the topic of the two clauses is *ngana* 'we', which is marked with nominative Case in the first clause, but with accusative Case in the second. Similarly, in (21b), the same topic *ngana* 'we' is accusative in the first clause, and nominative in the second. However, the accusativity of the pronoun is only morphologically relevant. At the syntactic level, where topic chaining applies, it is "Nominative", in the sense of being associated with SPEC TP. Thus, in this language, we find evidence of morphological accusativity, and not morphological ergativity.

5.3.2 Uniform Ergativity

We have seen that there are factors, such as tense/aspect, and semantics of NPs, which condition split ergativity (or accusativity) in Case and/or agreement. Given that in certain paradigms, an accusative language may exhibit ergative Case-marking, and vice versa, we would expect there to be a language in which the opposite Case system was present in all paradigms. In this language, the parameter that conditions the split in a split ergative language would apply at all times. Instead of "split" ergativity, this language would exhibit "uniform" ergativity at the morphological level.

I propose that Warlpiri may be such a language. The agreement morphemes on the auxiliary in Warlpiri follow an accusative pattern, while

NP arguments are Case-marked in an ergative pattern (Hale 1973, 1983; Dixon 1979; Jelinek 1984):

(22) Warlpiri

a. ngajulu-rlu ka-rna-ngku nyuntu-ø nya-nyi
I-Erg Pres-1sN-2sA you-N see-Nonpast
'I see you'

b. nyuntulu-rlu ka-npa-ju ngaju-ø nya-nyi
you-Erg Pres-2sN me-Nom see-Nonpast
'you see me'

(Hale 1973:328)

5.4 Three Functional Projections

In the system proposed in this thesis, there are two functional projections, corresponding to subject and object Case and agreement. There are languages, however, which exhibit a three-way verbal agreement system associated with subject, direct object, and indirect object. One such language is the Caucasian language Abkhaz:

(23) Abkhaz

sarà a-x°eč'-k°à a-š°q°'-k°à ø-rè-s-to-yt'
I the-child-pl the-book-pl 3pN-3pIO-1sE-give-Fin
'I gave the books to the children'

(Hewitt 1979:105)

Basque also has three agreement morphemes for subject, object and indirect object:

(24) Basque

zuk niri etxea eman d-i-da-zu
you-Erg me-Dat house-the-Nom given it-have-me-you
'you have given me the house'

(Laka 1991:7)

Laka's (1991) study of the inflectional structure in Basque argues convincingly for the existence of three projections: TP, Mod(al)P and IP. Cheng and Demirdash (1990) propose a similar structure with three functional categories (TP, MP, AuxP), but extend the structure to include three agreement projections as well.

It appears that variation among languages is permitted in the number of structural Case positions that are available in the basic clausal structure. However, the existence of more than two functional categories is problematic in the theory proposed in this thesis, as two of the three arguments necessarily must raise at the same level. Although in Basque, all three agreement morphemes never appear simultaneously, this is not the case in Abkhaz. I leave for future research the consequences of these multiple-category languages for my theory.

In this chapter, I investigated several issues relating to ergativity, including previous analyses, nominative/absolute Case, and morphological ergativity. I discussed how these issues could be accounted for within the framework of the theory presented in this thesis.

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