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A Movement Theory of Ergativity

by

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fulfillment of the requirements for the degree of Doctor of Philosophy

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Abstract

In this thesis, I propose a theory of ergativity in which NP arguments are checked for Case by moving to projections of agreement at LF. The Case-marking pattern of an ergative language arises when transitive subjects move to the projection of agreement usually associated with objects (AGR.o), while transitive objects and intransitive subjects move to the projection of subject agreement (AGR.s). While this proposal assigns the same underlying structure to clauses in an ergative language (unlike Marantz, 1984), it does have distinctive syntactic effects. In this it contrasts with a purely morphological approach to ergativity, such as that of Anderson (1976).

Arguments can move to the specifier position of agreement, or adjoin to its maximal projection. Movement cannot take place across the same kind of position as the landing site, which leads us to predict that transitive subjects cannot undergo grammatical extraction in an ergative language. This prediction turns out to be correct in a number of languages, including Chamorro, Mam, and other members of the Mayan group. Our theory also allows for a plausible account of split ergativity – non-canonical patterns in an otherwise ergative language where transitive and intransitive subjects are marked the same, but behave differently under extraction.

The proposal that NPs are not checked for Case until LF entails that they remain in their base positions at S-structure. Evidence for this claim is adduced from the distribution of empty pronoun arguments whose contents must be identified. Our prediction is that transitive subjects in an ergative language will interfere in the identification of an empty object pronoun, since it is closer to the pronoun than its legitimate identifier, AGR.s. This is also shown to be the case.

Résumé

Dans cette thèse, je propose une théorie de l'ergativité par laquelle la vérification des cas des syntagmes nominaux se fait en les avançant aux projections des accords à LF. La forme que prend l'assignation des cas à l'intérieur d'une langue ergative se présente lorsque les sujets transitifs se retrouvent à la projection de l'accord habituellement associée aux compléments d'objet (AGR.o), alors que les compléments d'objet transitifs et les sujets intransitifs avancent à la projection de l'accord du sujet. Bien que ce que je propose attribue la même structure sous-jacente pour les propositions d'une langue ergative (contrairement à Marantz 1984), on y retrouve des effets syntactiques distincts. De ce fait, ce que je propose fait contraste avec une approche purement morphologique de l'ergativité, telle celle d'Anderson (1976).

Un argument peut se retrouver à la position du déterminant de l'accord ou peut être adjoint à sa projection maximale. Aucun mouvement ne peut croiser une position de même type que celle du point de chute. Cela nous amène à prédire que les sujets transitifs ne peuvent être sujet à une extraction grammaticale dans une langue ergative. Cette prédiction s'avère être correcte en ce qui concerne un certain nombre de langues. Celles-ci incluent le chamarro, le mam, ainsi que d'autres langue mayas. De plus, cette théorie nous fournis une explication plausible de la double ergativité, c'est-à-dire, de formes non-canoniques à l'intérieur d'une langue par ailleur ergative dans laquelle les cas des sujets transitifs et intransitifs sont réalisés de la même façon, mais se comportent différemment lorsqu'il y a extraction.

Proposer que les cas des syntagmes nominaux ne sont vérifiés qu'à LF présuppose que ces mêmes syntagmes nominaux demeurent à leur position de base en structure de surface. Cette proposition se trouve renforcée par la distribution des pronoms vides dont le contenu doit être identifié. Notre prédiction est que les sujets transitifs d'une langue ergative devraient créer de l'interférence en regard de l'identification d'un pronom vide complément d'objet puisque le sujet transitif est plus proche du pronom que ne l'est son identificateur légitime (AGR.s). Ce qui est en effet le cas.

iii

Acknowledgements

TABLE OF CONTENTS

List of abbreviations

The following is a list of abbreviations used for glossing the languages in the text. These are taken from many sources and usually reflect the system of the authors.

A=absolutive
ABL=ablative
ACC=accusative
ap=antipassive
asp=aspect
C=complementizer
Cl=clitic/classifier
COM=comitative
dep=dependent aspect
dir=directional
ds=directional suffix
E=ergative
EX=exclusive
icp=incompletive aspect
IM=imperfective
imp=imperative
IN=inclusive
IND=indicative
IR=irrealis
L=linker
NFUT=nonfuture
NOM=nominative
Obl.=oblique
P=preposition
PASS=passive
Pl=plural
PF=perfective
PN=proper noun
R=realis
rec=recent past
RN=relational noun
S=subject agreement (irrealis)

1=first person
2=second person
3=third person
7=glottal stop

CHAPTER ONE
Syntactic ergativity

<u>Introduction</u>

Traditionally, ergative languages are those in which transitive objects and intransitive subjects have the same case inflection, which differs from the inflection of the transitive subject. Ergativity can also manifest itself in verb agreement, such that transitive subjects trigger a unique form, while transitive objects and intransitive subjects trigger the same agreement. The grouping of these two relations is thus characteristic of ergative languages in general, and one of the questions that is often asked is whether transitive objects are 'subject-like', or vice versa. Either way, a proper understanding of the structure underlying transitive and intransitive sentences is crucial in explaining ergativity, and that is what this thesis is about.

1.1 The issues

Perhaps the most perplexing question surrounding ergative languages is why they should exist at all. In attempting to provide an answer, we touch on other issues that are central to linguistic theory. One of these concerns the role of case inflection and agreement in Universal Grammar, which may be regarded as a unified phenomenon (henceforth Case). Specifically, what is the link between morphology and syntactic categories like 'subject' and 'direct object'. This issue arises whenever ergative languages are compared to 'accusative' ones – those in which transitive and intransitive subjects are marked the same for Case, in opposition to transitive objects. The other major issue concerns the manner of Case-assignment in an ergative language. Standard theory holds that the same Case is assigned under the same set of structural conditions. In an ergative language, however, different Cases appear to be assigned under one set, and the same Case under different sets. In order to accommodate this, it is necessary to re-evaluate the status of Case-assignment in the theory itself.

<u>Morphological and syntactic ergativity</u>

When syntactic categories like 'subject' and 'object' are said to pattern alike (or differently), it can take the form of Case-marking, or in the way that syntactic processes affect them. Languages can therefore be described as being syntactically ergative or accusative, in addition to morphologically ergative or accusative. In English, for example,

only subjects trigger agreement on the verb, making this a morphologically accusative language (agreement is underlined):

(1) Morphological accusativity (English)
  a. He admires him/all the candidates
  b. He eats all the time.
  c. *Him eat all the time.

The form that pronouns take confirms English as being morphologically accusative: transitive and intransitive subjects are marked with 'nominative' Case, transitive objects with 'accusative'. Ungrammatical accusative Case on the intransitive subject in (1c) anticipates the situation in an ergative language, where intransitive subjects are marked the same as transitive objects. English shows no signs of being morphologically ergative, neither in agreement nor in pronoun-marking.

  In addition to being morphologically accusative, English is syntactically accusative as well. To illustrate, consider the following paradigm, produced by movement from an embedded clause (the base positions of the moved consituents are indicated by co-indexed traces):

(2) Morphological accusativity (English)
  a. *Who$_i$ do you think [that t$_i$ saw John]?
  b. *Who$_i$ do you think [that t$_i$ left]?
  c. Who$_i$ do you think [that John saw t$_i$]?

In (2a), a transitive subject has moved across a lexical complementizer, while in (2b) it is the subject of an intransitive, and (2c) a transitive object. Since the subjects pattern together with respect to grammaticality (and in opposition to the object), (2) represents a syntactically accusative pattern.

  Just as some languages can be both morphologically and syntactically accusative, others are morphologically and syntactically ergative. Consider the following sentences from Mam (a Mayan language), where subjects and direct objects both trigger agreement on the verb (from England, 1983)[1]:

(3) Morphological ergativity (Mam)
  a. ma chin ok t-tzeeq'a-n-a
   asp 1sA dir 2sE-hit-ds-Cl.
   'You hit me'   [+TR]

---

[1] The morphology of Mam sentences will be discussed in more detail in 2.1; see p.vii for an index to abbreviations.

2

b. ma chin b'eet-a
   asp 1sA walk-Cl.
   'I walked'   [-TR]

(3a) is a transitive sentence, while (3b) is intransitive. In the latter, the subject triggers the same kind of agreement (*chin*) as the object does in (3a). The shared Case of transitive objects and intransitive subjects in an ergative language is called the 'absolutive', the distinct Case of transitive subjects the 'ergative'.

The syntactic ergativity of Mam can be established by observing how subjects and direct objects behave when they undergo a process of focussing. This is shown in the following paradigm (adapted from England, 1983a):

(4) Syntactic ergativity (Mam)
    a. *xiinaq chi-Ø kub' t-tzyu-7n cheej
       man asp-3sA dir 3sE-grab-ds horse
       'THE MAN grabbed the horse'   [+TR.subj]

    b. ma xiinaq s-uul
       asp man   3sA-arrive.here
       'THE MAN arrived here'   [-TR.subj]

    c. cheej chi   kub' t-tzyu-7n   xiinaq
       horse asp/3sA dir 3sE-grab-ds man
       'The man grabbed THE HORSES'   [+TR.obj]

    d. xiinaq x-Ø-kub'   tzyu-n t-e   cheej
       man   asp-3sA-dir grab-ap 3s-RN horse
       'THE MAN grabbed the horse'   [AP]

In (4a), a transitive subject has been focussed, while in (4b) it is the subject of an intransitive and in (4c) a transitive object. As indicated, intransitive subjects and transitive objects may be focussed grammatically, but not transitive subjects. In order to focus the subject of what would otherwise be a transitive sentence, the verb must first be 'detransitivized', as in (4d). This involves attaching an antipassive suffix to the stem, and turning the direct object into the possessor of an oblique ('relational') noun. It appears then that Mam is ergative at both the morphological and the syntactic level.

The next question is whether languages can pattern differently at morphological and syntactic levels. Is it possible for a language to have an accusative pattern of Case-marking and an ergative syntax? What about the converse? This touches on the role of Case-marking in linguistic theory. Perhaps the most plausible assumption has always been that surface Case-marking correlates with syntactic categories. On this view, it is no accident, for example, that NPs marked with nominative Case in an accusative language exhibit syntactic properties typically associated with subjects. It might therefore be surprising to

3

find a syntactic process in an accusative language like English that affects transitive objects and intransitive subjects equally, to the exclusion of transitive subjects. Similarly, absolutively Case-marked NPs in an ergative language might be expected to behave the same in the syntax, if the role of Case-marking is to pick out syntactic categories. This would either mean that subjects of intransitives were 'object-like', or that objects were like 'subjects'. Language acquisition might be regarded as a simpler task from this perspective, for how better to grasp the fundamentals of syntactic processes than through evidence in the form of Case-marking?

In spite of this, the role of Case-marking as an indicator of syntactic categories has been challenged in the field of ergativity. Anderson (1976), for example, shows that absolutive NPs in a number of ergative languages do not correlate with a single category with regard to syntactic processes. At the same time, transitive and intransitive subjects (which bear distinct Case-markings in an ergative language) are shown to behave alike under the same circumstances, exactly as they would in an accusative language. This suggests that a language can be ergative at the morphological level and accusative at the level of the syntax. The 'cost' of allowing this, of course, is that we lose our explanation of the role of Case in Universal Grammar.

What is striking about Anderson's arguments is that the same processes used to demonstrate that most ergative languages are syntactically accusative also operate in Mam, which has already been exemplified as having an ergative syntax. This calls into question the nature of Anderson's tests, and raises once again the possibility that – if the facts that he presents can be properly understood – the correlation between Case-marking and syntactic categories can be maintained. As pointed out already, this has certain theoretical advantages, and allows for ease of acquisition. This is what is at stake in the issue surrounding syntactic ergativity. In what follows then, I will propose that syntactic tests which are meant to establish whether a given language is ergative or not are only appropriate at a certain level of representation. At another level, different tests may be appropriate. Generally speaking, a proposal such as this can only be made in a theory that allows for grammatical relations to change in the course of a derivation. This is a controversial assumption, and it raises a host of questions regarding the execution of Case assignment, particularly in a language that is ergative. This will be discussed below.

Basic assumptions

The proposals of this thesis are developed within the 'principles and parameters' approach to linguistic theory, first laid out by Chomsky (1981). The grammar is conceived as a system of subtheories (e.g. Binding Theory, Case Theory, etc.), with various options

4

(parameters) that can be selected by individual languages. Together, the principles of grammar characterize four separate levels of syntactic structure: D-structure, S-structure, Phonetic Form (PF) and Logical Form (LF). They are organized as follows:

(5)　　　　D-str.
　　　　　　　|
　　　　　　S-str.
　　　　　　／＼
　　　PF　　　　LF
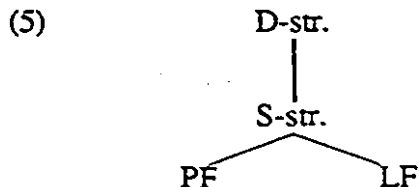
D-structure is the level of 'pure' thematic relations, where lexical properties are arranged hierachically in accordance with standard X-bar theory. I will also be assuming the 'VP-internal subject hypothesis', and the 'uniformity of theta-assignment hypothesis' (Baker, 1988); these will be discussed as we go along.

　　　　D-structure converts to S-structure via 'move-alpha', which is visible on the surface (PF). The derivational history of each sentence is preserved through co-indexed traces. Several principles apply at S-structure, including those of Binding Theory. These are given here (from Chomsky, 1986b:166):

(6) The binding principles
　　　Principle A: an anaphor is bound in a local domain
　　　Principle B: a pronominal is free in a local domain
　　　Principle C: an r-expression is free (in the domain
　　　　　　　　　　of the head of its chain)

Roughly speaking, 'bound' means co-indexed with a c-commanding antecedent, while 'free' means not bound. 'Local domain' is defined in terms of Government, as in the following (these definitions will be modified somewhat in the chapters that follow):

(7) Government (adapted from Rizzi, 1990)
　　　　X governs Y iff X is a governor which c-commands Y, and there is no
　　　　closer governor Z which c-commands Y, such that Z does not m-
　　　　command X

(8) C-command (adapted from Chomsky, 1986a)
　　　　　　X c-commands Y iff X does not dominate Y, and every Z that
　　　　dominates X also dominates Y

Thus, an anaphor will be bound if it is co-indexed with an antecedent that governs it, where Z in (8) stands for any branching category; pronominals are considered to be free when they are not bound.

Case Theory

Case-inflection plays an important role in any discussion of ergativity. In many theories, Case is assigned at S-structure under government, where Z in (8) stands for 'maximal projection'. Alternatively, fully-inflected NP's could be inserted into D-structure and checked for Case at S-structure or LF. This theory was first explored by Hale (1983), and later developed by Chomsky (1992); it is the one which we adopt as well. When Case-checking cannot apply, the sentence containing the Caseless NP is ruled out. I assume that the mechanism responsible for this is the Case Filter, or perhaps some other principle from which it is derived (adapted from Chomsky, 1981):

(9) The Case Filter: *NP, where NP is lexical and has no Case

Consider now the following configuration, where both agreement and the verb are governors and capable of checking NPs marked for Case:

(10) Case-checking at S-structure
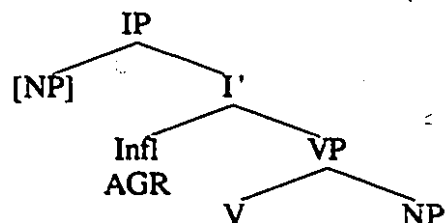
In (10), IP (='inflectional phrase') immediately dominates the subject NP (a specifier), while VP dominates the object (a complement). If the language is accusative, the subject NP will receive nominative Case from AGReement, and the object accusative Case from the verb. Subjects of intransitive verbs will be Case-marked/checked in the same way as transitive subjects, which is to say that they appear in Spec. of IP too.

If the language is ergative, however, it is not so obvious how (10) would account for the distribution of Case. Suppose that subjects were checked for Case by AGReement in this configuration, and objects by the verb. This raises a question as to how the subject of an intransitive is checked for Case – presumably also by the verb, since it carries absolutive markings. At the same time, however, it is a subject, hence should be in subject position. Nevertheless, we have already assumed that this position is associated with the ergative, not the absolutive Case in (10). Moreover, it is impossible for the verb to check NPs in the Spec. of IP, since the verb does not govern this position.

Alternatively, we might achieve our goal of accounting for the distribution of Case in an ergative language by allowing Case to be checked at LF. Processes that apply at this

6

level are not visible on the surface, so there is no direct way of confirming it. Still, if it were possible, object NPs could be checked for Case from Infl by moving there, along with subjects. A rough schematization of the LF-counterpart to (10) might be as follows:

(11) <u>Case-checking at LF</u>

```
                IP
              /    \
          NPᵢ        IP
                   /    \
               [NP]       I'
                        /    \
                     Infl      VP
                  Agr.s/Agr.o /    \
                            V        tᵢ
```
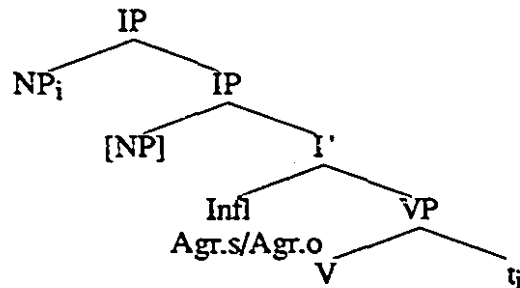
In (11), the object NP has adjoined to IP, where it will be checked for Case by Agr.o (=object agreement) under Infl. The Spec. of IP position is already occupied by the ergative subject, which in turn cannot be displaced (it relies on Agr.s for Case-checking). (11) also requires a different understanding of Government than the one given in (7). This is an empirical question, the answer to which will have many consequences. Before proceeding, however, it will be necessary to see how other researchers working in the field have addressed the issues identified here.

1.2 Surface ergativity (Anderson, 1976)

In the literature of generative grammar, the existence of syntactic ergativity has been called into question, most notably by Anderson (1976). According to him, most languages that show an ergative pattern of Case-marking are syntactically accusative, implying that ergativity is a mainly surface phenomenon. This presents a challenge to the approach that will be taken here, which assumes a correlation between Case-marking and syntactic categories at a certain level. The languages that we claim to be syntactically ergative are similar to those in Anderson's study. Consequently, it will be important to address these issues, i.e. so that our theory can accommodate them.

<u>Theories of underlying structure</u>

Anderson considers languages that are morphologically ergative both in terms of NP-marking and agreement. Not included in this survey are those that have a three-way distinction between transitive subjects (Agents), objects (Themes or Patients), and

7

intransitive subjects[2]. He then proceeds to outline various theories that would account for the Case-marking pattern of an ergative language. The first theory holds that in the structure underlying transitive sentences, the verbal arguments c-command each other – unlike the structure shown in (10), where the subject asymmetrically c-commands the object. On the second theory, the verbal arguments would correspond to different types of noun modifiers – e.g. 'true' complements vs. adjuncts. The third theory I refer to as the 'ergative-as-passive' theory, where NPs marked for absolutive Case occupy what would be the subject position in (10). On this theory, transitive subjects (which are marked with ergative Case) would correspond to oblique objects in passive sentences, such as the *by*-phrase in 'John was shot by the police'. Absolutive NPs, on the other hand, c-command all other NPs at S-structure.

Syntactic subject processes

Each theory is evaluated in light of well-known processes which pick out certain NPs as syntactic subjects in accusative languages. Anderson's reasoning is that the subjecthood of an NP in an ergative language should be established by syntactic, rather than morphological criteria. The 'syntactic subject processes' (as I shall call them) include Equi-NP deletion (or Control), Raising, Conjunction and Reflexivization. An example of each process is given below (affected empty categories are symbolized by *e*):

(12) Syntactic subject processes
    a. John tried [e to hit Bill]
       (* ... [Bill to hit e])   [Equi-NP deletion]

    b. John seems [e to like Mary]
       (* ... [Mary to like e])   [Raising]

    c. John came in and [e kissed Mary]
       (* ... and [Mary kissed e])   [Conjunction]

    d. John$_i$ annoyed Bill$_j$ with a talk about himself$_{i/*j}$ [Reflexivization]

As seen in (12a), only subjects may be deleted under identity. Similarly, only subjects can undergo raising (12b), be conjoined with other subjects (12c), or serve as antecedents for reflexives in certain constructions (12d).[3] In the theory of grammar we are assuming, Raising and Reflexivization fall under the binding principles (6), while Equi-NP deletion

---

[2] The understanding here and elsewhere is that e.g. verbs are specified for an argument structure, which designates the thematic (theta) roles of its event-participants. These are Agent (or Actor), Theme (or Patient), Goal, etc.

[3] In many languages, only subjects serve as antecedents to reflexives.

and Conjunction are subject to principles of control (cf. 2.2 and 4.1). All of these processes are checked at S-structure.

<u>'Deep' accusativity</u>

Anderson proceeds to show how subjects of both transitive and intransitive verbs can be deleted, raised, conjoined with other subjects, or serve as antecedents in languages that are morphologically ergative. At the same time, transitive objects are not allowed to undergo these processes. The following illustrates how Equi-NP deletion operates in Basque, a language with an ergative pattern of agreement (PRO represents the position of the deleted subject):

(13) <u>Equi-NP deletion</u> (Basque)
     a. [PRO dantzatzerat] joan da
          dance(Inf.) go he.is
       'He has gone to dance'

     b. [PRO txakurraren hiltzera] joan nintzen
          dog(def/gen) kill(Inf.) go I.was
       'I went to kill the dog'

     c. [PRO ikhusterat] joan da
          see(Inf.)   go he.is
       'He$_i$ has gone to see him$_j$'
       (Not: 'He$_i$ has gone for him$_j$ to see him$_i$'

In (13a), the subject of an intransitive verb has undergone deletion, a relation that would normally trigger absolutive agreement in a finite sentence. In (13b) the deleted NP is a transitive subject, which would normally be associated with ergative Case. The deleted categories thus behave the same syntactically, although they relate to different Cases. (13c) indicates that the deleted NP cannot be the (absolutive) object of a transitive verb, even though it is marked the same as an intransitive subject. In short, the results show a decidedly accusative syntactic pattern, or a system at odds with the morphology. Since all of the other tests derive this pattern, the conclusion seems to be that some ergative languages are 'deeply' accusative, i.e. that the morphology obscures the true nature of syntactic categories.

If morphologically ergative languages are essentially accusative in underlying structure, each of the theories discussed above proves false. The fact that reflexivization is unidirectional in these languages disproves the theory that the arguments of a verb c-command each other. The fact that the syntactic processes pick out ergative and absolutive subjects implies that absolutive NPs do not comprise a natural class, although this is what the 'ergative-as-passive' theory would predict. The conclusion then is that no theory based

9

on Case-marking can accurately predict the syntactic pattern of a language. Still, Anderson does not claim that syntactically ergative languages cannot exist. Citing Dyirbal – a language in which relative clauses are formed on an ergative-absolutive basis – he acknowledges that Case-marking can sometime correlate with syntactic categories. Thus, while there is no necessary correspondence between surface Case-marking and syntactic structure, it is not ruled out.

Anderson goes on to propose an account of why a language would have ergative Case-marking in the first place, despite being syntactically accusative. First he notes that most of the languages under consideration allow free scrambling of NPs, and tend to be either verb-initial or verb-final – a situation which apparently requires subject and object NPs to be kept as distinct as possible[4]. Because of this, one NP (the transitive subject) is marked with ergative Case whenever two direct (non-oblique) NPs are present. In sentences that have only one direct NP argument (i.e. intransitive sentences), the NP will appear with (unmarked) absolutive Case. Presumably, this theory is superior to one in which Case-marking relates directly to underlying syntactic categories. On an 'ergative-as-passive' theory, for example, transitive objects would have to undergo a change in grammatical function (i.e. become passivized) in order to receive absolutive Case – an otherwise unmotivated stipulation.

Despite the seeming evidence that most languages with ergative Case-marking are syntactically accusative, it can (and will) be argued that there is a correspondence between Case-marking and underlying syntactic structure. Nevertheless, the validity of Anderson's tests cannot be denied: Equi-NP deletion, Raising, Conjunction and Reflexivization are all syntactic subject processes, only the NPs they pick out are subjects at S-structure. Except for relativization in Dyirbal, Anderson's tests do not involve processes of question-formation, clefting, focussing or quantifier raising. As we shall see, morphologically ergative languages do assume a characteristic syntactic pattern with respect to these. Typically, representations derived by wh-movement and quantifier raising are checked at LF. Here we argue that there is a correspondence between morphological Case-marking and syntactic categories at this level.

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[4] Since Anderson's article, however, scrambling has been shown to be not so free as he had thought, i.e. it may be governed by syntactic principles. Cf. Mahajan (1990) for some discussion.

1.3 Thematic ergativity (Marantz, 1984)

Marantz (1984) presents a different view of ergativity in terms of how thematic relations are assigned at D-structure. In accusative languages, a transitive verb typically assigns Patient to the NP that it governs, while VP assigns Agent to the subject position. Marantz assumes the inverse is also possible, so that a transitive verb could assign the role of Agent to the object, and VP the role of Theme to the subject. This would be the situation in a true (or 'deep') ergative language, independently of Case-marking. The following diagram represents the alignment of theta-roles and grammatical relations (subject, object) in such a language:

(14) <u>Theta-role assignment in an ergative language</u> (Marantz)

```
              IP
           /      \
        NP          I'
     [Patient]    /    \
              AGR        VP
                       /    \
                      V       NP
                            [Agent]
```
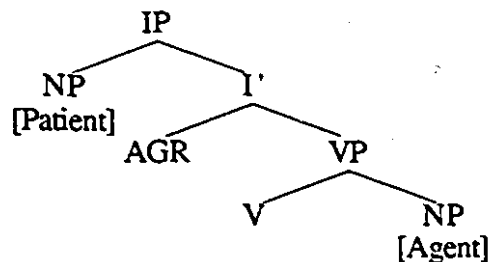
Although (14) represents the possible D-structure of an ergative language, not all languages with an ergative pattern of Case-marking derive from it. Like Anderson, Marantz claims many of these languages have an accusative syntax, which for him entails accusative theta-marking at D-structure. In addition, Case is assigned to structural positions independently of theta-roles, so that nominative (=absolutive) Case can be assigned to objects, and accusative (=ergative) Case can be assigned to subject NPs. Together, these assumptions produce a four-way typology of languages. A summary of the possibilities in Marantz's theory is given below:

(15) <u>Grammatical Relations and Case Marking</u>

Thematic language:	accusative		ergative	
Type:	'A'	'B'	'A'	'B'
SUB of v.i.	NOM	NOM(ABS)	NOM(ABS)	NOM
SUB of v.t.	NOM	ACC(ERG)	NOM(ABS)	ACC
OBJ of v.t.	ACC	NOM(ABS)	ACC(ERG)	NOM

Thematically accusative languages (where subject NPs bear the role of Agent) are said to have an accusative 'type A' Case-marking system if both transitive and intransitive subjects

11

are marked the same. An ergative 'type B' pattern can also be derived, however, if intransitive subjects are marked the same as transitive objects. Similarly, thematically ergative languages can have an ergative 'type A' or accusative 'type B' Case-marking system.

Arguments against Marantz

According to Marantz then, there are two types of ergative language: those that are thematically ergative (with ergative or accusative Case-marking), and those that are thematically accusative with ergative 'type B' Case-marking. Most languages, he claims, belong to the latter type. As in Anderson (1976), the tests Marantz uses to determine a language's status revolve around S-structure processes such as Equi-NP deletion, etc., which are subject-oriented. Thus, in a thematically ergative language, Patients (in subject position) will be affected instead of Agents. Here we argue that these languages cannot exist. The idea of theta-role assignment as in (14) is controversial for several reasons, not the least of which is that it runs counter to a proposal advanced by Baker (1988), known as the 'Uniformity of Theta Assignment Hypothesis':

(16) Uniformity of Theta Assignment Hypothesis (UTAH)
     Theta-roles are assigned uniformly across constructions
     and across languages

Given that Agents are Agents in both ergative and accusative languages, for example, the UTAH makes it hard to maintain that they are assigned to subjects in one language and objects in another. Moreover, for many of the ergative languages to be considered here – including those which Marantz claims are thematically ergative – it can be argued that theta-roles are assigned exactly as in thematically accusative languages. Thus, it will be important to understand that the effects of ergativity examined in this thesis do not derive from the alignment of theta-roles proposed by Marantz.

Passive

The languages that Marantz considers to be thematically ergative – i.e. with the theta-role assignment shown in (14) – in Dyirbal (Australian) and Central Arctic Eskimo (henceforth CAE). First he notes that when Agents (underlying objects) are passivized, the former subject (Theme or Patient) is put into an oblique Case (the comitative Case for CAE). This is shown below (from Marantz, 1984:203):

12

(17) <u>Passive in ergative languages</u>
      a. Piruutisi-Ø Siisa-mik   kap-si-vuq.
        Brutus-ABS Caesar-COM stab-ABS-IND3s
        'Brutus stabbed Caesar'   [CAE]

      b. bayi yara {bagul bargangu, bangul bargandu} durgananu.
        man-ABS {wallaby-DAT, wallaby-INST}   spear-PASS
        'Man is spearing wallaby'   [Dyirbal]

According to Marantz, an NP marked with absolutive Case is the sign of a subject in Dyirbal and CAE. Since the Agents in (17) are marked with absolutive Case then, they must be subjects, derived through passivization. At the same time, the fact that Patients are marked for oblique Case in (17) implies they occupied the Spec. of IP prior to this process. Bear in mind, however, that a thematically accusative language would be able to identify these same characteristics in terms of antipassivization. In this process, objects are marked obliquely and subjects are not affected at all. The Agent in (17) – a subject in a thematically accusative language – would thus be marked with absolutive Case without a change in grammatical function, and the Patient (an object) would be marked with oblique Case.

The double object construction

       Marantz also considers ditransitive verbs, which take an Agent, Patient and Goal in their argument structure. In a thematically accusative language, Goals are marked as objects after the rule of Dative Shift applies, and Themes become oblique. Marantz reasons that in a thematically ergative language, Goals should be marked like subjects, since behaving like a Patient seems to be a property of Goals in dative-shifted structures. He thus predicts that in Dyirbal and CAE, dative-shifted Goal arguments will take absolutive Case (the Case of subjects in these languages), and Theme (or Patient) will be marked with oblique Case, as if 'displaced'. The data below appears to confirm this prediction (Marantz, 1984:203-4):

(18) <u>Goal 'subjects', former 'subjects' as obliques</u>
      a. anguti-up titrauti-mik   nutaraq   tuni-vaa.
        man-ERG pencil-COM child-ABS give-IND3s/3s
        'The man gave the child a pencil'   [CAE]

      b. bayi bangun bangum wugan.
        him-ABS   she-ERG it-INST give
        'She gives him food'   [Dyirbal]

In (18a), *nutaraq* ('the child) is the Goal, marked with absolutive Case. The NP which would normally be associated with the absolutive (Theme) appears with oblique

(comitative) Case instead. A similar situation obtains in Dyribal (18b), except that oblique Case is instrumental.

Marantz does not elaborate on the phrase structures which would underlie the double object construction: much of his theory is lexically-based. In recent work, however, Larson (1988) proposes a theory in which even D-structures reflect movement operations. His ideas will be incorporated into the framework of this thesis. Here I show that Larson's theory can account for the same properties of the Dative-shifted construction observed by Marantz without assuming that Dyirbal and CAE are thematically ergative.

Larson (1988)

Larson's primary assumption is that all of a verb's arguments appear internal to the VP at D-structure, but that one of them usually moves to get Case at S-structure. This represents one version of the 'VP-internal subject hypothesis', in which theta-roles are assigned directly under Government (cf. Kitagawa, 1986; Kuroda, 1988, Sportiche, 1988). Arguments within the VP are arranged in a binary branching structure, which in turn reflects a universal thematic hierarchy. Agents are most prominent in this hierarchy, followed by Theme/Patient and Goal. The following represents the D-structure of a ditransitive verb like *give* prior to the rule of Dative Shift:

(19) Ditransitive construction
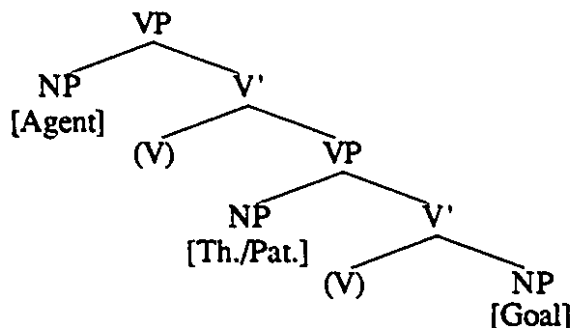
A single verb is associated with two positions, which is forced by the number of arguments (three) and strict adherence to binary branching. If the verb raises from the lower to the higher V position, it can be said to occupy both positions, hence govern all the arguments (the raised verb will c-command its trace in the lower V position). Without the rule of Dative Shift applying, (19) will derive a sentence like 'John gave a book to Mary'; the preposition *to* is inserted as a Case-assigner.[5]

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[5] Larson himself does not propose insertion of a preposition; I have modified this aspect of his theory for expository purposes only.

In the double object construction, the Goal is generated in the position of the Patient/Theme, which in turn is right-adjoined to V-bar. This is illustrated in the representation below:

(20) <u>The double object construction</u>

```
              VP
           /      \
         NP         V'
        [Agent]   /    \
               (V)       VP
                       /     \
                     NPi       V'
                    [Goal]   /    \
                           V'       NP
                          /  \    [Th./Pat.]
                        (V)    ti
```
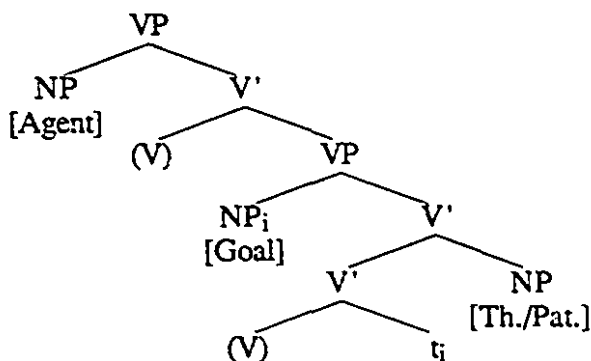
This structure would derive a sentence like 'John gave Mary a book', where the Goal receives accusative Case.

In ergative languages, Theme/Patients are usually marked for absolutive Case. Suppose that this is so in (19) because they occupy the specifier position of the lower VP. Then no matter how it is assigned, the Goal will be marked with absolutive Case when it appears in this position, as in (20). Theme/Patients also behave like 'displaced' arguments in receiving oblique Case; this would be because they are adjoined to V-bar in (20). On this analysis then, the distribution of Case in double object constructions can be accounted for without assuming that Dyirbal and CAE are thematically ergative.

<u>Topic chaining</u>

Like Anderson, Marantz would assume that subjects are in Spec. of IP, where they c-command all other NPs. The ultimate proof of thematic ergativity would thus involve processes like Equi-NP deletion, reflexivization, etc. If Patients were consistently deleted under identity in Dyirbal and CAE, for example, it would suggest that this really was the role assigned to subject positions in these languages. In Dyirbal there is a process known as topic-chaining that resembles Equi-NP deletion. Since Patients can undergo deletion in transitive sentences, it can be argued that Dyirbal is thematically ergative. Even so, Topic Chaining is rejected by Marantz as evidence for thematic ergativity, owing to the fact that the same process picks out different categories in Yidin, a related language.

Marantz does attempt to show that CAE and Dyribal are thematically ergative using a test based on reflexives, however. This is known as the 'Reflexive-passive ambiguity'. First he notes that intransitive reflexive sentences often have a meaning similar to the passive. In French, for example, a sentence like *Les enfants se lavent* ('The children wash themselves') can also mean 'The children were washed'. On his analysis of this example, the subject is derived (a Patient), and the reflexive morphology (the clitic *se*) receives the role of Agent. For a thematically ergative language, the derived subject would bear the Agent role (as in a passive), and Patient would be assigned to the reflexive morphology. Then, if the reflexive form had an alternate meaning, it would be something like 'He washed (something)'. This prediction seems to be borne out, as the following example indicates (ibid:212):

(21) Reflexive-passive (Dyirbal)
        bayi yara buybayimyu
        man-ABS hides-REFL
        'Man hides himself' or 'Man hides (something)'

As confirmation for this approach, CAE is compared to Greenlandic Eskimo, which on independent grounds is identified as a thematically accusative language with type B Case-marking. In Greenlandic, the secondary interpretation of the reflexive assigns the role of Patient to the subject, just as in French. The relevant examples are given below (ibid:214-5)

(22) Reflexive-passive (Eskimo)
    a. angut   ingmi-nik taku-vuq.   [CAE]
       man-ABS self-COM see-IND3s
       'The man sees himself'

    b. angut   taku-vuq.   [CAE]
       man-ABS see-IND3s
       'The man sees (something)'

    c. Piniartoq   toquppoq.   [Greenlndc.]
       hunter-ABS kill-IND3s
       'The hunter killed himself' or 'The hunter was killed.

    d. Anut   inmi-nut taku-vuq.   [Greenlndc.]
       man-ABS self-ALL see-IND3s
       'The man saw himself'

The ambiguity of Greenlandic is apparent from (22c). Note, however, that CAE (22a) is not ambiguous, i.e. it lacks the 'passive' interpretation: for this, a separate form must instead be used (22b). Moreover, there is another construction used for expressing

reflexives in Greenlandic (22d), one which is not ambiguous. Thus while Marantz intends to demonstrate the thematic ergativity of CAE vis-a-vis reflexive-passive ambiguities, the overall picture is far from clear.

Mcre importantly, what ambiguity there is in Dyirbal and CAE is not inconsistent with the view that these are thematically accusative languages, i.e. where an 'antipassive' interpretation can arise from a reflexive structure in the same way that a passive does in French and Greenlandic. On this view (which Marantz rejects), the Agent role would be assigned to the subject position at D-structure, rather than to an object that subsequently moves. The Patient, on the other hand, would be assigned to the reflexive morphology or not at all. In either case the result would be intransitive. Given this possibility then, it is not necessary to assume that Dyirbal or Central Arctic Eskimo are thematically ergative as Marantz proposes.

Control

Levin (1983) extends the tests of thematic ergativity to Equi-NP deletion in Yup'ik (Eskimo) and Dyirbal. As in Anderson, she assumes that only S-structure subjects can be deleted, or controlled. If the controlled subject bears the role of Patient (and is underived) the language will be thematically ergative. In this section, I indicate some of the requirements that a theory of control must meet, and show how Levin's data fails to meet them. It then follows that her claims regarding thematic ergativity in these languages will be inconclusive.

One of the assumptions about Control Theory is that the controlled NP is always PRO, an empty pronominal element that must remain ungoverned. For our purposes, only subject positions of (non-finite) embedded clauses can satisfy this requirement. Moreover, if a lexical NP appears in some position, the assumption is that it is governed, i.e. in order to receive Case. Under these circumstances then, whatever rule determines co-reference with an empty NP would not be 'control', and even objects (which are always governed) might refer to a higher NP. Secondly, we assume that control is established at S-structure through co-indexation with a c-commanding NP (cf. Chapter four for an elaboration of the mechanisms). If it can be shown that co-reference does not occur at S-structure, it implies that standard Control Theory is not at work. Given this possibility, the S-structure position of a controlled NP is no longer relevant, since this could change in the mapping to LF. Processes determining co-reference such as this could not be used as evidence for thematic ergativity.

Thematically ergative languages are such that the subject position will normally receive the role of Theme or Patient at S-structure (14). Consequently, the target of control

17

should be the Patient, or – if an Agent – only after 'passive' has applied. In support of this, Levin presents the following paradigm from Yup'ik (data is originally from Reed, 1977; structure has been added to the glosses):

(23) <u>Control in Yup'ik</u>
    a. angutem t aiciqnia   tan'gurraq.
       man-ERG come-FUT-say-IND3s/3s boy-ABS
       Lit.: 'Man says that boy will come'
       ('Man tells boy [PRO to come]')

    b. anucetaa   qimugta.
       take outside-let-IND3s/3s dog-ABS
       'He lets the dog [PRO be taken outside]'

    c. angutem neresqaa   tan'gurraq akutamek.
       man-ERG eat-want-IND3s/3s boy-ABS   akutaq-ABL/MOD
       'Man wants boy to eat the akutaq'

(23a) illustrates a typical control structure in Yup'ik. According to Levin, 'say' is a verb of obligatory control which takes three arguments – Agent, Goal and Theme (the latter a sentential complement). As indicated, this verb is probably closer to the verb *tell* in English. (23b) is intended to show that the Patient argument of the embedded verb is controlled, and (23c) that if it is an Agent, the 'passive' (i.e. the traditonal antipassive) must apply. Although there is no special morphology on the verb to indicate this, the Patient is marked with oblique Case.

As Levin herself points out, however, the data in (23) are merely consistent with the idea that a language can be thematically ergative. They do not, in other words, preclude an alternative analysis, i.e. one in which the verb has been antipassivized in (23c). Moreover, there is some doubt as to whether the sentences in (23) are biclausal – as in traditional structures of control – or monoclausal with incorporation of one verb to another (cf. Baker, 1988). If in fact they were monoclausal, it would explain the absence of 'passive' (or antipassive) morphology on the verb in (23c), as well as oblique Case on the Patient (the latter as a consequence of verb incorporation). In short, these data do not prove that Yup'ik is thematically ergative, where a subject with the role of Patient is the target of obligatory control.

<u>Purposive clauses</u>

According to Levin, the purposive construction in Dyirbal also exhibits properties of control. Inasmuch as only subjects bearing the role of Patient are deleted, it apparently confirms the status of Dyirbal as a thematically ergative language. Examples of purposive are given here (data is originally from Dixon, 1972):

18

(24) Purposives (Dyirbal)

    a. payi yara waynyjin   yalu
       man-ABS go.uphill-NFUT to.here
       'Man came uphill towards here'

    b. payi yara pangkun tuntungku manjan
       man-ABS bird-ERG point.out NFUT
       'Bird points out man'

    c. payi yara waynyjin   yalu [PRO pangkun tuntungku manjali]
       man-ABS go.uphill-NFUT to.here   bird-ERG point-out PURP
       'Man came uphill towards here, resulting in bird pointing out (him)'

(24a) and (24b) form the basis of (24c), which contains a purposive clause in brackets. Crucially, the deleted argument in (24c) is a Patient, indicated by PRO.

As Levin notes, however, purposive constructions really cover a wider range of meaning than the name suggests, and Dixon (1972) considers them a form of Topic chaining. As such, the same process that deletes subject-Patients will encompass all NPs which would otherwise have absolutive Case, including Agents of intransitives. At this point, we might reject purposives as a legitimate test of thematic ergativity, as both Marantz and Levin reject Topic chaining. Questions arise, however, when intransitive Agents are allowed to be controlled. In transitive clauses, the role of Agent is presumably assigned to objects. In this language then, they will be assigned to objects of intransitives as well. In order for an Agent to be controlled, it must therefore move to subject position at S-structure, e.g. as if undergoing 'passive'. This appears to be unmotivated in theory of grammatical relations developed by Levin and Marantz, and effectively undermines the analysis of purposives as control structures.

Co-reference into finite clauses

A third construction cited by Levin as evidence for the thematic ergativity of Dyirbal involves the suffix -ngurra, which attaches to a matrix verb to signal a sequential point in time that the action of the embedded verb takes place. It is usually translated as 'until'. As with purposives, the 'controlled' argument of the clause embedded under -ngurra, is the Patient of a transitive verb or the Agent of an intransitive. The most revealing property of the-ngurra, construction, however, is that lexical NPs may surface in what would otherwise be the position of PRO. The relevant paradigm is given below (from Dixon, 1972):

(25) Optional control (Dyirbal)
    a. pala yuku pangul yarangku matan
       stick-ABS man-ERG   throw-NFUT
       'Man threw stick'

    b. pala yara   waynjin
       man-ABS go.uphill-NFUT
       'Man went uphill'

    c. pala yuku pangkul yarangku matan   [waynjingurra]
       stick-ABS man-ERG   throw-NFUT go.uphill-NGURRA
       'Man threw stick and then (he) [immediately] went uphill'

    d. pala yuku pangkul yarangku matan   [payi yara waynjingurra]
       stick-ABS man-ERG   throw-NFUT man-ABS go.uphill-NGURRA
       'Man threw stick and then man [immediately] went uphill'

(25a-b) form the basis of (25c-d), which show that the single argument of the-*ngurra*
clause may or may not be present. This means that the embedded -*ngurra* clause is not a
true infinitive, hence not a genuine control structure. Consequently, it cannot be used as
evidence for thematic ergativity. In conclusion, none of the structures Levin uses to
demonstrate control in a thematically ergative language are appropriate. As before, this
undermines the theory of thematic ergativity, leading to our rejection of this concept.

Conclusion

      The theory of thematic ergativity addresses both of the issues that I have identified
as being relevant to this thesis, the relationship between Case-marking and syntactic
categories on the one hand, and the means of Case assignment in an ergative language on
the other. With regard to the first issue, Marantz and Levin assume that Case is assigned
independently of syntactic category: accusative Case can be assigned to subjects, for
example, instead of just to objects, as is commonly assumed; conversely, nominative Case
can be assigned to objects, instead of the usual subjects. This is not the view that will be
taken here, where a very close relationship is argued to exist between specific Cases and
syntactic categories, albeit at LF. As for the second issue, Marantz and Levin seem to
assume that Case assignment is a local operation, taking place at S-structure. Departing
somewhat from standard assumptions, however, accusative (=ergative) Case may
apparently be assigned by Infl, nominative (=absolutive) Case by the verb. In contrast, I
will assume that accusative Case can only be assigned by verbs, and that ergative Case is
not the same as accusative. Moreover, I will assume that nominative Case (which is the
same as absolutive) can only be assigned from Infl. I will adopt Marantz and Levin's
assumption that ergative Case can be assigned from Infl, provided that it consists of

20

separate projections of subject- and object- agreement. A similar approach to ergativity is taken by Johns (1992), to which we turn below.

1.4 'Derived' ergativity (Johns, 1992)

In many ergative languages, the same morphology used for marking transitive subjects with ergative Case also shows up as genitive Case in noun phrases. Johns (1992) develops a theory of ergativity based on this occurrence, whereby transitive constructions are derived from nominal ones. This is known as 'derived' ergativity. Here we will review Johns' theory, with an eye towards incorporating some of her insights into a more general theory of syntactic ergativity.

The focus of Johns' work is Inuktitut, another member of the Eskimo family with an ergative system of Case-marking. As the following examples show, transitive objects and intransitive subjects are unmarked, while transitive subjects are suffixed with the relative (=ergative) Case-marker-*up*:

(26) <u>Case in Inuktitut</u> (Johns, 1992)
    a. angut   ani-juq
        man(abs) go.out-INTR.PART.3s
        'The man went out'

    b. arna-up   angut   kuni-ga-a
        woman-REL man(ABS) kiss-PASS.PART-3s/3s
        'The woman kissed the man'

In addition, ergative and absolutive NPs trigger agreement on the verb by way of 'portmanteau' morphemes, often unexpressed phonetically.[6]

As seen in (26), Inuktitut verbal morphology is characterized by a passive participle on the transitive form. Since one of the goals is to account for the identical Case-marking found on subjects of transitive clauses and possessors in nominal expressions, it is important to note that, in addition to relative (=ergative) Case, the passive morpheme (*jaq*) occurs in both of these constructions. In order to account for this, Johns' first proposes that verbs in Inuktitut are 'defective', and as such cannot project a VP. Suffixation of the passive morpheme, however, enables one argument – Theme or Patient – to be assigned to a position outside of the lexical phrase. Since Agents are already assigned externally, transitive 'verbs' in this language result in having two external arguments, each of which appears in the specifier position of an agreement projection. The structure in (27) shows

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[6] Participles like-*juq* in (26a) are thus assumed to be inflected, although it is not obvious what the segmentations would be.

21

the verb-plus-participle to be nominal in character, i.e. incapable of projecting a VP. As a nominal, it serves as the complement for 'nominal' agreement (AGR.n), which is responsible for assigning genitive Case to a possessor. Nominal agreement in turn complements 'verbal' agreement (AGR.v), which has roughly the same function as Infl (AGR.v is responsible for assigning absolutive Case). Each of the agreement morphemes in (27) projects a maximal projection, complete with specifier position.

(27) The transitive contruction (D-structure)

```
              AGR.v" (=IP)
             /          \
          NP            AGR.v'
        nanuq          /      \
        (Th./Pat.)   /         \
              AGR.n"          Agr.v
             /      \          -Ø
          NP       AGR.n'
       anguti-up   /      \
        (Agent)  N        Agr.n
                 |          |
              kapi-jaq     -a
```
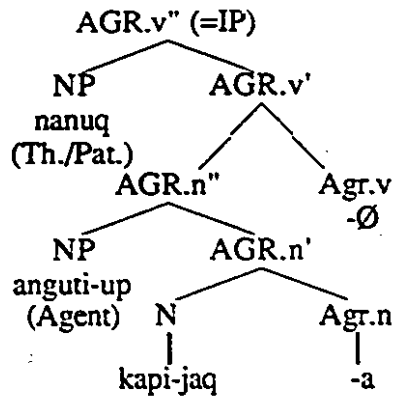
e.g. anguti-up nanuq   kapi-ja-a
     man-REL bear(ABS) stab-PASS.PART-3s/3s
     'The man stabbed the bear'

The common structure of transitive constructions and possessed NPs is evident in (27): both contain a projection of AGR.n. On the surface, this structure is reflected by the following data (ibid:68):

(28) Transitives & possessed NPs

Transitives	Possessed NPs
a. taku-ja-ra	nasa-ra
see-PASS.PART-1s	hat-1s
'I see it' (OR: 'The one I see')	'my hat'
b. Jaani-up taku-ja-a	Jaani-up nasa-a
John-REL see-PASS.PART-3s	John-REL hat-3s
'John saw him'	'John's hat'

The same form of agreement that cross-references ergative NPs in transitive sentences (*-ra*) marks possessors of noun phrases in (28a). In (28b), the relative Case-marker (*-up*) appears on overt subjects and possessors – an indication that they occupy the same position in underlying structure, i.e. the Spec. of AGR.n. In addition, (28a) indicates that transitive expressions can also have two interpretations, a nominal and a clausal one. The latter

surfaces whenever Agr.v is present: the Spec. of AGR.v provides a position for the Theme or Patient to be realized. When AGR.v is absent, the transitive form functions as a relative clause, the head of which receives this role. Consequently, structures that derive 'The man stabbed the bear' are associated with a parallel structure deriving, 'The bear is the man's stabbed one'.

Consequences

Johns' proposal is that transitive sentences are derived from possessed NPs contained within them. This leads to a number of consequences which I examine here. The first of these concerns the relationship of arguments and agreement morphemes in the transitive construction. According to Johns, both arguments are external, in the sense that they must surface in the Spec. position of one agreement morpheme or another. Still, nothing seems to rule out the possibility of Agent being assigned to the Spec. of AGR.v, Theme or Patient to the Spec. of AGR.n. In order to ensure that this does not happen, Johns states that "The set of (AGR.n) agreement morphemes ... link either to the possessor in a possessed nominal phrase or to the [Agent] in the transitive relative construction" (p.69). The result then, is an unwanted stipulation.

The theory of derived ergativity also predicts that the Agr.n projection can itself function as an argument, and stand in apposition to another NP. This is the basis of a relative clause construction in which the bears the role of Theme or Patient. Again, however, nothing in the theory seems to prevent the head of the construction from being assigned the role of Agent, although this is not possible in the language (ibid: p.72):

(29) <u>Relativizing Agents</u> (Inuktitut)
    a. [anguti-up nanuq   kapi-ja-a]   ani-juq
       man-REL bear(ABS) stab-PASS-3s go.out-INTR.3s
       *'The man who stabbed the bear left'

    b. [angut   nanur-mik kapi-si-juq]   ani-juq
       man(ABS) bear-MOD stab-AP-INTR.3s go.out-INTR.3s
       'The man who stabbed the bear left'

(29a) shows that a relativized noun may not correspond to a transitive Agent, as might be expected if both Theme and Agent can be realized as an external argument. As before then, it must be stipulated that Agents cannot associate with AGR.v. On the other hand, (29b) shows that an Agent can be relativized, so long as antipassivization has occurred. This in turn implies that Agents can associate with AGR.

Another consequence of Johns' theory is that all clauses – including 'transitives' – turn out to be intransitive. This is because sentences with two direct arguments always

involve Agr.v, which in turn selects for Agr.n. Since one of the arguments (the Agent) receives Case from AGR.n, there is only one truly 'clausal' Case, the absolutive. The single Case assigned to transitive objects and intransitive subjects in a canonically ergative pattern thus receives a natural explanation, since both types of clauses are intransitive (the difference being only in the presence or the absence of a passive participle).

In addition, Johns also captures the ordering of agreement morphemes in the Inuktitut verbal complex. As seen in the examples, relative (ergative) agreement, or AGR.n, appears closer to the verb stem than absolutive agreement (AGR.v). This is because AGR.v dominates AGR.n in underlying structure, hence the verb+participle move AGR.n first, in compliance with constraints on head movement (Travis, 1984). An analysis of Inuktitut which posits an inner ergative agreement morpheme is the only way to explain this fact, which otherwise runs counter to general pattern of subject agreement outside of object ageement (cf. Chomsky, 1991, and Chapter two for some discussion).

The theory of derived ergativity has consequences for word order. With the Agent in Spec. of AGR.n and the Theme in Spec. of AGR.v, the order of major constituents in Inuktitut transitive sentences should be OSV. Instead, however, it is SOV. The reason for this order, Johns suggests, is that after the participle has moved through AGR.n to AGR.v, the trace in AGR.n can no longer govern the Agent in its specifier position. In order to be Case-marked then, the Agent must adjoin to AGR.v, where it can be governed by the verbal complex. The following represents the S-structure of a transitive sentence in this theory, i.e. after adjunction has occurred:

(30) The transitive contruction (S-structure)


```
                        AGR.v"
                      /      \
        [anguti-up]ᵢ        AGR.v"
          (Agent)          /      \
                        NP         AGR.v'
                       nanuq      /    \
                      (Th./Pat.) /      \
                          AGR.n"        Agr.v
                         /    \      [[kapi]ᵥ-ja]ₙ-a
                       tᵢ      AGR.n'
                              /    \
                            tᵥ      tₙ
```
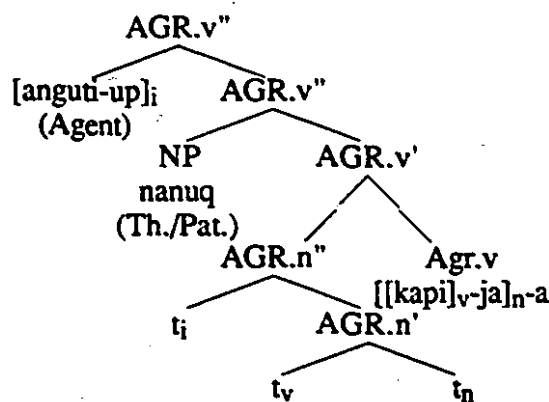
e.g. anguti-up   nanuq   kapi-ja-a
        man-REL   bear(ABS) stab-PASS-3s/3s
     'The man stabbed the bear'

As evidence that Agents are more prominent than Theme/Patients, Johns provides the following sentences, which are intended to show how co-referential pronouns in embedded clauses are controlled (ibid:78):

(31) <u>Control by Agents</u> (Inuktitut)

     a. Miuri   imnagi-lauq-tuq   [PRO quviasuk-ka-mi]
        M.(ABS) sing-PAST-INTR.3s   happy-because-4s
        'Mary$_i$ sang because she$_i$ was happy'

     b. Miuri-up Jaani   kuni-ga-a   [PRO quviasuk-ka-mi]
        M.(REL) J.(ABS) kiss-PASS-3s/3s   happy-because-4s
        'Mary$_i$ kissed John$_j$ because she$_i$/*he$_j$ was happy'

The assumption here is that control of the lower subject is determined by the highest c-commanding NP at S-structure. In (31a), the Agent is the only c-commanding NP, but in (31b) it would be higher than the Theme or Patient, given the structure (30).

       Johns concludes by remarking that only a 'passive participial' view of ergativity can explain the combined properties of transitive clauses, relative clauses and nominal expressions. Nevertheless, while this analysis is well-suited to Inuktitut with its many instances of the passive morpheme, it may not be appropriate for languages in which transitive contructions show no evidence of the passive. Moreover, even in Inuktitut, not all transitive verbs are suffixed with the morpheme *-jaq*. One of the most desirable effects, though, is the connection Johns makes between ergativity and the order of morphemes within the verbal complex. This seems to support the kind of underlying structure she proposes, with its two agreement projections. Another important aspect which she is forced to take account of is the fact that Agents cannot be relativized in the transitive construction. While the theory outlined in the following chapters differs in the means of capturing this, it too recognizes it as central to the notion of ergativity.

       The theory of ergativity proposed by Johns directly correlates Case-marking with syntactic categories. Since verbs are 'defective' in Inuktitut, there is no syntactic direct object, and there is no Case which could identify one. The role that would be assigned to the object (Theme or Patient) is syntactically realized as a subject, which is uniquely identified with absolutive Case. In addition, a separate category (possessor) is associated with the relative Case, and NPs with the role of Agent are uniquely identified with this category. Agents adjoin to AGR.v, where they c-command all other NPs. They may not be relativized, however, even though they would seem to be more accessible to binding. This appears to be a property unique to Inuktitut, where relative clauses may not involve standard operator movement.

Case is assigned locally in the theory of derived ergativity. On the one hand, absolutive Case is assigned by a head (AGR.v) to an NP in its specifier position; on the other, Case is assigned by a head (AGR.v) to an NP adjoined to its maximal projection. In effect, the Case-marking of direct arguments has been taken over by a rich system of agreement, to the point where verbs are not responsible for assigning Case at all. A similar conclusion was reached by Bok-Bennema & Groos (1984), and serves as a starting point for this thesis: verbs in ergative languages do not assign Case. It then follows that a system similar to the one Johns proposes will have to be adopted, with separate projections agreement morphemes responsible for Case.

1.5 Summary and outline of the thesis

Summarizing, the approaches taken by Anderson (1976), Marantz (1984) and Johns (1992) make different assumptions concerning the issues of syntactic ergativity that we have identified. These involve the correlation (if any) of Case-marked NPs with syntactic categories, and the nature of Case assignment itself.

Anderson (1976) assumes there is no correlation between Case and underlying structure, since e.g. both ergative and absolutive NPs control processes attributed to syntactic subjects. The special status accorded to transitive subjects in an ergative language, he claims, is the reflex of a disambiguating mechanism; consequently, there is no formal relationship between Case assigning categories and direct arguments. in the approach to ergativity taken here, however, agreement morphemes in the Infl complex determine the well-formedness of NPs in terms of Case. Moreover, the relationship between arguments and agreement is a formal one, defined locally at LF. As for the purported lack of correlation between syntactic categories and Case, we argue that the situation changes between S-structure and LF, where a correlation holds. Anderson's tests for syntactic subjecthood, in other words, are valid only at S-structure.

Marantz (1984) proposes a theory in which ergativity arises from the interaction of two parameters – Case- and theta-role assignment – neither of which correlates universally with syntactic structure. In one type of ergative language, Agents are assigned to objects at D-structure, while Theme/Patients are assigned to subjects; Case is then superimposed in a pattern that is either ergative or accusative. In the other type, the Agents are assigned to subjects, while Theme/Patients are assigned to objects; transitive subjects are then marked with ergative (=accusative) Case, transitive objects and subjects of intransitives with the absolutive (=nominative). Although Case may be locally assigned, both verbs and Infl are generally capable of assigning ergative or absolutive Case. This is not the viewpoint taken

here, where each Case is associated with a unique Case assigner. Thus, if Infl is responsible for assigning absolutive Case in one language, verbs will not be able to assign it in another. Although the absolutive Case is assumed to be the same as nominative, I claim that ergative Case is distinct from the accusative. Finally, the concept of thematic ergativity is inconsistent with the UTAH, hence must be rejected. The only way a language can be ergative is thus through Case assignment. Still, the intuition behind thematic ergativity – i.e. that Theme/Patients are more prominent with respect to Agents – is in evidence here, the major difference being the level at which relative prominence is achieved.

In the theory of ergativity proposed by Johns (1992), transitive structures are comprised of layered agreement projections, each of which assigns Case to an argument. The major innovation is that transitive subjects are regarded as nominal possessors marked with genitive (=ergative) Case; other NPs are Case-marked in a higher projection of agreement. At the level of D-structure, there is a one-to-one correspondence between syntactic categories and Case, where the latter is understood as 'Case-assigning agreement morpheme'. At S-structure, however, this correspondence is destroyed when the possessor adjoins to the highest agreement projection, presumably because its own Case-assigner has moved away. According to Johns, possessor movement is required to derive the SOV order of Inuktitut. As we shall see, the theory developed here does not require Case to be assigned at S-structure. Consequently, possessors need not undergo adjunction, and the correspondence between syntactic category and Case can be maintained. In essence though, the ideas put forth by Johns are consistent with the view of ergativity that is taken here.

Outline of the thesis

The thesis is organized as follows: in Chapter two, I spell out the major proposals concerning Case and ergativity. These involve the use of two agreement morphemes (as in Johns' theory), and the principles which govern the linking between arguments and agreement. Attention is focussed on the ergative construction, or the structure underlying transitive sentences in an ergative language. The phenomenon of split-ergativity is discussed in light of our proposals, as is the status of infinitive clauses in ergative languages.

Chapters three and four offer evidence supporting a movement-based theory of ergativity. One of the central claims is that in some ergative languages, NPs may remain *in situ* at S-structure, or are not checked for Case until LF. In Chapter four, we test for the S-structure position of arguments in the ergative construction, using processes that

27

characterize this level. These include anaphoric binding (as in Anderson,1976), and the identification of empty categories by agreement and other nominal elements. Particular attention is focussed on the claim that Agents are in the Spec. of VP at S-structure, where they may interfere with the identification of empty object pronouns.

In Chapter three, we test for the LF-position of direct arguments, i.e. after they have moved to agreement for Case-checking. These tests involve wh-movement and Quantifier Raising – processes whose well-formedness is also determined at this level. It is argued that an absolutive NP blocks antecedent-government of a subject (Agent) trace, rendering extraction of the latter ungrammatical. Exceptions to this generalization are considered, along with techniques that languages employ to move or quantify what would otherwise be a transitive subject. In addition, we examine the pattern of extraction in split-ergative situations.

About the data

The languages providing most of the material for this thesis are Mam, Tzotzil, Jacaltec (all members of the Mayan group), Dyirbal (Australian), and Chamorro (Austronesian). To a lesser extent, data is drawn from Basque and members of the Caucasian and Eskimo language families. Many other ergative languages are not included, but the analysis that follows should apply to them. Most of the material was taken from grammars and articles, except for samples provided by researchers in the field, and my own fieldwork on Chamorro.

CHAPTER TWO
Case-marking in an ergative language

2.0 Introduction

In this chapter, I lay out the proposals that underlie Case-marking in an ergative language. As a first step, I adopt the model of phrase structure outlined in Chomsky (1991, 1992), where separate agreement morphemes project to the phrasal level. The relationship that an argument has with agreement ultimately determines its well-formedness in terms of Case Theory. In previous models, structural Case-assignment occurred at S-structure. Here, however, I assume that arguments are inflected for Case at D-structure, and that Case is checked under Government at S-structure or LF. I will argue that two configurations are relevant for Case-checking: one in which the argument appears in the specifier position of an agreement projection, and one in which the argument is adjoined to agreement. The Case-checking configurations arise through movement, which in turn is constrained by the Empty Category Principle (ECP).

The proposals of this chapter address the question of how Case is assigned in an ergative language. The first claim is that both NPs in a transitive sentence are Case-marked through agreement (2.1). This differs from the way that Case is assigned in English, where agreement is responsible for marking only one NP with Case (the subject). The second claim is that the same agreement morpheme responsible for assigning Case to objects also Case-marks intransitive subjects. A different agreement morpheme is responsible for assigning Case to transitive subjects. The Case-marking pattern of an ergative language is thus seen to result from the particular agreement morphemes that are involved (2.2).

The existence of separate agreement projections also leads to an enriched view of split-ergativity – subparadigms in an ergative language that exhibit an accusative Case-marking pattern. I will propose that even in these situations, transitive subjects and objects are associated with the same agreement morphemes as in a canonical ergative paradigm. Intransitive subjects, however, associate with a different agreement morpheme (2.3). Finally, evidence from ergative languages indicates that at least one agreement projection is absent in infinitival constructions. Here I will argue that Case-checking by agreement depends on the verb's ability to support an agreement morpheme, but in infinitives the verb is prevented from doing this (2.4).

The proposals outlined here also bear on the relationship between Case-marking and the syntactic categories of 'subject' and 'direct object'. If movement to Case positions

does not occur until LF, NPs marked with absolutive Case will not constitute a natural syntactic class prior to this, since grammatical (=thematic) relations are defined configurationally. At the same time, transitive and intransitive subjects (marked with ergative and absolutive Case, respectively) may indeed belong to the same class of category whose effects were first observed by Anderson (1976). At LF, however, we predict that an ergative-absolutive pattern of syntactic categories will emerge, since absolutive NPs will locally appear with one agreement morpheme, ergative NPs with another. Later, the prediction will be tested with respect to principles that hold at this level. The theory of ergativity proposed here thus reaffirms the connection between overt Case-marking and underlying grammatical structure, provided that the latter can refer to LF, in addition to S-structure. In this light, the different patterns between surface Case and grammatical (or thematic) relations no longer seems mysterious.[7]

2.1 Case assignment

2.1.1 Mam

We begin by looking at Mam, a Mayan language with a rich system of agreement. In this language, all direct arguments are associated with some form of agreement: transitive objects and intransitive subjects with the absolutive, transitive subjects with the ergative. This canonically ergative pattern is illustrated in the following sentences (from England, 1983a):

(32) Basic sentences (Mam)
      a. ma chin ok t-tzeeq'a-n-a
         asp 1sA dir 2sE-hit-ds-cl.
         'You hit me'   [+TR]

      b. ma chin b'eet-a
         asp 1sA walk-cl.
         'I walked'   [-TR]

Ergative agreement takes the form of a verbal prefix in (32a), whereas absolutive agreement appears as a free form. In fact, absolutive agreement can also be affixed to other morphemes in the verbal complex. (32a) also includes an aspect marker, a morpheme glossed as 'directional', a 'directional suffix', and an enclitic. Each of these will be considered in more detail.

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[7]Throughout this thesis, I will refer to 'subject' and '(direct) object' to denote an Agent and Theme/Patient, respectively. The former canonically appears in the Spec. of VP at D-structure, the latter as sister to the verb.

Agreement

Agreement prefixes in Mam encode person and number features. Person features are somewhat underspecified, indicating a distinction between first and non-first person only; these are subdivided into singular and plural. Ergative and absolutive agreement forms in Mam are given here:[8]

(33) Agreement (Mam)

	Ergative			Absolutive		Enclitic
	Sing.	Plural		Sing.	Plural	(Sing.& plural)
1	n-/w-	q-	1	chin	qo-	1 -a
2	t-	ky-	2	tz'-/k-	ch-	2 -a
3	t-	ky-	3	t-	ky-	3 -Ø

In order to disambiguate second and third persons, Mam utilizes another morpheme, the enclitic. Actually this may indicate first- or second-person, as in e.g. (32b). In (32a), however, the presence of the enclitic means that the NP associated with the absolutive form cannot be a third person. Enclitics operate on a nominative-accusative basis in that they help cross-reference the subject in both transitive and intransitive sentences. In conjunction with the agreement prefixes, however, they form part of an ergative-absolutive system.[9]

The relative closeness to the stem of the enclitic vs. the agreement markers cannot be determined, but the position of the agreement markers relative to each other can: ergative agreement appears closer to the stem than absolutive agreement in transitive clauses. While this is true of Mayan languages in general, subject and object agreement markers often appear in the opposite order in languages that have both (Chomsky, 1991). The following sentence from Makua (a Bantu language), represents the more common order (from Stucky, 1983):

(34) Agreement morpheme order (Makua)
        Aráárima a-ho-n-th'úm-a   báásikeli
        A.   s.agr-Tns-o.agr-buy-tns bicycle
        'Aráárima has bought a bicycle'

---

[8] Unlike Mam, other Mayan languages (e.g. Jacaltec, Tzotzil) make use of zero-morphemes to cross-reference third persons; it is mainly for this reason that I have chosen Mam to introduce the relationship between ergative and absolutive agreement prefixes in the verbal complex.

[9] In later sections I will refer to the enclitic as a 'free' suffix, indicating its ability to associate with either AGR.s or AGR.o (see text for discussion).

In this example, object agreement is closer to the stem, since subject agreement is separated from it by another morpheme. As we shall see, the agreement morpheme order typified by Mam is directly related to its ergative pattern of Case-marking.

Tense & aspect

There is no tense morpheme *per se* in the Mam verbal complex, but futurity can be expressed by a special suffix attached to the verb stem or the directional. Aspect usually determines the time reference of a sentence, so that Mam can be considered as an 'aspect-oriented' (rather than a 'tense-oriented') language (cf. Comrie, 1981). The aspect marker often undergoes phonological modification, however, e.g. when an element is questioned or topicalized (examples appear in Chapter three). In this respect, aspectuals behave more like complementizers, which would be consistent with their initial position in the verbal complex. In the analysis to follow, I will be assuming that verbal complexes in polysynthetic languages are formed by successive applications of head movement, although this might not always be apparent on the surface. Such a view applies to aspectuals, directionals and absolutive agreement in Mam, some of which appear to be free-standing (32). Head-movement is constrained by the Head Movement Constraint (HMC), which basically ensures that movement occurs to an immediately dominating head position in phrase structure (cf. Travis, 1984).

Directionals

Directional heads and suffixes are derived from intransitive verbs of motion, and serve to modify the action of the main verb. As England (1983) points out, it is tempting to analyze sentences with directionals as containing two verbs, the main verb subordinate to a directional verb. In any case, the well-formedness of the main verb does not depend on the presence of a directional, as the following sentence indicates (ibid):

(35) <u>Absence of directionals</u>
      ma chi t-tzeeq'a-ya
      asp 3pA 2sE-hit-cl.
      'You hit them'

Thus although there is no directional in (35), it is perfectly grammatical (compare this example to the very similar 32a). Perhaps the most revealing property of directionals is that they may not surface in infinitives (ibid, p.299). This could mean they are related to the feature Tense, although aspectuals are also absent from infinitives. Abstracting somewhat, I will assume that directionals occupy the Tense position in structures from which verbal complexes are formed. Directional suffixes, on the other hand, appear closest to the verb

stem, and are probably attached prior to insertion in the syntax. Neither directionals nor directional suffixes play a major role in the analysis of Mam sentences.

<u>Word order</u>

The basic word order of Mam is VSO, but many other permutations are attested (England, 1992). Anderson (1976) noted a tendency for ergative languages to be 'verb-peripheral' (SOV or VSO), and claimed that ergativity arises from the need to distinguish between subjects and direct objects. Still, VOS word order is not allowed in Mam, despite the different forms of ergative and absolutive agreement. In the following section, we adopt a phrase structure that accommodates word order, as well as the order of morphemes in the verbal complex.

2.1.2 Phrase structure

The theory of phrase structure that will be adopted here was first proposed by Pollock (1989), and later modified by Chomsky (1991). Of the many facets of this theory, the one that most concerns us is the internal structure of Infl. This involves the types of categories that make up Infl, and the relationships that hold between them; for other aspects of this theory, the reader is referred to Chomsky (1991). The following represents a possible phrase structure of a transitive sentence in this theory:

(36) <u>D-structure</u>
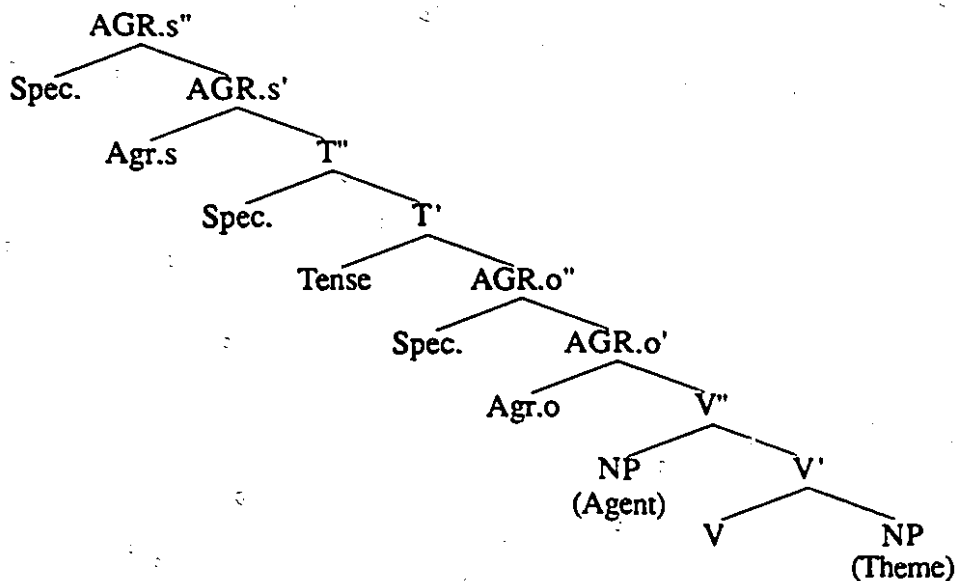
In (36), each inflectional element heads its own maximal projection, complete with specifier position. There are two separate agreement morphemes (AGR.s and AGR.o), each of

which is capable of assigning structural Case to an argument. AGR.s is the morpheme canonically associated with the subject (Agent) in a language like English, while AGR.o would be associated with the object (Theme) if English had object agreement. In what follows, AGR.s and AGR.o should be regarded as labels only, independent of syntactic categories like 'subject' or 'object'.

As shown in (36), all the verb's arguments appear in VP at D-structure, in accordance with the VP-internal subject hypothesis. The Agent functions as the verbal specifier, the Theme as sister/complement to the verbal head. As in other theories, we recognize two types of intransitive verb, each with an argument that corresponds to one in (36). 'Unaccusative' verbs are specified as having a single Theme, while 'unergatives' have a single Agent. In accordance with the UTAH, these roles will be assigned uniformly from one construction to the next, and in different languages.

Returning now to Mam, I will assume the following structure:

(37) <u>Mam</u> (D-structure)
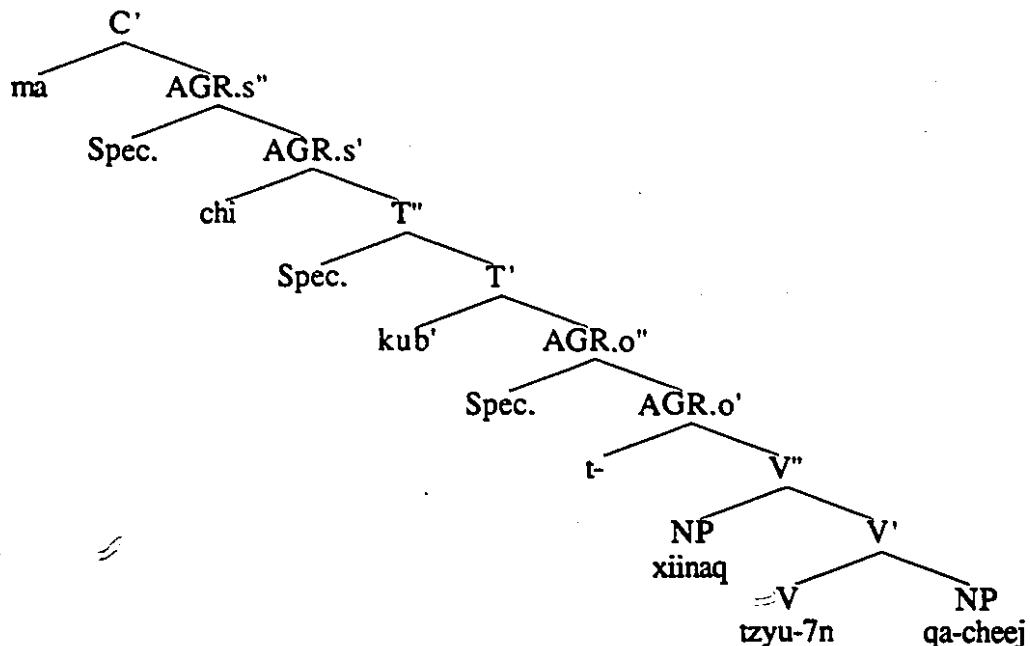
e.g. ma chi kub' t-tzyu-7n xiinaq qa-cheej
   asp 3pA dir 3sE-grab-ds man pl-horse
   'The man grabbed the horses' (England, 1983)

In (37), the aspectual marker is in COMP and the directional head appears under Tense. Crucially, the absolutive agreement marker is in the higher agreement projection, AGR.s, and ergative agreement in the lower AGR.o. This is the arrangement that is necessary in deriving the Mam verb complex, assuming that heads move stepwise from V to C in

accordance with the HMC. No syntactic position is provided for directional suffixes or enclitics in the structure shown in (37). The latter may be associated with either AGR.s or AGR.o.

In transitive sentences, absolutive agreement is responsible for the well-formedness of the object in terms of Case, while the subject depends on ergative agreement. This presents a problem if Case is assigned directly under government, since the absolutive agreement morpheme is separated from the object by several intervening potential governors. One way of overcoming this would be to adopt the Government Transparency Corollary of Baker (1988), whereby successive head movement renders intervening maximal projections transparent to government. Alternatively, one could assume that NPs are fully inflected for Case at D-structure, and are not checked until LF (as in Chomsky (1992, and many others). The following sentences are offered in support of this proposal:

(38) Case-checking (English)
    a. [$_{IP}$ There [$_{I'}$ was [$_{VP}$ a man standing on the corner]]]   [S-structure]
    b. [$_{IP}$ A man$_i$ [$_{I'}$ was [$_{VP}$ t$_i$ standing on the corner]]]   [LF]

The VP-internal subject 'a man' in (38a) receives nominative Case from Infl, the sign of which is number agreement. This couldn't be the result of VP-transparency, however, because the verb does not undergo movement. The post-copular NP must therefore be inflected for Case at S-structure, and then checked at LF. At this level, it would move to the position occupied by the subject in (38b). Since Case-checking seems to be required anyway then, I assume (with Chomsky) that *all* NPs are marked for Case at D-structure, and are later checked at LF, if not before.

Let us provisionally assume that arguments in Mam remain in their base positions at S-structure. In English, on the other hand, one argument usually moves to its Case position at this level. The ability of an argument to remain in VP may depend on whether the agreement morpheme responsible for checking Case can support an empty specifier position. Agreement in Mam would have this capability, but not agreement in English. As we shall see, supporting empty specifiers has to do with identifying their contents in the sense of Huang (1984); his theory will be spelled out as we go along. After head movement then, the verb complex will appear in the position occupied by aspect at D-structure, the head of COMP.

To sum up, the order of morphemes in the verbal complex of Mam can be derived from the underlying structure proposed by Chomsky (1991) and adopted here. After head movement, the VSO order of major constituents follows naturally, provided that arguments remain in their base positions at S-structure. These are fully-inflected for Case at D-

structure, but must be checked at LF. In addition, the grammar will ensure that NPs inflected for absolutive Case are not checked by ergative agreement, and vice-versa. Objects in the transitive construction must therefore be associated with absolutive agreement under AGR.s, subjects with ergative agreement under AGR.o. This has consequences for the overall view of ergativity, to be considered in 2.2.

2.1.3 Argument association

The association of absolutive agreement with AGR.s in the transitive construction implies that this agreement morpheme is responsible for checking intransitive subjects for Case as well. It would be implausible, in other words, for the same form of agreement to be associated with different agreement morphemes. In languages with a canonical pattern of Case-marking then, let us assume that absolutive agreement is always associated with AGR.s, the highest agreement projection. This in turn entails that AGR.s is involved in assigning (checking) Case in every sentence of an ergative language, transitive and intransitive alike. A similar situation obtains in accusative languages, where nominative Case is assigned in every matrix sentence. Since nominative is also associated with AGR.s, the condition on obligatory Case assignment in both language types can be generalized as follows:

(39) Obligatory Case assignment

Assign Case from AGR.s, where possible

(39) implies that AGR.s is a default Case-assigner, and that conditions may prevail in which Case cannot be assigned from AGR.s. These will be discussed in 2.3.

In the current literature, there are conflicting views on how Cases match up in ergative and accusative languages. Bittner (1987) and Bok-Bennema (1989) assume as we do that absolutive Case in an ergative language corresponds to nominative Case in an accusative language. On the other hand, Chomsky (1992) and Bobaljik (1992) take the view that absolutive Case corresponds to the accusative. For them, AGR.o would be the agreement morpheme assigning obligatory Case in an ergative language, AGR.s in an accusative language. The result of these assumptions is that no single agreement morpheme could assign Case obligatorily in both language types.[10]

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[10] Although Chomsky (1992) indicates how Case would be distributed in an ergative language, he does not refer to movement. Moreover, Government does not play a central role in his theory, as it does here.

<u>Binding Theory</u>

The theory of ergativity advanced by Bobaljik is motivated by the requirement that a subject must asymmetrically c-command an object in the transitive construction. As we saw in Chapter one, there is indeed support for this type of relationship based on anaphoric binding (many of the data Bobaljik presents are borrowed from Anderson). Moreover, he rejects a theory in which the object c-commands the subject in the transitive construction – as if it were in Spec. of AGR.s at S-structure. This is not the position being advocated here, however, where the canonical asymmetry between subjects and direct objects is not altered until LF.[11] In the model we are assuming, the subject (Agent) appears in Spec. of VP, where it c-commands the object (Patient) at S-structure. If the object is an anaphor, it can be bound in accordance with Principle A. The following depicts the situation in Abkhaz, which Bobaljik (like Anderson) uses to show how ergative NPs behave as subjects do in other (non-ergative) languages:

(40) <u>Binding in Abhkaz</u> (SOV)
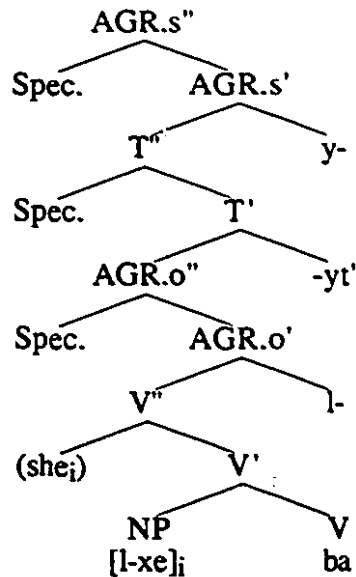
e.g. l-xe   y-l-ba-yt'
3sf-head(n) 3snA-3sfE-see-PRES
'She sees herself' (Anderson, 1976)

In our theory then, binding-theoretic facts receive a natural explanation, since the asymmetry between subjects and direct objects exists independently of the agreement

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[11] Bobaljik acknowledges the possibility of LF-movement, but argues against it on the grounds that Binding Theory would rule out the anticipated structure, as it does at S-structure. As we shall see, however, the type of LF-structure we are proposing will not be affected by the Binding Theory, so Bobaljik's objection would not apply.

projections which are responsible for Case-marking them. A slightly more complex binding-theoretic argument against LF-movement of the direct object will be discussed in 2.2.4

The ergativity parameter

The question still remains as to why transitive subjects in ergative languages are associated with AGR.o, rather than with AGR.s ('Why are languages ergative?'). This can be seen to follow partially from the Ergativity Parameter, stated by Bok-Bennema & Groos (1984) roughly as follows:

(41) The Ergativity Parameter
     Verbs in ergative languages do not assign structural Case.

Thus in order for both arguments of a transitive verb to be checked for Case, AGR.o and AGR.s must both be utilized. Chomsky (1991) and Sportiche (1990) go so far to claim that specifier-head agreement (as in the AGR.s or AGR.o projection) is the only way of checking NPs marked with structural Case – even in an accusative language. This is not the view taken here, however, where it is assumed that verbs in languages like English actively assign accusative Case to their objects. In part, our view is motivated by a cross-linguistic similarity between ergative and passive forms, the latter being standardly regarded as incapable of Case-assignment. Another argument can be constructed from Kayne's (1983) analysis of exceptional Case-assignment to COMP. Kayne notes that although some verbs apparently cannot govern (hence Case-mark) the subject position of their embedded complements, movement of this NP is still allowed:

(42) Movement of ungoverned subjects (English)
     a. *John alleged [$_{CP}$ [$_{IP}$ Mary to be guilty]]
     b. Who$_i$ did John allege [$_{CP}$ t'$_i$ [$_{IP}$ t$_i$ to be guilty]]?

Wh-movement is possible, Kayne argues, because the verb governs and Case-marks the intermediate trace in the embedded COMP in (42b).

Taking Sportiche & Chomsky's view, however, suppose that verbs are not capable of assigning structural Case, i.e. that accusative Case is assigned (or checked) via specifier-head agreement. This means that the wh-phrase in (42b) will move from the lower CP to the Spec. of AGR.o (or its equivalent) on its way to sentence-initial position. The problem with this approach is that specifier positions (excluding Spec. of CP) are non-operator positions, from which variables cannot be bound (cf. 2.2.2 below). The crucial step of movement therefore constitutes a violation of Principle C, a case of 'improper movement' (Chomsky, 1986b). As a result, the 'Spec.-head' hypothesis of Case assignment predicts

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that (42b) will be ungrammatical. On the other hand, traditional theory holds that verbs in some languages assign structural Case to their objects, hence does not make this false prediction.[12]

The proposal that verbs in ergative languages cannot assign structural Case gains support when we consider the consequences of Case-checking at LF; this will be demonstrated in 2.2. Together though, the principle of obligatory Case assignment and the dependence on two agreement morphemes for Case-checking will derive an ergative-absolutive pattern of Case-marking — but only if the transitive object associates with AGR.s. As things turn out, a nominative-accusative Case-marking pattern can be derived as well, i.e. if the transitive subject associates with AGR.s. In other words, just because verbs in languages like English assign structural Case to their objects does not mean that AGR.o cannot perform this function in another language. In effect then, ergative languages are two parameters removed from English, first in Case not being assigned from verbs, and second in the choice of agreement morpheme (AGR.o) that the subject (Agent) associates with.

2.1.4 Case and agreement

So far, we have proposed that direct arguments in Mam are licensed by agreement through Case-checking at LF. The standard configuration for agreement (hence Case-checking) is between a head and its specifier, the 'Spec.-head' relation. This implies that specifier positions are always present in underlying structure, as shown in (37). In addition, however, I will assume that an NP can be checked for Case when it is adjoined to the maximal projection of an agreement morpheme. Consequently, it may not be necessary for agreement morphemes to project a specifier position. Such a structure is schematized below:

(43) <u>Adjunction to agreement</u>

... AGR."

[NP$_i$]   AGR."

agr$_i$ ...
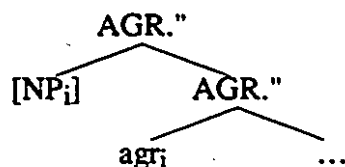
The proposal that agreement can be triggered by an NP adjoined to AGR.P has received mixed treatment in the literature. Sportiche (1990) in particular has argued against it, while

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[12] Conceivably, adjunction to AGR.o might be sufficient for Case-checking, thus avoiding the problem of improper movement. Still, if binding is sensitive to the operator/non-operator distinction, even an adjoined NP (a non-operator) would improperly bind a variable in (42b). See text for discussion.

Kayne (1989b) takes the opposite view. In what follows, we recapitulate the evidence bearing on this issue, and offer a different conclusion to the one reached by Sportiche. Then the concept of Case-checking through adjunction will be incorporated in our theory.

Kayne (1989b)

Kayne observes that in some varieties of English, relative clauses like the following are well-formed:

(44) [$_{NP}$ the people who the boy think(s) are in the garden] ... applauded loudly

What is remarkable about (44) is that the verb *think* appears to be agreeing with the plural wh-phrase that has moved across it, rather than with its subject, which is singular. Apparently in this dialect, AGReement is spelled out as -*s* (singular) whenever possible, but otherwise as the zero morpheme -$\emptyset$. Kayne proposes that in the derivation of (44) the wh-phrase adjoins to AGR.P on its way to COMP, as the following (partial) structure indicates:

(45) Double agreement structure

```
   ...              C"
               who_i      AGR"
                      t_i        AGR"
                          [the boys]     AGR'
                                    AGR        ...
                                    -Ø
```
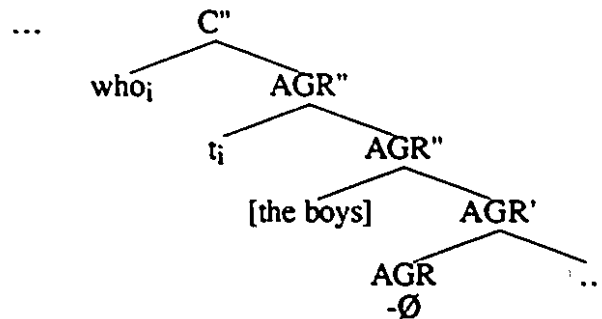
The assumption underlying (45) is that both the wh-trace and the subject are in an agreement relation with the head, so that the latter cannot be spelled out as -*s* (singular): instead, only the zero morpheme -$\emptyset$ is compatible with both NPs. On this account then, agreement through adjunction is essential.

Sportiche (1990)

Using data originally attributed to Kayne (1989c), Sportiche claims that agreement arises only through the Spec.-head relation. For him, participle agreement in French is brought about by movement to or through the Spec. of AGR.o. The following represents the relevant cases:

(46) Object agreement (French)
     a. ... une femme qu'on a dit(es) belle
     b. ... une femme qu'on a dit(*es) être belle
     c. ... une femme qu'on a dit(*es) que tu as vu(es)

In each of these examples, 'une femme' is modified by a relative clause formed by empty operator movement. The relativized position is the subject of an embedded small clause in (46a), the subject of an infinitive in (46b), and the object of a tensed embedded clause in (46c). Object agreement is optional in (46a) because the empty operator undergoing movement may or may not 'transit through' the Spec. of AGR.o on its way to COMP. The ill-formedness of object agreement in (46b-c) is attributed to improper movement: a trace in Spec. of AGR.o (a kind of argument position) binds a variable in the specifier of the embedded CP (a non-argument position), violating Principle C. Sportiche then reasons that adjunction to AGR.o must be ruled out as a triggering device for agreement, for otherwise it would be allowed in the unattested cases. For him, agreement is triggered only when movement occurs through a specifier position.

It is also possible, however, that movement from an operator position to a non-operator position is 'improper' (cf. Ft. 12). In (46c), for example, the trace in the lower CP occupies an operator position, but a trace adjoined to AGR.P does not; presumably, this would also result in a violation of Principle C. Given this alternative view, there is no reason to exclude adjunction as a configuration of agreement or Case-checking.

Government

A theory of agreement that allows adjunction requires changes in the definition of Government, under which NP's will be checked for Case. Up to now, the domain of Government has been defined by m-command, where (roughly): 'x m-commands y iff every maximal projection dominating x also dominates y'. The question naturally arises as to whether a maximal projection dominates (hence m-commands) a category adjoined to it. If not, dominance itself must be understood as follows:

(47) XP dominates YP if *any segment* of XP dominates YP

Given (47), an agreement morpheme can be said to m-command (hence govern) a category adjoined to its maximal projection, as well as one that occupies its specifier position. This would be the case in (43) above.[13]

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[13] The definition in (47) is exactly opposite from the one proposed by May (1985), and Chomsky (1986a:7): " ... a category [YP] is dominated by [XP] iff *every segment* of [XP] dominates [YP]". I will not attempt to adduce their evidence here, which remains a problem for our model.

<u>Case-chains</u>

Another issue surrounding the structure we are proposing concerns overtness of agreement and the level at which Case-checking applies. Sportiche (1990) assumes (as we do) that Case-checking is parameterized to S-structure or LF. Moreover, overt agreement is a sign that a chain has been established at S-structure. As we saw in (38), post-verbal NPs trigger agreement in existential 'there' constructions, but not when they are the objects of transitive verbs:

(48) <u>S-structure chains</u> (English)
    a. There is a man standing on the corner.
    b. There are three men standing on the corner.
    c. I saw three men standing on the corner.

On Sportiche's theory, a chain is formed between the expletive (*there*) and its associate in (48a-b), allowing the latter to remain in its base position at S-structure. Chain-formation is obligatory because Case-checking applies at this level and overt agreement is the sign that it has happened. The NP object in (48c) cannot receive Case through a chain because English does not tolerate expletives in the Case position of an object (which for Sportiche would be the equivalent to AGR.o). Objects must therefore move to get their Case, although this movement is not visible. The absence of agreement in (48c) means there is no chain-formation.[14]

The problem posed by Sportiche's theory is this: overt agreement is the sign of chain-formation, and chains arise through expletives in specifier position. We have proposed that not all projections of agreement have a specifier position, yet agreement (in Mam, at least) is overt. It seems we stand to lose the account of overt agreement in this language. Still, Case-checking could occur at LF, which means there is no reason why agreement cannot be overt. Moreover, if there is no specifier position to host an expletive, NPs will move to their Case positions at LF, just like transitive objects supposedly do in English at S-structure (48c). As we shall see, this has important consequences for the syntax of ergative languages in general.

2.1.5 Two-agreement systems

The model we have developed here accounts straightforwardly for the distribution of absolutive Case in an ergative language, where this derives from a single source, namely

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[14] We do not adopt the object movement aspect of Sportiche's theory for reasons which will soon become clear. Regarding the Case-checking parameter, it seems that LF would represent the default setting, so that S-structure will be chosen only when positive evidence (e.g. movement) is available (L. White, pc).

AGR.s. In similar fashion ergative Case derives from AGR.o, but its assignment is not obligatory in unmarked situations. The source and labels given to Case in 'two-agreement systems' – i.e. systems in which verbs do not assign structural Case – are given in the table below:

(49) <u>Distribution and source of Case in a 'two-agreement' systems</u>

<u>Lang./System</u>	<u>+TR subj.</u>	<u>+TR Obj.</u>	<u>-TR Subj.</u>
Ergative	AGR.o (ERG)	AGR.s (ABS)	AGR.s (ABS)
Accusative	AGR.s (NOM)	AGR.o (ACC)	AGR.s (NOM)

It is important to distinguish Case-marking patterns from language types, however. Thus while principle (39) requires Case to be assigned from AGR.s, there may be special instances where it is suspended. If this occurred in an ergative language, AGR.o would be responsible for (exceptionally) Case-marking the single argument of an intransitive verb. Then, transitive and intransitive subjects would look the same, as in an accusative language. Instances of non-canonical Case-marking in an ergative language will be discussed in 2.3.

<u>The source of Case</u>

As demonstrated in 2.1.1 for Mam, it may be possible to determine the source of Case – AGR.s or AGR.o – by examining the relative position of the agreement morphemes in the verbal complex. The assumption is that surface morpheme order reflects the order of syntactic affixation. Thus, if one agreement morpheme appears closer to the stem than another, the more remote one should correspond to AGR.s, the 'closer' one to AGR.o. Still, not every language is as rich as Mam in terms of agreement: it may be that agreement only cross-references one argument of a transitive verb. This complicates the effort of determining the source of Case. In the structure we are assuming, however, there is another morpheme that sometimes appears between AGR.s and AGR.o, namely Tense. In languages with just one overt agreement morpheme, the position of agreement with respect to Tense is crucial: if agreement is to the right of Tense, it is likely to be associated with AGR.o; conversely, if it is to the left, it should represent AGR.s. In either case, however, care must be taken to ensure that morphemes are treated uniformly (preceding or following the verb stem) – i.e. as either prefixes or suffixes. I assume that for any given language, tests are available that can establish this.

<u>Chamorro</u>

Consider now Chamorro, an Austronesian language which we discuss extensively in the chapters to follow. The agreement paradigms of this language are shown below (most of the Chamorro data is from S. Chung, and fieldnotes):

(50) <u>Agreement in Chamorro</u>

a. <u>'Number' agreement</u> (Intransitive clauses only)

<u>Sing.</u>	<u>Plural</u>	
-um-/Ø	man-	(realis)
--	fan-	(irrealis)

b. <u>'Subject' agreement</u> (Irrealis mood, transitive & intransitive)

	<u>Sing.</u>	<u>Plural</u>	
1	(bai) u-	(u)ta-/(bai) in-	(inclusive/exclusive)
2	un-	in-	
3	u-	u-/uma-	(intransitive/transitive)

c. <u>'Ergative' agreement</u> (Realis mood, transitive clauses only)

	<u>Sing.</u>	<u>Plural</u>	
1	hu-	ta-/in-	(inclusive/exclusive)
2	un-	in-	
3	ha-	ma-	

As seen in (50a), Number agreement cross-references the number of intransitive subjects only, in both the irrealis and realis mood (the distribution of singular forms will be discussed in 2.3). Subject agreement (50b) cross-references person and number features of all subjects in the irrealis mood, while 'Ergative' agreement (50c) registers the features of transitive subjects in the realis mood. At this point, 'Ergative' agreement should be thought of merely as a descriptive label, since it is the ergativity of Chamorro that we are trying to establish .

A cursory glance at Subject and Ergative agreement reveals a number of basic similarities. First, there are no differences in the second person forms, or in the first person plural inclusive form (I ignore here optional elements such as *bai* in the Subject agreement paradigm). The first person plural exclusive and the third person plural transitive forms are the same, except for the sequence *u-* in (50b). It is therefore likely that *u-* is an irrealis morpheme. If so, however, there are two expected forms in the Subject agreement paradigm that do not occur: **uhu-* (1s) and **uha* (3s). Let us assume that their absence can be explained by natural phonological processes.[15]

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[15] On this view, the basic (realis) morphemes for the first- and third persons would be *u-* (1s) and *a-* (3s) respectively, followed by vowel reduction in the irrealis (thus: *u+ a-* => *u-* , etc.). In the realis, the presence of the glottal segment *ḥ-* probably reflects a syllable onset (G. Piggott, pc).

Topping (1973) also analyzes the mood distinction in Chamorro as one of Tense: Subject agreement is used for the future. If the irrealis morpheme is generated in the Tense position then, it follows that the source of Case for subjects – transitive and intransitive alike – will be AGR.o, since agreement appears to the right of the mood morpheme.[16] The source of Case for a given argument can therefore be determined in a language with only one overt agreement morpheme. This is done by comparing the position of agreement with respect to Tense, which in theory is generated between AGR.s and AGR.o. In Chamorro, AGR.o is the source of Case for all subjects in the irrealis mood because Tense appears to the left of it. Moreover, if a particular form of agreement is associated with a unique source, we deduce that AGR.o is also the agreement morpheme from which transitive subjects derive their Case in the realis mood. The situation is somewhat more complicated with intransitives, since Number agreement (like the realis mood morpheme) can be null. This will be discussed in more detail in 2.3.

2.2 LF-movement

In this section, we discuss the processes and constraints which lead to well-formed structures at LF. Having already claimed that Case-checking in Mam applies at this level, we will be primarily concerned with how this requirement is met. First I will elaborate a little more on the principles which allow arguments to remain in their base positions at S-structure. Then I will discuss the properties of Case-checking configurations which arise through movement. These configurations will be seen to have important consequences for the syntax of ergative languages.

2.2.1 Identification of empty pronouns

According to the Extended Projection Principle of Chomsky (1981), all clauses must have subjects. Subjects are usually co-extensive with specifier positions, but this could be due to Case-checking at S-structure: NPs enter into Case-chains at this level, and these in turn require specifiers. With its separate projections of Tense and agreement, the Infl complex could in theory have as many as three specifier positions, maybe more. A central claim of this thesis, however, is that only one argument of a verb can ever be associated with a specifier, which usually limits the number of specifier positions to one.

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[16] The claim that intransitive subjects derive their Case from AGR.o in an ergative language would seem to contradict principle (39), the condition on obligatory Case assignment. In 2.3, however, we argue that the irrealis mood signals a non-canonical Case-marking situation in Chamorro, which takes precedence over (39).

This will be seen to follow from constraints on movement rules, which serve to fill the specifier position(s) at LF, if not before.

An argument can remain in its base position until LF only if its associated specifier position can remain empty at S-structure. Many researchers have observed that languages vary with respect to whether NP positions can be empty at this level (cf. Jaeggli & Safir (1989), and references cited there). Italian, for example, permits the subject position of a tensed clause to be empty, but English does not:

(51) <u>Empty subjects</u> (Italian, English)
    a. *e* parla inglese.
       (She) speaks English.

    b. *e speaks English.

In standard theory, the difference shown in (51) centers on the nature of agreement, which identifies the null subject in Italian, but not in English. Agreement in Italian is considered to be 'rich' in the number of person-number distinctions that it makes, whereas English agreement is 'poor'. In order for a specifier position to be licit then, its contents must be identified, and 'rich agreement' (which English lacks) fullfills this function.[17]

Within our present theory, it is not obvious whether the structure underlying (51a) contains a null argument, a null specifier in Infl, or both. If arguments are generated uniformly across languages and constructions, however, the 'missing' argument in this sentence must have originated in Spec. of VP and either moved to Spec. of AGR.s (Italian is an accusative language), or remained *in situ*. The latter possibility is suggested by the following sentence, in which the Agent is overt (from Haegeman, 1991):

(52) <u>Post-verbal subjects</u> (Italian)
        Ha mangiato un dolce *il ragazzo*
        has eaten   a sweet the boy
        'The boy has eaten a sweet'

I assume that since the Agent follows the Theme in (52) it remains in Spec. of VP, which is to the right of V-bar in underlying structure. In subject-initial sentences, the same argument will appear in Spec. of AGR.s, which is to the left of AGR.s (bar). In both (51a) and (52) then, there will be a specifier position in Infl, the contents of which are identified by rich agreement. This is both necessary and sufficient in a language where Case-checking applies at S-structure, as I assume it does in Italian. Thus in (52) the Agent NP enters into

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[17] The exact definition of 'richness' will be left open here (as elsewhere), but this will not affect our analysis. Jaeggli & Safir (1989) give a comprehensive account of identification and the 'pro-drop' phenomenon.

a chain to get Case from an empty pleonastic pronoun. Nevertheless, this does not mean that identification is the only route by which an argument can remain in its base position at S-structure. In Mam (we have claimed), chain-formation is not necessary since checking applies at LF. Consequently, Case-checking can be satisfied even if the argument adjoins to the Case-position – so long as no other principle is violated.

2.2.2 The L/L-bar distinction

In standard terminology, an A-position is one to which a theta-role can be assigned, while every other non-head position is an A-bar position. In earlier theories (e.g. Chomsky, 1981), the Spec. of IP (=AGR.s) was considered as an A-position, one to which external roles like Agent would normally be assigned. According to the VP-internal subject hypothesis, however, all of the arguments of a verb – including those that regularly appear outside of VP at S-structure – are theta-marked internally to VP. Strictly speaking then, any position outside of VP is an A-bar position, and any argument that appears in one of these must have moved there between D- and S-structure. These include specifier positions in the Infl complex. Diesing (1990) was perhaps the first to recognize this, claiming that subjects of Yiddish matrix clauses habitually undergo A-bar movement.

Recently, Mahajan (1990) has proposed a further characterization of non-argument positions which in part reflects the possibilities allowed by phrase structure. For him, argument positions in VP and specifiers of agreement are considered L(=lexical) positions, whereas adjunction sites and the Spec. of CP are L-bar positions. Mahajan's evidence for this distinction comes from Hindi, where certain NPs may be scrambled to the left of others, yet still induce the kind of binding effects that are typical of Binding Theory (i.e. the theory of A-binding). Some of his evidence is given here (from Mahajan, 1990):

(53) Weak crossover (Hindi)
    a. *kis-ko* $_i$ [uskii$_i$ bahin]$_j$ t$_i$ t$_j$ pyaar kartii   thii?
       who   his   sister   love   do.imp.fem   be.pst.fem
       'Who$_i$ did her$_i$ sister love?'

    b. *sab-ko* $_i$ [uskii$_i$ bahin]$_j$ t$_i$ t$_j$ pyaar kartii   thii?
       everyone his sister.   love   do.imp.fem   be.pst.fem
       'Their$_i$ sister loved everyone$_i$'

(54) Anaphoric binding (Hindi)
    a. *?[apne$_i$ baccoN-ne]$_i$ mohan-ko$_j$ ghar se   t$_i$ t$_j$ nikaal diyaa
       self's children(SUB) M.   house from   throw give.perf
       'Self's$_i$ children threw Mohan$_i$ out of the house'

    b. ?mohan-ko$_i$ [apne$_i$ baccoN-ne]$_j$ ghar se t$_i$ t$_j$ nikaal diyaa
       M.   self's children   house from throw give.perf
       'Self's$_i$ children threw Mohan$_i$ out of the house'

In (53a-b), a wh-phrase and a quantifier have been scrambled to clause-initial position, respectively (the unmarked order of Hindi is SOV). If these elements occupied traditional A-bar positions, they should trigger a weak crossover effect (cf. 2.2.4 below). Since they don't, Mahajan concludes that the moved NPs in (53a-b) occupy L-positions, whereas in other languages they might occupy L-bar positions. (54a) shows that normally direct objects cannot bind an anaphor embedded in a Hindi subject NP, just as in English. In (54b), however, the direct object has been scrambled to an L-position, from which binding can occur. If the fronted object in (54b) were in a typical A-bar position, however, the relative well-formedness of this sentence would be unaccounted for: the subject anaphor would not be properly bound. For our purposes, it will be important to accept Mahajan's distinction between L/L-bar positions as an extension of the standard A/A-bar dichotomy. This becomes clear when we consider the constraints on movement that must apply to satisfy Case-checking at LF.

2.2.3 Movement and constraints

Returning now to Mam, I assume that Case-checking does not apply until LF, and that it is instantiated at this level by movement of the Agent to Spec. of AGR.o, and adjunction of the Theme to AGR.s. The proposed LF representation of (37) is given here; head movement is not shown:

(55) The ergative construction (LF)
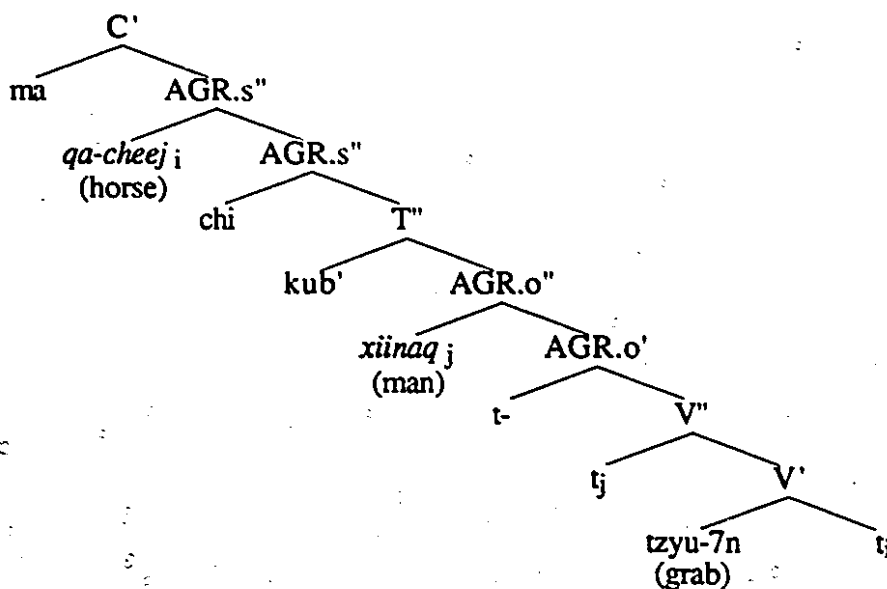

```
e.g.   ma chi kub' t-tzyu-7n   xiinaq qa-cheej
       asp 3pA dir 3sE-grab-ds man   pl-horse
       'The man grabbed the horses' (England, 1983)
```

As indicated, LF-movement leaves behind co-indexed traces in the positions occupied by the arguments at S-structure. Since the Agent moves to an L-position, the chain formed by movement is an L-chain; the Theme moves to an L-bar position, resulting in an L-bar chain. In what follows, I will argue that no other type of LF-structure is possible for transitive sentences in Mam, nor in any other language with an ergative system of Case-marking.

Relativized Minimality

To begin with, I will adopt the theory of movement outlined in Rizzi (1990), known as Relativized Minimality. Basically, this theory represents an articulation of the ECP, the principle which holds that all (non-pronominal) empty categories must be properly governed (Chomsky, 1981). In Rizzi's version, traces left by movement must be both head- and antecedent-governed (a 'conjunctive' formulation). The following definitions represent the core of Relativized Minimality, where alpha ranges over head- and antecedent-government:[18]

(56) Relativized Minimality
> X alpha-governs Y if there is no Z, such that
> i) Z is a typical potential alpha-governor for Y
> ii) Z c-commands Y and does not c-command X

(57) Potential antecedent governors
> a. Z is a typical potential antecedent governor for Y, Y in an L-chain
> =Z is an L-specifier c-commanding Y.
>
> b. Z is a typical potential antecedent governor for Y, Y in an L'-chain
> =Z is in an L-bar position c-commanding Y.
>
> c. Z is a typical potential antecedent governor for Y, Y in an $X°$-chain
> =Z is a head c-commanding Y.

Rizzi's definitions were originally formulated in terms of the A/A-bar distinction; I have converted them to match Mahajan's (1990) terminology here. In addition, (57b) has been amended to include elements adjoined to maximal projections.

The spirit of Relativized Minimality is that – all else being equal – moved elements are prevented from antecedent governing their traces when another category of the same type (L- or L-bar) intervenes. A wh-phrase may not govern its trace, for example, if there

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[18] Although government by a head is usually defined in terms of m-command, Rizzi argues (p.32) for a definition of head-government based on strict c-command. Head-government will be discussed in Chapter three.

is another wh-phrase closer to that trace, and a moved NP will not govern its trace if there is closer one in a specifier position. A moved NP may intervene between a wh-phrase and its trace with no ill effects, however, and a wh-phrase will not block the relationship between a moved NP and its trace.[19]

Derived LF-structure

Let us now examine (55) more closely, the proposed LF-structure where one argument (the Agent) moves to the Spec. of AGR.o to satisfy Case-checking, and another (the Theme) adjoins to AGR.s. Specifiers of agreement projections are L-positions, so movement to AGR.o constitites L-movement. Nothing intervenes between the moved Agent and its trace, so the latter will be properly antecedent-governed. The AGR.o agreement morpheme may be considered as the head-governor of the trace in Spec. of VP. The Theme adjoins to AGR.s, resulting in an L-bar chain. Although the trace of L-bar movement is separated from its antecedent by the Agent and its trace, these both occupy L-positions hence do not count as potential antecedents. The trace of L-bar movement is therefore also properly antecedent-governed. Here the verb (or verbal trace) functions as the head governor.

Suppose instead that AGR.s projected a specifier position, as well as AGR.o. Movement of the Agent would proceed as before, leaving a trace in Spec. of VP. Movement of the Theme, however, would leave a trace that could not be antecedent-governed: both the Agent and its trace occupy L-positions, hence would count as closer potential antecedent governors. Even if the Agent adjoined to AGR.o, the Theme could not move to a specifier position, since the trace of the Agent in Spec. of VP (an L-position) would intervene. The Agent and the Theme couldn't both adjoin to agreement for Case-checking either, for this would result in two L-bar chains, one of which would block government of the other's trace.[20] It follows then that if the Agent is associated with AGR.o (as in an ergative language), only one well-formed structure can be derived, the one in (55). If the Agent associates with AGR.s, however, another structure is allowed to surface, one which represents an 'accusative' two-agreement system. This is schematized below:

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[19] Another recent theory of movement is the 'Barriers' approach proposed by Chomsky (1986a). For the most part, I will not adopt the principles of this theory, but will follow Rizzi in assuming that some of them may play a role within his framework.

[20] In Rizzi's system, theta-government by a lexical head may substitute for antecedent-government. I assume, however, that this caveat applies only to variables, i.e. not to traces left by movement to a Case position. Cf. the following section for further discussion.

(58) An 'accusative' two-agreement system

```
              AGR.s"
             /      \
    [NPnom]i      AGR.s'
                 /       \
           (agr.s)        T"
                        /     \
                      Tns     AGR.o"
                             /       \
                      [NPacc]j      AGR.o"
                                   /       \
                             (agr.o)        V"
                                          /     \
                                        tj       V'
                                               /     \
                                            (V)        ti
```
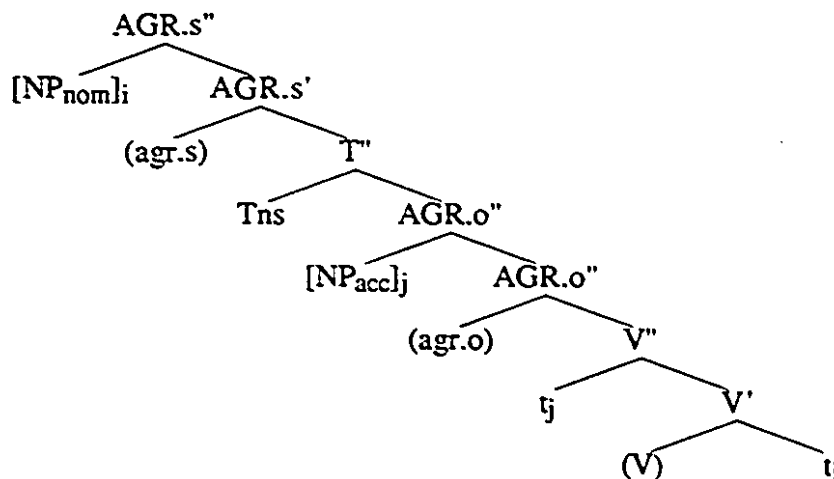
As in (55), both agreement morphemes are active in Case-checking. Notice that the Theme adjoins to AGR.o, since movement to the specifier position of this category would cross another L-position, the Spec. of VP. As before, both arguments could not adjoin to agreement, for then the Theme would constitute a closer potential antecedent-governor of the Agent's trace. (58) thus represents the only well-formed structure from which an 'accusative' pattern of Case-marking can be derived in a two-agreement system.

If Case is assigned from AGR.s by default, intransitive subjects will pattern with Agents in structures like (58), rather than with Themes. In both two-agreement systems, however, intransitive subjects could form an L- or L-bar chain when they are checked for Case, since no principle disallows it. Thus although a transitive object must adjoin to AGR.s in ergative languages, the subject of an intransitive verb may adjoin to the maximal projection of AGR.s or occupy its specifier position (*pace* its contents can be identified). In an accusative language, transitive subjects occupy the Spec. of AGR.s. Subjects of intransitives, on the other hand, have the option of adjoining to this category. This difference between L/L-bar chains may be reflected in the form that agreement takes, and may have consequences for other syntactic processes. These will be pointed out as we proceed.

2.2.4 LF-movement & weak crossover

The proposal that the absolutive NP in the transitive construction moves across the ergative subject at LF has potentially serious consequences for Binding Theory. This is because the potential binding relations that hold between subjects (Agents) and objects (Patients) at S-structure – including NPs contained within them – are reversed at LF, in effect creating new ones. Suppose, for instance, that a VP-internal subject (Agent) binds

an object (Patient) anaphor at S-structure. At LF, the Patient would adjoin to AGR.s for Case, where it would c-command the Agent. Since these two NPs would already be co-indexed, the question arises as to whether the Agent (an R-expresssion) would not be bound by the Patient, a case of Strong Crossover.

Perhaps more seriously, suppose there were a possessive pronoun in the specifier position of the subject NP, co-referring to the object (Patient) at S-structure. Since the pronoun does not c-command the Patient, the latter would not be bound. At LF, however, the Patient will c-command the pronoun, hence should also bind it. Moreover, if the trace left by LF-movement of the Patient were a variable, the resulting structure would constitute a case of Weak Crossover (WC). In English, this is exemplified by the following:

(59) <u>Weak Crossover</u> (English)
     a. His$_i$ mother kissed John$_i$
     b. *Who$_i$ did his$_i$ mother kiss t$_i$?

In (59a), the possessive pronoun is free in reference, but in (59b) it is bound. Informally then, WC occurs whenever a variable is co-indexed with a pronoun to its left – conceivably as in the ergative construction at LF. Following this line of reasoning, we predict that even sentences corresponding to (59a) will not surface in an ergative language. The following sentence (with proposed structure) shows this not to be the case:

(60) <u>Weak Crossover</u> (False)
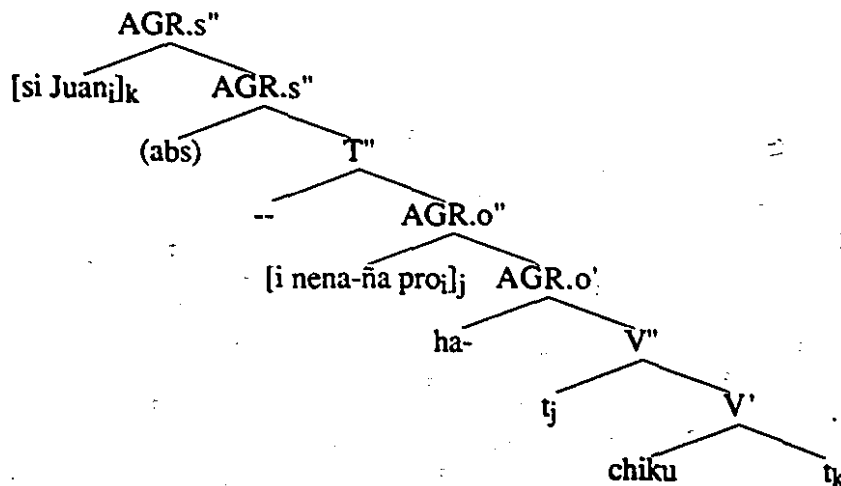
     Ha-chiku [i nena-ña   *pro* $_i$] si Juan$_i$
     R3s-kiss the mother-3s   PN J.
     'His$_i$ mother kissed Juan$_i$' (SC, pc)

The grammaticality of this example implies that that WC is not involved, or else the LF-structure could not be as proposed.

In a recent article, Georgopoulos (1991) suggests that WC effects may be absent in some languages (e.g. Palauan). If so, the analysis we have argued for may be salvaged, provided that WC does not occur in ergative languages. Nevertheless, Bobaljik (1992) has shown that ergative languages do exhibit WC effects in sentences corresponding to (59b). The following data is from Basque:

(61) <u>Weak Crossover</u> (Basque)
  a. Bere ama   nork maite du?
    his mother-ABS who-ERG love AUX-3sA/3sE

  b. Nork maite du   bere ama?
    who-ERG love AUX-3sA/3sE his mother-ABS

    (both) 'Who$_i$ loves his$_i$ mother?'

  c. ?*Bere amak nor maite du?
    his mother-ERG who-ABS love AUX-3sA/3sE

  d. ?*Nor maite du   bere amak?
    who-ABS love AUX-3sA/3sE his mother-ERG

    (both) ?* 'Who$_i$ does his$_i$ mother love?'

In (61a-b), the variable corresponds to a subject (Agent), and no WC effects occur. In (61c-d), however, the variables are in object (Patient) position and the effects are present. The wh-phrases in these examples are *in situ* at S-structure, suggesting that any differences in grammaticality are due to LF-movement (cf. Chomsky, 1976). Yet this is the very level where absolutive NPs supposedly adjoin to AGR.s in an ergative language. Thus, even though WC effects may be absent from some languages, they can be found in ergative ones, and Georgopoulos' alternative cannot be used.

<u>The Bijection Principle</u>

  Still, there is reason to believe that the trace left by adjunction of an absolutive NP to AGR.s is not a variable, hence would not be expected to induce a WC effect in the first place. According to Koopman and Sportiche (1982), a WC violation occurs when an operator binds both a variable and a pronoun, the latter only locally. When this happens (as in 59b), the pronoun becomes 'variable-like', disrupting a necessary one-to-one correspondence between variables and operators. This is known as the Bijection Principle (Koopman and Sportiche, 1982:146):[21]

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[21] The Bijection Principle has been amended to bring it into line with Mahajan's proposals. See text for discussion.

(62)   The Bijection Principle
        There is a bijective correspondence between variables and A-bar
        positions (read, 'operator positions')

Returning to (60), the question is whether the trace left by object-adjunction is a variable or not. Following Mahajan (1990), let us first assume that operator positions are restricted to the Spec. of CP, i.e. that adjunction sites are not operator positions *per se* (other potential operator positions will be discussed in 3.4). From this it follows that the object (Patient) trace is not a variable, and no WC violation will occur in declarative sentences based on LF-structure. On the other hand, we must assume that when an absolutive NP is questioned (as in 61c-d), the lowest trace will be interpreted as a variable, even though its immediate antecedent (the Case-checked trace adjoined to AGR.s) is not an operator.[22]

If traces left by adjunction do not induce WC effects at LF in an ergative language, we expect none to occur at S-structure in a language such as English. The following sentences (from Bobaljik) show fronting of an object NP, which could involve adjunction; (63b) is considered by him to be fully ungrammatical:

(63) Topicalization (English)
        a. His$_i$ teacher, John$_i$ really admires t$_i$
        b. ?John$_i$, his$_i$ teacher really admires t$_i$

In (63a), no Bijection Principle violation is expected, since *John* is not c-commanded by the specifier of the fronted object NP. In (63b), however, the specifier is locally bound by *John*, hence should function as a variable. If the object trace were a variable as well, the one-to-one correspondence between operators and variables would be disrupted, violating the Bijection Principle. Still, (63b) is not fully ungrammatical, suggesting that the trace of the adjoined object is not a variable. In fact, (63b) is much better than (59b), where the fronted element is a wh-phrase.[23] We thus assume that adjunction of an absolutive NP to AGR.s in an ergative language creates an L-bar chain, but that the residue of such movement is not a semantic variable ranging over different values. Consequently, no WC effects are expected to occur in declarative sentences. Moreover, Strong Crossover effects should not be apparent either, assuming that these fall under Principle C: this is because

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[22] A similar phenomenon has been observed by Cinque (1990), where adverbs adjoined to IP may have either clausal (wide) scope or VP (narrow) scope. When they are moved long-distance, however, only narrow scope is permitted, meaning that the lowest trace in the chain of adverb movement is interpreted as the variable.

[23] The trace in (62b) is probably what Lasnik and Stowell (1991) call a 'null epithet'. These too fail to trigger Bijection Principle violations.

fronted NP objects occupy L-bar positions. This becomes important when we discuss anaphors that adjoin to AGR.s in 3.3.

2.2.5 Implications of Case-checking

In 2.1.4 we saw that it was possible to determine the source of Case assignment by examining the position of the agreement morphemes in the verbal complex. Through this, we were able to determine the overall Case-marking pattern of a language. Here we attempt to determine whether an agreement morpheme (AGR.s or AGR.o) is the target of L- or L-bar movement. Generally speaking, the 'richer' an agreement paradigm is – i.e. the more person-number distinctions it makes – the more likely it is to be associated with movement to a specifier position (L-movement). This is because only rich agreement can identify the contents of an empty specifier at S-structure. Then, whichever agreement morpheme is not associated with 'richest' agreement will be the target of adjunction (L-bar movement). This (plus Relativized Minimality) also predicts the well-known fact that the richest form of agreement is always with the subject.

Knowing just the manner in which Case is checked (through L- or L-bar movement) cannot establish a language as being ergative or accusative, however. The subject of a transitive verb may be checked by movement to a specifier position, for example, but whether the language is ergative or not depends on which agreement morpheme is involved. Presumably, however, an argument checked for Case in a certain manner from a given source will trigger the same *form* of agreement. Conversely, agreement of the same form implies that Case is checked by the same agreement morpheme and in the same manner. Using the source and form of agreement as diagnostics, the manner in which Case is checked can be deduced as well. Together, the overall Case-marking pattern of a language can be established.

Consider Mam, for example. As we saw in 2.1.1, this language has two agreement paradigms, the absolutive and the ergative. In the transitive construction, the Agent is cross-referenced by two morphemes, AGR.o and the enclitic. Together, these comprise the 'richest' form of agreement, and thus most likely to be the target of L-movement. Transitive objects, on the other hand, are cross-referenced by just one set of prefixes, so it constitutes the 'poorer' of the two agreement paradigms. By our reasoning, objects should be checked for Case by L-bar movement. In the intransitive construction, however, the enclitic conspires with absolutive agreement to cross-reference the subject; strictly speaking then, the form of agreement is different than it is for transitive objects. It is therefore possible that intransitive subjects are checked through L-movement, rather than L-bar

movement. Still, the assumption is that AGR.s (the 'default' Case) is responsible for checking both absolutive NPs.

In Chamorro, determining the source and manner of Case assignment is not so easy, especially for intransitives. In the realis mood, for example, some intransitive subjects appear with overt Number agreement, while others don't (cf. 2.1.4). The question we attempt to answer here is whether this difference can be related to a different source and/or manner of Case-checking. The following sentences illustrate the two types of intransitives (adapted from Chung, 1990):

(64) Intransitives (Singular)
    a. T-um-angis i neni.
       cry (sing.) the baby
       'The baby cried'

    b. Sulon   i patgon.
       slip (sing.) the child
       'The child slipped'

(65) Intransitives (Plural)
    a. Man-tangis i neni   siha.
       pl.-cry   the baby pl.
       'The babies cried'

    b. Man-sulon i famagu'un.
       pl.-slip   the children
       'The children slipped'

(64) illustrates the two agreement forms used for marking intransitive singular subjects, the infix -*um*- (64a) and a zero morpheme (64b). The prefix *man*- (65) marks all plural subjects (and sometimes only optionally), so it obscures any differences which may account for the distribution in (64). For this reason, I will ignore the plural marker *man*- and assume that it attaches to a verb stem in the lexicon. As such, it can be considered as a kind of group-action marker, rather than an inflectional affix (M. Baker, pc).

The 'agreement' in (64b) has the same (zero) form associated with direct objects in the transitive construction. There it was associated with AGR.s, and objects were checked for Case by adjunction (L-bar movement). By analogy, the null agreement morpheme in (64b) will be associated with AGR.s as well, and intransitive subjects will be checked for Case in the same manner.

What then of the infix -*um*- ? Since this affix is not the same in form as transitive subject agreement (e.g. *ha*- [3s]), the subject in (64a) is not likely to be checked via L-movement to the Spec. of AGR.o. Moreover, since -*um*- is different than the null agreement morpheme in (64b), the subject is unlikely to adjoin to AGR.s. Consequently,-

um- must either trigger movement to the Spec. of AGR.s, or else adjunction to the maximal projection of AGR.o. As we shall see, there is good evidence in favor of the second option. This might seem surprising, since it would mean relaxing the requirement on default Case assignment from AGR.s. As it turns out, however, there are situations in ergative languages that show non-canonical patterns of Case-marking; these are known as ergative splits. I will claim that *-um-* represents such a pattern in Chamorro, or that intransitive subjects are checked for Case by adjoining to AGR.o. This will be discussed further in the next section.

Summarizing, we have claimed that zero-marked intransitive subjects and transitive objects are Case-checked through adjunction to AGR.s. Some intransitive subjects trigger a different form of agreement, however, which represents a different source and manner of Case-checking. Specifically, NPs cross-referenced by the infix *-um-* are checked for Case when they adjoin to AGR.o. Although transitive subjects are also checked for Case by AGR.o, the mechanism is different from that employed by *-um-* ; this is reflected in their different forms. Finally, Case-checking of an intransitive subject by AGR.o represents a departure from canonical Case-marking in an ergative language, since Case is not assigned from AGR.s.

Discussion

In this section, we have seen how movement satisfies the government requirement on Case-checking, and how it is constrained by principles of Universal Grammar. Of these, the one that plays the most important role is Relativized Minimality, which forces Case-marked NP's to adjoin to AGR.s or AGR.o if there is an intervening specifier. In an ergative language, the subject of a transitive clause is checked for Case by L-movement to Spec. of AGR.o, so the object must adjoin to AGR.s. In an 'accusative' language, transitive subjects are checked by movement to the Spec. of AGR.s, objects by adjunction to AGR.o. Otherwise (in a 'true' accusative language), the verb itself assigns Case to the object.

Another condition that we have seen rules out movement to AGR.s or AGR.o from an operator position, i.e. the Spec. of CP. This is considered as a case of improper movement. The system that emerges is rich enough to assign Case by agreement to both NPs of a transitive clause, yet not so rich that any Case array ensues. This is because the form of Case-marking correlates with the source of Case, and the manner in which Case is checked. Still, Case arrays may sometimes differ within the same language. A typical example in an ergative language is when the Case of intransitive subjects (normally the

same as transitive objects), takes the form associated with transitive subjects. This describes a split ergative system, the focus of the next section.

2.3 Split ergativity

In order to attribute similar agreement forms to a common source, we must allow for situations where Case is not checked by AGR.s. This is not surprising, given an underlying structure that has more than one agreement projection. In theory then, the single argument of an intransitive verb may associate with either agreement morpheme. The 'cost' of such a measure is in overriding the requirement that Case be checked by AGR.s in every sentence. We thus predict that AGR.s remains inert only under special circumstances.

Such a view seems to be required in explaining phenomena known collectively as split ergativity, special situations in ergative languages where intransitive and transitive subjects are marked the same. While this results in a Case-marking pattern typical of accusative languages, our claim will be that this is only apparent, and follows from the (exceptional) association of intransitive subjects with AGR.o. At the same time, however, NPs in the transitive construction will be checked for Case exactly as in normal ('non-split') situations. The predictions that follow from this hypothesis will then be tested in Chapter three.

2.3.1 Exceptional argument association

The system of agreement being advocated here assumes that in matrix sentences, AGR.s is generally responsible for checking Case. This includes subjects of intransitives, whose LF-structure is schematized below:

(66) <u>Argument association</u> (canonical)
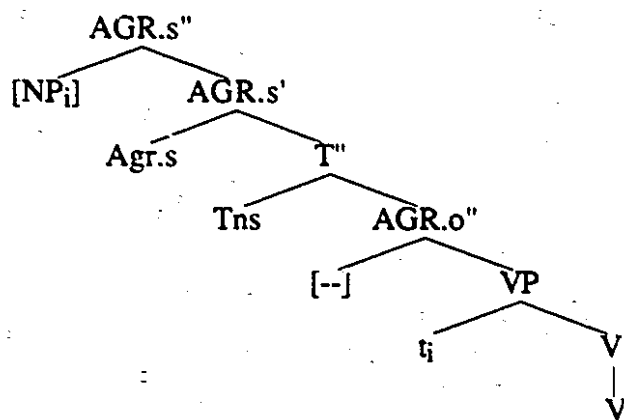
The structure (66) shows how the single argument of an unergative verb – an Agent – would move from its base position in Spec. of VP to the Spec. of AGR.s. As indicated, AGR.o is present but inert.[24]

The type of language (ergative or accusative) is determined by whichever argument of the transitive construction derives its Case from this agreement morpheme: if it is the subject (typically an Agent), the language is accusative; if it is the object (typically a Theme), the language is ergative. As we saw in 2.2.5, however, some sentences do not require AGR.s to play an active role in checking Case. These turn out to be intransitives whose single argument derives its Case from AGR.o. Together with the transitives, the overall pattern is one which superficially looks like an accusative language – although in 'true' accusative languages, subjects derive their Case from AGR.s. Situations where this occurs thus exhibit non-canonical Case-marking for an ergative language. Schematically, the structure underlying such an intransitive is proposed to be as follows:

(67) <u>Argument association</u> (non-canonical)
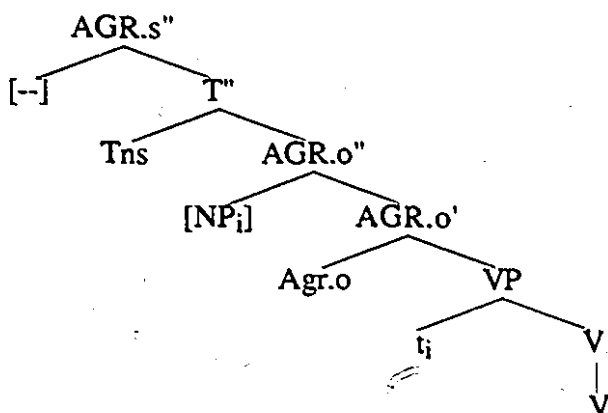
In this structure, the intransitive subject moves to the Spec. of AGR.o, while AGR.s remains inert. (67) is thus very similar to the proposed structure of a transitive sentence, where the subject (Agent) also moves to AGR.o in an ergative language.

2.3.2 Types of ergative splits

According to Dixon (1979), non-canonical Case-marking in ergative languages can coincide with a change in mood or aspect; with the type of NP that is involved (e.g. full NPs vs. pronouns), or with arguments bearing different theta-roles. In the following we

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[24] According to Chomsky (1991), even in sentences with one direct argument, both types of agreement are still available.

give an example of each type of ergative split, along with a proposal for the structure that underlies it. In 2.3.3, the circumstances triggering non-canonical Case-marking will be discussed.

<u>Argument-pair splits</u>

One of the ways in which a nominative-accusative pattern can emerge in an ergative language is along semantic lines. Usually, this hinges on the thematic role of the intransitive subject. In Bats – a North-East Caucasian language – the single argument of some intransitive verbs can appear with either absolutive or ergative Case. The latter occurs when the subject is regarded as having caused the action (from Comrie, 1973:241):

(68)   <u>Bats</u>
        a. So   woze.
           A1s fall
           'I fell'

        b. As   woze.
           E1s fall
           'I fell' (i.e., deliberately)

The single argument of the intransitive verb in (68a) could be considered as a Theme, while the one in (68b) appears to be an Agent. Crucially, transitive subjects are marked the same as the subject is in (68b). This in turn implies that both subjects derive their Case from a common source and in a common manner; thus if transitive subjects are normally checked by movement to the Spec. of AGR.o, so too will the subject be in (68b). Again, while this gives the impression of a nominative-accusative Case-marking pattern, the association of arguments and agreement in the transitive construction is characteristic of an ergative language.

Chamorro is another language with a possible split along semantic lines. As we saw in 2.2.5, some singular intransitive subjects are cross-referenced by the infix -um- , while others are unmarked. Although there are some exceptions, most of the verbs that appear with -um- are agentive, and verbs with zero Case-marking are unaccusative or stative (i.e. the single argument usually bears the role of Theme). Since agreement in the latter is the same as for direct objects, verbs infixed with -um- represent the non-canonical Case-marking situation where Case is checked by AGR.o. Although the form of agreement is not the same as for transitive subjects (which also receive their Case from AGR.o), this can be attributed to a difference in the manner of Case-checking: L-movement in the case of transitive subjects, L-bar movement in the case of unergatives.

Pronoun splits

Another way that non-canonical Case-marking can manifest itself in an ergative language is by NP-type. In Dyirbal (Australian), full NPs and third person pronouns follow a canonically ergative pattern of Case-marking, but first- and second-person pronouns do not, patterning instead on a nominative-accusative basis (all Dyirbal data is originally from Dixon, 1972):

(69) Full NPs (Dyirbal)
    a. payi yara paninyu
        man-ABS come-NFUT
        'Man is coming'

    b. payi yara pangkun jukumpiru palkan
        man-ABS woman-ERG   hit-NFUT
        'Woman is hitting man'

(70) First- and second- persons (Dyirbal)
    a. ngaja   paninyu
        I-'NOM' come-NFUT
        'I'm coming'

    b. ngaja   nginuna   palkan
        I-'NOM' you-'ACC' hit-NFUT
        'I'm hitting you'

According to Dixon (1972), it is even possible to use NPs from each paradigm in the same sentence, as in the following:

(71) 'Mixed' systems
    a. ngaykuna pangkul yarangku palkan
        I-'ACC'   man-ERG   hit-NFUT
        'Man is hitting me'

    b. ngaja   payi yara palkan
        I-'NOM' man-ABS hit-NFUT
        'I am hitting man'

Nominative and accusative Case appears in quotes in (70) – (71) because the source (it is argued) is the same as for absolutive and ergative NPs, respectively. True 'mixes' such as those in (71) are not expected to exist. I propose that first- and second-person pronouns in Dyirbal are only labelled 'nominative' and 'accusative' because there are no corresponding ergative or absolutive pronoun forms to compare them to (nor do they use morphemes comparable to ergative-absolutive endings). Let us then assume that 'nominative' first- and second-person forms are systematically associated with AGR.o, along with ergative full NPs and third-person subject pronouns. 'Accusative' forms, on the other hand, are

associated with AGR.s, along with absolutive full NPs and third-person object pronouns. First- and second-person intransitive pronoun subjects thus contribute to a non-canonical Case-marking pattern. Our claim is that the structure underlying (70a) would be the same as in (68). Still, we expect that the association of arguments and agreement morphemes is canonically ergative in the structures underlying (71), a prediction which will be tested in Chapter three.

Aspect-mood splits

Other splits occur along the lines of tense and aspect. In the Mayan language Chol, for example, the single argument of an intransitive verb triggers absolutive agreement in the perfective aspect, but ergative in the imperfective. This simple shift has the effect of making agreement in the imperfective paradigm look nominative-accusative. Whether the association between arguments and agreement morphemes has been altered is another matter, however; the proposal here is that only the morpheme from which the intransitive subject derives its Case has changed in the imperfective aspect, from AGR.s to AGR.o. Similar instances of ergative splits based on aspect are found in Hindi (Indo-european) and Ixil (Mayan).

Non-canonical Case-marking also manifests itself in Chamorro irrealis clauses. This is shown below, where the same form of agreement cross-references the subjects of both transitive and intransitive verbs (from Chung, 1982):

(72) Agreement in the irrealis (Chamorro)
      a. Pära uta-lalatdi i mañain-hu.
        Fut. S1p-scold the parents-my
        'We are going to scold my parents'   [+TR]

      b. Pära uta-fan-ma-lalatdi ni mañain-hu.
        Fut S1p-Pl-Pass-scold Obl. parents-my
        'We are going to be scolded by my parents'   [-TR]

In these sentences, the agreement morpheme *ta-* appears closer to the stem than the irrealis morpheme *u-* (cf. 2.1.4). Our conclusion is that it represents AGR.o. If the transitive subject is checked for Case through L-movement to the Spec. of AGR.o in (72a), the same kind of movement must be involved in (72b), where the form of agreement is the same. As in the previous examples, this gives the impression of a nominative-accusative pattern of Case-marking. The claim, however, is that the association of arguments with agreement is the same in (72a) as in the realis mood. The structure underlying (72b), however, would be as in (68).

2.3.3 Causes of split ergativity

The non-canonical patterns exhibited by Bats, Chol, Dyirbal and Chamorro are all morphological in nature. It is not obvious, however, that the differences in Case-marking signal different syntactic categories. Although we claim that they do not, this remains to be tested. In the theory we are assuming, the similar markings on transitive and intransitive subjects implies that these two relations derive their Case from the same agreement morpheme. Still, unless there is evidence from morpheme order, we do not know which agreement morpheme it is – AGR.o or AGR.s. This too must ultimately be decided on the basis of syntactic tests. For the time being, however, let us continue to assume that intransitive subjects derive their Case from AGR.o in a non-canonical Case-marking situation, and that transitive subjects and direct objects are checked for Case consistently in all contexts. Having already seen how this can give rise to a nominative-accusative pattern, let us explore how such a situation could arise in the first place.

First, the view of split ergativity offered here entails relaxing the requirement on Case assignment from AGR.s. All along, our assumption has been that AGR.s is a default Case, which is only assigned when necessary. The question then is what requires AGR.o to be assigned, when it would otherwise remain inert? What is it about the irrealis mood in Chamorro, for example, that requires AGR.o to be assigned? Why is the imperfective aspect typically associated with non-canonical Case-marking in ergative languages, rather than perfective aspect? While the answers to these questions are not fully understood, I believe they can be framed within the type of phrase structure we are assuming, where the functional category Tense dominates the AGR.o projection, but not that of AGR.s. One can thus imagine how a particular morpheme under Tense might select for a rich agreement morpheme, which then attracts an argument to its specifier position. A similar mechanism determines the relationship between a verb like *wonder* and its CP complement. At D-structure, this verb selects a CP headed by the feature [+wh]. At S-structure, a wh-phrase 'saturates' the CP, such that *wonder* always appears with an interrogative complement ('I wonder what Bill bought'). The structure underlying e.g. a Chamorro sentence in the irrealis mood might then be represented as follows:

(73) AGR.o selection

```
              AGR.s"
            ╱      ╲
         [--]       T"
                  ╱   ╲
                 u-    AGR.o"
               [+__F]  ╱    ╲
                    [e]     AGR.o'
                          ╱      ╲
                       [+F]       VP
                                ╱    ╲
                             NP       V'
                                      │
                                      V
```
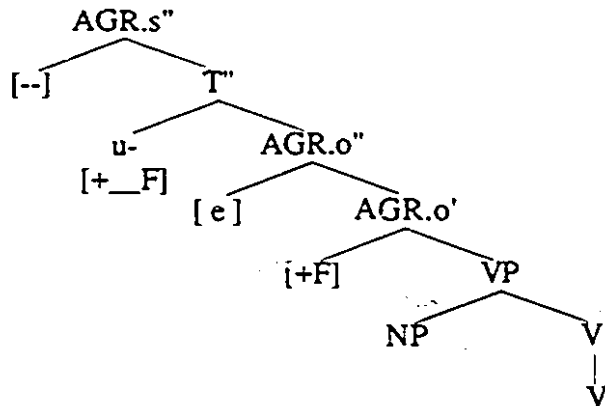
In this structure, the irrealis morpheme *u-* is lexically specified for the feature [+F], which heads its AGR.o complement at D-structure. As a rich agreement morpheme, [+F] projects a specifer position, which is saturated by an argument at LF. The structure in (73) yields sentences like those in (72). The lexical selection for a rich agreement morpheme thus takes precedence over the requirement that (the default) AGR.s be used.

A selection-based account of split ergativity could also be adapted to Dyirbal, given certain other assumptions. In this language, first- and second-person pronouns trigger the non-canonical Case-marking pattern, which we claim to follow from the association of intransitive subjects with AGR.o. Inherently, first- and second-persons are linked to discourse in a way that third persons and full NPs are not: the former are relevant to the speech act itself. We might then attribute to the Tense morpheme in Dyirbal a lexical property of selecting for 'inherent discourse linking' which would then attract a first- or second-person pronoun at LF. Only AGR.o would satisfy this requirement, if selection is from Tense. This would then produce the paradigm of split ergativity.

Imperfective aspect in Chol presents a different kind of problem. Here too, the selectional property responsible for the ergative split would have to be attributed to Tense, which dominates the AGR.o projection but not that of AGR.s. This split involves aspect, which we have analyzed as appearing under COMP in Mayan languages (cf. 2.1.1). Still, it is a well-known fact that a kind of feature-sharing occurs between Tense and COMP, exemplified below for English:

(74) Feature-sharing
   a. We wanted very much for him to come/*that PRO to come.
   b. We never expected that he would come/*for he would come

64

(74a) shows that infinitive clauses are incompatible with 'finite' complementizers. (74b) the converse. If feature-sharing between Tense and COMP is a property of Chol, the features of the imperfective aspect could be shared by Tense, so that in effect an ergative agreement morpheme could be selected for indirectly.

Finally, argument-pair splits in Bats and Chamorro might be determined by Tense if a property of selecting Agent-like features were attributed to it. In each case, the selectional requirements of Tense could be satisfied through government of the lower agreement morpheme, as in (73). Throughout this discussion, it has been assumed that Tense does not govern AGR.s, hence may not select for features under this projection in the manner proposed for AGR.o. Thus, any account which takes the basic relationship of intransitive subjects to be with AGR.o (i.e. instead of AGR.s) could not appeal to government-selection as a means of explaining the (supposedly) exceptional relationship it would have with AGR.s in a split ergative context.

Discussion

In this section, I have argued that the structure we are assuming for ergative languages allows for a nominative-accusative Case-marking pattern to obtain with only a minimal change in argument-agreement association. Subjects of intransitive clauses, it was claimed, derive their Case from AGR.o in non-canonical situations, instead of the usual AGR.s. In the transitive construction, there is no change at all in the association of arguments with agreement.

It is interesting to note that the alignment I have ascribed to intransitive sentences in split ergative contexts is the basic one assumed by Bobaljik (1992). For him, an intransitive subject with non-canonical Case-marking would presumably involve the AGR.s agreement morpheme. While there is little to choose between the two theories (both explain the distribution of Case) they make divergent claims regarding the syntactic behaviour of direct arguments – if Case-marking has anything at all to do with underlying syntactic categories. For example, Bobaljik would predict (correctly) that intransitive subjects and transitive objects (Patients) behave the same in canonically ergative situations, since these NPs derive their Case from the same agreement morpheme (AGR.o). In non-canonical situations, however, transitive and intransitive subjects might be expected to behave similarly, in opposition to transitive objects. This latter prediction differs from the one that is made here. If the nominative-accusative pattern exhibited by non-canonical Case-marking is only apparent, transitive and intransitive subjects would still behave differently, as in the canonical situation. The reason for this would be that absolutive NP's occupy the 'highest' position at LF, whereas transitive subjects (Agents) are c-commanded

by the absolutive NP at LF. The relative position of these NPs should interact with principles that hold at LF, such as the ECP. These predictions will be tested in Chapter three. First, however, we examine the pattern of Case-marking in infinitives.

2.4 Infinitives

So far, attention has been focussed on the Case-marking properties of finite clauses in ergative languages; here we consider clauses that are non-finite. In English, infinitives are characterized by the phonetically-empty NP PRO and an absence of subject agreement. These properties are seen as being related, since agreement is a governor and PRO must always be ungoverned.[25] Still, English is an accusative language, and only one agreement morpheme plays an active role in Case-assignment anyway. In an ergative language, both agreement morphemes are responsible for checking Case, so it is important to determine which one of these is absent from infinitival constructions. In this section, we claim that AGR.s is absent, but that nothing rules out AGR.o from surfacing. First we explore the consequences that the VP-internal subject hypothesis has for structures of obligatory control and spell c... the predictions that our theory makes (2.4.1). In 2.4.2 we consider evidence that NPs marked with absolutive Case cannot be checked in infinitival constructions, and in 2.4.3 that ergative NPs can. The opposite view has been advanced for infinitives by Bobaljik (in press), and his theory is discussed in 2.4.4. A summary of Chapter two then follows.

2.4.1 The distribution of PRO

In current versions of syntactic theory (e.g. Chomsky, 1986a), subjects are base-generated in Spec. of IP, the 'external' argument position. If the clause is finite, a [+Tense] feature in the head of Infl governs the subject, assigning Case to it. In non-tensed clauses, the subject still appears in Spec. of IP, but [-Tense] is not considered as a governor. Consequently, the subject cannot receive Case and must be realized as the non-lexical PRO. It is also usually assumed (though not always explicitly) that a PRO-subject can only occupy a specifier position. For the most part, these assumptions carry over to the present theory, where IP=AGR.s. The only major difference is that the Spec. of

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[25] For the purposes of this discussion I will assume the standard GB theory of PRO, which holds that as a pronominal anaphor, it cannot be assigned a governing category.

AGR.s is not an argument position *per se,* owing to the VP-internal subject hypothesis: nevertheless, it is an L-position in Mahajan's sense.[26]

The VP-internal subject hypothesis also forces certain changes in the way that infinitives are derived. First, both arguments of a typically transitive verb (Agent, Theme) will be governed at D-structure by the verb itself. This means that for a PRO-argument to remain ungoverned, it must L-move to a higher specifier position. If PRO were generated as an object, however, movement would violate Relativized Minimality, since the Agent (or whichever argument is in Spec. of VP) represents a closer potential antecedent governor. PRO-Themes will never surface then, unless the verb is unaccusative or passive. On the other hand, PRO-Agents can L-move to a higher specifier position so long as they remain ungoverned. Still, movement could not be to Spec. of AGR.s or AGR.o, since agreement morphemes are considered governors. I assume then that in infinitives, Agents which are realized as PRO move to the Spec. of TP, as in the following:

(75) Structure of infinitives
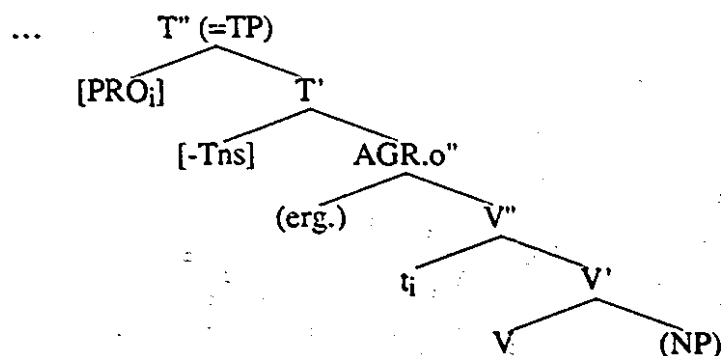
Since [-Tns] is not a governor, PRO will not be governed in the Tense phrase. Moreover, PRO occupies a specifier position, and in this sense is well-formed. I assume that [-Tns] can never identify the contents of its empty specifier, even after movement has occurred; it is therefore necessary for a c-commanding NP in the matrix clause to serve this function.

Another property of (75) is that AGR.o does not project a specifier position. This wouldn't make a difference in a language such as English, where AGR.o is basically inert. On the other hand, AGR.o is rich enough in an ergative language to project a specifier position, at least in transitive clauses. If this happened, however, it would block L-movement of the PRO-subject to the Spec. of TP, violating Relativized Minimality. Thus, PRO-Agents in an ergative language can only surface if AGR.o does not project a specifier.

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[26] Subjects of infinitives may be realized lexically if they are governed from outside the clause, as in 'Mary wanted [*him* to win]'. For the purposes of this discussion, however, I will not be concerned with exceptional Case-marking.

in 2.4.3 we see evidence of a different AGR.o projection in the morphology itself. Finally, note that L-movement of a PRO-Agent to the Spec. of TP allows for L-bar movement to a higher position (e.g. COMP) of some other relation. On the other hand, L-bar movement across the AGR.o projection would be ruled out if some NP were adjoined to it. Evidence bearing on these predictions will be adduced in Chapter four.

Summarizing, PRO satisfies the conditions on its well-formedness by moving from its base position to the specifier of TP, where it remains ungoverned and can be controlled. Only arguments originating in the Spec. of VP can be realized as PRO, even in an ergative language (unless the verb is unaccusative, passive, etc.). If Marantz (1984) and Levin (1983) are correct in assuming that NPs with the role of Theme can be base-generated in the Spec. of VP, they too should surface as controlled arguments. In the theory we are assuming, however, arguments are assigned uniformly across languages and structures; consequently, if Themes are generated as sisters to the verb in one language, they could not be generated in the Spec. of VP in another.

AGR.s and Tense

Consider next the relationship between Tense and agreement. In the *Economy of Derivations*, Chomsky (1991) proposes that the feature [-Tns] is not 'strong enough' to allow verb movement.[27] This means that the verb cannot move to AGR.s, since the latter is higher on the tree than Tense: to do so would violate the Head Movement Constraint (Travis, 1984). The lack of agreement in infinitives can thus be explained by assuming a) that AGR.s must be lexically supported by the verb to play an active role in Case-checking, and b) that AGR.s cannot be realized when the feature [-Tns] is present. The latter in effect blocks head movement to AGR.s, prohibiting the absolutive agreement morpheme from surfacing.[28]

From these assumptions, two predictions emerge. First, lexical NPs checked by AGR.s should never surface in infinitive clauses (but cf. Ft. 22). For an ergative language, these include intransitive subjects and transitive objects (absolutive NPs), for an accusative language, transitive and intransitive subjects (nominatives). Subjects represent the controlled argument in an infinitive, so we expect these to be non-lexical anyway. Objects, on the other hand, distinguish between ergative and accusative languages: in the

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[27] 'Strong' does not correlate with 'rich', as in descriptions of agreement; the latter may not be rich enough to project a specifier position, but could still be strong enough to induce verb movement (cf. the Chamorro morpheme -*um*-).>

[28] If Tense lowers to the verb at S-structure (as in e.g. English), lexical support can come as late as LF, when the tensed verb raises back again.

former they are checked by AGR.s, while in the latter they are not. We thus expect lexical NP objects to be ill-formed in ergative languages (where they depend on AGR.s for Case), but not in accusative languages. Second, since AGR.o is lower than the Tense projection, NPs that depend on it for Case should be able to surface in infinitives. In accusative languages, the object could depend on AGR.o (if the verb did not Case-mark it directly). In ergative languages, the transitive subject is usually associated with AGR.o, but must remain ungoverned in infinitives. Still, if transitive objects cannot be checked for Case by AGR.s, they could be linked to AGR.o in infinitives. If this happened, however, it would have to be through adjunction, for otherwise Relativized Minimality would be violated. In what follows, we examine evidence suggesting that each of these predictions is correct.

2.4.2 Absolutive agreement in infinitives

We first consider evidence from the Mayan group which shows that NPs marked with absolutive Case do not surface in infinitival constructions. We have claimed that the source of absolutive Case is AGR.s, which is higher than the Tense projection. Owing to conditions on the realization of agreement morphemes, it follows that when a clause is [-Tns], NPs marked with absolutive Case will not occur. Data is presented here from Mam, Jacaltec, Tzotzil and Tzutujil. Throughout the discussion, I will assume that the controlled NP is the subject (Agent) of a transitive verb, base-generated in the Spec. of VP, and that it moves to the Spec. of TP at S-structure.

Mam

According to England (1983), infinitives in Mam serve as complements to verbs of motion or location, as well as causative verbs. In the former, the embedded empty subject is co-referential with the matrix subject, while in the latter, it refers to the matrix object. As we have seen, Mam is a VSO language, and the order of morphemes in the verbal complex is roughly ASP-ABS-ERG-STEM. Infinitives are formed by suffixation of the morpheme -*l*, which represents the feature [-Tns]. Normally, this would be expected to occur between AGR.o and AGR.s, except that these agreement morphemes are absent from infinitives (along with aspectuals and directionals). If infinitives represent structures of control, it is not surprising that AGR.o is missing, since this agreement morpheme is responsible for checking lexical NPs marked with ergative Case. The absence of AGR.s,

on the other hand, forces transitive objects to be checked for Case by other means. Evidence for this is given below (from England, 1983:298-300):[29]

(76) <u>Subject control structures</u>
  a. c chi e7x xjaal
   past 3pA go person
   'The people went'

  b. o tz'-ex ky-laq'o-7n xjaal
   past 3sA-dir 3pE-buy-ds person
   'The people bought it'

  c. o chi e7x xjaal [PRO laq'o-l t-ee]
   past 3pA go person buy-inf 3s-RN
   'The people went to buy it'

(77) <u>Object control structures</u>
  a. ma tz'-ok n-q'o-7n-a [PRO tx'eema-l sii7]
   asp 2sA-dir 1sE-give-ds-cl. cut-inf wood
   'I made you cut wood'

  b. ma tz'-ok n-q'o-7n-a [PRO tx'eema-l t-ee sii7]
   asp 2sA-dir 1sE-give-ds-cl. cut-inf 3s-RN wood
   'I made you cut at (the) wood' (adapted from England, 1983)

In (76c) and (77b) the transitive object surfaces as the possessor of a relational NP. In this context, it is checked for Case by agreement internal to the NP, and not by AGR.s. In (77a) the object is a non-specific bare noun, adjacent to the verb stem. I assume this means it has been incorporated. Schematically, the structure underlying (77a) would be as follows (prior to verb movement):

(78) ...   V'
         / \
     V+N_i NP
           |
           N'
           |
           t_i
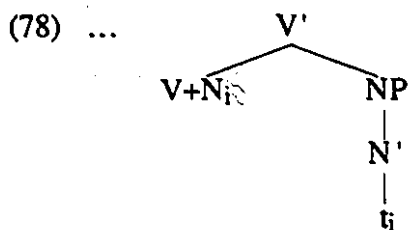
   e.g. ... tx'eema sii7 ('cut wood')

According to Baker (1988), noun incorporation is a means of satisfying the Case requirements of a lexical NP. If so, the NP object in (42) would not be marked for Case, and no Case-checking by AGR.s would occur. The data in (77) are thus consistent with the prediction that absolutive NPs cannot be expressed in control structures: instead of

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[29]Aissen (1987) analyzes similar structures in Tzotzil as subjunctives, but her observations pertain as much to matrix verbs as embedded ones: both are underspecified in terms of agreement.

relying on AGR.s, transitive objects rely on agreement in oblique (relational) NPs for Case, or else incorporate.

Jacaltec

As in Mam, tenseless clauses show no sign of aspect or agreement in Jacaltec, and subjects are always null. According to Craig (1977), they exhaust the set of control structures in the language. The following sentences contain examples of infinitives in Jacaltec (from Craig, 1977:244-245):

(79) Infinitives (Jacaltec)
    a. chin oc   [PRO way-oj]
      1sA enter   sleep-inf
      'I am falling asleep'

    b. chin to [PRO il-o'   kin]
      1sA go   see-inf fiesta
      'I am going to see (the) fiesta'

    c. [PRO lok-o' ixim] x-Ø-w-u   txonbal
          buy-inf corn   asp-A3-E1-do market
          'Buying corn is what I'm doing in the market'

Infinitives are marked by the suffix *-oj*, which is phonologically modified in (79b-c). According to Craig, this too is a sign of incorporation. Moreover, she states that objects such as those in (79b-c) cannot take a noun classifier, which would indicate that Jacaltec does not allow the strategy of expressing a direct object obliquely, as in Mam. As before, these data confirm the prediction that absolutive Case cannot be assigned in infinitives, which in turn would follow if AGR.s were higher than the Tense projection and responsible for checking NPs marked with absolutive Case.

Tzotzil & Tzutujil

Tzotzil is another Mayan language in which infinitives lack aspect and agreement markers. As before, the cases with which we are most concerned involve infinitives with two direct arguments. In the following, however, the verbs appear with no overt NPs at all (from Aissen, 1987:16):[30]

(80) Infinitives (Tzotzil)
    a. 7a   li chon-e   mu s-k'an   [PRO mil-el]
      TOP the snake-cl not E3-want   kill-inf
      'The snake doesn't want to be killed'

---

[30] In (80c), the matrix (modal) verb is composed of a stem and an ergative prefix, although it wasn't glossed this way by Aissen.

b. Av-ich' [PRO 7il-el]
   E2 get   see-inf
   'You were seen'

c. Mu s-tak'   [PRO jotz'-el]
   not E3-can   dig-inf
   'It can't be dug out'

No transitive object is expressed overtly in (80a-c). Furthermore, what would be the object NP is co-referential with the subject of the matrix clause. This strongly suggests that a passive transformation has taken place, or that the embedded verbs in (80) are derived intransitives. If so, the structure underlying (80c) might be as follows:

(81) ...
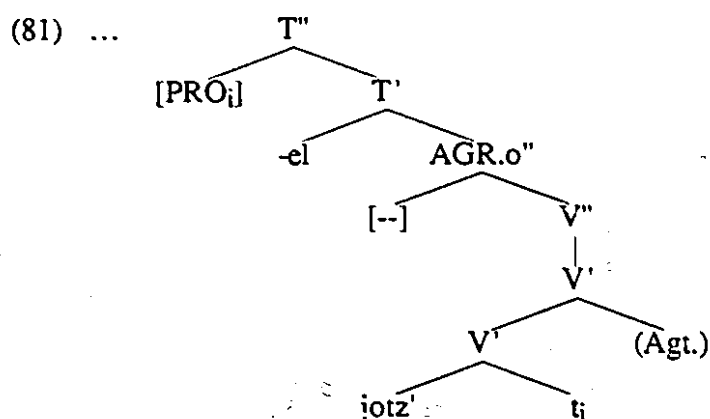
e.g. ... jotz'-el ('to be dug out')

Mayan languages in general have several passive affixes, not all of which are phonetically overt (England, 1983; Dayley, 1985). If (80c) contains one, the Agent would be syntactically suppressed, surfacing as an optional argument in (81). Then, L-movement of the Theme (PRO) to Spec. of TP would be unimpeded. Given this possibility, the data are consistent with our prediction that absolutive NPs cannot surface in Tzotzil infinitives, as in Mam and Jacaltec.

The situation in Tzutujil is similar to the one in Jacaltec, where objects of transitive verbs undergo incorporation in infinitival constructions. Dayley (1985:396) observes that objects in Tzutujil are interpreted as non-specific or indefinite, which is consistent with the effects of incorporation. An example is given here (from Dayley, 1985:393):

(82) Tzutujil (incorporation)
        x-Ø-qa-amaj [PRO choy-oj chee7].
        asp-A3-E1-begin   cut-inf tree
        'We began to cut trees'

Absolutive NPs are thus prohibited from appearing in infinitives, a fact that follows if they depend on AGR.s for Case. This does not exhaust the set of possibilities for marking transitive objects in the language, however; in 2.4.3 we discuss a special case of how they can be realized in Tzutujil and Tzotzil.

Basque

Basque is another ergative language where absolutive agreement fails to surface in infinitives. Paradoxically, however, absolutive NPs may still be realized. The following sentence represents the purposive construction, in which an infinitival clause complements the verb 'to go' (from Anderson, 1976):

(83) [PRO liburu hoik irakurtzerat] noatza
       book those read-inf   I-go-them
       'I am going (in order) to read those books'

It seems that here the NP 'those books' triggers absolutive agreement on the matrix verb, rather than on the embedded infinitival verb. From this we can deduce that infinitives are themselves incapable of checking NPs marked with absolutive Case, or that AGR.s is inert.[31]

In this section, we have looked at evidence bearing on the proposal that AGR.s is responsible for checking NPs marked with absolutive Case in an ergative language. Because AGR.s cannot be realized in infinitives, the prediction was that absolutive NPs would not surface in these structures. Subjects of intransitives are unilluminating, since they are always realized as PRO, and cannot be associated with agreement. Objects, on the other hand, provide the ideal testing ground for our prediction. In ergative languages, these are realized differently, i.e. without the agreement that marks them in matrix clauses: objects of infinitives are marked with oblique Case, incorporated, passivized, or trigger absolutive agreement in a matrix clause. In accusative languages, on the other hand, objects of infinitives are marked the same as in matrix clauses (evidenced e.g. by members of the Bantu group). This implies that they rely on AGR.o instead of AGR.s for Case-checking. The data thus confirm our predictions, and lend support to the general theory of Case worked out thus far.

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[31] The suggestion that NPs can be checked for Case by agreement morphemes outside their clause raises many interesting questions, but I will not pursue them here.

2.4.3 Ergative agreement in infinitives

One of the proposals of this thesis is that AGR.o is responsible for checking NPs marked with ergative Case. In infinitives, the prediction is that AGR.o may be present, and play an active role in checking NPs. The reason is that this agreement morpheme is lower than the Tense projection, and thus will not be affected by the inability of the verb to move beyond [-Tns]. Nevertheless, AGR.o could never be associated with the controlled subject (PRO), which must remain ungoverned. Furthermore, it could not project a specifier position, since this would ultimately block antecedent-government of the trace of PRO, which moves to Spec. of TP at S-structure. In this section, we examine evidence for AGR.o appearing in infinitives from Chamorro, Tzotzil, Tzutujil and Basque.

<u>Chamorro</u>

In Chamorro – which I claim is an ergative language – infinitives are marked with the same infix -*um*- that cross-references unergative subjects in realis clauses (cf. 2.2.5) Some examples appear below (from Chung, 1989; fieldnotes):

(84) <u>Infinitives</u> (Chamorro)
    a. Malägu' gui' [PRO bumisita si Rita]
       want   he   visit-UM PN Rita
       'He wants to visit Rita'

    b. Malägu' si Maria [PRO bumisita gui']
       want   PN M.   visit-UM him
       'Maria wants to visit him'

The question here is whether the object NPs in (84) are marked for absolutive Case. As we saw in the previous section, AGR.s is generally unavailable in infinitive clauses. If -*um*- has the same function as in intransitives, however, some argument will be Case-checked through adjunction to AGR.o. Let us assume, therefore, that the object NPs in (84) are licensed by this affix, as in (85). The PRO-subject of the transitive verb L-moves to Spec. of TP, as in all infinitives. The object, on the other hand, adjoins to AGR.o – just as subjects do in unergative constructions. Because each argument involves a different form of movement (L/L-bar), Relativized Minimality is respected.[32] In the irrealis mood, what appear to be infinitives are not marked by -*um*-. Moreover, transitive objects are well-formed, as if they were checked by absolutive agreement.

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[32] We also predict that infinitive verbs with just one argument do not require the infix -*um*-. This prediction is confirmed by Topping (1973), who cites numerous examples (p.227).

(85) <u>Structure of infinitives</u> (Chamorro)

```
...              T" (=TP)
              /        \
        [PRO]ᵢ          T'
                     /      \
                 [-Tns]     AGR.o"
                          /        \
                    [si Rita]ⱼ      AGR.o"
                                  /        \
                              -um-          V"
                                          /    \
                                        tᵢ      V'
                                              /    \
                                          bisita    tⱼ
```
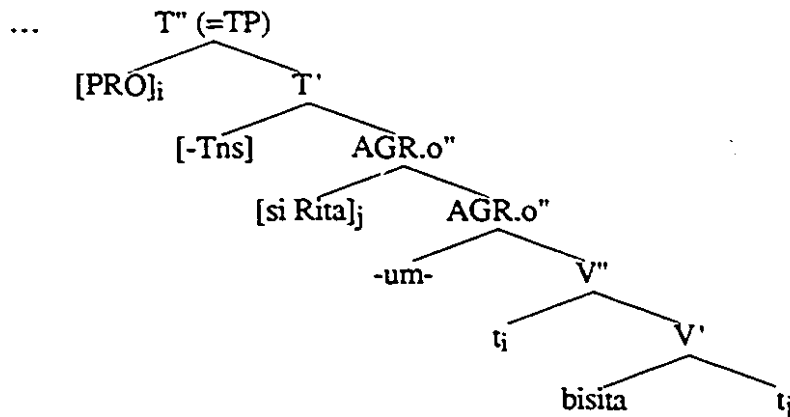
... b<u>um</u>isita si Rita ('to visit Rita')

As it turns out, however, lexical NPs also surface in subject position. This is shown in the following example (fieldnotes):

(86) <u>Irrealis 'infinitives'</u>
        Malägu' gui' [pära u-bisita   si Rita si Juan]
        want   he   Fut S3s-visit PN R.   PN J.
        Lit.: 'He wants that Juan should visit Rita'

As indicated by the translation, irrealis clauses are not considered as 'true' infinitives; if the subject can be realized lexically, in other words, it must be governed, even when the subject is non-lexical. I assume then that irrealis clauses are fully specified for AGR.s and AGR.o, and that (86) does not fall under the analysis proposed for infinitives.

      The proposal that ergative agreement is present in infinitival constructions in Chamorro is consistent with our claim that AGR.s (or absolutive agreement) is absent. That AGR.o should license direct objects in infinitives is somewhat surprising, however, given the system of ergativity that has been developed here. As noted in 2.3.2 -*um*-signals a non-canonical pattern of Case-marking in which subjects derive their Case from AGR.o. The alternative, of course, is that the transitive verbs in (84) assign structural Case to their objects. Still, this would treat the various manifestations of the infix -*um*- as accidental. In addition, such a view will not account for the syntactic behaviour of direct arguments, to be discussed in Chapter three. More importantly, however, the relationship that an object can have with AGR.o seems to be attested in other languages as well.

In 2.4.2 we saw how transitive objects in Tzotzil behaved as controlled subjects in infinitives by first undergoing passive. Lexical objects can be expressed, however, as in the following sentences (from Aissen, 1987:15-16):

(87) 'Ergative' infinitives (Tzotzil)
    a. 7ak'-o [TP PRO s-pamta-el a-vex]
       let-imp   E3-cense-inf E2-pants
       'Have your pants censed'
       (Lit.: 'Let (you) cense you pants')

    b. ta j-lajes-be [TP PRO s-ti7-el   pro]
       icp E1-finish-io   E3-eat-inf
       'I'll finish eating (it)'

    c. Mi x-a-na7   [TP PRO y-uch'-el   kajve]
       Q asp-E2-know   E3-drink-inf coffee
       'Do you drink coffee?'

    d. Kolta-(o)-on   ta   [TP PRO s-t'ox-el   j-si7]
       help-imp-1sA prep   E3-split-inf E1-firewood
       'Help me split my firewood'

Each of the sentences in (87) contains an embedded infinitive with a transitive verb whose object is cross-referenced with ergative agreement. This constitutes evidence that AGR.o is present and responsible for checking NPs marked with ergative Case. A similar strategy has been observed for Tzutujil (Dayley, 1985) and Basque (Anderson, 1976):

(88) 'Ergative' infinitives (Tzutujil, Basque)
    a. x-Ø-qa-amaj   [TP PRO r-choyji-ik ja chee7].
       asp-A3-E1p-begin   E3-cut-inf the tree
       'We began to cut the tree'   (Tzutujil)

    b. nahi   dut   [TP PRO tzakurraren hil]
       desire I.have.it   dog.def.gen kill
       'I want to kill the dog'   (Basque)

In each of these examples, a transitive object is cross-referenced by ergative agreement, consistent with our claim that AGR.o is present in infinitives. On the other hand, the embedded constituents in (88) might represent possessed nominals, given that a similar form of agreement appears internally to NPs in Tzotzil, Tzutujil and Basque. Some researchers (Bobaljik,1992) have pointed out that infinitival constructions are notoriously hard to find in ergative languages, and what candidates there are might be better analyzed as complex nominals (=possessive constructions). The sentences in (87) – (88) fall into this category.

Still, it is not clear how possessed nominals would be interpreted if some measure of control were involved. In English, for example, a sentence like 'John wants to kill the dog' means that only John intends to be the killer. A corresponding sentence with a possessed nominal – 'John wants the dog's killing' – allows other potential killers to be involved. Arguably, some derived nominals do allow either one of their implicit arguments to be controlled, as in the following examples (cf. Williams, 1980):

(89) Control in nominals
     a. The doctor performed the operation
     b. The patient underwent the operation

     operation: [Agent, Theme]

In (89a) the implicit Agent of the derived nominal is understood as being co-referential with the subject, while in (89b) it is the Theme. In (89b), moreover, co-reference with the subject (which does not involve a PRO) parallels the relationship between the possessor of an object and a subject, as in 'The patient underwent his (the patient's) operation'. In the languages we have considered, however, the matrix subject never corresponds to a possessed NP (a Theme), but only to an Agent. It seems then that the embedded constructions in these languages should be analyzed as infinitives, rather than as complex nominals.

The proposed structure of AGR.o is slightly different in infinitives than in finite clauses: in the former, objects (Themes) adjoin to AGR.o, while in the latter, subjects (Agents) move to a specifier position. The manner of Case-checking in tensed and non-tensed clauses being different, we expect to find differences in the form of Case-marking too. This prediction appears to be substantiated in Chamorro, where transitive subjects in tensed clauses are marked by members of the Ergative agreement paradigm, objects of infinitives by the infix -um-. In other languages, the situation is not so clear. Tzotzil may exhibit a different form of ergative agreement in tensed clauses and infinitives: first- and second-person enclitics appear in the former, but Aissen (1987) cites no examples of them occurring in the latter. Tzutujil and Basque, on the other hand, show no difference at all. Still, this does not entail that different manners of Case-checking cannot have the same form. These are only tendencies, and languages may vary as to how closely they adhere to them.

In this section, we have shown that AGR.o can exist inside infinitives, and that NPs marked with ergative Case can be checked by this agreement morpheme. This follows from our assumptions about the underlying structure and properties of infinitives, and the particular association of arguments with agreement morphemes. In the next section we

consider infinitives from another point of view, where the association of arguments with agreement is reversed.

2.4.4 An alternative analysis

Having seen some evidence suggesting that ergative agreement is present in infinitives, let us consider the opposite view – i.e. that absolutive agreement is the only kind to surface in these constructions. This would be the prediction if absolutive NPs were canonically associated with AGR.o, and ergative NPs with AGR.s – i.e. as in the theory of ergativity suggested in Chomsky (1992) and developed by Bobaljik (1992). Here we review the evidence used to motivate this theory.

Drawing on data from Inuit (West Greenlandic), Bobaljik focusses on the contemporative mood, which he claims to have the properties associated with infinitives in other languages. As in the present theory, it is assumed that clauses marked with [-Tns] render the higher agreement projection inert (Bobaljik calls this AGR.1, but I will continue to refer to it as AGR.s). Consequently, transitive PRO subjects may occupy the Spec. of AGR.s at S-structure and be controlled. Intransitive subjects, on the other hand, derive their Case from AGR.o in Bobaljik's theory, hence are not affected by the [-Tns] specification; unlike transitives then, intransitive subjects are expected to be realized lexically. Bobaljik cites two environments in which the contemporative mood (marked by the suffix -*llu*) is used: as the complement of *promise,* and with certain gerundive clauses. The relevant sentences are reproduced below:

(90) Transitive infinitives (W. Greenlandic)
    a. [miiqqat   ikiu-ssa-llu-git]   niriusui-vutit.
      children-ABS help-FUT-LLU-3pA promise-IND.2sA
      'You promised to help the children'

    b. anguti-rujug-suaq   [aavir-suaq   uniar-lugu]   tiki-lir-suq
      man-very.big-ABS whale.big-ABS trail-LLU.3s come-begin-PART
      '... the big man who began to come [trailing the big whale ...'

(91) Intransitive infinitives (W. Greenlandic)
    a. aggi-ssa-llu-tit   niriusui-vutit.
      come-FUT-LLU.2s promise-IND.2s
      'You promised to come'

    b. agi-ssa-vlutik   uqar-put
      come-FUT-LLU.3p-REFL say-IND.3p
      Lit: 'They said (of themselves) to come'

    c. [qaammassuaq   uqaluaaartuannuarluni]   nirilirput
      moon.man-ABS tell.stories-continue-LLU.4s eat-start-3p
      'The moon man continuing to tell stories, they started to eat'

d. [niviarsiaq sikkir-luni] kiina-nnu-a   nui-ratannuar-puq
   girl giggle-LLU.4s   face-little-3s appear-at.last-3s
   'The girl giggling, her little face appeared at last'

In (90a-b), the contemporative clause contains a transitive verb, and as expected only the object triggers (absolutive) agreement. The subject is non-lexical, and does not trigger ergative agreement. This is consistent with Bobaljik's proposal that transitive subjects are associated with AGR.s in ergative, as well as in accusative languages. The sentences in (91) contain embedded intransitives in control and gerundive constructions. Unlike transitive subjects in the contemporative mood, intransitive subjects trigger agreement, and in (91c-d) are realized lexically. This confirms Bobaljik's prediction that they are not affected in infinitives, consistent with his hypothesis that they associate with AGR.o.

While Bobaljik's evidence looks compelling at face value, there are some aspects of the contemperative mood which undermine an analysis that equates it with true infinitival constructions. First, while there is a tendency to suppress ergative agreement in clauses marked by -*llu*, it is not ruled out completely. Fortescue (1984:299) reports that first- and second-person transitive subjects can be cross-referenced with third-person objects on portmanteau forms in the contemperative mood: e.g. -*llutigu* (=1p/3s). Assuming that agreement is a governor then, PRO could not exist in Spec. of TP, as in true infinitives. Second, Bergsland (1959:58) cites the following example of a lexical transitive subject in a contemporative clause (morpheme glosses added):[33]

(92) <u>Contemporative</u> (lexical subject)
     [kunu-up ilagalugit   *pro*] *pro* aullarpuq
      K.-rel   be.together-LLU-3p   go.out-IND-3s
      'Kunik/being together with (them), (he) went out'

The superordinate verb here is intransitive, so there is little doubt that the ergative subject 'Kunik' belongs in the contemporative clause. Since lexical NPs must be checked for Case, they will be governed at LF. This suggests that governed *pro* – instead of PRO – is the empty category in (90), where there is no overt subject.

Perhaps the most serious problem with Bobaljik's analysis concerns the status of co-reference in transitive and intransitive contemporative clauses. According to Fortescue (1984), the contemporative mood is used whenever a lower subject is co-referential with a higher one, or overlaps in reference with it. On Bobaljik's analysis, this property can be

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[33] It might be argued that the embedded structure in (92) is not transitive, but contains an intransitive verb with a collective subject - somewhat like *gather* in English (M. Baker, pc). I assume that this is not the case, however, since the absolutive agreement suffix on the verb does not cross-reference the subject, the normal pattern for intransitives.

attributed to a PRO-subject in transitives clauses (90). In intransitives, however, there is no necessary link between superordinate and contemporative subjects, since these are not structures of obligatory control. In (91a-b), for example, the empty subjects are governed by AGR.o, hence could not be PRO. In (91d), moreover, Bobaljik ignores the fact that 'the girl' overlaps in reference with 'her little face', as does 'moon man' with 'they' in (91c); this is confirmed by fourth-person object marking on the verb, which signals overlapping reference independendly of -*llu*.. For these reasons, it seems unlikely that contemporative mood should be equated with true infinitives. Instead, it seems to function as a switch-reference device between clauses with co-referential or overlapping subjects. As such, it is not relevant to the question at hand.

In this section, we have considered Bobaljik's proposal that absolutive NPs derive their Case from AGR.o in an ergative language, while transitive subjects derive theirs from AGR.s. As in the present theory, this particular alignment predicts that only NPs associated with AGR.o will surface in infinitival constructions. The difference, however, is that this agreement morpheme is associated with ergative Case in our system. Bobaljik's prediction rests on the status of the contemporative morpheme -*llu* in West Greenlandic, which is regarded as a reflex of the feature [-Tns]. It was shown, however, that clauses in the contemporative mood lack the properties of true infinitives. In particular, Bobaljik's analysis treats as accidental the co-(or overlapping) reference of embedded intransitive subjects, missing a generalization that governs transitive and intransitive subjects alike. These problems can be overcome by assuming that contemporative clauses are indeed finite. This in turn obviates any advantage Bobaljik's proposal has over ours, where absolutive NPs are associated with AGR.s.

Summary and conclusion, Chapter two

Here I summarize the basic elements of my theory. Ergative languages are put together differently than accusative languages. In the unmarked case, transitive objects (e.g. Patients) and intransitive subjects are associated with AGR.s, the highest projection of agreement in Infl. Evidence for this alignment comes from languages like Mam, where ergative agreement is closer to the verb stem than absolutive agreement, and Chamorro, where (transitive) subject agreement is to the right of Tense. The claim is that whenever such an ordering obtains, the language will be ergative.

Agreement is a formal means of checking Case assignment. NPs may be marked for Case at D-structure, but must be checked at LF, if not before. Languages vary as to whether checking takes place at S-structure or LF. If checking is at LF, arguments remain in VP until this level; otherwise they enter into overt chains or move to Case positions at S-

structure. Case-checking occurs under government, i.e. when agreement governs a Case-marked NP. Government can be satisfied through the Spec.-head relationship, or between a head X and an NP adjoined to the maximal projection XP. Movement to a Case position at LF is conditioned by two separate modules of grammar, identification (i.e. of empty categories) and Relativized Minimality. The first determines whether a specifier position is licit at S-structure, such that a landing site will be available for movement at LF. The second helps determine whether traces left by movement are well-formed in terms of head- and antecedent-government. Together, these two modules limit the distribution and types of allowable Case positions. Crucially, only one type of position (L/L-bar) is permitted for each argument of a transitive clause in a language that depends on AGR.s and AGR.o for Case. Thus if the subject (Agent) moves to Spec. of AGR.o (as in an ergative language), the object must adjoin to AGR.s, and if the subject moves to Spec. of AGR.s, the object (typically a Patient) will adjoin to AGR.o. True accusative languages do not depend on both agreement morphemes, so that transitive objects may be checked for Case *in situ* by the verb.

The agreement morpheme responsible for Case and the manner in which it is checked (through Spec.-head agreement or adjunction) may be reflected in the form that Case-marking takes. Conversely, if objects of transitive verbs and subjects of intransitives bear the same markings (or if they trigger the same form of agreement), it is probably because they derive their Case from the same agreement morpheme and in the same manner. Differences in the form of Case-marking – even on the same argument – can be attributed to a difference in the source of Case, the manner of Case-checking, or both. By the same token, the formal similarity of different arguments may signal a common source and manner of Case-checking. As diagnostics, the correlations of form with source and manner can help to determine the alignment of arguments and agreement in a language, including situations where Case-marking does not follow a canonical pattern.

The position of agreement morphemes in underlying structure is crucial with respect to Tense. Absolutive NPs in particular depend on Tense to facilitate head movement. If Tense is 'weak' (as in infinitives) the verb will not be able to provide AGR.s with lexical support, hence AGR.s may not be realized; it follows then that NPs marked with absolutive Case are precluded from appearing in infinitives. Languages employ various techniques to compensate for the unavailability of absolutive Case, such as incorporating objects or marking them obliquely. Transitive objects (Themes or Patients) may even be marked with ergative Case in these constructions, since AGR.o is not affected by a weak Tense morpheme. On the other hand, subjects (Agents) are never realized lexically in infinitives. This is probably because the matrix verb requires an empty argument slot in its complement

clause. As PRO-argments then, Agents move to Spec. of TP where they can be identified (controlled) by a higher NP.

Two predictions follow from the proposed association of arguments with agreement morphemes. First, the morpheme responsible for checking transitive subjects (Agents) should be closer to this argument than the one responsible for checking objects (Themes or Patients). Otherwise, the association of arguments and agreement morphemes might be no different in an ergative language than in an accusative one. The position of agreement with respect ot arguments should be evident at S-structure, provided that Case-checking does not occur until LF. We also predict that after Case-checking has occurred, the argument adjoined to AGR.s (Theme or Patient) asymmetrically c-commands the Agent in Spec. of AGR.o. This prediction will be tested in the following chapter, the first in Chapter four.

CHAPTER THREE
Movement in an ergative language

3.0 Introduction

In this chapter, we focus our attention on the proposal that NPs marked with absolutive Case are adjoined to AGR.s at LF. Adjunction is required in the ergative construction because the subject (in Spec. of VP or AGR.o) blocks movement of the object to a specifier position. In a canonically ergative system, intransitive subjects also adjoin to AGR.s. Since movement to a Case position does not always take place until LF, adjoined NPs can only be detected with respect to processes that apply there. Principles which characterize S-structure (such as Binding Theory), would thus be unaffected by LF-movement of an absolutive NP. Our main concern will be the ECP, conditioned as it is by Relativized Minimality.

The ECP determines the well-formedness of movement that occurs at S-structure or LF. Wh-movement usually takes place at S-structure, but in some languages wh-phrases do not move until LF. QR generally occurs at LF, but quantifiers and the NPs that they modify sometimes appear separately at S-structure; this is known as quantifier float. In accordance with Rizzi's (1990) conjunctive formulation of the ECP, traces left by movement at S-structure or LF must be both head- and antecedent-governed. It follows then that if there is a closer potential antecedent to a trace than its 'true' antecedent, the ECP will not be satisfied, and representations derived along these lines will be ruled out. It is in this way that the presence of an NP adjoined to AGR.s can be felt.

The proposal is that NPs marked with absolutive Case adjoin to AGR.s via L-bar movement. This means that other arguments – in particular transitive subjects (Agents) – cannot move to COMP or undergo QR without crossing the L-bar adjunction site. In effect, we predict that transitive subjects cannot undergo L-bar movement unless the structure is modified in some way. This is because the NP adjoined to AGR.s functions as a closer governor, blocking proper government of the Agent's trace by its 'true' antecedent. Absolutive NPs, on the other hand, should not be barred from undergoing wh-movement or QR, since there is no closer governor that could intervene between a trace adjoined to AGR.s and its 'true' antecedent. The overall distribution of traces left by wh-movement and quantifier raising will then reflect Case-marking itself: transitive objects (e.g. Patients) and intransitive subjects will pattern together, leaving traces that are properly governed; transitive subjects (Agents), on the other hand, will leave traces that do not satisfy the ECP.

Chapter three is organized as follows: 3.1 focusses on wh-movement in ergative languages, as it is instantiated in constituent questions and relative clauses. The behavior of Agents, Patients, and other arguments is examined in light of the prediction that an NP adjoined to AGR.s blocks antecedent-government of wh-traces. Although wh-constructions are produced at S-structure, I assume their well-formedness is determined at LF. This differs from the theory proposed by Lasnik & Saito (1984), in which some traces are marked for government at S-structure. The same pattern exhibited by S-structure movement should therefore be discernable through processes that operate solely at LF, such as Quantifier Raising. 3.2 is a survey of QR, and the semantic scope that certain NPs have in relation to sentential operators. The prediction is that only absolutive NPs will have operators like negation in their scope, since only these NPs c-command the operators at LF.

There are some interesting exceptions to the ban on movement of transitive subjects in an ergative language. Even so, these follow a distinct pattern of their own, one in which the object NP is or contains an anaphor co-referring to the subject. These cases will be discussed in 3.3. Section 3.4 is devoted to wh-movement and QR in situations that do not typify canonical Case-marking in an ergative language (ergative splits). If this does not reflect a basic re-alignment of underlying grammatical relations (as suggested in 2.3), there should be no difference in the pattern of wh-movement or quantification in these cases. While this prediction is borne out with regard to wh-movement, the QR facts are obscured by other factors. In 3.5, some of the strategies that languages use to move or quantify constituents which are otherwise blocked by absolutive NPs will be considered. These include antipassivization and 'wh-agreement', a strategy taken by Chamorro that is reminiscent of a nominative-accusative syntax. This is followed by a summary of the proposals made in Chapter three, and a brief discussion of the literature surrounding movement in an ergative language.

3.1 Wh-movement

In this section, we examine sentences that are derived by wh-movement. For the most part, these involve constituent questions, but the generalizations extend to relative clauses, clefts and focussed elements. Wh-constructions are typified by an operator in COMP (sometimes null) and a gap somewhere in the sentence where a constituent would otherwise be expected. The standard assumption is that the operator (wh-phrase) originates in the position of the gap and moves to the Spec. of COMP at S-structure (Chomsky, 1977). The chain formed by such movement is an L-bar chain, and will satisfy the ECP so

84

long as no potential L-bar antecedent intervenes. In 3.1.1 we consider how subjects and direct objects pattern when they move to COMP in constituent questions. In 3.1.2 the range of data is extended to include other constructions formed by wh-movement – relative clauses, clefts, etc. In 3.1.3 wh-movement of adjuncts is considered, and 3.1.4 that of non-direct, or optional arguments.

3.1.1 Wh-questions

Constituent questions are usually formed when a wh-phrase is moved to COMP at S-structure.[34] A priori, nothing prevents subjects and direct objects from doing this. In all cases, traces left by movement must be head- and antecedent-governed. In Rizzi's (1990) theory, the domain of head-government is the immediate projection of the head (p.31). The set of head-governors includes lexical categories and their traces, and certain other agreement morphemes, to be described as we proceed. Antecedent-government was spelled out in 2.2.3. To illustrate the workings of head- and antecedent-government, consider the following abstract representation, which depicts the S-structure of a sentence derived by questioning a transitive subject in an ergative language:

(93) <u>Transitive subject extraction</u> (S-structure)
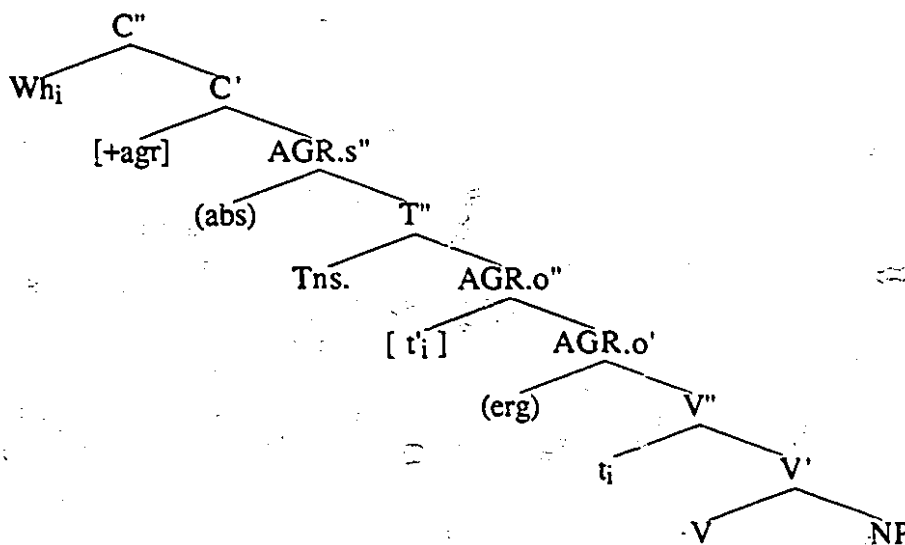
This structure contains a feature in the head of COMP labelled '[+agr]', which in Rizzi's system functions as a head-governor. Its main purpose is to license the specifier position of COMP, and is only present when the Spec. of COMP is filled.

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[34] I will not be considering wh-phrases that remain *in situ* at S-structure and move to COMP at LF (*wh-in-situ*).

The lower subject trace in (93) will be head-governed by ergative agreement, and antecedent-governed by another trace in the Spec. of AGR.o. This trace will in turn be head-governed by absolutive agreement, or else by the feature [+agr] (Tense is not considered as a head-governor). The wh-phrase in COMP antecedent-governs the trace in Spec. of AGR.o. If the ECP applied at S-structure, transitive subject extraction would be grammatical, since every trace is head- and antecedent-governed (this would be sufficient to ensure well-formedness of subject extraction in Lasnik & Saito's (1984) theory). On the other hand, the LF-structure underlying transitive subject movement would be as follows:[35]

(94) <u>Transitive subject extraction</u> (LF)
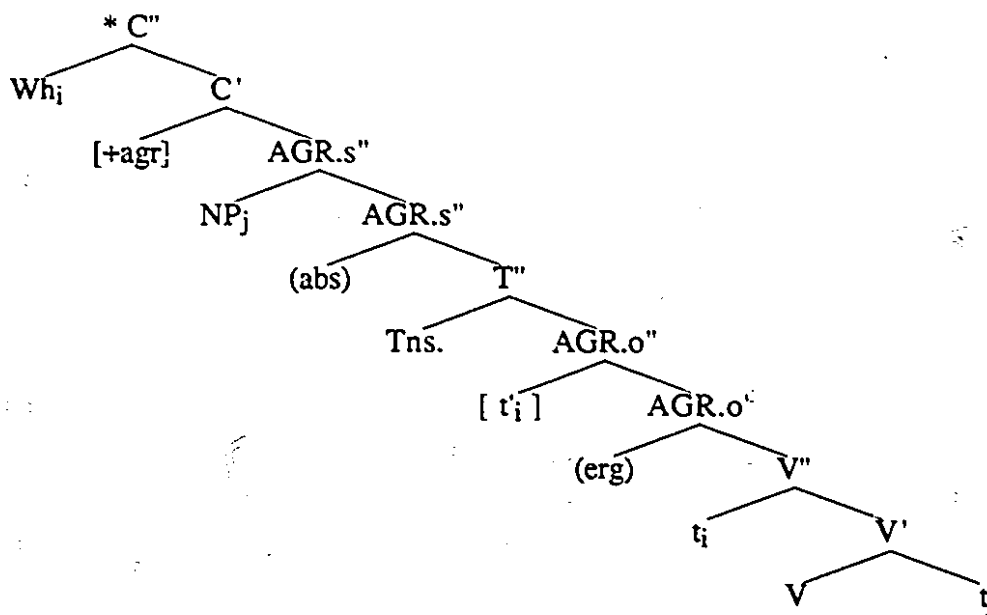
The difference between (93) and (94) is that in the latter the transitive object has adjoined to AGR.s for Case-checking, creating a potential L-bar antecedent for the subject trace in Spec. of AGR.o. As a result, this trace cannot be antecedent-governed by the wh-phrase in COMP. We thus predict that questions formed on subjects in an ergative language will not be permitted in the presence of an absolutive NP.

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[35] According to the VP-internal subject hypothesis, the lower trace in (94) is theta-governed by the verb, hence we might suppose that antecedent-government can be satisfied through theta-marking. Apparently, however, traces left by L-movement cannot be antecedent-governed in this way:

    i) *John$_i$ is likely for Mary$_j$ to have been told t$_j$ [PRO to kiss t$_i$]

For reasons that will become clear, I will thus assume that only traces bound by operators can be antecedent-government through theta-marking.

In contrast, consider the representation that corresponds to movement of a transitive object in a language that is ergative:

(95) Transitive object extraction (LF)

```
                C"
        Wh_j          C'
              [+agr]       AGR.s"
                      t'_j        AGR.s"
                           (abs)        T"
                                   Tns.       AGR.o"
                                        [NP_i]       AGR.o'
                                               (erg)       V"
                                                      t_i        V'
                                                              V        t_j
```
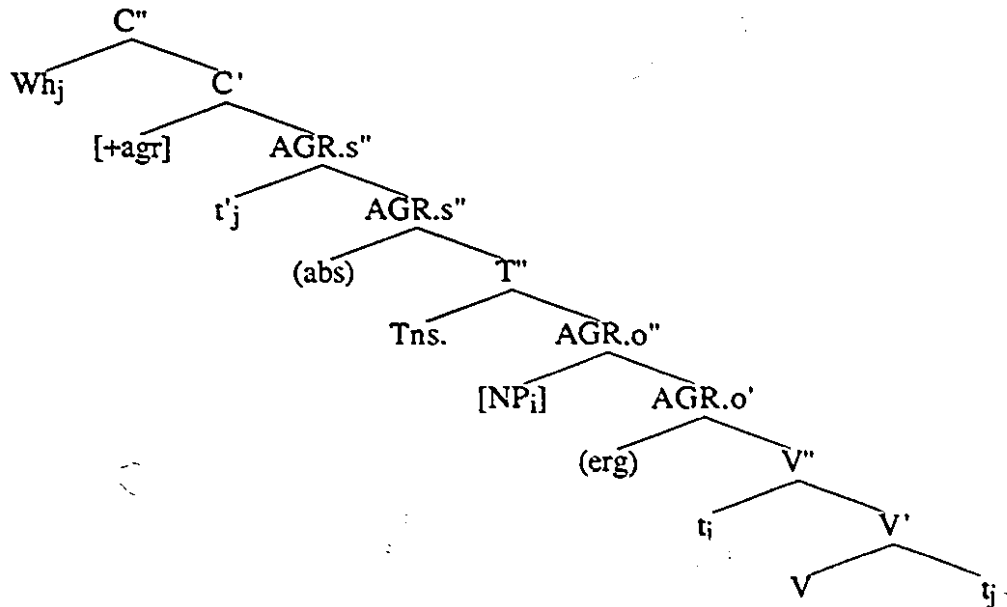
The lower object trace in this representation (sister to the verb) is head-governed by the verb/verbal trace and antecedent-governed by the trace adjoined to AGR.s. This trace in turn is head-governed by the feature [+agr] and antecedent-governed by the wh-phrase in the Spec. of COMP. The ECP will thus be satisfied at LF, leading to the prediction that questions formed on transitive objects will be grammatical in an ergative language. A similar prediction holds for intransitive subjects.[36]

Mam

    In view of these predictions, consider the following data from Mam, with its ergative-absolutive system of Case-marking. In transitive sentences the object can be questioned, along with the single argument of an intransitive verb. Transitive subjects, on the other hand, cannot undergo this process without a change verbal morphology (data from England, 1983, 1989):[37]

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[36] Intransitive subjects may sometimes be associated with ergative agreement, in which case AGR.o serves as the head-governor of the lower trace in Spec. of VP.

[37] Wh-movement in Mam involves a change in aspect marking, from unmarked to 'dependent'; this is probably an indication that a wh-operator is in the Spec. of COMP, i.e. it is a spell-out of the feature [+agr].

(96) <u>Transitive NP extraction</u> (Mam)
    a. ma-a7   chi tzaj t-tzyu-7n   Cheep kab' xiinaq
      rec-emph 3pA dir 3sE-grab-ds José two man
      'José grabbed the men'   [Basic]

    b. alkyee-qa xhi   tzaj t-tzyu-7n   Cheep
      who-pl   rec dep/3pA dir 3sE-grab-ds José
      'Whom did José grab?'   [+Tr.obj.]

    c. *alkyee saj   t-tzyu-7n   kab' xiinaq
      who rec dep/3sA/dir 3sE-grab-ds two man
      'Who grabbed the men?'   [+Tr.subj.]

(97) <u>Intransitive NP extraction</u> (Mam)
    a. ma chi b'eet xiinaq
      rec 3pA walk man
      'The men walked'   [Basic]

    b. alkyee x-hi   b'eet?
      who 3pA-dep walk
      'Who walked?'   [-Tr.subj.]

These data match the predictions of subject and direct object question formation in an ergative language. (96b) shows grammatical extraction of a transitive object, corresponding to the tree in (95). (96c) indicates that transitive subjects cannot be extracted, in accordance with the tree in (94). Intransitive subjects also undergo movement as predicted (97). The sentences in (96) – (97) thus provide initial confirmation of the proposal that absolutive NPs are checked for Case by adjoining to AGR.s at LF.

Chamorro

As in Mam, transitive subjects in Chamorro cannot be questioned without a change in verbal morphology. Transitive objects, on the other hand, are under no such restriction. This is shown in the data below:

(98) <u>Transitive NP extraction</u> (Chamorro)
    a. Ha-fa'gasi si Juan   i kareta.
      R3s-wash PN J. the car
      'Juan washed the car'   [Basic]

    b. Hafa ha-fa'gasi si   Juan?
      what R3s-wash PN Juan
      'What did Juan wash?'   [+Tr.obj.]

    c. *Hayi ha-fa'gasi i kareta?
      who R3s-wash the car
      'Who washed the car?'   [+Tr.subj.]

The claim is that (98b) corresponds to the tree in (94), and (98c) to the one in (94). The ill-formedness of (98c) is attributed to the ECP, whereby the subject trace in Spec. of AGR.o fails to be properly governed by its antecedent, due to the intervention of the absolutive object. As expected, intransitive subjects can also be questioned using the same morphology as in declarative sentences. This holds of subjects marked by -um- (singular unergative), and zero-marked (singular unaccusative), or man- (plural) (adapted from Chung, 1982;1990):

(99) Intransitive subject extraction (Chamorro)
    a. Kumati i patgon.
       cry(UM) the child
       'The child cried'

       Hayi kumati?
       who cry(UM)
       'Who cried?'   [Unerg/sg.]

    b. Mämaigu' i   neni.
       Ø-sleep(Imp) the baby
       'The baby is sleeping'

       Hayi mämaigu'?
       who Ø-sleep(Imp)
       'Who is sleeping?'   [Unacc/sg.]

    c. Man-ma'pus i famalao'an.
       pl-leave   the women
       'The women left'

       Hayi na famalao'an man-ma'pus?
       who L women   pl-leave
       'Which women left?'   [Plural]

Although the intransitive subject in (99a) shares a common source of Case with transitive subjects (AGR.o), nothing intervenes between the trace adjoined to this agreement morpheme and the wh-phrase in COMP. These facts are thus consistent with the predictions concerning constituent questions based on Case-assignment.

3.1.2 Relative clauses

Other constructions formed by wh-movement include relative clauses, clefts, and focus constructions. In this section, we focus on the behaviour of subjects and objects in relative clauses, which are representative of the others. The most conspicuous difference between relative clauses and constituent questions is that the latter involve overt wh-operators, whereas the former often don't. This is demonstrated by the following:

(100) <u>Null operator movement</u> (Subjacency)
    a. *This is the man *whom* I don't know how John met.
    ... the man [CP whom₁ [C' [IP I don't know [CP how₁ [IP John met t₁ t₁]]]]]

    b. *This is the man *that* I don't know how John met.
    ... the man [CP Op₁ [C' that [IP I don't know [CP how₁ [IP John met t₁ t₁]]]]]

The relative clause in (100b) is equally bad as the one in (100b) with respect to Subjacency,
even though there is no overt wh-phrase involved. We thus assume that a null operator
undergoes movement in (100b), and that it is subject to principles like the Subjacency
Condition and the ECP. Generally speaking, the languages under consideration use null,
rather than overt operators in forming relative clauses. Even so, the predictions are the
same with regard to which NPs can be relativized, clefted or focussed: transitive objects
and intransitive subjects, but not transitive subjects. The following illustrates the
possibilities of grammatical relativization in Dyirbal (from Dixon, 1972: p.101):

(101) <u>Grammatical relativization</u> (Dyirbal)
    a. balan djukumbil nyinanyu
       woman-abs   sit-NFUT
       'woman is sitting down'   [Basic -Tr.]

    b. nadja   balan djukumbil buran
       I-'NOM' woman-abs   see-NFUT
       'I am watching woman'   [Basic +Tr.]

    c. balan djukumbil [nadja   bura-ngu] nyinanyu
       woman-abs   I-'NOM' see-REL   sit-NFUT
       'the woman whom I am watching is sitting down'   [+Tr.obj.]

    d. nadja [balan djukumbil nyina-ngu]   buran
       I-nom woman-abs   sit-REL   see-NFUT
       'I am watching the woman who is sitting down'   [-Tr.subj.]

(101a-b) form the basis for (101c-d). The latter show that transitive objects (101c) and
intransitive subjects (101d) can be relativized without any changes in morphology or
sentence structure. Transitive subjects, on the other hand, cannot be relativized directly.
Transitive sentences containing Agents must first be antipassivized, followed by
relativization of the (now-intransitive) subject. Relativization of subjects and direct objects
in Dyirbal therefore follows the canonical pattern of Case-marking in an ergative language.

In Jacaltec, the facts are roughly the same as in Dyirbal. I have provided what would be an example of ungrammatical relativization of a transitive subject, based on statements made by Craig (1977):[38]

(102) Relativization (Jacaltec)
    a. ... ch'en ome   [xinliko ...]
        the/cl earrings buy(A3/E1)
        '... the earrings that I bought ...'   [+Tr.obj]

    b. x-∅-w-il   naj [xto   ewi]
        asp-A3-E1-see cl   go(A3) yesterday
        'I saw (the man) who went yesterday'   [-Tr.subj.]

    c. *... metx tx'i' [xintx'a   ni'an unin ...]
        cl/the dog bite(A3/E3) little child
        '...the dog that bit the child ...'   [+Tr.subj]

In (102a) a transitive object has been relativized, while in (102b) it is the subject of an intransitive; (102c) shows that transitive subjects cannot be relativized directly in Jacaltec, following the pattern established by Dyirbal. In both languages, the ECP is assumed to be responsible for ruling out transitive subject relativization. This follows from the proposal that a transitive object – e.g. 'the child' in (102c) – is adjoined to AGR.s for Case-checking at LF, blocking antecedent-government between a null operator in COMP and a subject trace in AGR.o. A similar paradigm of relativization obtains in a variety of ergative languages, including Chamorro and Inuktitut (but not Basque). It is one of the central features of these languages, and distinguishes them syntactically from those in which subject relativization is relatively unmarked (cf. Keenan & Comrie, 1977).

3.1.3 Adjunct extraction

Up to now, discussion has centered around the direct arguments of basic sentences. In this section, we consider the behaviour of adjunct phrases: temporal expressions ('in the morning'), locatives ('at the bank'), manner adverbials ('with a hammer') and resultatives ('because of her'). On the face of it, the analysis proposed here would seem to predict that extraction of anything other than direct objects will be prohibited. This is because absolutive NPs adjoin to AGR.s, blocking antecedent-government. Like traces left in Spec. of AGR.o, adjunct traces will not be properly antecedent-governed, hence should

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[38] First- and second- person (transitive) subjects in Jacaltec can be relativized without special marking, i.e. against the pattern of canonical Case-marking. Our discussion is therefore restricted to cases involving third persons only.

violate the ECP. In the majority of cases, however, these predictions are not borne out. In Jacaltec, for example, locative and temporal expressions can be questioned freely with no special morphology (data from Craig, 1977):

(103) <u>Adjunct extraction</u> (Jacaltec)
        a. Bakin x-Ø-ul   naj
           when asp-A3-arrive he
           'When did he arrive?'   [Temporal]

        b. Bay   chach yoyi?
           where A2   go
           'Where are you going?'   [Locative]

In Tzotzil too, certain adjuncts can be focussed, a process which we assume involves wh-movement. The following sentence contains a focussed PP, evidenced by the clitic in sentence-second position (from Aissen, 1987):[39]

(104) <u>Adjunct extraction</u> (Tzotzil)
            Naka ta mulaetik la 7i-Ø-bat 7un
            just by mule   cl asp-A3-go cl
            'JUST it went on muleback'

In Mam, adjuncts may also be questioned without a change in verbal morphology – except for the shift to dependent aspect marking characteristic of all wh-movement (from England, 1983:253):

(105) <u>Adjunct extraction</u> (Mam)
        a. tii-tzan   x-Ø-b'aj   t-tzeeq'a-n-a nii-tal t-litz'an-a
           why-then asp-3sA-dir 2sE-hit-ds-cl small 2s-brother-2s
           'WHY did you hit your little brother?'

        b. jatuma setz   q'i-7n-Ø   u7j
           where asp-3sA-dir bring-ds-pass book
           'WHERE did the book come from?'

The fact that certain adjuncts can be questioned without changing verbal morphology does not mean that absolutive NPs are not adjoined to AGR.s, however. It is conceivable that these adjuncts are attached to a projection that is higher than AGR.s, such as C-bar. This possibility is supported by the fact that adjunct phrases in Mam occur clause-initially in unmarked situations, as shown by the following sentences (England, 1983):

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[39] The same elements may not be topicalized, however. Cf. Aissen (1987:158) for discussion.

(106) Adjunct placement (Mam)
  a. k'ala-7tz-a   cheej maajlai
     t ie.up-proc imp-2s horse other side

     maajlai k'ala-7tz-a cheej
     (both: 'Go and tie up the horse there on the other side!')   [Locative]

  b. cheeb'a b'iincha-n-kub'-t-a   q-mees
     slowly make-imp-dir-2s/emph-cl pl-table
     'Slowly make our table!'   [Manner]

  c. eew   tz-ul   aaj   nan   yaa7
     yesterday 3sA-dir return ma'am grandmother
     'Yesterday Grandmother came'   [Temporal]

In (106a) the fronted adjunct phrase is a locative, while in (106b) it is a manner adverbial
and (106c) a temporal phrase. These constituents could not be adjoined to VP, since they
all appear to the left of (absolutive) agreement. Neither could they be adjoined to AGR.s,
for even then they wouldn't appear clause-initially if aspect is in COMP and the verbal
complex raises to it (cf. 2.1.1). The only other possibility seems to be C-bar. Suppose
then that the adjunct phrases in (106) are attached to this node, but that in declarative
sentences, COMP does not project a specifier position. This is co-extensive with the
absence of dependent aspect marking in Mam. In wh-questions, however, there is a
specifier position to which the adjunct phrase can move, and its presence there is indicated
by dependent aspect. The latter is a spell-out of the feature [+agr]. The following
represents the kind of structure envisaged here (details omitted):

(107) Adjunct placement (optional)
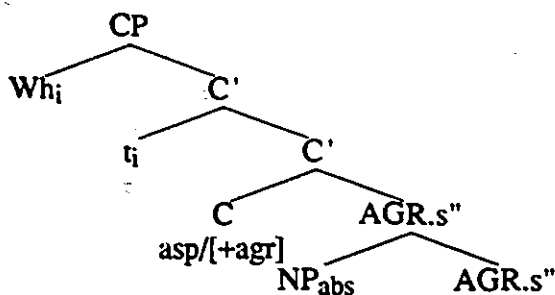
(107) shows how adjuncts may originate in C-bar adjoined position, leaving a trace that can
be governed by its antecedent. The feature [+agr] occupies the head of COMP, serving as
head-governor. Moreover, by allowing non-arguments to adjoin to C-bar, we predict

extraction to be grammatical, as in (103) – (105). This is because the path of movement does not cross an absolutive NP adjoined to AGR.s, leading to a violation of the ECP.[40]

Chamorro

In Chamorro too, certain adjunct phrases can be questioned without a change in verbal morphology. In most cases, however, a complementizer in second position separates the wh-phrase from the rest of the sentence (data is from Topping, 1973; Chung, 1991):[41]

(108) Adjunct extraction (Chamorro)

    a. Amanu na sumásaga   si Carmen?
       where C stay(s).prog PN Carmen
       'Where does Carmen live?'   [Locative]

    b. (Sá) hafa na un-cho'gue *pro* ?
       Sub. what C 2-do (it)
       'Why did you do it?'   [Resultative]

    c. Ngai'an nai humanao hao?
       when   C go(sing.) you
       'When did you go?'   [Temporal]

    d. Taimanu agang-mu ni patgon?
       how   call-2p   Obl. child
       'How did you call the child?'   [Manner]

In (108a-b), the wh-phrase co-occurs with a lexical complementizer *na*. This can be explained by assuming that – unlike Mayan languages – the verbal complex in Chamorro does not raise beyond AGR.s in tensed clauses. Then, in order to license a trace adjoined to C-bar, the complementizer is inserted.[42] In (108c), the questioned adjunct phrase is followed by a different complementizer (*nai*), which also serves to head-govern the adjunct trace. In (108d), the questioned adjunct *taimanu* appears without a complementizer, although here the verb has been nominalized. It seems then that while most cases of adjunct movement in Chamorro do not result in changes to verbal morphology, they are accompanied by differences in clause structure, viz. the insertion of a lexical complementizer or nominalization. This follows from the proposal that adjuncts can be

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[40] (107) is still problematical if the first projection of C-bar is taken as the domain of head-government.

[41] The particle *sá* in (108b) is analyzed by Topping as a subordinating particle, and sometimes occurs before *hafa na* ('why'); this may indicate that the sentence as a whole is biclausal.

[42] According to Rizzi (1990: p.53), the lexical complementizer *that* is generally incompatible with the feature [+agr] in English. In dialects that permit *that*-trace violations, however, these two elements may both reside in COMP, as suggested for Chamorro. This view is further substantiated by Chung (1991), who demonstrates that lexical complementizers do not prohibit long-distance movement of any kind.

attached to C-bar in underlying structure. More importantly, movement from this position does not cross another L-bar adjunction site, hence does not lead us to predict that adjunct phrases cannot be extracted in an ergative language. Even though adjunct phrases apparently undergo wh-movement in the presence of an absolutive NP, however, we still predict that they cannot move long-distance, e.g. across a COMP node filled by another wh-phrase: the latter counts as a closer antecedent-governor, blocking antecedent-government.

In this section, we have seen that adjunct phrases do not pattern like transitive subjects under movement in ergative languages. Like subject traces in Spec. of AGR.o, adjunct traces are not theta-marked, hence depend on antecedent-government from COMP to satisfy the ECP. Absolutive NPs would block movement of adjunct phrases if these originated inside VP. As C-bar adjuncts, however, their traces can be governed by their antecedents.

3.1.4 Optional arguments

In addition to adjuncts and direct arguments, there is another type of category to consider for extraction: indirect or 'optional' arguments. Some examples of optional arguments include Instruments ('Cut the bread *with a knife'*), stative complements ('Be afraid *of something'*), and passive Agents ('Be seen *by somebody'*). Optional arguments are considered 'argumental' in that they reflect part of a verb's meaning (thus *cut* entails a cutting device), and 'optional' because they often fail to appear in phrase structure ('John was arrested'; 'He is afraid', etc.). To capture these special properties, I will assume that optional arguments are generated inside VP (as V-bar adjuncts), but are not theta-marked by the verb. This proposal will be seen as having consequences for their extraction.[43]

Languages may vary as to how optional arguments are expressed. In English, for example, passive Agents surface with a distinct preposition *(by)* which is related to its meaning. In Chamorro, passive Agents take a 'default' (oblique) Case-marker *ni,* so-called because it also appears with Instruments, complements of nouns and stative verbs, and second (Theme) objects of double object constructions. The various uses of this preposition are shown below:

(109) <u>Oblique NPs</u> (Chamorro)
    a. Chiniku   si Maria ni lahi.
      kiss(Pass.) PN M. Obl. man
      'Maria was kissed by the man'   [Pass. Agt.]

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[43] I follow roughly here the work of Grimshaw (1990), who refers to optional arguments as 'argument-adjuncts'.

b. Ha-fa'gasi si Juan i kareta ni häpbun.
   R3s-wash PN J.   the car Obl. soap
   'Juan washed the car with soap'   [Instr.]

c. Malago yó ni banana.
   want   I Obl. banana
   'I want the banana'   [Stative]

d. Ha-tugi'-i   si Juan i che'ulu-ña   ni kätta.
   R3s-write-Dat. PN J.   the cousin-3s Obl. letter
   'Juan wrote his cousin a letter'   [Double obj.]

The assumption that optional arguments are not theta-marked and originate inside
VP leads to specific predictions concerning movement in the presence of an absolutive NP.
In short, we predict that optional arguments cannot be directly extracted, since antecedent-
government will be blocked from COMP. Moreover, the lack of theta-marking means that
they cannot be antecedent-governed by the verb. In order for optional arguments to
undergo wh-movement, some changes in morphology or sentence structure must be made
in order to circumvent the absolutive NP adjoined to AGR.s.

Consider first the situation in Chamorro, where NPs normally marked with
'default' (oblique) Case are questioned:[44]

(110) <u>Optional argument extraction</u>
      a. *Hayi chiniku   si Maria?   [Pass. Agt.]
         who kiss(Pass.) PN M.
         'Who was Maria kissed by?'

      but: Hayi chumiku   si Maria?   [wh.agr]
           who kiss(UM) PN M.
           'Who kissed (wh.subj) Maria?')

      b. *Hafa ha-fa'gasi si Juan i kareta?.   [Instr.]
         what R3s-wash PN J.   the car
         'What did Juan wash the car with?'

      but: Hafa fa'gase-ña   si Juan ni kareta?   [wh.agr]
           what wash(NOM)-3s PN J. Obl. car
           'What did Juan wash the car with?'

_____

[44] Arguments of ditransitive verbs are 'true' arguments since they must appear in surface structure: 'I gave
John *(a book)'. It follows then that traces left by movement of Theme or Goal will be antecedent-governed
by virtue of theta-marking. Apart from this, ditransitive verbs follow the pattern of other transitive verbs.

c. *Hafa malago hao?　　　　　　　　　　　　　　　[Stative]
　　　　　what want　you
　　　　　'What do you want?'

　　　but: Hafa malago-mu?　　　　　　　　　　　　　　[wh.agr]
　　　　　what want(NOM)-2s
　　　　　'What do you want?'

In each of the examples, direct questioning of an optional argument leads to
ungrammaticality, and alternate constructions (collectively known as 'wh-agreement') must
be used instead (cf. Chung, 1982; Chung & Georgopoulos, 1988). This takes the form of
an active sentence in (110a) and nominalization of the verb in (110b-c). The overall pattern
of extraction in (110) is thus as predicted, and can be attributed to the blocking effect that
an absolutive NP has on antecedent-government. The optional NP traces would not be
antecedent-governed in the structure underlying (110), leading to a violation of the ECP (in
3.5 I analyze the kind of structure underlying (110a) in more detail).

Jacaltec

　　　　In Jacaltec too, different optional arguments are marked similarly, in this case as
possessors of 'relational nouns'. Consider the following sentences from Craig (1977);
some morpheme glosses have been added:

(111) Optional arguments (Jacaltec)
　　　　a. x-Ø-in-tzoc'ic'oj te'　　te'　y-u　　ch'en machit　an
　　　　　asp-A3-E1-cut　cl/the tree　E3-RN cl/the machete 1p
　　　　　'I cut the tree with the machete'　　　　　　　　　[Instr.]

　　　　b. x-Ø-in-mak　metz tx'i y-u　　hune' te'
　　　　　asp-A3-E1-hit cl/the dog E3-RN a stick
　　　　　'I hit the dog with a stick'　　　　　　　　　　　[Instr.]

　　　　c. x-Ø-mak-ot　　naj pel y-u naj　　xuwan
　　　　　asp-A3-hit-PASS cl. P.　E3-RN/Obl. J.
　　　　　'Peter was hit by/because of John'　　　　　　　　[Pass.Agt.]

Because relational NPs involve the same kind of agreement found in transitive sentences
(ergative), their internal structure is also likely to be similar. If so, they may be viewed as
NPs embedded within a projection of AGR.o, as in the following structure:

(112) <u>Relational NPs</u>

```
            AGR.o"
          /      \
      [ e ]      AGR.o'
                /      \
            (erg)       NP
              y        /   \
                     N       NP
                     u    ch'en  machit
```

y-u   ch'en machit
E3-RN the machete
'with the machete' (=111a)
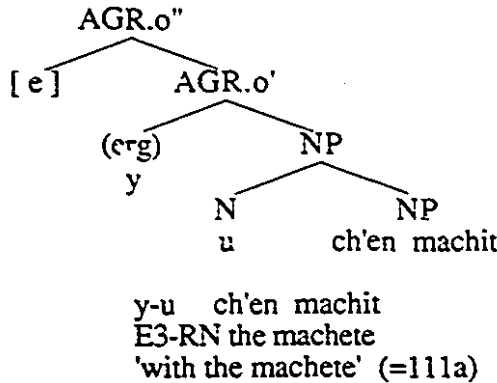
In (112), the optional argument *ch'en machit* ('this machete') is generated as the NP complement of a relational noun *-u*. This NP moves to the Spec. of AGR.o at LF, while the relational noun raises to the head of AGR.o at S-structure – just as verbs do in transitive clauses.

As in Chamorro, optional arguments in Jacaltec – self-contained projections of AGR.o adjoined to V-bar – are not expected to be grammatically extracted. The following sentences show that this prediction is correct, at least in Jacaltec (ibid):

(113) <u>Optional argument extraction</u> (Jacaltec)

a. *tzet y-u   x-Ø-a-tzoc'ic'oj te'   te'   [Instr.]
   what E3-RN asp-A3-E2-cut   cl/the tree
   'What did you cut the tree with?'

but: tzet   x-Ø-tzoc'<u>nic'oj</u> te'   te' haw-u?   [AP]
     what asp-A3-cut(ap) cl/the tree E2-RN
     Lit: 'What cut the tree because of you?'

b. y-u   naj xuwan x-Ø-mak-ot   naj pel   [Pass.Agt.]
   E3-RN cl J.   asp-A3-hit-Pass. cl P.
   *It is by John that Peter got hit'

but: 'It is because of John that Peter got hit'   [Adjunct]

(113a) shows that an Instrument cannot be questioned directly in Jacaltec unless grammatical relations are significantly altered: the verb in the second sentence carries antipassive morphology (underlined), usually a sign that the object (Theme) has itself become an optional argument. We assume then that the Instrument trace is governed by its antecedent, or that there is no absolutive NP adjoined to AGR.s in underlying structure (unless it is the Instrument itself). In (113b) a passive Agent has been clefted, and as predicted the sentence is ungrammatical. There is another interpretation for this sentence, however, the 'indirect agentive' (Craig, p.78). I assume that this arises from a situation

where an adjunct, rather than a passive Agent has been affected, in keeping with the analysis developed in the previous section. To summarize, optional arguments behave as expected in Jaclatec.

Mam

Mam also uses relational nouns to express optional arguments, hence we predict that these will be prohibited from undergoing wh-movment. The following data do not seem to bear this out, however (from England, 1983):

(114) Optional argument extraction (Mam)

    a. o   Ø-jaw patq'u-7n-Ø   xaq t-u7n Kyel   [Pass.Agt.]
        past 3sA-dir turn.over-ds-pas? rock 3s-RN M.
        'The rock was turned over by Miguel'

        al u7n Ø-Ø-jaw   patq'7n-Ø   xaq?
        Q RN past-3sA-dir turn.over-ds-pas? rock
        'By whom was the rock turned over?'

    b. ma Ø-kub' t-tx'ee7ma-n Kyel tzee7 t-u7n maachit   [Instr.]
        rec 3sA-dir 3sE-cut-ds   M. tree 3s-RN machete
        'Miguel cut the tree with a machete'

        al u7n x-Ø-kub'   t-tx'ee7ma-n Kyel tzee7?
        Q RN asp-3sA-dir 3sE-cut-ds   M. tree
        'With what did Miguel cut the tree?'

In (114a), a passive Agent has been questioned, and in (114b) an Instrument. Each of these sentences contains an NP marked for absolutive Case, which should block antecedent government of the optional argument trace adjoined to V-bar. Since this obviously does not happen, (114) remains a problem for our analysis. Passive Agent extraction is discussed again in 3.5.1.[45]

Summary

In this section, we have explored the consequences of the absolutive Case hypothesis for the extraction of optional arguments – NPs which are generated within VP but which are not theta-marked by the verb. Optional argument traces depend on government from COMP, so moving them across an absolutive NP should result in ungrammaticality. For the most part, this prediction is borne out. Generally speaking then, only absolutive NPs and adjunct phrases undergo unobstructed wh-movement,

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[45] There is one difference between Mam and Jacaltec which might explain the different behaviour of optional arguments in these languages: in Mam there is no genitive (=ergative) agreement within the moved relational NP, while in Jacaltec there is. A proper analysis would take us too far afield, however.

whereas transitive subjects and optional arguments must choose other strategies. The most important principle in determining the well-formedness of traces is the ECP, which in our theory holds only at LF. The level of application is crucial in the analysis of wh-movement, which occurs before Case-checking in an ergative language. Even so, an absolutive NP adjoined to AGR.s can be detected. In the next section, we give further evidence for the LF-position of this NP based on Quantifier Raising.

3.2 Quantification

In this section, we focus our attention on sentences containing quantifiers, including NPs that are modified by elements such as *each, every, all, many,* etc. As is well-known, quantifiers are interpreted as binding variables, leading some researchers to propose that they undergo a rule of movement at LF (May, 1985; Chomsky, 1986a). If so, it is reasonable to suppose that in a ergative language only absolutive NPs will be affected, whereas NPs marked with ergative Case will not. As in the case of wh-movement, ergative NPs would leave a trace in Spec. of AGR.o that could not be antecedent-governed. In other words, we expect that transitive subjects in ergative languages cannot be quantified.

In 3.2.1, we review the major assumptions of quantification theory, including the rule that affects them in LF – Quantifier Raising (QR). Some of these are modified in light of Rizzi's (1990) theory. In 3.2.2, we examine the data from ergative languages, and show how a theory of ergativity based on movement accounts for them. Section 3.2.3 presents evidence bearing on the proposal that quantifiers can be assigned their scope by undergoing wh-movement. In 3.2.4 we discuss how ergativity interacts with sentential operators like tense and negation.

3.2.1 Basic assumptions

Quantifiers like *everyone* do not refer to specific persons, but rather to a variable set of persons. In order to reflect this fact, *everyone* is treated as an LF-operator that binds a variable in the position that it occupied at S-structure. In standard theory (May, 1985), this means a quantifier will adjoin to IP (=AGR.s) at LF, as the following sentence from Haegeman (1991) shows:[46]

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[46] The discussion in the text will be oriented towards English IP for expository purposes, and later adapted to structures that are appropriate for ergative languages.

(115) <u>Quantifier-binding</u> (=QR)

    a. [$_{IP}$ Mary likes everyone]   [S-str.]

    b. [$_{IP}$ everyone$_j$ [$_{IP}$ Mary likes t$_{ij}$]]   [LF]

The LF structure reflects the way a sentence with a quantifier is interpreted, roughly: 'For all x, x a person, Mary likes x'. The variable (x) is representend by a trace in (115b), and as such is subject to the ECP. The rule adjoining the quantifier to IP is obligatory, but only inasmuch as variable-binding is satisfied. As we shall see, there other means by which a quantifier can bind a variable, in which case QR need not apply.

    The LF-position of a quantifier determines the way that other elements within the sentence are interpreted. In the following sentence, for example, two quantifiers interact with each other to produce distinct interpretations (from Van Riemsdijk & Williams, 1986:225):

(116) <u>Double raising</u>: *'Someone loves everyone'*

    S-structure: [$_{IP}$ someone loves everyone]

    a. [$_{IP}$ everyone$_j$ [$_{IP}$ someone$_i$ [$_{IP}$ t$_i$ loves t$_j$]]]   [LF-1]
       ('For all *x*, there is a *y*, such that *x* loves *y* ')

    b. [$_{IP}$ someone$_i$ [$_{IP}$ everyone$_j$ [$_{IP}$ t$_i$ loves t$_j$]]]   [LF-2]
       ('There is a *y*, for all *x*, such that *x* loves *y* ')

(116) shows how both quantifiers adjoin to IP, but in different orders. In (116a), the subject-quantifier *someone* adjoins to IP first, followed by the object-quantifier *everyone;* in (116b) the order is reversed. The way that each LF-structure is interpreted reflects the fact that one quantifier is in the scope the other, where 'being in the scope of x' corresponds to 'being c-commanded by x'. Thus in (116a) each person may love someone different, while in (116b) there is one person that is loved by all. The result is that (116) is ambiguous.

Head-government

    In standard quantification theory, raised quantifiers leave traces in the positions that they occupy at S-structure. This presents some problems for the version of the ECP we are assuming, especially with respect to subject traces. In (116a), for example, the subject trace is antecedent-governed by the raised quantifier *someone,* but does not appear to be head-governed. Unlike structures derived by wh-movement, there is no [+agr] feature in COMP to head-govern traces left by QR. In (116b), moreover, *everyone* should also

block antecedent-government of the subject trace, since it is a closer potential antecedent. Given the conjunctive formulation of the ECP then, sentences like (116) should not be allowed to surface. The fact that they do requires either quantification theory to be modified, or else the ECP. In the following I propose a slight revision of the former.

The S-structure position of subject quantifiers is usually assumed to be the Spec. of IP. On the VP-internal subject hypothesis, however, subjects (Agents) originate in the Spec. of VP. Let us suppose that a subject trace in Spec. of VP can function as a variable, satisfying quantifier-binding. The result is that the subject quantifier in Spec. of IP will not have to undergo QR at LF. On this account, the LF-structure of (116) would be as follows:

(117) <u>Quantifier-binding</u> (QR)

```
                IP
          ┌──────┴──────┐
    [everyone]ⱼ         IP
                 ┌───────┴───────┐
           [someone]ᵢ            I'
                          ┌───────┴───────┐
                         Agr              VP
                                   ┌───────┴───────┐
                                  tᵢ               V'
                                          ┌─────────┴─────────┐
                                          V                   tⱼ
                                        loves
```
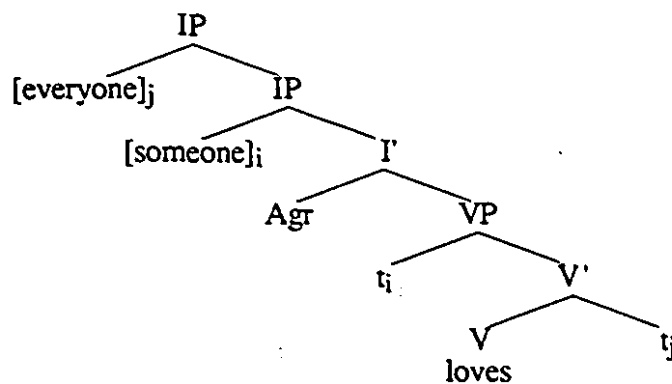
Both: *'For all x, there is a y, such that x loves y'* (=116a)
     'There is a y, for all x, such that x loves y' (=116b)

Subjects move to Spec. of IP to get their Case in English, but in (117) the subject also binds a trace in Spec. of VP, satisfying the requirements of quantification theory. Crucially for our analysis, the subject does not undergo further movement at LF, hence leaves no offending trace that would violate the ECP.

We also propose that the structure shown in (117) is the source of both interpretations of the sentence (116). First, since *everyone* still adjoins to IP, it is obvious how the subject falls within its scope, yielding the interpretation (116a). What is not so clear is how *everyone* falls within the scope of *someone*, yielding the interpretation (116b). In 2.2, we proposed a definition of m-command that allowed a head to govern elements adjoined to its maximal projection. In fact, the same relation holds between the IP subject in (117) and the adjoined object: the subject m-commands the object, since one part of IP

dominates the object. It then remains to state that 'being in the scope of x' corresponds to 'being m-commanded by x', giving both interpretations of sentence (116).[47]

Scope positions

As a final modification of quantification theory, I would like to suggest that the scope position of a quantifier must be one in which the quantifier c-commands an independent operator such as Tense. The intuition behind this idea is that a quantifier inherits its operator-function when licensed by an operator-head. A similar relationship obtains between a wh-phrase in COMP and the feature [+agr]. Quantifiers in the Spec. of IP (=AGR.s) satsify the c-command requirement, as do those that are adjoined to IP. Quantifiers occupying the corresponding positions of TP will also be well-formed, as will those that move to COMP (cf. 3.2.3). On the other hand, quantifiers cannot be licensed if they are adjoined to AGR.o or VP, or if they occupy the specifier position of either category: this is because they will not c-command the Tense node.

Summarizing, I assume that scope assignment is obligatory (as in the standard analysis), and that quantifiers must appear in a legitimate scope position at LF. QR is not the only means by which quantifiers can assign scope, however: movement to the Spec. of IP is sufficient, as is movement to any other position which c-commands the Tense-operator. In an ergative language, NPs adjoined to AGR.s will not have to undergo QR, since they are in a valid scope position already. Transitive subject quantifiers, on the other hand, will have to move beyond their Case position (Spec. of AGR.o) to be well-formed. If this happens prior to movement of the absolutive NP, the latter will be unable to antecedent-govern its trace in object position (recall that antecedent-government can only be achieved through theta-marking if the trace is a variable). Still, if the transitive object NP adjoins to AGR.s first, the quantifier-subject will likewise leave behind a trace that cannot be antecedent-governed. We thus predict that quantification of transitive subject NPs will be ungrammatical in an ergative language, in contrast to transitive objects and intransitive subjects. In the following, we present evidence in support of this prediction, which in turn confirms the general theory of ergativity presented here.

3.2.2 Quantifier-raising

Assuming that quantifiers take scope over Tense enables us to test the hypothesis that absolutive NPs occupy legitimate scope positions at LF. Transitive subjects, on the

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[47]Sentences like (116) are thus ambiguous because either interpretation is available, i.e. not because each interpretation is associated with a unique structure. This is consistant within the framework of May (1985).

other hand, should not be grammatical under quantification, since they cannot attain a scope position without violating the ECP. While the data is incomplete, evidence from Jacaltec suggests that only absolutive NPs can be quantified (from Craig, 1977):

(118) Quantification (Jacaltec)

    a. x-Ø-ul   hune' maca.   [-TR.subj.]
       asp-A3-come someone
       'Someone came'

    b. x(a)-Ø-w-al   hune' tzetet.   [+TR.obj.]
       asp-A3-E2-say something
       'You said something'

(118a) represents quantification of an intransitive subject, (118b) the object of a transitive verb. Not included in this paradigm is a sentence having a quantified transitive subject. Our prediction is that such a sentence would not be possible. The structure underlying this unattested case would be as follows:

(119) Transitive subject quantification (*)
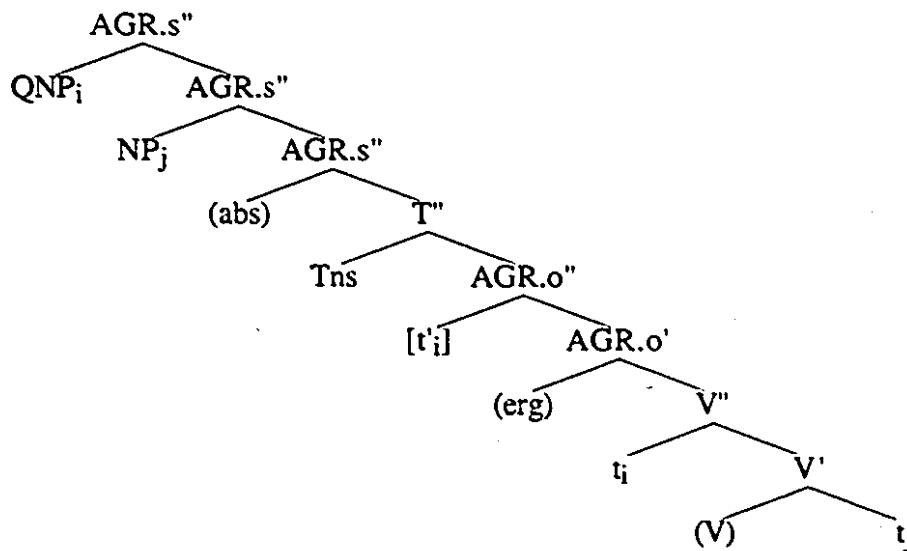
(119) depicts a transitive sentence in which an absolutive NP has adjoined to AGR.s, followed by the raising of a quantifier-subject. The latter leaves a trace in Spec. of AGR.o which cannot be antecedent-governed: the absolutive NP serves as a closer antecedent, blocking government from the scope position. If the order of adjunction were reversed, the QNP would function as a closer antecedent, blocking government of the object trace.

Quantification of arguments

In 3.1.1, we saw that transitive subjects could not undergo movement in Chamorro without special morphology, but that absolutive NPs could. The ungrammaticality of transitive subject extraction was attributed to the ECP. Since QR involves movement too, we expect a similar paradigm of facts to obtain: sentences with quantified transitive subjects should be ruled out, in contrast to those containing transiti··e objects and intransitive subjects. Such a paradigm is attested by following data from Chung (1990); NPs modified by quantifiers are bracketed:

(120) Quantification of transitive subjects (Chamorro)
   a. *Ti ya-nñiha [*todu* i medikus] i manbaba na nengkanu'
      not like-3p   all   the doctors the bad   L food
      'All doctors dislike bad food'

   b. *Ha-fatinasi   yu' siya [*kāda* taotao]
      R3s-make.for me chair each person
      'Each man built me a chair'

(121) Quantification of transitive objects (Chamorro)
   a. In-ätan [*todu* i sanhalom-ña i lugat]
      R1p-see all the inside-3s the place
      'We saw all the interior of the place'

   b. änai ha-hunguk [*todu* i istoria-n i asagua-ña]
      when R3s-hear   all the story-L the wife-3s
      '... when he heard his wife's whole story'

(122) Quantification of intransitive subjects (Chamorro)
   a. Gaigi gias John [*todu* i lapis]
      exist Loc. J.   all   the pencil
      'John has all the pencils'
      (Lit. 'All the pencils are at John')   [Unacc.subj.]

   b. Man-dangkulu yan man-lokka' [*kāda* patgun]
      pl.-big   and Pl.-tall   each child
      'Each child is big and tall'   [Unacc.subj.]

   c. Ni-na'sinmagagu   ni   nana-nñiha [*kāda* neni]
      make(Pass.).w/o.clothes Obl. mother-3s each baby
      'Each baby was undressed by its (Lit. their) mother'   [Pass.subj.]

   d. Man-gine'ti [*todus*] ni kandit
      pl.-grip(Pass.) all   Obl. electricity
      'Everyone was shocked by the electric current'   [Pass.subj.]

   e. Man-hiniluk   [*todu* i trongku-n niyuk yan lemmai]
      pl-break(Pass.) all   the tree-L   coconut and breadfruit
      'All the coconut and breadfruit trees were broken'   [Pass.subj.]

These sentences contain the quantifiers *todu* ('all') and *kāda* ('each'), which I assume are generated in the specifier positions of the NPs that they modify. If the quantified NP adjoins to AGR.s first (i.e. if it is absolutive). it will be well-formed in terms of quantification theory. This would be the case in the structures underlying (121) – (122). In the structure underlying (120), however, there are two NPs that adjoin to AGR.s: the absolutive (for Case-checking) and the subject, which must undergo QR to attain a scope position. The underlying structure would be the same as in (119), which is illicit in terms of the ECP. The data in (120) – (122) are thus consistent with the proposal that movement to a legitimate scope position is blocked by an absolutive NP adjoined to AGR.s.[48]

Adjuncts and optional arguments

It still remains to see how adjuncts and optional arguments behave when they are quantified. Unfortunately, here too the data are incomplete. The only other sentences which are available involve 'true' arguments, as in the following (from Chung, 1990:18-32):

(123) Quantification of other arguments (Chamorro)
a. Ha-dimanda i gubietnu   salappi' gi [*kāda* familia]
   R3s-demend the government money Loc. each family
   'The government demanded money from each household'

b. Man-sinangan-i   as Juan [todu i   bidada-ña *kāda* dia]
   pl.-tell(Pass.)-DS Obl. J.   all   the do.Prog-3s each day
   'They were told by Juan all the things he had been doing every day'

c. Mam-ahan yu' kändi pära [*todu* i fama'ao'an]
   AP-buy   I   candy for   all   the girls
   'I bought candy for all the girls'

In (123a-b), the quantified phrase is an NP argument of a ditransitive verb, while in (123c) it is a PP. In either case, however, the trace of QR could be antecedent-governed by the verb through theta-marking. This explains why these sentences are grammatical.

Generally speaking then, grammatical relations in Chamorro behave as predicted under quantification: absolutive NPs are well-formed, whereas transitive subjects are not. This follows from the underlying structure we have proposed, i.e. where absolutive NPs attain a legitimate scope position through their association with AGR.s. Transitive subject quantifiers must undergo QR to reach a scope position, which ultimately violates the ECP.

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[48] Unexpectedly, some intransitive subjects cannot undergo QR grammatically. These are the subjects of 'agentive' (unergative) verbs, which derive their Case from AGR.o instead of AGR.s. As these belong to a split-ergative paradigm, they will be discussed in 3.4.

There do exist alternative means by which an otherwise transitive subject can be quantified, however, including wh-agreement and a shift to SVO word order. Since these involve a change in verbal morphology or sentence structure, they will not be considered here (cf. 3.5 for wh-agreement, 4.4 for the SVO word order).

3.2.3 Quantifier-movement

Languages may vary as to how quantifiers attain their scope positions. As we have seen already, quantifiers in the Spec. of NP may force the whole NP to undergo QR. Another possibility would be for the quantifier to move by itself, leaving a trace in Spec. of NP. Since this would only be detectable at S-structure, it could not be considered as QR *per se*, but representations derived by such movement should be similar to those resulting from QR. In French, the wh-quantifier *combien* ('how much') behaves in the manner just described. The following shows that the phrase containing *combien* can move to COMP, or just the specifier by itself (from Rizzi, 1990:12-27):

(124) NP-specifier movement (French)
    a. [Combien de livres]$_i$ a-t-il consultés t$_i$?
       'How many (of) books did he consult?'

    b. [Combien]$_i$ a-t-il consultés t$_i$ de livres?
       'How many did he consult (of) books?'

Strictly speaking, these sentences depict wh-movement, rather than QR. Crucially, however, the interpretation of both (124a-b) is the same ('For which x, x a number, he read x books'), suggesting that their LF structures are the same (or similar). In other words, the S-structure position of the phrasal unit 'de livres' does not entail a difference in meaning.

Consider next the following sentences from Tzotzil (Mayan) where the quantifier *7ep* ('many') occurs in clause-initial position (data from Aissen, 1987; some morpheme glosses added):

(125) NP-specifier movement (Tzotzil)
    a. 7ep 7i-s-Ø-k'el-ik   k'in li tzebetik-e.
      lots cp-E3-A3-look-pl fiesta the girls-cl
      'The girls saw many fiestas'
      (not: 'Many girls saw the fiestas')

    b. 7ep ta-s-Ø-jim-ik   bala li solteroetik-e.
      lots icp-E3-A3-fire-pl bullet the soldiers-cl
      'The soldiers fired many bullets'
      (not: 'Many soldiers fired bullets')

c. 7ep 7i-s-Ø-ti7-ik   kaxlan li viniketik-e.
   lots cp-E3-A3-eat-pl chicken the men-cl
   The men ate plenty of chicken'
   (not: 'Many men ate chicken')

In each case, the quantifier *7ep* is interpreted as if it were in the Spec. position of the appropriate NP. Exactly which NP is of crucial interest to us, given the proposals of argument association and Case-checking: in (125), *7ep* quantifies the transitive object, an absolutive NP. This is in accordance with out prediction that only absolutive NPs can be quantified in an ergative language, and that transitive subject NPs cannot: as indicated, *7ep* cannot quantify the latter. The following reinforces the idea that quantification by *7ep* is not just a property of objects, but of absolutive NPs in general (from Aissen, 1984; some morpheme glosses added):

(126) Intransitive subjects (Tzotzil)
      a. 7ep   7i-Ø-laj   ti Pinedae.
         many cp-A3-die the Pinedists
         'Many Pinedists died'   [Unacc.]

      b. 7ep   xa Ø-ch'ay y-osil   ti krixchanoetik le7e
         many cl A3-lose E3-land the people   there
         'A lot of land of the people there was lost'   [Passive]

      c. 7ep   7i-Ø-nuxinaj-ik ta 7uk'um li viniketike.
         many cp-A3-swim-pl in river   t he men
         'Many men swam in the river', or
         'The men swam a lot in the river'   [Unerg.]

The sentences in (126) are intransitive, and like those in (125), *7ep* is interpreted as quantifying over the absolutive argument.[49]

Analogously to *combien*, I will assume that *7ep* originates in the Spec. position of the NP that it modifies and moves to the Spec. of CP at S-structure. At LF, the structure underlying (125b) would be as in (127) below (head-movement not shown):[50] In this structure, the relationship between *7ep* and the NP that it quantifies is a local one: no potential antecedent appears between the moved quantifier and its trace. This is because the NP containing the trace of *7ep* has adjoined to AGR.s, and is immediately subjacent to

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[49] According to Aissen (1984:26), *7ep* can have a sentential adverb reading, as in (126c); this is reminiscent of the analysis of *always* given in Heim (1982), and may suggest a similar treatment of *7ep* (thanks to M. Baker).

[50] Again it must be stated that the present analysis is incompatible with Lasnik & Saito's (1984) theory of government. Following their principles, the trace of *7ep* (a non-argument) would be ungoverned at S-structure, leading to a violation of the ECP. In our theory, the ECP applies only at LF.

(127) <u>Quantifier-movement</u> (Tzotzil)
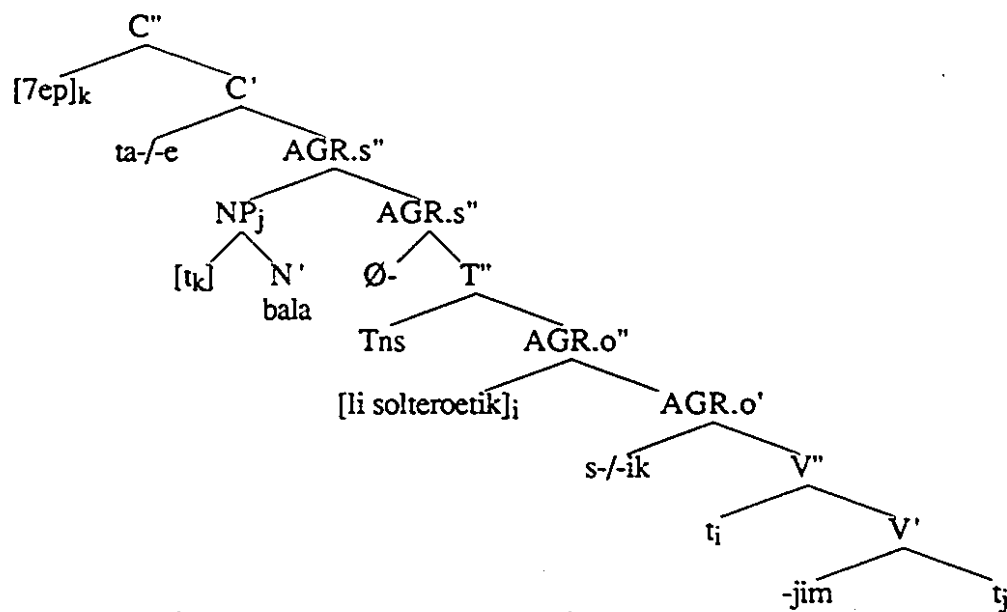
```
                    C"
           ┌─────────┴──────┐
        [7ep]ₖ              C'
                      ┌──────┴──────────┐
                   ta-/-e            AGR.s"
                              ┌─────────┴──────┐
                            NPⱼ              AGR.s"
                          ┌──┴──┐         ┌────┴────┐
                        [tₖ]   N'        Ø-        T"
                              bala             ┌────┴──────┐
                                             Tns         AGR.o"
                                      [li solteroetik]ᵢ    ┌───┴────┐
                                                        AGR.o'
                                                   ┌──────┴──────┐
                                                 s-/-ik         V"
                                                           ┌─────┴────┐
                                                          tᵢ         V'
                                                               ┌──────┴───┐
                                                             -jim        tⱼ
```

7ep ta-s-Ø-jim-ik   bala li solteroetik-e.
lots icp-E3-A3-fire-pl bullet the soldiers-cl
'The soldiers fired many bullets' (=125b)

In the unattested cases of transitive subject quantification, however, antecedent-government of a trace in Spec. of NP would be blocked by the intervening (absolutive) NP adjoined to AGR.s.

An account of *7ep* that mirrors *combien* predicts that there are cases where this quantifier appears in its base position at S-structure, forcing the whole NP to undergo QR at LF. The following sentences point to such a possibility (from Aissen, 1987; some morpheme glosses added):

(128) <u>Quantifier-raising</u> (Tzotzil)
 a. 7i-Ø-y-ich'   [*7ep* tak'in] li viniketik-e.
    cp-A3-E3-get   much money the men-cl
    'The men received a lot of money'
    (not: 'Many men received money')

 b. 7i-Ø-s-man-ik   [*7ep* kaxlan] vaj li kremotik-e.
    cp-A3-E3-buy-pl lots bread   the boys-cl
    'The boys bought lots of bread'
    (not: 'Many boys bought bread')

Here too only absolutive NPs can be modified by the quantifier *7ep*. This follows from the assumption that scope assignment is obligatory, and our proposal that absolutive NPs appear in a legitimate scope position at LF. The fact that ergative NPs cannot be modified by *7ep* also follows from our claim that they cannot attain a valid scope position without

109

violating the ECP. The generalization holds regardless of whether quantifiers move to COMP at S-structure or at LF through QR.

Summarizing, we have seen evidence from Tzotzil suggesting that quantifiers can attain their scope position either via overt movement or QR. The quantifier *7ep* can move to COMP at S-structure, or else remain in the specifier position of its containing NP. If the former course is taken, the quantified NP – with the trace of *7ep* in NP specifier position – adjoins to AGR.s for Case-checking. The quantifier itself remains in COMP, a position from which it can assign scope. If the latter course is taken, the whole NP adjoins to AGR.s for Case-checking and scope assignment. Unattested quantification of transitive subjects reduces to ungrammatical movement. The overall pattern of quantification in Tzotzil thus reflects the pattern of Case-marking, and provides additional support for the theory of syntactic ergativity outlined here.[51]

3.2.4 The scope of absolutive NPs

The proposal that absolutive NPs adjoin to AGR.s predicts that only these NPs will have scope over sentential operators at LF. Sentential operators include items like negation, tense, and mood. At the same time, ergative and other non-absolutive NPs are not expected to exhibit this property, since they never c-command sentential operators. In this section, we examine data from ergative languages which corroborates these claims, thereby lending support to the absolutive Case hypothesis.

According to Bittner (1987), transitive objects in West Greenlandic always have scope over modals of necessity (e.g. *must*), whereas antipassive objects (Themes) with oblique Case never do. Her examples showing this effect are given here:

(129) <u>Modals of necessity</u> (W. Greenlandic)
    a. atuartut   ilaat   ikiur-tariaqar-pa-ra.
       of.students one.of.them(Abs) help-must-tr.indic-1sE/3sA
       'I must help one of the students' (MB'87:205-29a)

       $\cong \exists x$ [x is one of the students & it is necessary that i (I help x)]

    b. atuartut   ilaannik   ikiur-(ss) i-tariaqar-pu-nga.
       of.students one.of.them(Instr) help-ap -must -intr.indic-1sA
       'I must help one of the students' (MB'87:205-29b)

       $\cong$ It is necessary that ($\exists x$ [x is one of the students & I help x])

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[51] The account of quantifier-movement given here predicts that only specifiers of absolutive NPs will undergo movement, if specifier-movement is allowed at all. Indications are that this prediction is correct: cf. Gerdts (1988a) for Salish, and Chung (1991b) for Chamorro. I will not pursue this matter here, however.

The sentence in (129a) is transitive (there is both ergative and absolutive agreement marking on the verb), while the one in (129b) is an intransitive antipassive. In both sentences, only the argument marked with absolutive Case can have wide scope with respect to the sentential operator. This fact can be explained by assuming that an absolutive NP adjoins to AGR.s at LF, where it c-commands the modal – assuming that the latter is generated under Tense). Non-absolutive NPs, on the other hand, would never c-command the Tense node in unmarked (e.g. declarative) sentences. At LF, the transitive subject in (129a) would be in Spec. of AGR.o, while an antipassive object would remain its base position (129b). It follows then that these relations will not have wide scope.

Another effect cited by Bittner involves the interaction of absolutives and negation. The data are repeated here, along with their interpretatons (211-38):

(130) <u>Negation</u> (W. Greenlandic)
     a. suli uqaasia   puiur-nngit-la-a   = *A,*B*
       yet his.utterance(Abs) forget-NEG-neg.indic-3sE/3sA

     b. suli uqaasia-nik   puiur-$\varnothing$-nngit-la-q   = **A, B*
       yet his.utterance-Instr forget-ap-NEG-neg.indic-3sA

     'He$_1$ had not yet forgotten his$_2$ utterance'

A. He$_2$ had uttered several things. He$_1$ had forgotten all of them but one.
B. He$_2$ had uttered several things. He$_1$ had not forgotten any of them, still remembers everything.

As before, the data indicate that transitive objects (but not subjects) can have scope over negation (130a). Moreover, intransitive subjects also take wide scope, but antipassive objects do not (130b). According to Chomsky (1991), the 'negation phrase' (Neg.P) is generated between Tense and AGR.o in underlying structure. If so, the facts in (130) are straightforward: absolutive NPs move to an LF-position which is higher than the negative, whereas ergative NPs do not (antipassive objects do not move). Bittner goes on to claim that the interaction between absolutive NPs and sentential operators is not specific to West Greenlandic, but rather to ergative languages in general. Thus in Basque, transitive objects are interpreted as having scope over negation, while objects marked with the special 'Z'-Case (which I take to be oblique) are not (ibid, p.227):

(131) <u>Negation</u> (Basque)
     a. Ez   dut   ikusi ikalslea.
       NEG 3sA.have.1sE see   student-Abs
       'I didn't see a/the student'
       $\equiv$ x is a student & *not* (I saw x)

b. Ez   dut   ikusi ikaslerik.
NEG 3sA.have.1sE see   student-Z
'I didn't see any students/a (single) student'
≡ *not* (∃x [x is a student & I saw x])

No interpretations are given concerning NPs with ergative Case, presumably because they do not exist. This is not surprising, if in Basque transitive subjects are checked for Case by AGR.o: they could never attain a position of c-command over negation. According to Bittner, nominative NPs have scope over sentential operators in accusative languages. This too is consistent with our analysis, given that nominative NPs are associated with AGR.s, which c-commands the Tense node. It seems then that whichever NP is associated with AGR.s will exhibit this effect, regardless of language-type.

To sum up, transitive objects and intransitive subjects take scope over sentential operators in ergative languages, whereas transitive subjects apparently do not. This fact can be readily explained within our framework, where absolutive NPs c-command sentential operators at LF, the level where scopal relations are determined. In other recent theories of ergativity (Johns, 1992; Bobaljik, 1992), sentential operators would c-command transitive objects at S-structure and LF. In these frameworks, the data presented by Bittner would seem accidental, requiring an independent explanation. In the theory of ergativity outlined here, however, the relationship between absolutive NPs and sentential operators is reversed between S-structure and LF, providing a staightforward account of these facts.

3.3 Exceptional movement

Our observation thus far has been that movement or quantification of transitive subjects is ungrammatical in an ergative language. This was seen to follow from the proposal that absolutive NPs are adjoined to AGR.s at LF, blocking antecedent-government of the subject trace. In this section, we examine some exceptions to the observed pattern – sentences where the subject is moved or quantified but which are not ruled out. In our terms, this might follow if the absolutive NP could not function as a potential governor, allowing a moved wh-phrase or quantifier to antecedent-govern its trace. We propose that such a situation may in fact arise through the intervention of a condition on 'circularity of reference'.

3.3.1 Basic exceptions

In Chamorro, transitive subjects can be grammatically extracted if the object is or contains an anaphor referring to it. Embedded anaphors may be in Spec. of NP (i.e. possessors), or serve as the complement to a head noun. Some examples are given below (Chung, 1989-47,58):

(132) <u>Wh-movement</u> (Chamorro/irrealis)

    a. *Hayi na palao'an* ₁ pära u-kattayi *gui'* ₁?
        who L woman Fut. S3s-write her
        'Which woman is going to write herself?'   [Dir.obj.]

    b. *Hayi* ₁ pära u-ripiti   [i isturia-ña *pro* ₁] ha'?
        who Fut. S3s-repeat the story-3s   Emp.
        'Who₁ is not going to repeat his₁ story?'   [Specifier]

    c. *Hayi* ₁ pära u-paini   i gapitulu-n [i patgon-ña *pro* ₁]?
        who Fut. S3s-comb the hair-L   the child-3s
        'Who₁ is going to comb his₁ child's hair?'   [Specifier]

    d. *Hayi na famalao'an* ₁ pära   u-na'innaihun [i alitus-ñiha *pro* ₁]?
        who L women   Fut. S3p-give.away the earrings-3p
        'Which women₁ are going to give away their₁ earrings?'

                                            [Specifier]
    e. *Hayi* ₁ pära u-na'na' [i minagahit put *guiya* ₁]?
        who Fut. S3s-hide the truth   about him
        'Who is going to hide the truth about himself?'   [NP-compl.]

    f. *Hayi na palao'an* ₁ pära u-taitai   [i lepblu put *guiya* ₁]?
        who L woman Fut. S3s-read the book about her
        'Which woman is going to read the book about herself?'

                                            [NP-compl.]

According to Chung (1982b;1989), lexical anaphors are morphologically the same as pronouns in Chamorro. That the forms in the sentences above are indeed anaphors follows from their obligatory co-reference with the subject. If the object form in (132a) referred to any other NP, for example, the sentence would be ungrammatical. In (132b-d) an empty anaphor occupies the specifier of the object NP, and in (132e-f) the complement of the object is an anaphor. There are thus three separate cases in which extraction of a transitive subject is permitted.[52]

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[52] There may be some question as to whether anaphors can appear in Spec. of NP. Here I follow Chomsky (1986b) in assuming that the binding domain of an anaphor is the minimal category that contains a potential binder. Since there is no other NP that can c-command a specifier, the NP that contains the latter could not be considered as a binding domain. This does not explain the impossibility of possessor-anaphors in languages like English, however.

The Chamorro sentences in (132) are marked for irrealis mood. Exceptional subject extraction can be detected in realis clauses too, as the following sentences illustrate (obtained from informants):

(133) <u>Wh-movement</u> (Chamorro/realis)
    a. ? *Hayi* $_i$ ha-li'i' *gui'* $_i$?
      who R3s-see him
      'Who saw himself?'   [Dir.obj.]

    b. *Hayi* $_i$ ha-taitai [i lepblo-ña *pro* $_i$]
      who R3s-read the book-3s
      'Who$_i$ read his$_i$ book?'   [Specifier]

    c. *Hayi* $_i$ ha-sangan [i istoria put *guiya* $_i$]?
      who R3s-tell   the story about him
      'Who told the story about himself?   [NP-compl.]

As in the irrealis mood, there are exactly three environments where movement of a transitive subject is acceptable: when the direct object is an anaphor (133a), when the possessor of the object is an anaphor (133b), or when the complement of the object head noun is an anaphor (133c).[53]

<u>Jacaltec</u>

    Exceptional movement of transitive subjects is not restricted to Chamorro. A similar paradigm is found in Jacaltec, as shown in the sentences below (adapted from Craig, 1977:217-218; structure added):

(134) <u>Wh-movement</u> (Jacaltec)
    a. x-Ø-s-potx'   [s-ba *pro* $_i$] *naj* $_i$
      asp-A3-E3-kill E3-refl   cl/he
      'He killed himself'   [Control]

    b. *mac* $_i$ x-Ø-s-potx' [s-ba *pro* $_i$]
      who asp-A3-E3-kill E3-refl
      'Who killed himself?'   [Dir.obj]

    c. *ha' naj* $_i$ x-Ø-s-potx' [s-ba *pro* $_i$]
      cleft cl/he asp-A3-E3-kill   E3-refl
      'It is he who killed himself'   [Dir.obj]

    d. *mac* $_i$ Ø-s-mak [s-mam *pro* $_i$]
      who A3-E3-hit E3-father
      'Who hit his father?'   [Specifier]

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[53] When the object functions as an anaphor (133a) the sentence is considered questionable. No explanation for the difference between this and (132a) will be offered, however.

As in Chamorro, object anaphors which refer to the subject allow extraction to occur grammatically (134b-c), as do anaphors in the specifier position of the object NP (134d). In fact, these two cases can be collapsed in Jacaltec, since anaphors take the form of possessed relational nouns. The data do not include examples analogous to Chamorro (132e-f) and (133c); in all probability, NP-complements simply do not exist in the language (M. Baker, pc). Still, unless the object is or contains an anaphor referring to the subject, ergative subject extraction is ungrammatical.

Quantifier Movement

A similar set of exceptions can be found in Tzotzil concerning the quantification of transitive subjects. Ordinarily, these cannot be quantified, a fact which was explained by the blocking effect of the absolutive NP at LF; S-structure movement of *7ep* from a transitive subject position, or QR of the whole NP containing *7ep* would be ruled out by the ECP. When the absolutive NP contains an anaphor referring to the subject, however, quantification becomes possible. The following shows this to occur when *7ep* moves to COMP at S-structure (Aissen, 1987-257; structure added):[54]

(135) Quantifier-movement (Tzotzil)
    a. *7ep* ᵢ 7i-Ø-s-nak'   [s-ba-ik *pro* ᵢ] t a ch'en li viniketik-e
       lots cp-A3-E3-hide E3-self-pl   in cave the men-cl
       'Lots of men hid themselves in the cave'

    b. *7ep* ᵢ 7i-Ø-x-chol   [s-ba *pro* ᵢ] li 7amuchetik-e
       lots cp-A3-E3-line.up E3-self   the toads-cl
       'Lots of toads lined up'

    c. *7ep* ᵢ 7i-Ø-s-tzob   [s-ba *pro* ᵢ] li sapo-e
       lots cp-A3-E3-gather E3-self   the toad-cl
       'Lots of toads got together'

In the structure underlying these examples, the trace of *7ep* would be in the specifier position of the NP marked with ergative Case (itself in Spec. of AGR.o at LF); ordinarily, an absolutive NP adjoined to AGR.s would block antecedent-government of this trace, but doesn't. To complete the paradigm, transitive subjects may be exceptionally quantified when *7ep* remains in its base position, as in the following data (ibid, p.265):

(136) Quantifier raising (Tzotzil)
    a. 7i-Ø-x-chol   [s-ba *pro* ᵢ] [*7ep* ᵢ li 7amuchetik-e]
       cp-A3-E3-line.up E3-self   many the toads-cl
       'Lots of toads lined up'

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[54] As in Jacaltec, there is no available data on the quantification of ergative subjects in sentences whose direct objects contain a co-referring noun complement.

b. 7i-Ø-s-tzob   la [s-ba *pro* ᵢ] [*7ep* ᵢ li sapo-e]
   cp-A3-E3-gather cl E3-self   many the toads-cl
   'Lots of toads got together'

In the LF-structures underlying these examples, there would be two NPs adjoined to AGR.s, the absolutive and the ergative. The absolutive NP adjoins first, for otherwise the ergative NP would block antecedent-government of the object trace. The quantified subject nevertheless manages to antecedent-govern its own trace in Spec. of AGR.o, despite the intervening absolutive NP. Apparently, this has to do with the anaphor in the specifier position of the object NP, which refers back to the subject.

Returning to Chamorro, we might expect quantification of transitive subjects to be possible if the absolutive NP is or contains a co-referring anaphor. As it turns out, this prediction is incorrect. In 3.4.3, however, we recognize an independent principle (head-government) that accounts for the ill-formedness of such cases.

Summing up, while transitive subjects are generally prohibited from undergoing wh- or quantifier-movement in ergative languages, there is a set of principled exceptions. These can be broken down into three specific cases, all of which involve obligatory dependence of an anaphor on the subject NP. Somehow, this must be responsible for overcoming the effect of the absolutive NP on antecedent-government. In the following section, we pursue this idea, and propose an analysis of transitive subject extraction that interacts with the idea that absolutive NPs receive Case by adjunction to AGR.s.[55]

3.3.2 Mutual dependence

Although the examples discussed so far are exceptional in allowing movement or quantification of the transitive subject, they share one important property: in each case, the absolutive object is or contains an NP that is referentially dependent on the subject. This type of dependency can be termed as 'L-dependency', since the antecedent of the anaphor is in an L-position (Spec. of VP). Proper government of traces left by wh-movement or QR also represents a kind of dependency, i.e. of the trace on the moved constituent. This is 'L-bar dependency'. It seems likely then that potential antecedent-government of a trace (or of an anaphor) represents a case of potential dependency, i.e. where the trace (or anaphor) is 'potentially dependent' on a closer c-commanding category of the appropriate type. Bringing these concepts under a unified set of principles, I will argue that an NP

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[55] Berinstein (1985) has observed a similar pattern of ungrammatical subject extraction in K'ekchi, a Mayan language. According to her, however, co-referential NPs embedded in the object do not have the same 'saving' effect that they do in Chamorro and Jacaltec.

116

which is or contains an element dependent on another NP cannot also function as the potential antecedent of the second NP. To allow otherwise would amount to saying that an NP can be its own antecedent, a situation which the grammar does not tolerate. As a result of this condition, an NP adjoined to AGR.s (as in an ergative language) will not block antecedent-government of a trace in subject position.

Linking theory

Higginbotham (1983) proposes a theory of antecedence that expresses the relationship between co-referring elements in a way that differs from co-indexing. His proposal is that antecedence should be expressed in terms of 'linking', which is indicated by means of headed arrows pointing to the antecedent. This allows both *John* and *Mary* in the following example to function as the antecedent of *they* – a fact which cannot be captured by a theory that relies solely on co-indexing:

(137)   John told Mary that they should leave

The linking shown in (137) is made possible by the rule 'Link X to Y', which applies freely between argument positions at S-structure, and automatically in the case of movement (p.402).

Higginbotham argues that binding relations are best expressed in terms of Linking Theory, but many principles of the Binding Theory are carried over. One of these is c-command. Thus, "... if X c-commands Y, then Y is not an antecedent of X ..." (ibid). Nevertheless, Linking Theory also governs A-bar (L-bar) relations, such as those that hold between moved wh-phrases and their traces. Such traces will be linked to their antecedents by means of headed arrows, just as other anaphors are linked to arguments. In other words, Linking Theory is a theory of A/A-bar relations (in the traditional framework), or L/L-bar here. Consider how the principles of Linking Theory would be implemented in a sentence like the following, which exhibits both kinds of antecedence (Higginbotham himself does not discuss this sentence):

(138)   [IP Himself [IP John likes t]]

The relative grammaticality of this example suggests that *himself* is linked to *John* even though it doesn't occupy an argument position and isn't c-commanded by the subject. I

assume that this is possible because *himself* is also linked by movement to its trace, which satisfies both of these requirements. Conceivably, if the subject also underwent L-bar movement, the anaphor adjoined to IP could also function as a closer antecedent, since it appears in L-bar position. This will become important in the analysis of exceptional subject extraction to follow.

Consider next the following representation, which roughly corresponds to a transitive sentence in an ergative language in which the object contains an anaphor referring to the subject (extraction of the subject does not occur):

(139)   [IP [Pictures of himself NP] [IP John likes t]]
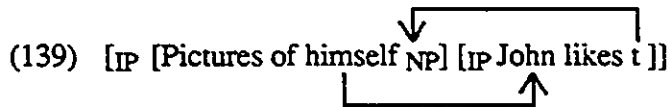
The arrows indicate that *John* is the antecedent of *himself* (an L-anaphor), and that the fronted object NP is the antecedent of its own trace. We might ask if *himself* could be the antecedent of *John* in (139), since both NPs occupy an argument position. The answer is obviously no, since *himself* does not c-command the subject at any level. In the following representation, however, the subject *John* has been replaced by a wh-trace:

(140)   *Who did [IP [pictures of himself NP] [IP t like t]]
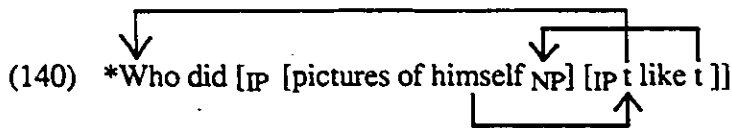
The sentence associated with this structure is ungrammatical, perhaps because the trace of *who* (an L-bar anaphor) cannot be properly head-governed across two IP nodes. Otherwise, the fronted object intervenes between the wh-phrase and its trace, so it qualifies as a potential governor. The ill-formedness of (140) could therefore also be attributed to Relativized Minimality.

Again we may speculate as to whether a dependency exists between the matrix subject position (filled by trace) and the anaphor *himself*. As we noted earlier, it seems doubtful that *himself* could be considered as an antecedent, since there is no obvious c-command relation between this anaphor and the subject trace. Nevertheless, according to Higginbotham: "... antecedence of y to x is a special case of dependence of x on y, and x [may be] dependent on y if y is *contained* in an antecedent of x" (p.404). Thus, if the fronted object NP in (140) is considered as a potential antecedent of the subject trace (x), the latter can be dependent on the anaphor (y) contained within the object NP.

118

Circularity

In addition to the various notions of dependency expressed in L/L-bar relations, Higginbotham proposes the following restriction on LF structures, where D* = 'closure of dependence':[56]

(141) The Circularity Condition

NOT: D* (X, X).

This condition is meant to rule out certain cases of 'circularity' which had been noted in the literature. For example, a sentence like 'His wife saw her husband' is considered to be circular, assuming that the possessive pronoun *her* depends on the NP 'his wife' for its interpretation, and that *his* depends on 'her husband'. The circular interpretation of this sentence is represented here by means of linking (from Higginbotham, 1983-36):

(142) Circularity (English)

*[his wife NP] saw [her husband NP]
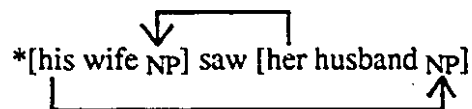
According to Higginbotham, the mutual dependency shown by linking violates the Circularity Condition. In order for the sentence to receive a grammatical interpretation, at least three people must be involved, so that *her* refers to some person other than 'his wife', or *his* to someone other than 'her husband'. The following definition of potential antecedenthood shows how the Circularity Condition can be incorporated into the Relativized Minimality system of Rizzi (1990:7):[57]

(143) Potential antecedenthood (revised)
Z is a potential antecedent-governor for Y if
Y is in an X-chain (X ranges over L/L-bar and head),
Z = an X-category c-commanding Y, and
and Z does not depend on Y.

In what follows, we show how potential antecedenthood enriched with the notion of dependency allows for grammatical extraction of transitive subjects in an ergative language.

[56] Higginbotham did not name this condition.
[57] I have used 'X-category' to conflate the terms 'specifier' and 'head' from Rizzi's original formulation; the former also includes elements adjoined to agreement for the purpose of Case-checking.

In light of the Circularity Condition, recall the claim that absolutive NPs adjoin to AGR.s, where they serve to block antecedent-government of a subject trace. If the object is an anaphor, however, its dependency on the subject is established prior to L-bar movement. Given this dependency, the subject trace could not 'potentially depend' on the fronted object, for to do so would (potentially) violate the Circularity Condition. As a result, the object couldn't function as a potential antecedent-governor, and the subject trace would be properly governed by its natural antecedent in COMP. As we saw in 3.3.1, transitive subjects in Chamorro may undergo exceptional wh-movement when the absolutive NP is an anaphor. Sentence (132a) is repeated here (minus verb movement), along with its LF structure in Linking Theory. Linking between the absolutive NP and its trace in VP has been omitted.

(144) <u>Direct object anaphor</u> (Chamorro)
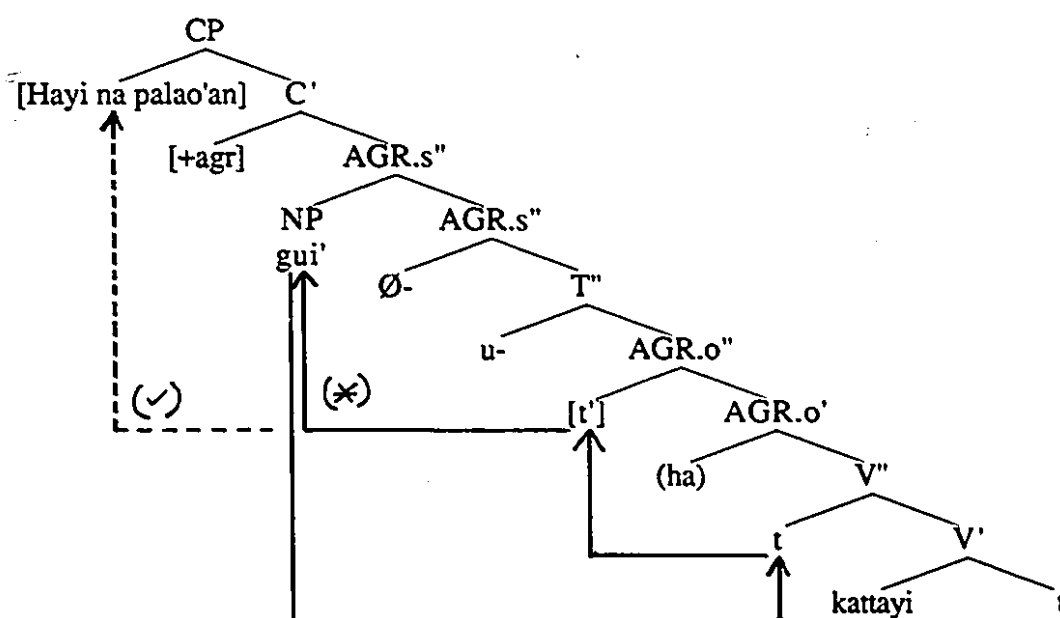
Hayi na palao'an pära u-kattayi   gui'? (=132a)
who L woman Fut. S3s-write her
'Which woman is going to write (to) herself?'

The linking in this sentence conforms to our proposals: the absolutive NP *gui'* (here an anaphor) is shown to be dependent on the subject/subject trace despite subsequent L-bar movement. The subject trace is prevented from potentially depending on the absolutive NP (to avoid a violation of the Circularity Condition), such that the wh-phrase in COMP may antecedent-govern its trace. This accounts for the grammaticality of the sentence.

Weak crossover

A similar situation arises when the object NP contains an anaphor dependent on the subject prior to L-bar movement. Normally, the object would function as a potential antecedent, blocking proper government of the subject trace from COMP. Taking Rizzi's definition of antecedent to include the notion of dependency means that a subject trace will 'potentially depend' on a fronted object NP, however. Moreover, the trace depends potentially on any element *contained* within this antecedent. Thus, if an anaphor embedded in an object is already dependent on the subject, the subject trace could not also be dependent on the anaphor without leading to a violation of Circularity. In short, an object NP containing a subject-oriented anaphor cannot function as a potential antecedent, and in sentences that meet this description, a wh-phrase in COMP (or quantifier adjoined to AGR.s) will succeed in antecedent-governing its own trace. In the Jacaltec sentence (134d), a possessor-anaphor is embedded in the object NP. The LF-structure of this sentence is given here, represented in terms of Linking Theory. As before, the dotted line indicates potential antecedenthood (or dependency), and (*) that a dependency may not obtain without violating the Circularity Condition.

(145) Possessor-anaphor (Jacaltec)
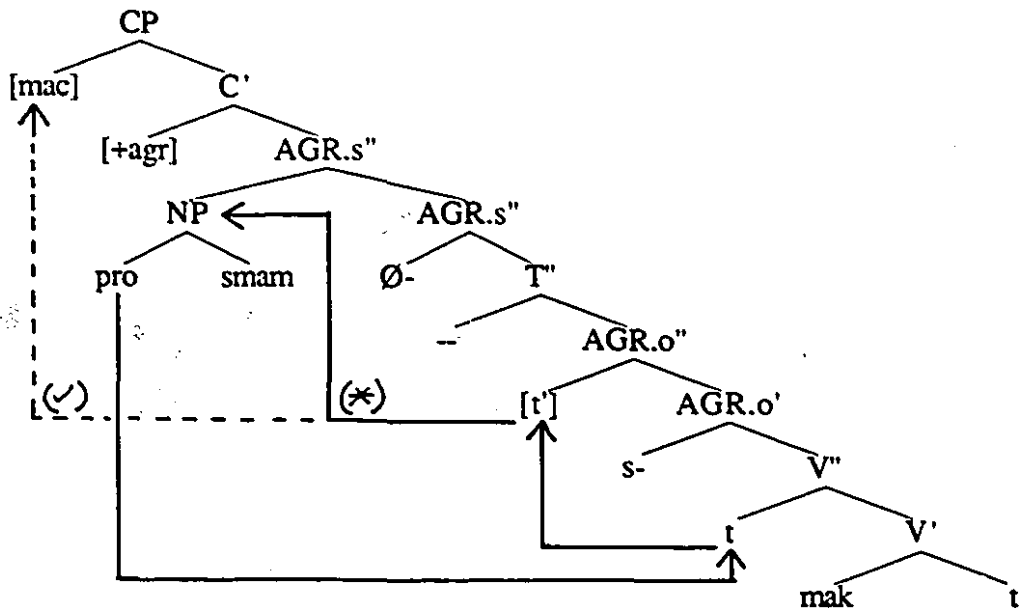
mac Ø-s-mak   [s-mam *pro*] (=134d)
who A3-E3-hit   E3-father
'Who hit his father?'

The proposal that the absolutive NP adjoined to AGR.s cannot function as a closer potential antecedent implies that the ECP is satisfied, accounting for the grammaticality of this sentence. In similar fashion, avoidance of the Circularity Condition accounts for the well-formedness of sentences with a co-referring noun complement in an absolutive NP, as in (132e-f). The structure underlying (132e) would thus be the same as (145), except that the anaphor (which is overt) is located under N-bar and the specifier position is empty.

3.3.3 Pronouns and anaphors

Transitive subjects undergo exceptional movement if the object is or contains an anaphor referring to it. The reason for this, it was proposed, has to do with avoidance of the Circularity Condition, an independent principle that holds at LF. Implicit in this approach is the assumption that one principle (the Circularity Condition) can affect the applicability of another (the ECP). Aoun (1985) has proposed a similar system, where certain traces are assigned a governing category by default in order to avoid a Principle C violation. Here we have suggested that a category cannot be considered as a potential antecedent for the ECP if by doing so it would violate the Circularity Condition.

Our account of exceptional subject extraction relies on the presence of an anaphor in the object position. This is not to say that a co-referential pronoun embedded in the object could not induce the same effect, however, as in Higginbotham's example (142). Moreover, anaphors and pronouns in Chamorro are identical in form, enhancing the possibility that extraction will be facilitated by co-referring pronouns (rather than just anaphors) in sentences with object-possessors or noun complements.[58] Nevertheless, there is good evidence in Chamorro to suggest that avoidance of circularity can only be induced by anaphors, and never by pronominals. The following sentence (adapted from Chung, 1982b) depicts wh-movement of a matrix subject from a clause whose verb complement contains a co-referring pronoun (the return to co-indexation here is for expository purposes):[59]

(146) <u>Co-referring embedded pronouns</u> (Chamorro)
    *Hayi ₁ ha-tungu' [na atraso gui' ₁]
    who R3s-know that be.late him
    'Who₁ knew that he₁ was late?'

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[58] The same possibility would not be allowed in sentences with an object pronoun, however, since then the pronoun would be bound at S-structure in violation of Principle B.

[59] (146) is based on an ungrammatical sentence which has a third person plural subject; in Section 4.5 I argue that transitive sentences with third person plural subjects are ruled out by illicit wh-movement.

As indicated, the sentence (146) is ill-formed, presumably ruled out by the blocking effect on antecedent-government caused by an absolutive NP. The failure to avoid the Circularity Condition can be explained by assuming that only anaphors trigger this effect in Chamorro, and that the subject of the embedded clause in (146) could not be an anaphor, there being no local antecedent to bind it. This view gains further support from the following construction, where a co-referential noun complement embedded in a possessed object fails to save subject extraction (adapted from Chung, 1982b; cf. Ft.55):

(147) Co-referring embedded anaphors (Chamorro)

$*Hayi_i$ ha-hunguk [i istoria-ta pro$_k$ put gui''_i]?
who R3s-hear the story-1p (our) about him
'Who heard our story about him(*self)?'

In this sentence, the proform gui' is not anaphoric, since the object NP itself constitutes a binding domain where the closest binder is the (disjoint) possessor. It must therefore be a pronoun, one that fails to trigger the circularity effect.[60]

It appears then that in some languages, only anaphors allow for exceptional extraction of a subject vis-a-vis avoidance of the Circularity Condition. Why this should be the case is something of a mystery, considering that this condition was motivated in the first place by sentences involving pronouns. In English, moreover, there are instances where the circularity effect can be triggered by a pronoun in the subject position of an embedded relative, shown below with linking (irrelevant links have been omitted):

(148) Co-referring embedded pronouns (English)

*[Her husband $_{NP}$] kissed the woman that [$_{NP}$ his wife] knew t

If pronouns in embedded complements can violate the Circularity Condition, our account of (146) – a case where circularity did not come into play – would be undermined. Conversely, by stipulating that co-referring NPs must be anaphors, we are left with no account of (148). These are problems that require further study.

Conclusion

In this section, some exceptions to the general ban on extraction/quantification of transitive subjects were presented, and an account of them was offered based on

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[60] In Jacaltec as well, co-referring (possessor) pronouns are the same in form as anaphors, hence a similar attempt might be made to attribute circularity there to either category. At present, however, there is no data available that would bear on this issue.

Higginbotham (1983). The basic idea is that an object NP – adjoined to AGR.s at LF – will not function as a potential antecedent when it would violate the Circularity Condition, a principle which disallows cases of mutual dependency.

3.4 Ergative splits

In this section, we examine wh-movement and quantification in contexts of non-canonical Case-marking, where transitive and intransitive subjects are marked the same. In Chapter two, it was suggested that a similar marking on the two types of subject might arise from a common source of Case, rather than a realignment of underlying grammatical relations. For example, if the subject of an intransitive verb received its Case from AGR.o, it would look the same as the subject in the ergative construction, which receives its Case from AGR.o. At the same time, however, the overall pattern of wh-movement and quantification would be exactly as in the canonical Case-marking paradigm, where only transitive objects (and intransitive subjects) can be affected without a necessary change in verbal morphology. Essentially, it is evidence for this type of split-ergativity that is adduced here.

The AGR.o hypothesis, as I shall call it, makes specific predictions concerning the overall pattern of movement and quantification in these contexts, as opposed to a hypothesis that assigns transitive and intransitive subjects the same grammatical function in accordance with their Case-marking. If transitive and intransitive subjects were underlyingly the same, they should pattern together syntactically, as in a nominative-accusative language. On the other hand, the AGR.o hypothesis predicts that – despite appearances – transitive subjects will pattern differently under extraction than intransitive subjects. Transitive subjects, for example, should not be able to undergo wh-movement or QR, as before. Intransitive subjects, on the other hand, should undergo these processes easily, along with transitive objects. The following then is a brief look at syntactic processes in non-canonical Case-marking environments, one which seems to corroborate the view of ergativity taken here.[61]

3.4.1 Pronouns in Dyirbal

In 2.3, we saw that full NPs in Dyirbal follow an ergative-absolutive Case-marking pattern, while first- and second- person pronouns were 'nominative-accusative'. The rationale for this was that first- and second- person pronoun subjects are marked the same

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[61] Cf. Massam (1991) for a different view of what the syntax of split-ergativity is about.

for Case (as in a nominative-accusative language), while objects are marked differently. The claim was made, however, that 'nominative' Case was really ergative, and that 'accusative' Case was absolutive. The source of Case for objects ('accusative' or absolutive) was proposed to be AGR.s, while subjects derived theirs ('nominative' or ergative) from AGR.o.

In Dyirbal there is a rule of topic-chaining, whereby the topic of one clause is deleted under co-reference with the topic of another. I assume that prior to the application of this rule, NPs must first be topicalized. The generalization, however, is that only absolutive NPs may do so. For the remainder of this discussion I will concentrate mainly on clauses in which topicalization occurs. The following data illustrates the possibilities of topic-chaining in transitive and intransitive sentences (from Dixon, 1972):[62]

(149) Topic-chaining (full NPs)
    a. bayi yara baninyu
       man-ABS come-NFUT
       'Man came here'

    b. bayi yara   bangun djugumbiru balgan
       man-ABS woman-ERG   hit-NFUT
       'Woman hit man'

    c. *bayi yara* ᵢ baninyu   [*e* ᵢ bangun djugumbiru balgan]
       man-ABS come-NFUT   woman-ERG   hit-NFUT
       'Man came here and was hit by woman'

    d. *bayi yara* ᵢ bangun djugumbiru balgan   [*e* ᵢ baninyu]
       man-ABS woman-ERG   hit-NFUT   come-NFUT
       'Man was hit by woman and came here'

    e. *bayi yara* ᵢ baninyu   [*e* ᵢ bagun djugumbilgu balgal-nga-nyu]
       man-ABS come-NFUT   woman-DAT   hit-AP-NFUT
       'Man came here and hit woman'

Sentences (149a-b) form the basis for (149c-e), which are all biclausal in nature. The initial clauses of these sentences are 'complete' in the sense that both arguments of the verb are lexically realized; the second (bracketed) clauses contain a null argument co-referential with an absolutive NP.[63] In (149c), the transitive object of the second clause has been

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[62] Ergative NPs can trigger deletion of a co-referential topic, but according to Dixon these are not themselves to be considered topics (p.79). Strictly speaking then, constructions involving ergative co-reference (marked by *-ngurra* on the second verb) are not topic-chains (cf. 1.3). For the remainder of this discussion I will concentrate on clauses in which 'true' topicalization occurs.

[63] At this point, it is not clear what the relationship is between the two clauses of a topic-chaining construction; following Dixon, I will assume that the second is dominated by the first, such that the lexical topic in the first clause will c-command other topics that are deleted.

deleted under co-reference with the intransitive subject of the initial clause, while in (149d) an intransitive subject that refers to a transitive object has been deleted. In (149e) what would otherwise be an ergative subject has been deleted under co-reference, but this possibility is not attested: antipassivization must first apply, such that the Agent corresponds to an absolutive relation.

The pattern of co-reference in (149) is typical of an ergative system. I will thus assume that topicalization in Dyirbal arises through movement of an NP to COMP, which may then be deleted under co-reference with another NP. A similar approach to topicalization has been proposed for Chinese by Huang (1984), who considers it a form of wh-movement (cf. Chapter four for more discussion of his system). The following diagram represents the proposed S-structure of the second clause in sentence (149c):

(150) <u>Topicalization</u> (absolutive full-NP)
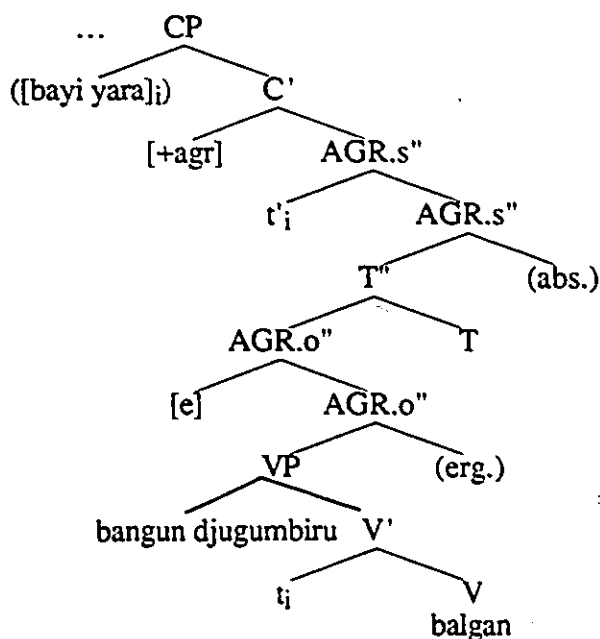
bayi yara ₁ ... [bangun djugumbiru *e* ₁ balgan]
                   woman-ERG   hit-NFUT
'Man came here and was hit by woman' (=149c)

In this structure, a transitive object has moved to the Spec. of CP of the second clause, leaving behind traces that are both head- and antecedent-governed. The topic is non-lexical, signalling co-reference with the intransitive (topicalized) subject the initial clause. Transitive subjects cannot generally undergo movement to COMP without violating the ECP. This is because they would leave behind a trace in Spec. of AGR.o that could not be properly-governed: at LF, an absolutive NP adjoined to AGR.s would block antecedent-

government. Agents must therefore derive their Case from AGR.s, and if necessary, the rule of antipassive will apply, as in (149e). A movement analysis of topicalization thus accounts for sentences involving NPs that pattern on an ergative-absolutive basis. In what follows, we examine first- and second- person pronouns in more detail, to see if they pattern in the same way.[64]

Pronoun-topics

First- and second-person pronouns in Dyirbal follow a nominative-accusative Case-marking pattern. In 2.3 it was suggested that this would follow from an analysis whereby the relevant pronoun subjects derived their Case from AGR.o, regardless of transitivity. If so, we predict that nothing would change in the formation of topic-chains with first- and second-person pronouns. For example, intransitive ('nominative') pronoun subjects should enter freely into topic-chains with transitive objects, but not with transitive pronoun subjects, even though both subjects are marked the same. Moreover, for transitive pronoun subjects to occur in topic chains at all, they would have to undergo antipassivization, just as full NP (ergative) subjects do in canonical Case-marking situations. The following data (from Dixon, 1972:133) show the first of these predictions to be correct:

(151) Pronoun topic-chaining ('NOM'/'ACC')
  a. ngadja   baninyu
     [1st]-'NOM'   come-NFUT
     'I came here'

  b. ngayguna   bangun djugumbiru balgan
     [1st]-'ACC'   woman-ERG   hit-NFUT
     'Woman hit me'

  c. *ngadja* ₁   baninyu   [e ₁ bangun djugumbiru balgan]
     [1st]-'NOM' come-NFUT   woman-ERG   hit-NFUT
     'I came here and was hit by woman'

  d. *ngayguna* ₁   bangun djgumbiru balgan   [e ₁ baninyu]
     [1st]-'ACC'   woman-ERG   hit-NFUT   come-NFUT
     'I was hit by woman and came here'

(151a-b) form the basis of (151c-d). 'Nominative' intransitive subjects can indeed enter into topic-chains with transitive (absolutive) objects without any special marking. Presumably, this is because NPs marked with 'nominative' Case are checked by AGR.o,

[64] Marantz (1984), has questioned the validity of a movement-based analysis of topic-chaining in Dyirbal (as originally proposed by Dixon,1972). I will not attempt to address his objections here (but cf. also Levin,1983 for some discussion).

and nothing intervenes between a trace in the specifier position of this agreement morpheme and the topic in Spec. of CP. The following paradigm confirms the second prediction, i.e. that two 'nominative' pronoun subjects cannot enter into a topic chain together (ibid, p.135):

(152) Pronoun topic-chaining ('NOM'/'NOM'; AP)

    a. ngadja   baninyu
       [1st]-'NOM' come-NFUT
       'I came here'

    b. ngadja   balan djugumbil balgan
       [1st]-'NOM' woman-ABS   hit-NFUT
       'I hit woman'

    c. *ngadja $_i$ baninyu   [e $_i$ balan djugumbil balgan]
       [1st]-'NOM' come-NFUT   woman-ABS   hit-NFUT
       'I came here and hit woman'

    d. *ngadja $_i$ balan djugumbil balgan [e $_i$ baninyu]
       [1st]-'NOM' woman-ABS   hit-NFUT   come-NFUT
       'I hit woman and came here'

    e. ngadja $_i$ baninyu   [e $_i$ bagun djugumbilgu balgal-nga-nyu]
       [1st]-'NOM' come-NFUT   woman-DAT   hit-AP-NFUT
       'I came here and hit woman'

(152a-b) form the basis of all the other sentences. (152c-d) indicate that chaining transitive and intransitive pronoun subjects is ungrammatical in contexts of non-canonical Case-marking, just as chaining both types of full-NP subjects would be in canonical situations. The ill-formedness of these examples hinges on the transitive pronoun subject: it cannot become a topic because in moving to topic position (taken here as COMP), it leaves behind a trace in Spec. of AGR.o that cannot be antecedent-governed. This is seen in the LF-representation of (152c) in (153). Here the absolutive NP has adjoined to AGR.s, its Case position. Since this is an L-bar position, it qualifies as a potential antecedent-governor of the subject trace, blocking proper government from COMP; topicalization is thus ruled out by the ECP.

In order to take part in a well-formed topic chain, transitive pronoun subjects – like ergative NPs – must become absolutive, as in (152e). Thus although first- and second-person subject forms are marked the same in Dyirbal, they do not behave the same syntactically. This follows on the analysis developed here, but would remain a mystery if surface Case patterns were always taken to reflect underlying grammatical relations.[65]

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[65] There is a certain irony to this conclusion, since I have argued (contra Anderson) that Case-marking is indeed an indicator of underlying grammatical relations. Recall, however, that his arguments focus on the

(153) <u>Topicalization</u> ('nominative' pronoun)
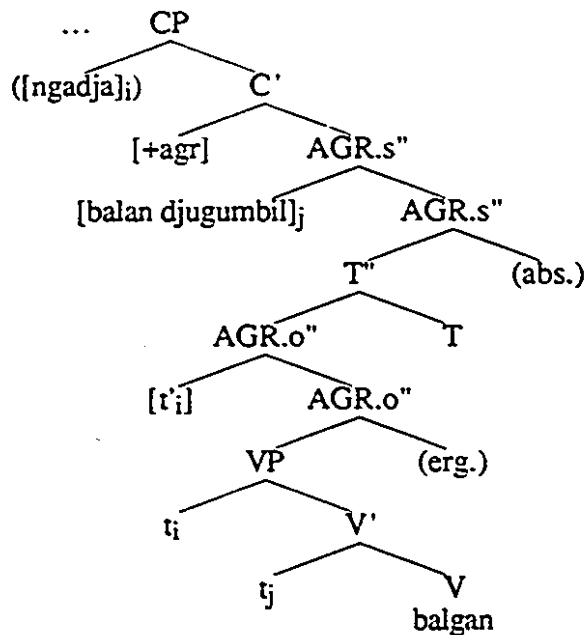
```
...        CP
      ┌────────┴────────┐
 ([ngadja]ᵢ)           C'
                 ┌──────┴──────┐
              [+agr]        AGR.s"
                     ┌──────────┴──────────┐
            [balan djugumbil]ⱼ          AGR.s"
                                ┌──────────┴──────────┐
                               T"                   (abs.)
                        ┌───────┴───────┐
                     AGR.o"             T
                 ┌─────┴─────┐
               [t'ᵢ]       AGR.o"
                      ┌───────┴───────┐
                     VP             (erg.)
                 ┌────┴────┐
                tᵢ        V'
                     ┌─────┴─────┐
                    tⱼ           V
                              balgan
```

*ngadja ᵢ   baninyu   [e ᵢ balan djugumbil balgan]
[1st]-'NOM' come-NFUT   woman-ABS   hit-NFUT
'I came here and hit woman' (=152c)

<u>Extensions</u>

In addition to topic-chains, there are other structures in Dyirbal based on L-bar movement that involve only absolutive full-NPs, or 'nominative-accusative' first- and second-person pronouns. The following represents a relative clause construction (from Dixon, 1972:136):

(154) <u>Relative clauses</u> (Dyirbal)
    a. *ngadja* ᵢ [e ᵢ waynydji-ngu]   miyandanyu
       [1st]-'NOM' go.uphill-REL laugh-NFUT
       'I laughed as I went uphill'

    b. *ngayguna* ᵢ [e ᵢ waynydji-ngu] bangul yarangu buran
       [1st]-'ACC'   go.uphill-REL man-ERG   see-NFUT
       'Man saw me going uphill'

    c. ngadja   [e ᵢ waynydji-ngu] *balan djugumbil* ᵢ buran
       [1st]-'NOM' go.uphill-REL   woman-ABS   see-NFUT
       'I saw the woman as *she* was going uphill'

---

syntactic properties of subjects and direct objects at S-structure, whereas mine pertain to those that hold at LF. Case-marking on first- and second-person pronouns in Dyirbal is thus deceptive only insofar as topicalization is considered as an S-structure phenomenon.

The relative clauses are bracketed in the sentences above, with a co-indexed empty category corresponding to the matrix NP that it modifies. In (154a), the empty category is an intransitive subject, which would be marked with 'nominative' Case if it were realized lexically; in (154b) the empty category is a transitive object, which would otherwise be 'accusative'. These relations both correspond to absolutive NPs in the full-NP paradigm. Moreover, transitive subject first- or second-person pronouns (which would otherwise be marked with 'nominative' Case) cannot be relativized in Dyirbal without undergoing antipassivization first. These facts correspond exactly to those of topicalization given earlier, and would follow from the same analysis. (154c) is potentially ambiguous, but in fact can only be understood when the modified NP is the transitive object. Again, these facts illustrate that despite appearances, first- and second-person pronouns in Dyirbal pattern on an ergative-absolutive basis: 'nominative' subjects derive their Case from AGR.o, while 'accusative' objects are checked by AGR.s.

3.4.2 Irrealis in Chamorro

Another type of ergative split is evidenced in Chamorro, where subjects of both transitive and intransitive clauses are cross-referenced by overt agreement in the irrealis mood (adapted from Chung, 1984):

(155) <u>Irrealis subjects</u> (Chamorro)
    a. Pära u-fattu   yó agupa'.
      Fut. S1s-arrive I   tomorrow
      'I will arrive tomorrow'   [-TR]

    b. Pära bai u-taitai   edyu na lepblu.
      Fut.   S1s-read that L book
      'I am going to read that book'   [+TR]

Since agreement has the same form in (155a-b), the assumption is that both transitive and intransitive subjects derive their Case from the same agreement morpheme, AGR.o. The resulting overall pattern therefore looks nominative-accusative. Nevertheless, it is predicted that absolutive NPs will pattern the same syntactically, since nothing blocks antecedent-government of an absolutive trace left by wh-movement or QR. Transitive subjects, on the other hand, should not be able to undergo wh-movement or QR in irrealis clauses, just as in realis clauses. This is because an absolutive NP adjoined to AGR.s will disrupt government of the subject trace. These predictions are confirmed by the data below (from Chung, 1989):[66]

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[66] The verb in (156a) is unaccusative, yet unaccusative verbs are normally checked for Case by AGR.s (cf. 2.3). Presumably then, the requirement that AGR.o be utilized in the irrealis mood has overridden the

(156) <u>Wh-movement</u> (irrealis)
    a. Hayi pära u-fattu agupa'?
       who Fut. S3s-arrive tomorrow
       'Who will arrive tomorrow?'   [-TR.subj.]

    b. Hafa pära u -fa'gasi si Juan?
       what Fut. S3s-wash PN. J.
       'What is Juan going to wash?'   [+TR.obj.]

    c. *Hayi pära u-taitai   edyu na lepblu.
       who Fut. S3s-read that L book
       'Who is going to read that book'   [+TR.subj.]

In the LF-structures underlying (156a-b), there would be an intermediate trace adjoined to AGR.s. Since nothing intervenes between this trace and the wh-phrase in COMP, the former could be properly-governed by the latter. On the other hand, the ungrammaticality (156c) suggests that transitive subject traces are not antecedent-governed in the irrealis mood. This difference in the behaviour of transitive and intransitive subjects is not expected in a theory where surface Case reflects underlying relations at the deepest level; such a theory would predict both types of subject to pattern together under movement, possibly in opposition to transitive objects. The data in (156) do not support this view.

<u>Exceptional movement</u>

    If indeed the ungrammaticality of extracting a transitive 'nominative' subject is due to the blocking effect of an absolutive NP, the same exceptions to the general ban on ergative subject extraction should be in evidence. This was already demonstrated in 3.3 using the appropriate examples, which are repeated here (from Chung, 1989:162):

(157) <u>Exceptional extraction</u> (irrealis)
    a. *Hayi na palao'an* ᵢ pära u-kattyi *gui'* ᵢ?
       who L woman Fut. S3s-write her
       'Which woman is going to write to herself?'   [Dir.obj.]

    b. *Hayi* ᵢ pära u-chiku [i pätgon-ña *pro* ᵢ]?
       who Fut. S3s-kiss the child-3s
       'Whoᵢ is going to kiss hisᵢ child?' (RCN)   [Specifier]

---

normal association of unaccusative arguments with AGR.s. This has obvious consequences for long extraction, but they will not be pursued here. Certain other problems arise when we consider the implications of Case-checking discussed in Chapter two. For example, irrealis subjects are supposedly checked for Case via L-movement to AGR.o, whereas unergative subjects adjoin to AGR.o. The question then is what happens to unergative subjects in the irrealis mood? At present, the answer to this question is not known.

131

c. *Hayi* ᵢ pära u-na'na' [i minagahit put *guiya* ᵢ]?
    who Fut. S3s-hide the truth   about him
    'Who is going to hide the truth about himself?'   [NP-compl.]

Presumably, extraction of a transitive subject in the irrealis mood could only improve if it was difficult to begin with – i.e. if it was checked for Case by AGR.o despite appearing in a nominative-accusative paradigm. These data thus confirm the view of split-ergativity taken here.

Passive Agent extraction

    The source of subject (irrealis) agreement in Chamorro is AGR.o, which projects a specifier position for NPs to occupy at LF. Moreover, in structures with a single argument (intransitives), there will be no adjunction site at AGR.s to interfere with proper government. It should thus be possible for an optional argument like a passive Agent to be questioned, etc. without violating Relativized Minimality. This is because an NP in the Spec. of AGR.o only counts as a potential antecedent for traces left by L-movement. On the other hand, intransitive subjects in the realis mood are checked for Case via adjunction, regardless of the source. We thus predict that wh-movement of a passive Agent will be ungrammatical in the realis mood. The following sentences confirm these expectations (from Chung, 1982:72):

(158) Passive agent extraction
    a. *Hayi in-aligao   i lepblu?
       who Pass.(R)-look.for the book
       'Who was the book looked for (by)?'   [Realis]

    b. Hayi pära u-in-aligao   i lepblu?
       who Fut. S3s-Pass.-look.for the book
       'Who is the book going to be looked for (by)?'   [Irrealis]

I assume that extraction of the passive Agent is ruled out in (158a) because antecedent-government of the Agent trace is blocked by the subject NP ('the book'), adjoined to AGR.s at LF. In (158b) extraction is permitted because the subject is in Spec. of AGR.o (an L-position), allowing the wh-phrase in COMP to antecedent-govern its trace. The structure of (158b) is given in (159) (heads remain *in situ* for ease of exposition). The structure (159) shows how a transitive object 'displaces' an Agent in the derivation of a passive, along the lines proposed by Larson (1988); at LF, the object moves to Spec. of AGR.o. Having been demoted, the passive Agent trace is not theta-governed by the verb, and must rely on the wh-phrase in COMP for proper government (cf. 3.1.4). Even so, the object NP in the Spec. of AGR.o does not block it.

(159) <u>Passive agent extraction</u> (irrealis)
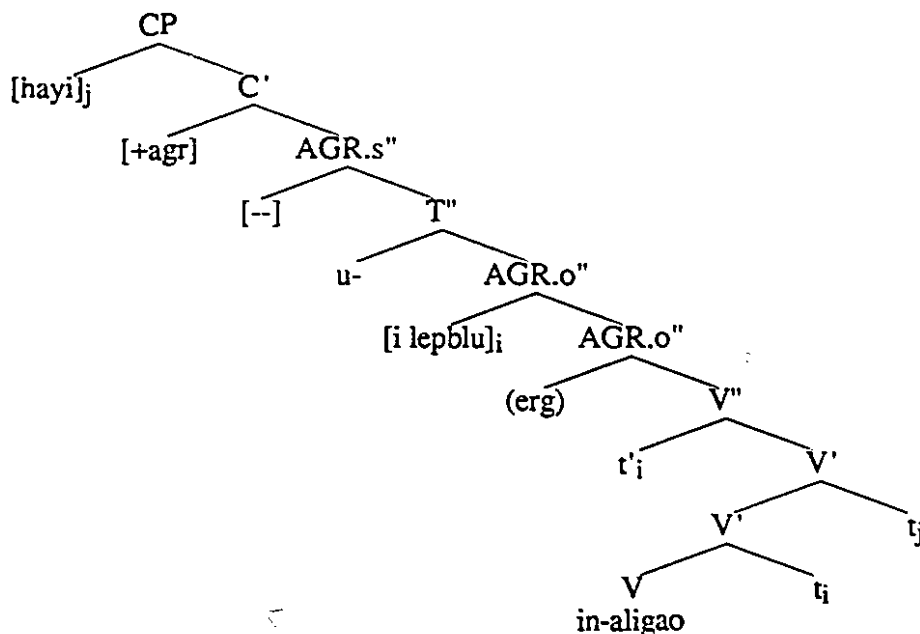
```
                    CP
           /              \
      [hayi]ⱼ              C'
                     /            \
                 [+agr]          AGR.s"
                           /            \
                        [--]            T"
                                  /            \
                                u-            AGR.o"
                                        /            \
                                 [i lepblu]ᵢ        AGR.o"
                                               /            \
                                            (erg)           V"
                                                       /          \
                                                    t'ᵢ           V'
                                                             /          \
                                                          V'            tⱼ
                                                       /      \
                                                     V        tᵢ
                                                  in-aligao
```

Hayi pära u-in-aligao   i lepblu?
who Fut. S3s-Pass.-look.for the book
'Who is the book going to be looked for (by)?' (=145b)

Irrealis agreement in Chamorro typifies non-canonical Case-marking in an otherwise ergative language: transitive and intransitive subjects are marked the same, just as they would be in an accusative language. As the evidence has shown, however, subjects do not pattern alike under extraction, and in fact the situation is identical to extraction in the realis mood. This leads us to conclude that irrealis subjects derive their Case from AGR.o, where they are checked by movement to a specifier position. In the next section, we show how the same principles of Case assignment determine the distribution of quantifiers in the context of non-canonical Case-assignment.

3.4.3 Quantification in Chamorro (Argument-type splits)

In section 3.2 we considered quantification in Chamorro, and gave evidence that it conformed to an ergative pattern of Case-marking. Nevertheless, the data there included examples of unaccusative intransitives only, i.e. where the single argument derives its Case from AGR.s. When unergative intransitives are considered, a different pattern emerges, reflected in the data below (from Chung, 1989):[67]

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[67] The generalizations here apply to verb-initial orders only. As with many other processes in Chamorro, a different paradigm obtains when the order is changed to SVO. In Chapter four I give an analysis of this construction, and reasons for the differences.

133

(160) <u>Quantification of unergatives</u>

    a. *Man-ä'ayuda *todu i famalao'an* pära uma-fa'tinas i sena.
       pl.-help   all the women Fut. S3p-make the dinner
       'All the women helped cook dinner'

    b. *Kumentus *käda palao'an* put   i chäta'an   na ha'ani.
       talk(sing.) each girl   about the weather L rain
       'Each girl talked about the rainy weather'

    c. *Kumati   *käda patgun*
       cry(sing.) each child
       'Each child cried'

(161) <u>Quantification of other relations</u>

    a. *Ti ya-nñiha *todu i medikus* i manbaba na nengkanu'.
       not like-3p all the doctors   the food L bad
       'All doctors dislike bad food'   [+TR.subj]

    b. änai ha-hunguk *todu i istoria-n i asagua-ña*
       when 3s-hear   all the story-L the wife-3s
       '... when he heard his wife's whole story'   [+TR.obj]

    c. Man-dangkulu yan man-lokka' *käda patgun*
       Pl.-big   and Pl.-tall   each child
       'Each child is big and tall' (=156b)   [Unacc.]

The unergative subjects in (160) pattern with transitive subjects (161a), and against transitive objects (161b) and unaccusative subjects (161c). As such, Agent quantification – for this is the shared argument in (160) and (161a) – has the appearance of being syntactically nominative-accusative, corresponding roughly to Case-marking: AGR.o is the source of Case for both kinds of subjects in the ungrammatical sentences. This is somewhat unexpected, given our previous arguments against a realignment of underlying relations in split-ergative situations. The data in (160) – (161) also contrast with the facts of wh-movement in the language, where both unergative and unaccusative subjects were shown to undergo extraction easily (cf. 3.1.1). In what follows I argue that a separate cause is responsible for the failure of unergative subjects to undergo QR in Chamorro. After factoring this out, the paradigm would be as expected: intransitive subjects patterning with transitive objects, and in opposition to transitive subjects. The syntactic accusativity of quantification in situations of non-canonical Case-marking is therefore only apparent, and underlyingly the grammatical relations are the same as they would be in canonical Case-marking contexts.

<u>Unergative quantification</u>

In 3.2 it was proposed that quantified NPs must c-command the Tense-operator. This means that unergative subjects are forced to undergo QR in order to bind a variable, since AGR.o (to which they are adjoined for Case) does not c-command the Tense morpheme. Suppose then that the structure underlying (160c) is as follows, after QR has applied (head-movement has been omitted):

(162) <u>Unergative quantification</u>


```
               AGR.s"
              /     \
 [käda patgun]ᵢ    AGR.s"
                  /      \
               [--]      T"
                        /   \
                     Tns.    AGR.o"
                           /       \
                        [t'ᵢ]      AGR.o"
                                  /       \
                                UM         V"
                                         /    \
                                       tᵢ      V'
                                                |
                                                V
                                               kati
```
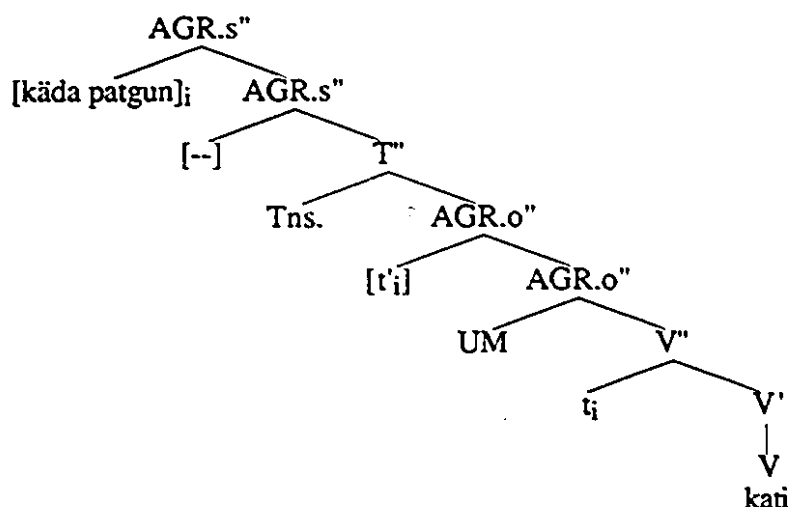
*Kumati *käda patgun*
cry(sing.) each child
'Each child cried' (160c)

As can be clearly seen in (162), nothing intervenes between the quantified NP in its scope position and the trace adjoined to AGR.o that would qualify as a closer antecedent-governor. What is not so clear is whether this trace is governed by a lexical head. In Rizzi's (1990) theory, the domain of head-government is restricted to the first immediate projection of the governor, i.e. the X-bar level. This means that while the lowest trace of the unergative subject can be head-governed by AGR.o (realized here as -*um-*), the same agreement morpheme cannot govern a trace adjoined to its maximal projection. Moreover, there is nothing higher in the tree which could serve as head-governor: Tense does not qualify, and AGR.s is inert.

I assume then that both unergative and transitive subjects violate the ECP when they undergo QR because there is a trace associated with AGR.o that is not governed by a lexical head. Transitive subjects leave their trace in Spec. of AGR.o, whereas unergative subject traces are adjoined to this category. In addition, however, transitive subject traces fail to satisfy the ECP in terms of antecedent-government, since the absolutive object

adjoined to AGR.s constitutes a closer governor. We then predict that an object which is or contains an anaphor referring to the subject will not 'save' transitive subject quantification. since although Circularity may intervene to allow antecedent-government, head-government is still lacking. The following sentences confirm this prediction (Sandy Chung, personal communication):

(163) <u>Non-exceptional QR</u> (transitive subjects)
    a. *Ha-lalatdi [*kāda pātgon*]$_i$ *gui'* $_i$
      R3s-scold   each child   him
      'Each child scolded himself'   [Dir.obj.]

    b. *Ha-laladti [*kāda lalahi*]$_i$ [i pätgon-ña *pro* $_i$]
      R3s-scold each man   the child-3s
      'Each man scolded his (own) child'   [Specifier]

    c. *Ha-hunguk [*kāda pātgon*]$_i$ [i istoria put *guiya* $_i$]
      R3s-hear   each child   the story about him
      'Each child heard the story about himself'   [NP-compl.]

In (163a), the direct object is an anaphor referring to the subject, while in (163b) the anaphor is a possessor, and in (163c) a noun complement. The fact that transitive subject quantification is ungrammatical thus supports the proposal that head-government is responsible for unergative quantification.

<u>Unergative wh-movement</u>

    The lack of head-government in the proposed structure (162) can account for ungrammatical quantification of unergative subjects, but not for grammatical wh-movement of these same NPs. As we saw in 3.1.1, subjects of all intransitives extract freely in Chamorro. In Rizzi's (1990) framework, however, structures underlying wh-movement are fundamentally different from those derived by QR in that they are specified for the feature [+agr] in the head of COMP. This can be seen in (164), which we take to be the wh-counterpart of (162).[68]

    As the structure (164) shows, the subject trace in Spec. of AGR.o is within the first immediate projection of [+agr], such that it can be head-governed; the result is that all traces in (164) satisfy the ECP. In English too, [+agr] is responsible for head-governing traces left by wh-movement (e.g. 'Who ate the apple?'). Just as in Chamorro though, raising of subject quantifiers is not permitted, for this would leave a trace in Spec. of AGR.s that could not be head-governed. The difference is that while subject QNP's in Chamorro are

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[68] According to Rizzi, the feature [+agr] may not be realized lexically in every language, but can act as a head-governor on a language-specific basis.

forced to raise in order to satisfy their scope requirement, subject QNP's in English (and transitives and unaccusatives in Chamorro) satisfy it by assuming their Case position in AGR.s (cf. also 3.2).

(164) Unergative wh-movement

```
                    C"
            ╱          ╲
      [hayi]ᵢ            C'
                    ╱        ╲
              [+agr]          AGR.s"
                         ╱        ╲
                      [--]          T"
                               ╱        ╲
                            Tns.          AGR.o"
                                     ╱        ╲
                                  [t'ᵢ]          AGR.o"
                                            ╱        ╲
                                         UM            V"
                                                  ╱        ╲
                                                tᵢ            V'
                                                              │
                                                              V
                                                             kati
```
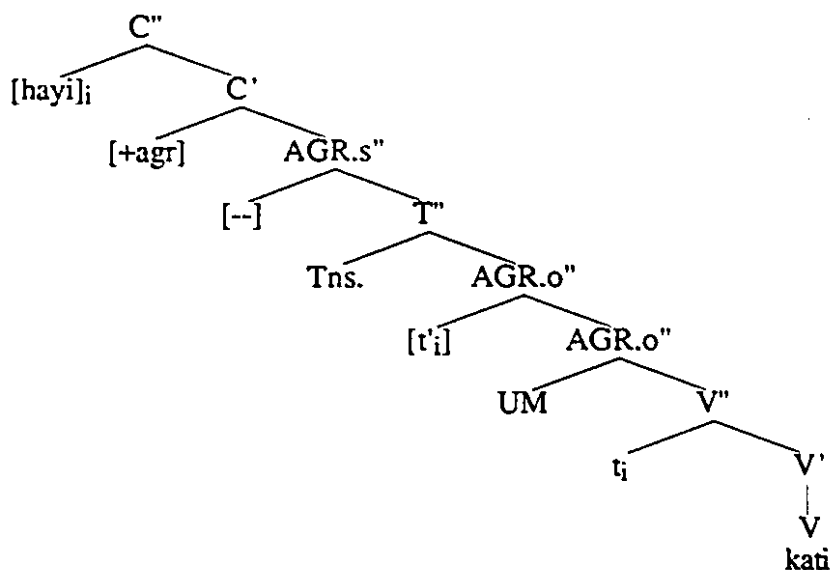
Hayi kumati?/'Who cried' (99)

The difference between wh-movement and QR of unergative subjects in Chamorro thus reduces to the presence vs. absence of the feature [+agr], a natural consequence in a theory that requires traces to be both head- and antecedent-governed. Asymmetries between QR and wh-movement have been noted in the literature before (Chomsky, 1991), so it is not surprising to find them in an ergative language. After head-government has been factored out, quantification in Chamorro takes on a syntactically ergative pattern, where transitive objects and intransitive subjects of both kinds satisfy antecedent-government (and in contrast to transitive subjects). The generalization is significant here in that it ranges over data that project a syntactically accusative pattern based on split-ergativity of the argument type.

Consequences and conclusion

In this section, we have spelled out a theory of split-ergativity which holds that at least some nominative-accusative patterns in otherwise ergative languages are due to exceptional Case-checking by AGR.o. Normally, Case is obligatorily checked by AGR.s, but in these special circumstances the requirement is suspended. The evidence for syntactic ergativity in the split situations is twofold: the continued ability of the transitive object to

137

pattern with the intransitive subject despite being marked differently, and the inability of the two subjects to pattern alike, despite being marked the same. The conclusion is that ergative splits do not necessarily reflect a change in structural relations.

The syntax of split-ergativity has been most recently addressed by Massam (1991). In her system (as in this one) ergative splits arise through the selectional requirements of morphemes such as tense or aspect. In a language like Chamorro, for example, the realis morpheme would select a VP containing an internal subject, while in the irrealis mood subjects would be generated in IP. In addition, nominative (= absolutive) Case is assigned obligatorily. While this system successfully accounts for the distribution of Case in an ergative language (including ergative splits), it implies that subjects in the irrealis mood will behave the same under extraction, and that transitive objects and intransitive subjects will no longer continue to do so. As we have seen, however, this doesn't happen in Chamorro (or in Dyirbal, etc.), so there must be something more to the syntax of split ergativity than just the distribution of Case.

Only a few examples of syntactic split-ergativity have been illustrated here – one example each involving NP-type (Dyirbal), mood (Chamorro), and argument-type (Chamorro). These are representative of the kinds of splits that can occur in ergative languages, but clearly much more research must be done before the AGR.o hypothesis can be accepted. Still, the predictions made by this hypothesis are clear: in a non-canonical Case-marking situation, the transitive subject is expected to behave no differently under extraction/quantification than in a canonically ergative one.

It should be noted that Mayan languages have been absent from the discussion of split-ergativity. This is not to say that there are no splits in these languages, or that if there are, they do not pattern as predicted by the AGR.o hypothesis. Usually, the evidence is simply unavailable. Thus while e.g. the durative aspect in Ixil exhibits a nominative-accusative Case-marking pattern, it is not known whether transitive subjects are any easier to extract or quantify than in the punctual aspect, where Case-marking reflects an ergative-absolutive pattern. In Jacaltec, on the other hand, first- and second-person ergative subjects can be clefted without a necessary change in verbal morphology. This represents a real challenge to the approach to ergativity taken here, but also suggests a type of split that is not addressed by the AGR.o hypothesis. These are questions that require futher research.

Finally, the view of split ergativity advocated here echoes Anderson's (1976) discussion of surface ergativity, where it was argued that surface Case patterns did not reflect underlying grammatical relations (cf. 1.2). For him (and for Bobaljik, 1992), an ergative-absolutive Case-marking pattern obscures an underlying S-structure in which

138

transitive and intransitive subjects have equal status. The main proposal of this thesis has been that LF-structures correlate with Case-marking in an ergative language. In a canonically non-ergative situation, however, Case-marking does indeed obscure grammatical relations at this level. In this sense then, ergative splits are truly marked constructions.

3.5 Alternate strategies

So far, we have seen how transitive subjects generally fail to undergo extraction or quantification without a change in verbal morphology. Here we examine some of the strategies involved that make movement of this NP possible. These will be of interest mainly insofar as they interact with the processes and structures that have been proposed for ergative languages. All of the languages under consideration have processes of passive and antipassivization. The immediate effect on underlying structure is to decrease the number of direct arguments by one, or the number of agreement morphemes that are necessary for Case-checking. In passive constructions Agents take on the status of optional arguments, whereas in antipassive structures Themes are realized optionally. The remaining direct argument – Theme in the passive construction, Agent in the antipassive – is marked with absolutive Case (except in non-canonical Case-marking situations). Extraction or quantification of an Agent thus amounts to moving an optional argument across the absolutive NP in the passive construction, or moving the absolutive itself in the antipassive. Chamorro has a special set of constructions known collectively as wh-agreement. Each of the strategies that enable Agents to be moved will be considered separately.

3.5.1 Passivization

Passive Agents are not expected to undergo wh-movement or QR in an ergative language, since the trace they leave in VP is not theta-governed, and an absolutive NP adjoined to AGR.s may block antecedent-government. As we saw in 3.4, however, passive Agents in Chamorro can be extracted if the subject is in Spec. of AGR.o, as required by the irrealis mood. The following data indicates that passive Agents can be extracted in Mam as well (data from England, 1983, 1983a):[69]

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[69] It is not known whether passive Agents can undergo QR in Chamorro irrealis clauses, but the expectation is they can; as before, the subject of the derived intransitive would be in Spec. of AGR.o, so that the passive Agent trace could be antecedent-governed. Subject (irrealis) agreement would provide the trace with a head-governor.

(165) <u>Passive agent extraction</u> (Mam)

    a. o   Ø-jaw patq'u-7n-Ø   xaq t-u7n Kyel
       past 3sA-dir turn.over-ds-Pass rock 3s-RN Miguel
       'The rock was turned over by Miguel'

    b. al u7n Ø-Ø-jaw   patq'u-7n-Ø   xaq?
       Q RN asp-3sA-dir turn.over-ds-Pass rock
       'By whom was the rock turned over?'

    c. al u7n xhi   kub' tzy-eet qa-cheej?
       Q RN dep-3pA dir grab-Pass pl-horse
       'By whom were the horses grabbed?'

The examples in (165b-c) are potentially damaging to the account of Case-checking proposed here, especially if the form of absolutive agreement is the same in both transitive and intransitive sentences. The same form would imply the same source and manner of Case-checking, and since transitive objects adjoin to AGR.s, so too would intransitive subjects. Then, unlike irrealis passive agent traces in Chamorro, traces left by movement in (165) would fail to satisfy antecedent-government.

    As we saw in 2.1.1, however, the absolutive agreement in (165b-c) is not the same as for transitive objects. Recall that Mam is specified for a set of enclitics (henceforth 'free' suffixes) which mark both transitive and intransitive subjects. In the ergative construction, the members of this set cross-reference the subject, along with the independent set of ergative agreement prefixes. The object in the ergative construction is cross-referenced by a single set of absolutive agreement morphemes. In intransitives, however, the members of the free set cross-reference the subject with the regular absolutive morphemes. Since the (absolutive) agreement paradigms are slightly different, we conclude that the manner of Case-checking is different for transitive objects and intransitive subjects. In intransitive sentences, the subject could derive its Case via movement to the Spec. of AGR.s, rather than adjunction (which is how transitive objects get their Case). Then passive Agents would be expected to undergo extraction grammatically, i.e. without violating the ECP. The claim then is that the passive Agent traces in (165) are properly governed by their antecedents. The structure underlying (165c) is shown in (166) (excluding head-movement). The absolutive subject NP is shown to be in Spec. of AGR.s, rather than adjoined to it. The 'free' suffix appears along with the absolutive agreement morpheme (phonologically modified when joined with aspect) in the head of AGR.s, much like it would appear with ergative agreement under AGR.o in transitive sentences. The assumption here is that a specifier position is projected whenever the free suffix appears, i.e. in AGR.s or AGR.o. The absolutive morpheme appears whenever Case is being

checked by AGR.s, through L- or L-bar movement. This explains how a passive Agent can be extracted in Mam without failing to meet the requirement of antecedent-government.

(166) Intransitive subject agreement/passive Agent extraction
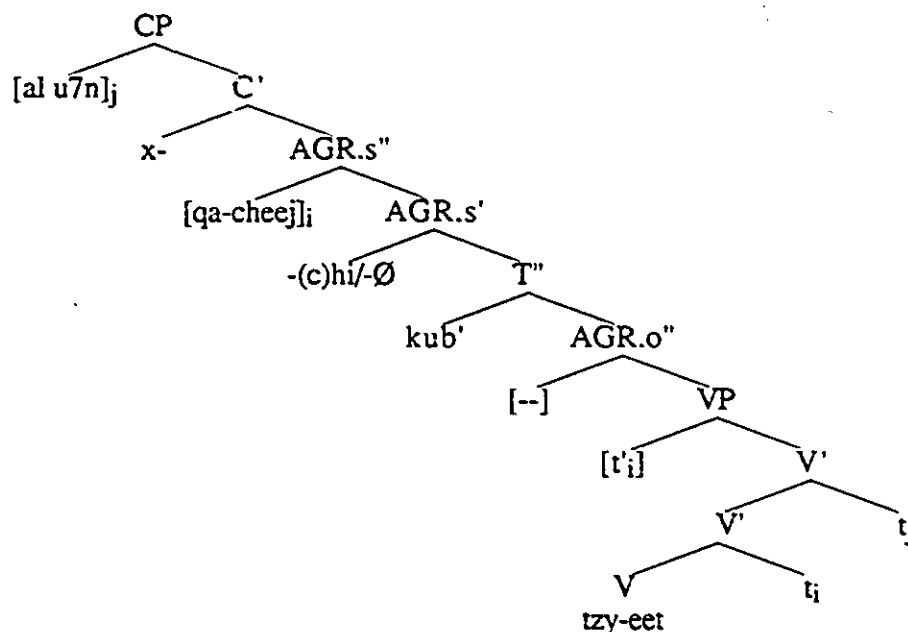

```
                    CP
        _____/\
   [al u7n]ⱼ        C'
              _____/\
             x-      AGR.s"
              _____/\
         [qa-cheej]ᵢ   AGR.s'
                  ____/\
             -(c)hí/-Ø    T"
                     ___/\
                  kub'    AGR.o"
                     ___/\
                  [--]    VP
                     ___/\
                   [t'ᵢ]   V'
                       ___/\
                      V'    tⱼ
                   __/\
                  V    tᵢ
               tzy-eet
```

al u7n xhi   kub' tzy-eet   qa-cheej?
Q RN   dep-3pA dir grab-Pass pl-horse
'By whom were the horses grabbed?' (165c)

3.5.2 Antipassivization

By far the most prevalent means of extracting or quantifying what would otherwise be a transitive subject is through antipassivization. This involves changing the status of an object (Theme) from direct to optional, and marking the Agent with absolutive Case. Antipassive constructions are therefore intransitive, so extraction or quantification of an Agent should be no different than for other intransitive subjects. The following shows extraction of antipassive subjects in Mam (England, 1983) and Tzutujil (Dayley, 1985):

(167) Antipassive subject movement (Mam)
    a. ma chi tzaj t-q'o-7n   Mal   kab' xkoo7ya w-ee-ky'
       rec 3pA dir 3sE-give-ds María two tomato   1s-RN-1s
       'María gave me some tomatoes'   [Basic]

    b. Mal   Ø-Ø-saj   q'oo-n   t-e   xkoo7ya w-ee-ky'
       María asp-3sA-dir give-AP 3s-RN tomato   1s-RN-1s
       'María gave me some tomatoes'   [Focus]

141

(168) <u>Antipassive subject movement</u> (Tzutujil)

    a. Atet xatjech'eb'a7-ni ja chakach
       you twisted-AP   the basket
       'You were the one who twisted the basket up'   [Cleft]

    b. Qas jab'el jar iixoq   ja x-ch'anab'a7-ni ja r-aal.
       very pretty   the woman that o-undressed-AP the 3s-child
       'The woman who undressed her child is very pretty'   [Relative]

    c. Naq x-b'ak'ab'a7-ni   ja sii7?
       who 3sA-tie.up-AP   the firewood
       'Who ties up the firewood?'   [Question]

In the structures underlying (167) – (168), the Case-checked trace of wh-movement would either be adjoined to AGR.s or in its specifier position, depending on the availability of free suffixes. In either case, it would be head-governed by [+agr] and antecedent-governed from COMP. The structure underlying (168c) would therefore be as follows:

(169) <u>Antipassive structure</u>
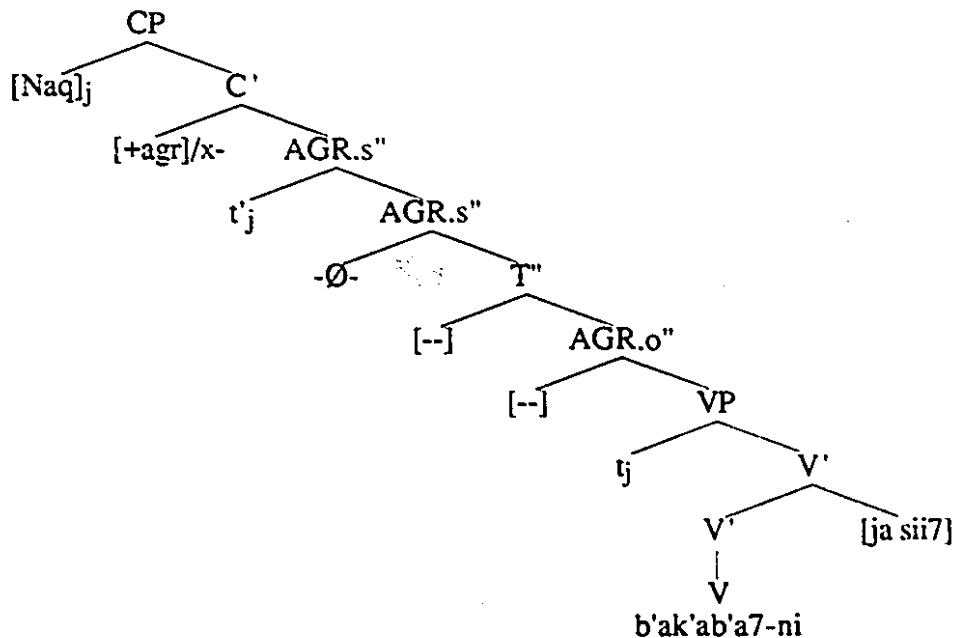
Naq x-b'ak'ab'a7-ni   ja sii7?
who 3sA-tie.up-AP   the firewood
'Who ties up the firewood?' (168c)

The subject (Agent) is checked for Case by adjoining to AGR.s (it is not clear if Tzutujil employs free suffixes). Aspect resides in COMP, which is compatible with the feature [+agr]. The antipassive object (Theme) is generated as a V-bar adjunct, in accordance with its status as an optional argument. These assumptions account for the grammaticality of

antipassive subject movement in Tzutujil. In principle, Chamorro also permits extraction of the Agent from an antipassive construction, but this is not the preferred strategy; this will be discussed in 3.5.3.

Quantification

Quantification of antipassive subjects is expected to be grammatical in an ergative language, so long as they are not checked for Case by AGR.o: quantifiers associated with this category would have to undergo further movement to reach a legitimate scope position, and would leave behind a trace that couldn't be head-governed. In 3.4.3 we saw examples of this in Chamorro. If quantification takes place through wh-movement, on the other hand, the feature [+agr] can function as a head-governor. This was argued to be the means by which the quantifier 7ep in Tzotzil appeared in clause-initial position (3.2.3). The expectation then is that antipassive subjects quantified by 7ep will be grammatical. The following sentences appear to confirm this prediction (from Aissen, 1984):

(170) Antipassive subject quantification (Tzotzil)
    a. 7ep $_i$ ta x-k'-el-van [e $_i$ krixchano] ta ch'ivit
        many icp-look-AP   people   in market
        'Many people are watching (someone) in the market'

    b. 7ep $_i$ ch-mil-van-il [li e $_i$ viniketike]
        many icp-kill-AP-pl the men
        'Many men kill (people)'

In (170), 7ep moves from the specifier position of the subject NP to the Spec. of CP. At LF, the subject NP will adjoin to AGR.s, where the quantifier-trace embedded in it can be head-governed by [+agr]; antecedent-government is from the quantifier itself. Quantifier-movement from antipassive subjects in Tzotzil is thus grammatical. Quantifier-raising of whole NPs containing 7ep should also be well-formed, provided AGR.s is responsible for checking them; this is because AGR.s c-commands the Tense node, such that raising beyond this point becomes unnecessary. At present, it is not known whether this prediction is correct.

In Chamorro, antipassive subjects cannot undergo quantification in the realis mood, indicating that they are checked for Case by AGR.o (like unergative subjects). An example of ungrammatical quantification is given here (from Chung, 1989):

(171) Antipassive subject QR (Chamorro)
    *Man-aitai *käda pargun* lepblu
    AP-read each child book
    'Each child read a book'

In the structure underlying (171), the subject would first adjoin to AGR.o, and then move on to AGR.s for scope. The trace adjoined to AGR.o would fail to be head-governed, however, leading to a violation of the ECP (cf. 3.4.3). Evidence that the antipassive morpheme *man-* (not to be confused with the plural morpheme *man-*) is associated with AGR.o can be adduced from the fact that the irrealis morpheme *u-* precedes it, as shown in the following sentence (adapted from Gibson, 1990):

(172) <u>Mood/antipassive morpheme order</u>
      U-mam-a'gasi i lalahi ni kareta.
      S3s-AP-wash the male Obl. car
      'The boy will wash the car'

Antipassives in Chamorro therefore represent a pattern of non-canonical Case-marking, one in which AGR.o is responsible for checking Case instead of AGR.s. Nevertheless, this type of ergative split is entirely consistent with the type of argument that is involved, since antipassive subjects are invariably agentive, like unergatives. In the irrealis counterpart of (171), the antipassive subject would move to Spec. of AGR.o (to satisfy the lexical requirements of irrealis mood), followed by adjunction to AGR.s for scope. As in (171), however, quantification is expected to be ungrammatical due to lack of head-government; no examples are available to confirm this.

The inability of transitive subjects to undergo wh-movement or QR forces ergative languages to adopt different strategies for affecting Agents. Here we have examined the most common of these strategies, the antipassivize. In this process, transitive objects (Themes) are generated as optional arguments that receive oblique Case, enabling Agents to become associated with AGR.s, the source of absolutive Case. Having achieved this, Agents may then be moved or quantified without violating the ECP. In non-ergative Case-marking situations, intransitive subjects are associated with AGR.o, instead of AGR.s. While such antipassive subjects may be moved, they cannot be quantified, due to the absence of a [+agr] head-governor in these structures. For languages like Chamorro then, the antipassive strategy is no escape for quantification. Still, this doesn't mean that Agents can't be quantified. The strategy for achieving this will be the topic of the next section.[70]

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[70] In Chamorro and the Mayan languages, extraction of the antipassive object (Theme) is also ungrammatical. While this may in part be due to the lack of antecedent-government (along with realis passive Agents in Chamorro), such a view cannot explain unattested movement in irrealis clauses, or in sentences where intransitive subjects are checked for Case via L-movement (e.g. Mam). I suspect this has something to do with head-government, but will leave the matter open for the time being.

3.5.3 Wh-agreement (Chamorro)

In Chamorro realis clauses, transitive subjects can be extracted or quantified when the verb is infixed with the morpheme -um-. This is part of the paradigm of so-called wh-agreement in the language (Chung, 1982; Chung & Georgopoulos, 1988). The relevant examples are given here:

(173) Wh-agreement (extraction)
        a. Ha-fa'gasi si Juan   i kareta.
           R3s-wash PN J.   the car
           'Juan washed the car'   [Basic]

        b. *Hayi ha-fa'gasi   i kareta?
           who R3s-wash   the car
           'Who washed the car?'   [-wh.agr.]

        c. Hayi fuma'gasi i kareta?
           who wash(UM) the car
           'Who washed the car?'   [+wh.agr.]

(174) Wh-agreement (quantification)
        a. *Todu i dos* um-aluk na   bunitu   esti na na'an i Juan.
           all the two UM-said that beautiful this L name PN J.
           'All the two of them said this name Juan was beautiful'

        b. *Käda ma'estra gi iskuela* mu-rekuknisa si Maria.
           each teacher Loc. school UM-recognise PN M.
           'It was each teacher at school who recognized Maria'

We may suppose that the morpheme -um- in (173) – (174) has the same properties as it does in infinitives and in unergative (singular) constructions. If so, it is generated in AGR.o, and does not project a specifier position. For the transitive subject to be checked for Case, it could adjoin to AGR.o (like subjects of unergatives) before moving to a higher position. This gives rise to several problems, however; first, a trace adjoined to AGR.o would constitute a closer potential-antecedent for the lower object trace (assuming this still moves to AGR.s), and second, the object adjoined to AGR.s would block antecedent-government of the subject trace, as in (173b).

In 2.4.3 it was suggested that objects of infinitives adjoined to AGR.o, while the PRO-subject moved to the specifier of the Tense phrase. When the clause is non-finite, the verb cannot raise to Tense, nor to the higher AGR.s position (this was seen as necessary so that the PRO-subject could remain ungoverned). The structure of (83a) – a sentence which contains an embedded infinitival clause – is repeated here for convenience (verb-movement is not shown):

(175) Structure of infinitives (Chamorro)
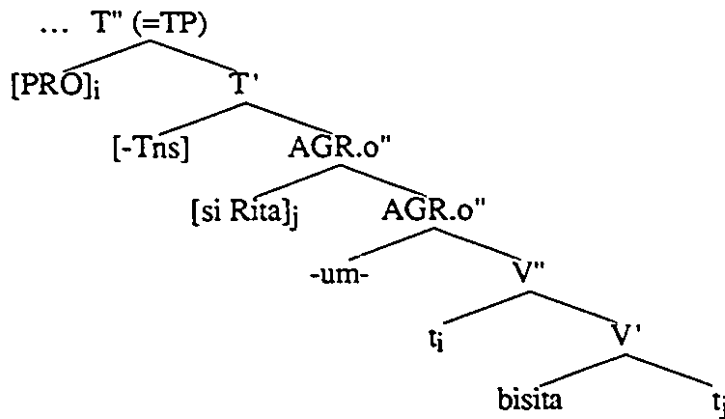
Malägu' gui' [PRO bumisita si Rita]
want   he   visit-UM PN Rita
'He wants to visit Rita' (83a)

When a clause is [+Tns], however, the verb may transit via head movement all the way to AGR.s, and NPs marked with absolutive Case can be checked. This is shown in (176), the proposed structure of the Chamorro sentence (173c):

(176) Wh-agreement structure (UM)
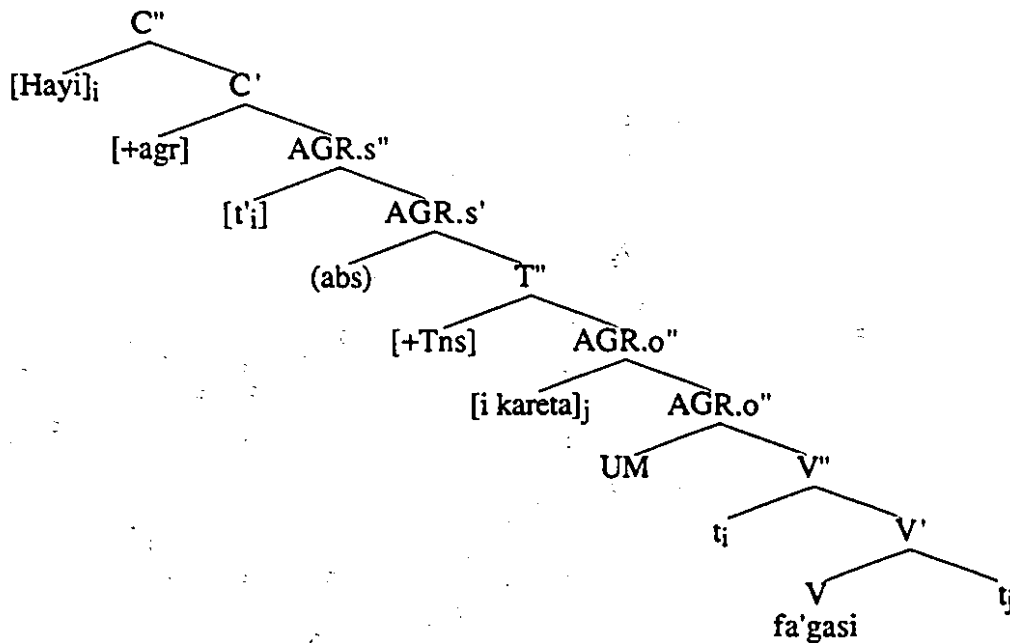
Hayi fuma'gasi i kareta?
who wash(UM) the car
'Who washed the car?' (=173c)

The wh-phrase *hayi* ('who') has moved directly from the Spec. of VP to the Spec. of AGR.s and on to COMP. Crucially, the first link in this chain is formed by L-movement, so that the object adjoined to AGR.o doesn't block antecedent-government. The structure shown in (176) represents a true reversal of grammatical relations, since the subject (Agent) is checked for Case by AGR.s, the object (Theme) by AGR.o. At the same time, the proposed structure of wh-agreement in (176) is consistent with the properties of the infix -*um*- in both infinitive and unergative (singular) constructions, in keeping with the goal of 'one form, one meaning'.

Summary

In this section (3.5), we have examined various strategies that ergative languages use in order to extract or quantify what would otherwise be the subject of a transitive clause. Of these, the antipassive strategy is used most often, since it circumvents the blocking effect of absolutive NPs altogether. Passivization represents a slightly different strategy, in which Agents are first rendered as optional arguments and then moved. Passives generally highlight the object, however, making this a more complex affair. Only in Chamorro irrealis clauses is passivization the main strategy for questioning the Agent, owing mainly to the fact that there is no wh-agreement in this paradigm. In the Chamorro realis mood, a reversal of argument-agreement association obtains, so that extraction of a transitive subject does not cross an absolutive NP. This was shown to be part of a unified phenomenon involving the morpheme -*um*-.

Conclusion, Chapter three

In this chapter, we have explored the consequences of LF-movement of the absolutive NP to AGR.s for Case-checking. In the ergative construction, the absolutive NP adjoins to AGR.s, blocking antecedent-government of other L-bar traces. The prediction was that transitive subjects and other (non-absolutive) elements could not undergo L-bar movement on their own, as this would ultimately violate the ECP. For the most part, this prediction turned out to be correct. At the same time, absolutive NPs were expected to undergo L-bar movement easily, and the data bore this out as well. Adjuncts, on the other hand, did not appear to be affected by the presence of an absolutive NP. A major class of exceptions to ungrammatical transitive subject movement was noted, but these were very systematic, and actually supported the proposal that objects were subjacent to a moved wh-phrase or raised quantifier at LF. The exceptional cases all involved an object NP which was or contained a co-referring anaphor, and this obviated the blocking effect on antecedent-government. The association of transitive objects with AGR.s was

shown to hold in contexts which displayed a non-canonical Case-marking pattern for an otherwise ergative language. Only here did surface Case-marking obscure underlying grammatical relations, which were elsewhere shown to correspond to LF-structure. Finally, some of the strategies that ergative languages employ to extract or quantify Agents were examined. Significantly, each strategy represented an alternative to the underlying structure proposed for transitive sentences, and in this respect supported the approach to ergativity taken here.

The major contribution of the absolutive Case hypothesis is that it accounts in a principled way for the general inability of transitive subjects to undergo syntactic (LF) processes in an ergative language. While many authors have taken note of this fact, none has offered an explanation of it in a Government & Binding framework. Among the Mayanists, there is a tendency to attribute obligatory antipassivization (i.e. for extraction) to a necessary disambiguation of direct arguments in transitive sentences (Craig, 1977; England, 1983). On this view, it is the poverty of agreement that leads to a potentially ambiguous situation: third-persons in particular are often the least-marked. Still, when ambiguity can be reduced by other (e.g. pragmatic) means, the facts do not change. More importantly, the 'ambiguity approach' does not extend to languages with different morphological systems. In Chamorro, for example, only one direct argument (the subject) can ever be cross-referenced on the verb, so there is little doubt as to which one is being questioned, etc. Berinstein (1985) has proposed an account of ungrammatical transitive extraction in K'ekchi (Mayan), using a Relational Grammar approach.

The treatment of subject movement has not been consistent in the literature on ergativity. Smith (1984) addresses the question of whether transitive subjects can't be relativized in Labrador Inuktitut. Although he concludes they can, his examples show that antipassivization has occurred. In contrast, Johns (1992) assumes that NPs marked with relative (=ergative) Case are systematically fronted in the derivation of Eskimo transitive constructions, but does not pursue the syntactic consequences of this move The only consistent treatment of transitive subject movement has come from researchers who treat NPs marked with absolutive Case as nominative, i.e. where it can be claimed that only 'subjects' (a class excluding ergatives) undergo processes like relativization, etc. Keenan & Comrie (1977) take this approach, but the appropriate conception of ergativity was never made explicit. Dixon's (1972) work on Dyribal follows in this vein, but no formal means were proposed to rule out ungrammatical involvement of transitive subjects in unmarked situations. In this respect, the present theory hopes to shed some light.

CHAPTER FOUR

Object pronoun binding

4.0 Introduction

In Chapter two, it was proposed that the local relationship between direct arguments and agreement morphemes was established at LF, either through L- or L-bar movement. The assumption has always been, however, that these relationships are not local at S-structure, where NPs marked with ergative or absolutive Case remain in their base-positions. In this chapter, we examine evidence that bears on this claim.

To some extent, the relationship between an Agent in Spec. of VP and agreement in AGR.o is a trivial one, since nothing significant intervenes between them (possibly only adverbs adjoined to VP). The relationship between a transitive object (e.g. Patient) and absolutive agreement is more interesting, however, since both AGR.o and the Agent intervene. The strategy here is thus to find some process involving AGR.s and an absolutive NP that is affected by the presence of an Agent NP. This would then corroborate the long-distance nature of the absolutive relationship.

Huang (1984) has proposed a version of Control Theory which I refer to as Identification. In this theory, empty pronominal categories must be formally identified, a process that occurs at S-structure. Crucially, both NPs and agreement morphemes qualify as identifiers. Given just this much, it is easy to see how an Agent (in Spec. of VP) might 'misidentify' an empty pronoun object, if it turns out to be closer to the object than the morpheme needed to identify it, namely AGR.s. The prediction then is that empty object pronouns will not be tolerated in an ergative language, in contrast to empty subject pronouns. The following Mam sentences represent the type of example we are interested in (from England, 1983a):

(177) Empty pronoun NPs (Mam)
    a. ma Ø-tzaj t-tzyu-7n   xiinaq   [+TR]
       asp 3sA-dir 3sE-grab-ds man
       '(She) grabbed the man'
       Not: 'The man grabbed (her)'

    b. ma tz-uul
       asp 3sA-arrive
       '(He) arrived'   [-TR]

Only empty subject pronouns are allowed in Mam, never objects. This, we claim, is a consequence of identification principles operating on an ergative structure.

Chapter four is organized as follows: first, Huang's (1984) generalized theory of control is presented as a means of accounting for the distribution of empty pronouns in various contexts (4.1). We also adopt a proposal of Speas' (1990) restricting potential identifiers to lexical NPs and rich agreement. The modified theory of identification is then applied to languages that employ both agreement morphemes for Case-checking. These include ergative languages, and some 'accusative' ones (4.2). Section 4.3 examines the distribution of pronouns in Chamorro, including those that appear to be lexical. In 4.4 we extend the analysis of Chamorro to subject-initial word orders, where conditions governing the distribution of object pronouns are altered. Chapter four concludes with a study of the Chamorro morpheme *ma-*, which interacts with many of the processes that operate in the language (4.5). This is followed by a conclusion to the thesis.

4.1 Identification Theory

In this section, I spell out the general framework within which the analysis of empty pronouns in ergative languages takes place. This draws on the important work of Huang (1984), whose theory of control predicts the distribution of empty pronouns in general. In (4.1.1) we review Huang's theory, and in (4.1.2) adopt a parameterized version of it proposed by Speas (1990).

4.1.1 Generalized Control Theory

According to Huang (1984), the distribution of empty categories is determined by their ability to be identified. As we saw in (2.2.1), one of the ways this can be done is through the presence of agreement features, provided these are rich enough. While imprecise, this notion usually refers to the complexity of person-number distinctions in a given paradigm (Jaeggli & Safir, 1984). In Spanish, for example, an empty pronoun is licit in the subject position of a tensed clause because subject agreement (AGR.s) is sufficiently rich. English, on the other hand, does not allow null pronouns to appear in this position, as agreement is 'too meager'. Some examples are given here (from Huang, 1984):

(178) <u>Null subjects</u> (Spanish, English)
      a. José sabe que [IP *e* ha sido visto por María]
      b. *John knows that [IP *e* has been seen by Mary]

In these examples, the empty subject position (symbolized by *e*) is assumed to be a *pro* instead of PRO, because it is governed by agreement.

Not all languages conform to the pattern shown in (178). In Chinese, for example, an empty category appears in the subject position of a tensed clause, even though there is no agreement to identify it (ibid:533):

(179) Null subjects (Chinese)
　　　[IP *e* kanjian ta　le]
　　　　　　see　　him asp
　　　'(He) saw him'

In (179), *le* represents an aspect marker, presumably located under Infl. Nevertheless, it is not specified for any person-number features relating to the subject, so a pronoun could not be identified by this morpheme. Huang reasons that the empty subject position in (179) is occupied by a variable instead, bound by an empty NP that has been topicalized. This remains an option insofar as L-bar movement is licit, and of course the empty topic can be identified. The latter condition is linked to principles of discourse, and need not concern us here.[71]

Object agreement

Agreement also plays a role in identifying empty categories in non-subject positions. Languages with rich object agreement should be able to identify empty object pronouns, for example. Without object agreement, however, an object pronoun might be 'misidentified' by subject agreement (or the subject), resulting in its being bound. The following illustrates the situation in English:

(180) Object pronoun binding (English)
　　　[IP John$_i$ [I' AGR$_i$ [VP see *pro* $_i$]]]
　　　*'John saw'

The distribution of null pronouns is thus assumed to be determined by the interplay of two independent principles, given below:

(181) Generalized Control Rule (GCR)
　　　Co-index an empty pronominal with the closest nominal element (NP or Agr)

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[71] Identification of empty topics is a property of 'discourse-oriented' languages like Chinese, which are characterized by discourse-bound anaphora and topic chains. I assume that this parameter is independent of ergativity, so that some ergative languages (e.g. Dyirbal) could be considered as discourse-oriented, others not. For discussion of discourse in Mam, cf. England (1991); for Chamorro, Chung (1984).

(182) <u>Disjoint Reference Rule</u> (DJR)
    A pronoun must be free in its governing category

The GCR represents a formal means of recovering the contents of an empty category. In addition, it applies at S-structure. The DJR, on the other hand, is none other than Principle B of the Binding Theory. Since null pronouns must be identified – but cannot be locally bound – they will usually only surface in subject position. This becomes clear in the discussion to follow.

<u>Identification by NPs</u>

In both English and Spanish, the subject position of an infinitival clause may be occupied by the empty category PRO, even though this kind of clause lacks subject agreement altogether. In 2.4 it was suggested that PRO-subjects moved to Spec. of TP at S-structure in order to remain ungoverned. Under these conditions, a c-commanding NP in a higher clause can identify it, as in the sentence 'John persuaded Bill to come'. A partial S-structure of this sentence is shown here:[72]

(183) <u>Control</u> (English)
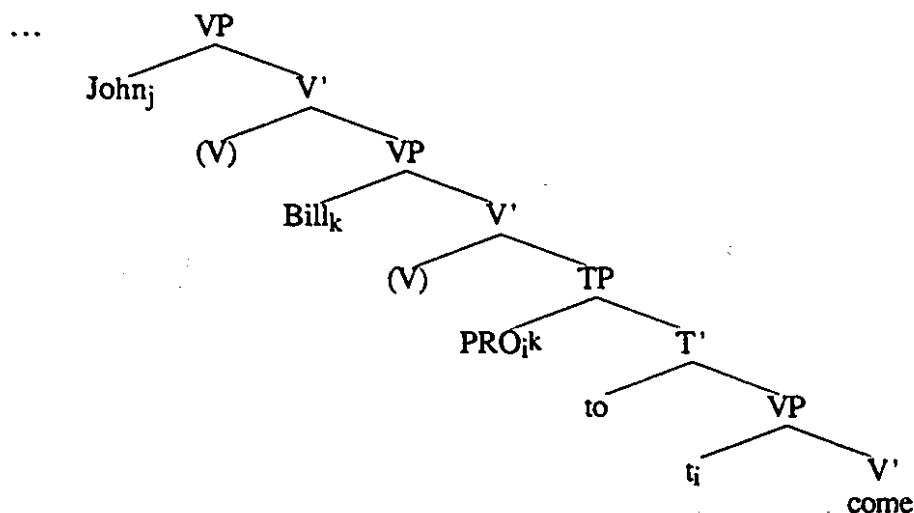
(183) illustrates the kind of structure proposed by Larson (1988) for verbs with more than two direct arguments (cf. 1.3). In it, two NPs can be seen to c-command the embedded PRO subject, but only one of them (*Bill*) identifies it. This can be explained by assuming that there is a 'closeness' condition on the GCR which takes into account the asymmetrical

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[72] Subject agreement in the matrix clause is not shown in (183), but it also c-commands the embedded empty subject: it too must therefore be regarded as a potential identifer of PRO.

relationship between arguments in a verbal projection. The following definitions are adapted from Huang (pp. 552-3):

(184) <u>Closest nominal elements</u>
        A is closer to B than C if A c-commands B but C does not, or
        (where both A and C c-command B)
        -A but not C occurs within the same clause as B, or
        -A is separated from B by fewer clause boundaries than C
            (where clause=VP, or any maximal projection of Infl)

The only difference between Huang's definitions and those in (184) is the notion of what constitutes a clause. Speas (1990) regards VP as a kind of 'lexical clause', a concept which we incorporate here. In addition, maximal projections of Tense and agreement are assumed to be clausal; this becomes relevant in 4.1.2 below. According to these definitions then, *Bill* is closer to PRO than *John* is in (183) by virtue of the fact that fewer clausal boundaries separate this NP from the lower subject.[73]

The definitions of 'closest' in (184) apply to agreement morphemes as well as to full NPs. As is standardly assumed, however, c-command is understood as m-command in the case of heads, such that agreement will be able to identify an empty category in its own specifier position (provided it is rich enough). In Chapter two we proposed that the specifiers of agreement projections could be filled by empty pleonastic pronouns at S-structure. These must also be identified by agreement in order to satisify the GCR. In the discussion to follow, we will be mainly concerned with empty pronouns that occur in argument positions at S-structure.

4.1.2 The parameterization of identifiers (Speas, 1990)

Before showing how identification works in ergative languages, let us first consider how it has been applied to Navajo by Speas (1990). There are two sets of data that Speas attempts to account for: the distribution of null pronouns in basic transitive sentences, and the possibilities for co-reference between matrix and relative clauses. As Speas herself points out, the latter set is not governed by principles of identification, hence need not concern us here. The distribution of null pronouns, on the other hand, can be accounted for in Huang's general framework. This will provide the basis for the analysis of ergative languages to follow.

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[73] The situation with verbs like *promise* is less than clear: e.g. 'John$_i$ promised Bill$_j$ [PRO$_{i/*j}$ to come]'. Larson (1991) suggests that *promise* undergoes the rule of dative shift, in which case the GCR would have to apply at D-structure. Nothing in our account of underlying ergativity turns on this, however.

Drawing on data originally compiled by Platero (1974, 1978, 1982). Speas notes that in transitive sentences with two third-person arguments, both NPs can be lexical, or both can be null. Subject NPs (Agents) can be empty when object NPs (Patients) are lexical, but an object NP cannot be empty when the subject is lexical. These facts are shown below (from Speas, 1990:340):

(185) Identification YI (Navajo)
    a. ashkii at'eed yi-yiiltsa
       boy   girl   YI-see(3s)
       'The boy saw the girl'   [Lex.subj/lex.obj]

    b. yi-yiiltsa.
       YI-see(3s)
       'He saw her'   [pro.subj/pro.obj]

    c. ashkii yi-yiiltsa
       boy   YI-see(3s)
       'He saw the boy'   [pro.subj/lex.obj]

       *'The boy saw her'   [Lex.subj/pro.obj]

The morpheme that marks both objects and subjects as third-person in this language is the portmanteau form *yi-*. Navajo has another such form *bi-*, the function of which is to highlight the object; this is used to express the unattested reading in (185c). Sentences involving *bi-* will be discussed below.[74]

In Speas' framework, a lexical clause contains all of the arguments of a verb at D-structure, making it equivalent to VP. Infl, on the other hand, is not contained within the lexical clause. This means that when Huang's theory is applied to structures underlying unmarked (*yi-*) sentences, the subject (Agent) is always closer to the object (Patient) than the agreement morpheme. The following represents this situation:

(186) Yi-sentences (Empty subject)
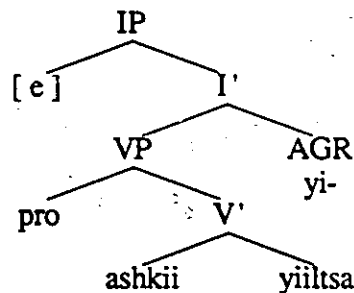
e.g. ashkii yi-yiiltsa/'He saw the boy' (=185c)

---

[74] Third person readings such as 'It saw him' for (185b), and 'It saw the boy' for (185c) are ruled out independently by a semantic hierarchy; cf. Hale (1973).

(186) shows a lexical clause embedded under *yi-*, which in turn projects a specifier position with a pleonastic pronoun (symbolized by *e*). The Spec. of VP position contains an empty (argumental) pronoun, and the object position a lexical NP.

Speas' account of this example is roughly as follows: first, the object is lexical, so the GCR does not apply to it. The null pronoun in Spec. of VP must be identified, however. Infl is specified for agreement, which apparently is rich enough to identify the subject; recall that *yi-* is a portmanteau form, capable of identifying two arguments.

Consider next the kind of structure that would correspond to the unattested reading of (185c) – where the subject is a lexical NP and the object is a null pronoun:

(187) Yi-sentences (Empty object)
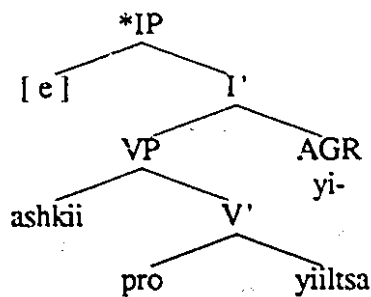
e.g. ashkii yi-yiiltsa/*'The boy saw him' (=185c)

Here the subject NP is the nominal element closest to the empty object pronoun. The subject is thus the identifier of the pronoun, and the two will be co-indexed. As a result, the pronoun is bound, in violation of the DJR: the interpretation is disallowed.

Finally, consider the kind of structure that would correspond to (185b), a grammatical sentence with two null pronouns. Again, the nominal element closest to the empty object would be the subject in Spec. of VP. On a strict interpretation of Huang's principles then, (185b) should not be allowed to surface since it violates the DJR. In order to prevent the object from being bound by the null subject, Speas proposes that the GCR is parameterized such that in some languages empty NPs do not themselves count as potential identifiers. Navajo being such a language, identification depends on a lexically-specified referent. The identifier of the object pronoun in (185b) is therefore not the subject (Agent) in Spec. of VP, but the agreement morpheme under Infl. (Note that if there were two agreement morphemes under Infl, neither one of them would be closer to an empty pronoun than the other: potentially then, the empty pronouns in sentences like (185b) are ambiguous.)

To summarize, Speas makes use of Huang's theory of control to account for the distribution of null pronouns in Navajo transitive sentences with the third-person marker *yi*. As a morpheme that appears only when both NPs are third-person, it is not clear whether AGR.s and AGR.o are present in underlying structure. I will assume that they are, however, and that each is capable of identifying a null pronoun. This will prove important in analyzing sentences with *bi-*, another third-person agreement morpheme.

bi-constructions

The morpheme *bi-* alternates with *yi-* in Navajo much like passive morphology alternates with active in languages like English. Like *yi-*, *bi-* is considered as a portmanteau form, marking both subjects (Agent) and objects (Patient) as third person (unlike *yi*-stems, however, those to which the affix *bi-* attaches are phonologically reduced, suggesting a passive-like argument structure). While sentences with *yi-* follow the standard SOV word order, those with *bi-* are OSV. Null pronouns and lexical NPs have the following distribution in transitive sentences with this morpheme (from Speas, 1990:341):

(188) <u>Identification BI</u> (Navajo)
      a. ashkii at'eed bi-iltsa
          boy   girl   BI-see
          'The boy, the girl saw'   [Lex.subj/lex.obj]

      b. bi-iltsa
          BI-see
          'Him, she saw'   [Pro.subj/pro.obj]

      c. at'eed bi-iltsa
          girl   BI-see
          'Him, the girl saw'   [Lex.subj/pro.obj]

          *The girl, he saw   [Pro.subj/lex.obj]

(188a) shows that two lexical NPs can occur in a *bi*-sentence, so long as the order is OSV; in (188b) both arguments are null. As with *yi*-sentence (185c), (188c) has two potential readings, only one of which actually surfaces: with *bi-*, however, the fronted object must be null, and not the subject. In this sense, (188c) is the opposite of (185c).

Speas' analysis of *bi*-constructions capitalizes on the fact that the object appears to the left of the subject in sentences where both are visible (188a). According to her, the objects in these sentences have been fronted by a rule of topicalization. Consequently, there is no empty pronoun in object position that has to be identified, but instead a trace to which the GCR does not apply. Still, even topicalized empty pronouns need to be

identified. Following Huang's arguments, the empty fronted topic in *bi*-constructions could be identified by some NP in the discourse, or else by the morpheme *bi*- itself. Let us assume that *bi*- identifies the empty topic in (188b-c), along with the empty pronoun subject in (188b). Still, in order to explain the missing interpretation of (188c) the topicalized lexical NP must be closer to the empty subject (Agent) than subject agreement.

As Huang states, " ... control theory refers to the closest potential binders that may be in A- or A-bar position" (p. 568). This means that lexical NP topics are capable of binding a pronoun that is in the Spec. of VP, potentially resulting in a violation of the DJR. We could assume then, that the topic moves to Spec. of IP in (186), and that binding is possible between a topicalized NP there and an empty pronoun in the Spec. of VP. Still, Speas' analysis of the data in (188) is inconsistent with the mechanisms of identification, given a structure like the one in (186): if the null subject can be identified by agreement in (188b), agreement should be able to identify it in (188c) as well, rather than the topicalized object. On Speas' own account then, (188c) is predicted to have two grammatical readings instead of one (it doesn't). This problem can be resolved by assuming an underlying structure in which the topicalized object is closer to the empty subject than the verbal complex, as in the following S-structure representation:

(189) <u>Identification by AGR.s & AGR.o</u>

```
              AGR.s"
            /       \
        [ e ]      AGR.s"
                  /       \
                T"       [bi-iltsa]_V
              /    \
          AGR.o"    t_V
         /      \
     at'eed_j   AGR.o"
              /       \
            V"          t_V
          /    \
       pro*_j   V'
              /    \
            t_j     t_V
```
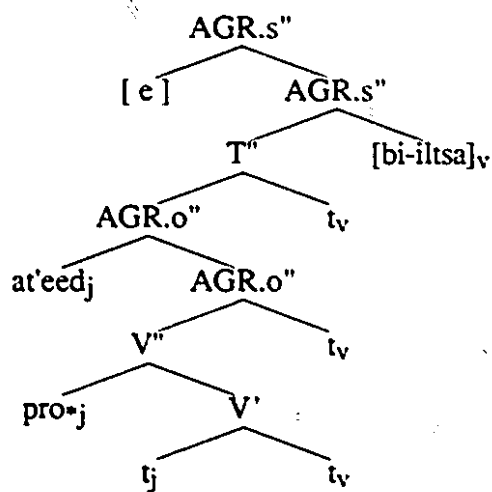
e.g. At'eed bi-iltsa/*The girl, he saw (=188c)

In this structure, the topicalized object is shown to have adjoined to AGR.o, the same position it associates with at LF in sentences marked with *yi*-. The subject, on the other hand, will be checked by L-movement to Spec. of AGR.s – a position which remains empty at S-structure. Notice now that the topicalized object is separated from the subject by fewer clause boundaries than AGR.s in the verbal complex: AGR.s is separated from it

157

by maximal projections of AGR.o and Tense. As a result, the topicalized NP is closer, and will 'misidentify' the subject, leading to a violation of the DJR. Speas' account of (188c) can thus be maintained by assuming an Infl with an articulated internal stucture, with the verbal complex moving to the highest head position.[75]

The claim is that in Navajo sentences with two empty pronouns, both identifiers (AGR.s and AGR.o) are located in the verbal complex under AGR.s at S-structure. Assuming that they share their properties with the complex as a whole, both agreement morphemes will c-command the pronouns they identify. Still, since the identifiers are dominated by the same maximal projections, neither one of them will be closer to a given pronoun than the other. In order to prevent an empty pronoun from being identified by the wrong agreement morpheme, let us assume that they retain the indices of their identifiers at LF. When Case-checking applies, potential 'feature clashes' will then be filtered out. A pronoun that is identified by AGR.s cannot be checked for Case by AGR.o, and one that is identified by AGR.o cannot be checked by AGR.s. Only one correct association between agreement and a pronoun is permitted.

A further refinement

Speas' contribution to Identification Theory is in parameterizing the GCR, such that it is only sensitive to phonetically-realized nominal elements in some languages. While this accounts for the Navajo data, a non-parameterized GCR would be preferable as a construct of universal grammar. Suppose then that non-phonetic pronouns, NP-traces, and traces of agreement morphemes never function as potential identifiers. On this view, the GCR would only be sensitive to lexical NPs and rich agreement. With respect to English, this means that both PRO as well as *pro* would be invisible for the purpose of identification. The following sentence seems to contradict this proposal, however:

(190) Empty object binding (English)
        [IP John told Bill$_j$ [IP PRO to fix *pro* $_j$]]
        (*'John told Bill to fix')

If the notion of potential identifier were parameterized as Speas suggests (i.e. if PRO were able to identify the empty object pronoun in (190)), the ungrammaticality of this example would be straightforward: *pro* would be bound by PRO, in violation of the DJR. On the other hand, if PRO cannot function as an identifier (as we propose), *pro* might be identified

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[75] We must also ensure that agreement traces do not misidentify an empty pronoun, if they are closer to the pronoun than its 'proper' identifier; cf. the structure underlying (188b). This can be accomplished by including traces in the set of (non-lexical) elements that do not count as potential identifiers.

by the matrix object. Note, however, that both PRO and *pro* are forced to be identified by *Bill*. Through the transitivity of co-indexing then, the object pronoun will be co-indexed with a c-commanding NP, and end up being bound. It thus seems plausible to assume that PRO, like other empty elements, does not function as a potential identifier.[76]

In conclusion, a modified version of Huang's Generalized Control Theory has been presented, which restricts identifying categories of empty pronouns to lexical NPs and rich agreement. In the following section, we apply this modified theory to ergative languages, and use it to support the proposals that have been made concerning their underlying structure.

4.2 Identification in two-agreement systems

In this section, we apply the principles of Identification Theory to languages that rely on both agreement morphemes for Case, which includes ergative languages. Inasmuch as our account of empty pronoun binding is successful, the proposed structure of ergative languages will gain support. As in Navajo *yi*-constructions, the claim will be that empty object (e.g. Patient) pronouns in ergative languages are bound by lexical transitive subjects in the Spec. of VP. This is seen to be the case in 4.2.1 for Mam. Although the distribution of empty pronouns in this language is characteristic of Mayan languages in general, Woolford (1991) has proposed a different account for Jacaltec, which will be considered in 4.2.2.

Our analysis is based on the proposal that direct arguments in an ergative language depend on both agreement morphemes for their well-formedness. Nevertheless, a similar dependency could obtain in languages with an 'accusative' pattern of Case-marking. In order to show that the effects attributed to ergativity are not just a property of two-agreement systems, we will examine Palauan, an 'accusative' language with a rich system of agreement. There we see that in the relevant cases, null objects may surface with lexical NP subjects. This will be the focus of 4.2.3.

4.2.1 Identification in an ergative language

In this section, we examine the distribution of empty pronouns in an ergative language, Mam. Only transitive sentences will be considered, since intransitives do not

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[76] This raises the question of whether sentences of the form [pro₁ saw pro₁] are grammatical in Chinese. I assume that they are not, either for the same reason discussed here (where both subject and object are identified by the same category, resulting in the binding of the latter), or because both subject and object are topicalized, resulting in the object's trace not being antecedent-governed (Relativized Minimality).

contain the elements that could potentially disrupt the identification of an object pronoun. As we saw in 2.1.1, transitive verbs register agreement with subjects (Agents) as well as objects (Patients). Some examples of transitive sentences with lexical NPs are given here (data from England, 1983, 1983a):[77]

(191) <u>Lexical subject/lexical object</u> (Mam)

    a. ma Ø-tzaj   t-tzyu-7n   xiinaq cheej
        asp 3sA-dir 3sE-grab-ds man horse
        'The man grabbed the horse'

    b. ma Ø-kub' t-tx'ee7ma-n Kyel tzee7 t-ul'   maachit
        rec 3sA-dir 3sE-cut-ds M.   tree   3s-RN machete
        'Miguel cut the tree with a machete'

In the structure underlying (191a-b), there is only one empty category that needs to be identified, a pleonastic pronoun in the Spec. of AGR.o; this could be identified by AGR.o itself, which c-commands it from its position in the verbal complex. For the remainder of this discussion, I will ignore empty pleonastic pronouns, and concentrate on pronouns in argument positions.

    In the unmarked case, pronoun subjects are null in Mam. This fits into a typology of languages proposed by McCloskey & Hale (1984), in which rich agreement roughly correlates with the obligatoriness of empty pronouns. When they are allowed, lexical pronoun subjects are fronted, as if having undergone wh-movement. This is shown in the data below (from England, 1983:157):[78]

(192) <u>Obligatoriness of empty pronouns</u> (Mam)

    a. *aax   n-q-uul   <u>qo7-ya</u> b'iincha-1 t-ee
        the same prog-1pE-come 1pA-1pEx arrange-inf 3s-RN

    b. aax   <u>qo7-ya</u> n-q-uul   b'iincha-1 t-ee
        the same 1pA-1pEx prog-1pE-come arrange-inf 3s-RN

    (both): 'We came to arrange it'

The position of the lexical pronouns is indicated by underlining in (192). In general then, subject pronouns are non-lexical in the presence of subject agreement, whether ergative or absolutive. The following sentences show null subjects occurring with lexical NP objects (ibid):

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[77] Only some of the combinations of subject and object are possible in Mam, regardless of the lexicality of these NPs. For example, plural subjects may not occur with plural objects.

[78] As in Jacaltec, first- and second-person (ergative) pronouns undergo wh-movement exceptionally in Mam, i.e. without the necessary change in verbal morphology that typifies movement of other NPs.

(193) <u>Null subjects/lexical objects</u> (Mam)
    a. ma Ø-tzaj   t-tzyu-7n   cheej
       asp 3sA-dir 3sE-grab-ds horse
       'He grabbed the horse   [3s->3s]

    b. ma ch-ok   t-tzeeq'an cheej
       asp A3-dir E3 -hit   horse
       'He hit the horses'   [3s->3p]

    c. ma tz'-ok   ky-tzeeq'an cheej
       asp A3s- dir E3p-hit   horse
       'They hit the horse'   [3p->3s]

In the structures underlying (193a-c), the verb will have undergone head-movement
through AGR.o and AGR.s all the way to COMP, the site of aspect; from there, the subject
pronoun in Spec. of VP can be identified by AGR.o in the verbal complex, in accordance
with the GCR.

Mam also tolerates empty pronouns in object position. When this happens,
however, the subject position must be empty too, as in the following (ibid):

(194) <u>Null subjects/null objects</u> (Mam)
    a. ma Ø-tzaj   t-tzyu-7n
       asp 3sA-dir 3sE-grab-ds
       'He grabbed her'   [3s->3s]

    b. ma ch-ok   t-tzeeq'an
       asp 3pA-dir 3sE-hit
       'He hit them'   [3s->3p]

    c. ma tz'-ok   ky-tzeeq'an
       asp 3sA-dir 3pE-hit
       'They hit her'   [3p->3s]

When transitive subjects are lexical, objects must be lexical as well; (177) – repeated here –
shows that third-person lexical subjects and empty pronoun objects cannot co-occur in
transitive sentences (from England, 1983a):

(195) <u>Lexical subjects/pronoun objects</u> (Mam)
    a. ma Ø-tzaj--t-tzyu-7n   xiinaq
       asp 3sA-dir 3sE-grab-ds man
       'She grabbed the man'
       (*The man grabbed her')   [+TR]

    b. ma Ø-tzyuu-n   xiinaq
       asp 3sA-grab-AP man
       'The man grabbed'   [AP]

161

To express the forbidden meaning in (195a), it is necessary to antipassivize first, as in (195b); this results in a syntactically intransitive construction. These facts are predictable, given the type of structure we are assuming: although object agreement is apparently rich enough to license a null object pronoun in (194), something prohibits the identification of one in (195a). The structure of the latter would be as follows:

(196) 'Misidentification' of a pronoun object


```
                        C'
                       /  \
[ma tzaj t-tzyu-7n]ᵥ      AGR.s"
                         /  \
                        tᵥ    T"
                             /  \
                            tᵥ    AGR.o"
                                 /  \
                              [ e ]   AGR.o'
                                     /  \
                                    tᵥ    V"
                                         /  \
                                 [xiinaq]ₖ   V'
                                            /  \
                                           tᵥ   [pro]*ₖ
```
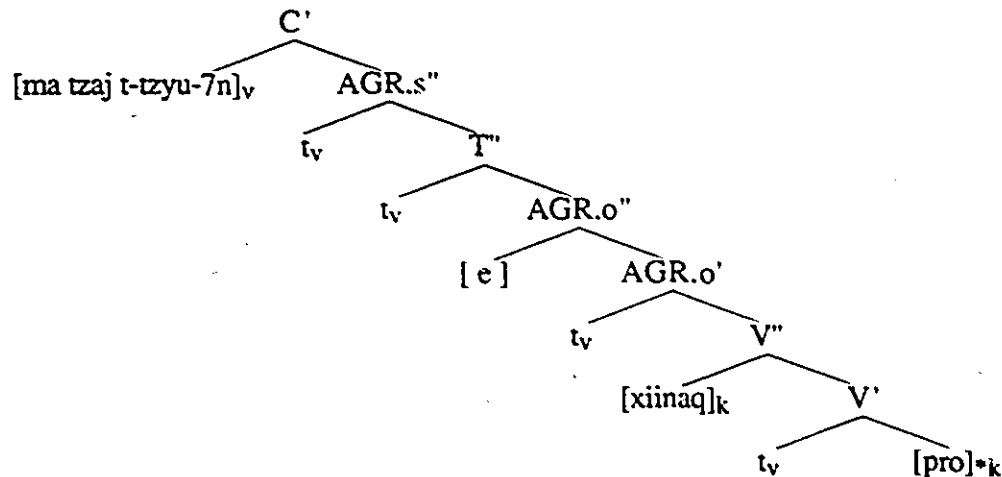
e.g. ma Ø-tzaj   t-tzyu-7n   xiinaq
asp 3sA-dir 3sE-grab-ds man
(*'The man grabbed her')   (=195a)

Both arguments appear in their base positions, so the nominal element closest to the object *pro* is the subject NP in Spec. of VP. Since it is lexical, the subject is determined as the identifier of the pronoun, and the two will be co-indexed. The empty object pronoun will then be bound, in violation of the DJR; this prohibits the illicit interpretation. A structure such as (196) ensures that object *pro*'s can never surface in an ergative language in the context of a lexical subject (e.g. Agent), a claim which is supported by the Mam data.[79]

In the structures underlying sentences with two *pro*'s (194), the subject in Spec. of VP is not considered as a potential identifier since it is non-lexical. It follows then that the absolutive agreement morpheme in the verbal complex will identify the object pronoun without binding it. Moreover, both agreement morphemes in the verbal complex will identify the empty pronouns correctly: absolutive agreement will not identify the *pro*-subject (Agent), nor ergative agreement the *pro*-object (Patient); otherwise a feature-clash will ensue. Transitive sentences without any lexical NPs are thus grammatical, as

[79] Even if the subject in (196) were to move to AGR.o at S-structure, it would still be the closest nominal element to the object pronoun - i.e. closer than absolutive agreement in the verbal complex.

predicted. A similar situation obtains in sentences with just an empty pronoun subject (193).

The principles of Identification Theory and the structure shown in (196) thus account for the distribution of lexical vs. empty NPs in Mam transitive clauses. This analysis relies on the claim that arguments remain in VP at S-structure, or that movement is not involved at this level. The analysis also assumes that Agents asymmetrically c-command Patients, such that the latter can be bound by the former, but not vice-versa. In the following section, we examine this asymmetry in more detail, showing that without it the facts of object pronoun binding cannot receive an adequate treatment.

4.2.2 The 'flat-VP' hypothesis (Woolford, 1991)

The preceding discussion rests on the assumption that Agents in Mam asymmetrically c-command Patients at S-structure. Woolford (1991) arrives at a different conclusion for Jacaltec, a language that is similar to Mam in both word-order and empty pronoun distribution. According to her, Agents and Patients c-command each other within the VP. This I shall refer to as the 'flat-VP hypothesis'. Evidence for this view takes the form of Principle C violations, where the possessor of a subject (Agent) NP shares an index with the object: sentences in which this happens are ungrammatical, presumably because the possessor (an R-expression) is not free.

Noun classifiers and co-reference

Pronoun binding in Jacaltec interacts with an independent process of co-reference known as Noun Classifier Deletion (Craig, 1977). Noun classifiers are forms that typically appear with common nouns or names, but which can also stand alone. When this happens, they are interpreted as pronouns. According to Craig, noun classifiers delete under co-reference with a preceding NP, as in the examples below (ibid, p.161):

(197) Noun Classifier Deletion
a. [sat s-tz'at   naj] xway   naj
   on E3-bed cl   sleep(ABS) cl/he
   'It is on his$_i$ bed that he$_{j/*i}$ sleeps'   [-NCD]

   [sat s-tz'at   naj] xway   *pro*
   on E3-bed cl   sleep(ABS)
   'It is on his$_i$ bed that he$_{i/*j}$ sleeps'   [+NCD]

b. [s-tx'i' naj] xtx'a-ni naj
E3-dog cl bite-AP cl/he
'It is his$_i$ dog that bit him$_{j/*i}$'   [-NCD]

[s-tx'i' naj] xtx'a-ni *pro*
E3-dog cl bite-AP
'It is his$_i$ dog that bit him$_{i/*j}$'   [+NCD]

c. xil naj [s-mam naj]
see cl/he E3-father cl
'He$_i$ saw his$_{j/*i}$ father'   [-NCD]

xil naj [s-mam *pro*]
see cl/he E3-father
'He$_i$ saw his$_{i/*j}$ father'   [+NCD]

Following standard practice, deletion sites are understood as being occupied by empty pronominals, in this case by *pro*-classifiers. In (197c) the NP antecedent is a subject (Agent), which c-commands the empty classifier in object position; in (197a-b), however, the antecedent is itself a specifier that does not c-command the classifier. This would be a problem if *pro*-classifiers relied on their antecedents for identification; I assume, therefore, that they are identified by NP-internal (ergative) agreement instead.

Consider now the following sentences from Woolford (1991), provided to show that co-reference is not possible between a subject possessor and a *pro*-classifier in object position (from Craig, 1977):[80]

(198) *pro*-classifier objects
a. Ø-x-il [$_{NP}$ s-mam naj Pel] *pro*
A3-E3-see E3-father cl P.
'Peter's father saw it'
(*'Peter's$_i$ father saw him$_i$')

b. Ø-x-il [$_{NP}$ s-mam naj] *pro*
A3-E3-see E3-father cl
'His father saw it'
(*'His$_i$ father saw him$_i$')

According to Woolford, the impossible reading of (198a) represents a Principle C violation, where the *pro*-classifier binds a referential noun in the subject (Agent) NP. This presupposes that the Patient c-commands the Agent, as in the following structure (details omitted):

---

[80] For the purposes of this discussion, we will only be concerned with animate pronouns. Inanimate object *pro*'s may be licit in the presence of lexical NP subjects, but animates may not; this distinction is apparent in (198a-b).

(199) <u>Flat-VP</u> (=198a)

```
...              VP
          _____|_____
        V        NP         pro i
        xil   _____|_____
             N            NP
           smam        [naj Pel]ᵢ
```

The unattested reading of (198b), on the other hand, represents a principle B violation, where one *pro*-classifier binds another, the latter in the position occupied by 'naj Pel' above. This of course would only follow if the subject NP did not constitute a binding domain, for otherwise its possessor could be co-indexed with any other NP, including the object.

In addition, the 'flat-VP' hypothesis predicts that an empty pronoun in the specifier position of an object (Patient) NP cannot be co-indexed with an Agent as in the sentence below:

(200) <u>Object possessor binding</u> (Jacaltec)
> Ø-x-il   naj Pel [NP s-mam *pro*]
> A3-E3-see cl. P.   E3-father
> 'Peterᵢ saw hisᵢ father'

Following the reasoning set out by Woolford, the object NP in (200) would be c-commanded by the subject (Agent), so that the *pro*-possessor in the object would end up being bound by 'naj Pel' (here the subject); this should also be a violation of Principle B. Nevertheless, there is no evidence in the literature to suggest that sentences like (200) are ungrammatical.

An identification-based account

In the theory of identification outlined here, the sentences in (198) would be accounted for by assuming that *pro*-classifiers in object position will be 'misidentified' by the lexical subject-Agents which c-command them. Thus, having an (animate) *pro* in these sentences is excluded by the DJR. Given the independently motivated principles of identification, there is no need to posit a flat VP in which the arguments c-command each other. Moreover, an identification-based approach predicts that (200) will be grammatical, i.e. if possessor agreement can identify the empty specifier. Then, the possessor pronoun will be free to be co-indexed with a c-commanding NP. Identification Theory thus gains support if (200) turns out to be well-formed.

The two views of VP-structure make different predictions concerning the distribution of empty pronouns in Jacaltec. For example, the 'flat-VP' hypothesis predicts that every sentence with one lexical and one *pro*-NP will be ruled out, since the two NPs c-command each other. For sentences with a lexical Agent and an empty pronoun Patient this prediction is correct, assuming that the former 'misidentifies' the latter. The 'flat-VP' hypothesis makes the wrong prediction regarding sentences with an empty pronoun Agent and a lexical Patient, however. These are predicted to be ungrammatical, for here the Patient could 'misidentify' the Agent. Given these considerations then, and the fact that identification rules out all the ungrammatical cases attributed to the flat-VP hypothesis, it seems reasonable to suppose that arguments in Jacaltec VP's (as in other ergative languages) are arranged hierarchically. This was also shown to be necessary for anaphoric binding in ergative languages by Anderson (1976).

Summary

In this section I have shown how the GCR and DJR account for the distribution of null pronouns in Jacaltec, a Mayan language similar to Mam. This was possible by assuming an underlying structure in which the subject (Agent) NP remains in Spec. of VP at S-structure, where it asymmetrically c-commands the object (Patient). Given this, it was argued that Woolford's flat-VP hypothesis was unnecessary.

4.2.3 Identification in an accusative language

So far, we have seen how empty object pronouns fail to occur with lexical NP subjects in two ergative languages (Mam and Jacaltec), and have attributed this fact to the operation of identification principles on a specific underlying structure. This structure is motivated by the proposal that verbs in ergative languages are incapable of assigning Case, so that both projections of agreement are required. The ergative pattern of Case-marking was then seen as a consequence of arguments associating with particular agreement morphemes. Still, our analysis does not preclude the possibility that verbs are incapable of assigning Case in languages with a non-ergative pattern of Case-marking. If such languages exist – and if the distribution of empty pronouns is the same as that which has been observed for Mam – our explanation may have less to do with the possibility of an NP remaining in VP at S-structure than with two-agreement systems in general. In order to control for this, we must therefore show that in a two-agreement system, the subject (Agent) does not always remain in Spec. of VP, so that *pro*-objects (Patients) may surface

without being bound. Here we claim that Palauan (Austronesian) represents just such a case.

Palauan

Palauan is a VOS language in which agreement follows a canonically accusative pattern: subjects of transitive and intransitive verbs are cross-referenced by the same set of prefixes, while objects in the perfective aspect are cross-referenced by a unique set of suffixes. In the imperfective aspect, a preposition appears before the object (data from Georgopoulos, 1985a:61):

(201) Morphological accusativity (Palauan)
      a. ng-kileld-ii   a sup a Droteo
         3s-heat(PF)-3s soup   D.
         'Droteo heated up the soup'

      b. ng-remurt *pro*
         3s-run(IM)
         '(He) is running'

In addition, subjects of transitive and intransitive verbs pattern the same under extraction, in opposition to transitive objects. This can be seen in the sentences below (ibid, pp. 61,67):

(202) Syntactic accusativity
      a. ng-te'a$_i$ [a kileld-ii   a sub __$_i$]?
         CL-who   heat(R/PF)-3s soup
         'Who heated up the soup?'   [+TR.subj]

      b. ng-te'a$_i$ [a remurt __$_i$]
         CL-who   run(IM)
         'Who is running?'   [-TR.subj]

      c. ng-ngera$_i$ [a le-silseb-ii __$_i$ a se'el-il]
         CL-what   IR/3-burn(PF)-3s friend-3s
         'What did his friend burn?'   [+TR.obj]

(202a-b) show that subjects retain realis mood-marking when they are questioned, whereas objects require a shift to the irrealis mood (202c). Palauan is thus both morphologically and syntactically 'non-ergative'.

The fact that objects trigger agreement in the perfective aspect and must appear with a preposition in the imperfective suggests that verbs in Palauan are incapable of assigning Case, just as in an ergative language. Taken with the overall pattern of Case-marking, we are led to conclude that objects (Themes or Patients) get their Case from AGR.o in the perfective aspect, while AGR.s is responsible for checking subjects (Agents). Both

agreement projections are therefore needed in perfective transitive sentences. In addition, subject and object agreement appear to be rich enough to license empty pronouns, as can be seen in the following examples (Georgopoulos, pc):

(203) Lexical/empty pronouns (Palauan)
    a. ng-'illebed-ii   a resensei-ii a Droteo.
      3s-hit(PERF)-3s   teacher-3s D.
      'Droteo hit his teacher'   [Lex.subj/lex.obj]

    b. ng-'illebed-ii   a resensei-ii *pro*
      3s-hit(PERF)-3s teacher-3s
      '(He) hit his teacher'   [Pro.subj/lex.obj]

    c. ng-'illebed-ii *pro pro*
      3s-hit(PERF)-3s
      '(He) hit (him)'   [Pro.subj/pro.obj]

These data indicate that empty subject pronouns can occur with lexical NP objects (203b) or with empty object pronouns (203c). The deciding case, however, is whether empty pronoun objects can grammatically occur with lexical NP subjects. The following indicates that this is also possible (ibid):

(204) Lexical subjects/pronoun objects (Palauan)
    a. ng-'illebed-ii *pro* a Droteo.
      3s-hit(PERF)-3s   D.
      'Droteo hit (him)'

    b. ng-'illebed-terir *pro* a Droteo.
      3s-hit(PERF)-3p   D.
      'Droteo hit (them)'

Crucially then, Palauan does not exhibit the same pattern of behaviour with respect to empty object pronouns as Mam does, despite its reliance on both AGR.s and AGR.o for Case. This would be consistent with a structure in which the Agent L-moved to AGR.s, as in (205).[81] The empty pronoun object in (205) depends on AGR.o for Case, and will adjoin to this agreement projection at LF. Now since the subject (Agent) moves to Spec. of AGR.s, the closest nominal element to the *pro*-object is agreement (AGR.s or AGR.o) in the verbal complex; it can therefore be properly identified without violating the DJR.

      The failure of *pro*-objects to be ruled out in the presence of lexical NP subjects in Palauan follows from the general approach to underlying structure taken here, provided that subjects (Agents) can appear in their Case positions at S-structure. Consequently, the

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[81] I assume that syntactic structures are left-headed in Palauan, i.e. in order to accommodate word order; nothing in the analysis turns on this, however.

ungrammaticality of lexical subjects co-occurring with *pro*-objects is not universal, but is characteristic only of languages where the subject remains in VP at S-structure. This is the case in ergative languages, where a transitive subject (Agent) is always closer to a *pro*-object than its legitimate identifier. Still, some non-ergative languages may exhibit binding effects on empty pronouns. This was seen to be the case in Navajo, and can be observed in Palauan too, where (204a) turns out to have the alternative interpretation 'Droteo hit himself' (Carol Georgopoulos, pc). In keeping with our analysis, the subject-Agent ('Droteo') would remain in VP, where it identifies the empty object-Patient. Instead of violating the DJR, however, the Patient takes on an anaphoric role. This seems to be a property of certain pronouns in Chamorro too, which will be discussed in the following section.

(205) <u>Palauan</u> (S-structure)

```
                      AGR.s"
                    /        \
              AGR.s'          [a Droteo]ᵢ
            /       \
[ng-'iilebed-ii]ᵥ    T"
                   /    \
                  tᵥ     AGR.o"
                       /        \
                    tᵥ           V"
                              /       \
                            V'         tᵢ
                          /    \
                        tᵥ      pro
```
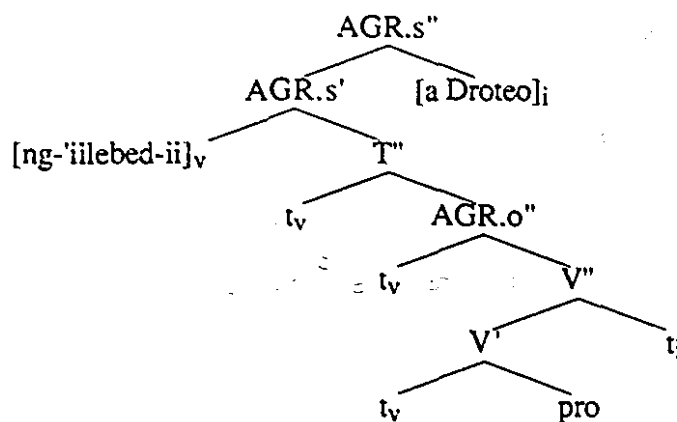
e.g. ng-'illebed-ii *pro* a Droteo.
     3s-hit(PERF)-3s   D.
     'Droteo hit (him)' (204a)

Summary

Identification Theory predicts that object pronoun binding effects may occur in 'accusative' languages, depending on the S-structure position of the transitive subject. If the Agent remains in Spec. of VP, it will still be closer to an empty pronoun Patient than the agreement morpheme needed to identify it (AGR.o). On the other hand, if the Agent is in its Case position (AGR.s) at S-structure, AGR.o will be closer to the Patient, allowing it to be identified. This option is not available for ergative languages, since even if the Agent moved to AGR.o at S-structure, it would still be closer to an empty pronoun Patient than

AGR.s. Predictions concerning the distribution of empty object pronouns in ergative languages are thus more easily refuted.[82]

4.3 Pronoun binding in Chamorro

In this section, we examine the distribution of pronouns in Chamorro, to see if there is evidence for the claim that arguments remain in their base positions at S-structure. If so, a lexical subject (Agent) should bind a *pro*-object (Patient) that needs to be identified. Unlike Mam and Jacaltec, however, some object pronouns in Chamorro are not empty. Strictly speaking then, one would not expect them to be conditioned by the GCR. Despite this, their distribution appears to be determined by Identification Theory (4.3.1). Our proposal will be that lexical pronouns are really verbal clitics co-indexed with empty pronouns in object position (4.3.2). Object proforms in Chamorro may also double as anaphors, to which the DJR does not apply (4.3.3). In the presence of a lexical subject then, a co-referential object proform should be licit, since as an anaphor it can be bound. A disjoint proform, on the other hand, will be ungrammatical. By and large, these predictions are confirmed, and lend overall support to the analysis of Chamorro as an ergative language. In 4.3.4, we consider some exceptional cases involving discourse factors and inanimate NPs.

4.3.1 Pronoun distribution

As in Mam and Jacaltec, pronoun subjects are generally non-lexical in Chamorro, a consequence of rich agreement. This is illustrated in the examples below (Chung, 1984; Topping, 1973):

(206) Subject pronouns (Chamorro)
    a. Ha-fahan (*gui) i lepblu.
       R3s-buy   he   the book
       '(He) bought the book'   [AGR.o]

    b. Guahu   lumi'e'   i palao'an.
       I(Emp.) see(UM) the woman
       'I am the one who saw the woman'   [Focus]

---

[82] Still, the assumption is that arguments remain in their base positions at S-structure, where the GCR & DJR apply; if movement occurred prior to this level, pronoun binding effects could be obscured, regardless of the language-type.

c. Ø-mattu (gui').
   (abs)-arrive (he)
   '(He) arrive'   [AGR.s]

(206a) shows that lexical pronouns are incompatible with ergative agreement in transitive clauses: in order for a pronoun to be overtly realized, it must be focussed, as in (206b). Pronouns may be empty when associated with AGR.s as well, which would be the case in (206c). Underspecified as it is then, this agreement morpheme must be rich enough to satisfy the GCR.

Empty pronoun objects

According to Chung (1984), empty object pronouns in Chamorro are acceptable when they refer to another NP in the larger discourse context. In this respect, Chamorro might be considered as a discourse-oriented language like Chinese, where an empty topic binds a variable in object position. Chung argues convincingly against this, however, citing numerous examples which show how an L-bar relationship could not hold between a topic and a trace in argument position. Moreover, if AGR.s is capable of identifying a pro-NP in (206c), a topic-based analysis would not be necessary in accounting for a pro-object in a transitive sentence. Examples of empty pronoun object-Patients in Chamorro appear below (ibid, pp.120-121):

(207) *Pro- objects* (Chamorro)
   a. Ha-hähassu   ha' *si Maria* ; [na in-bisita *pro* ; gi espitát]
      R3s-remember Emp PN M.   that 1p-visit   Loc. hospital
      'Maria remembers that (we) visited (her) at the hospital'

   b. Ha-konni' si Dolores *i famagu'un* ; gi paingi.   Kao ha-lalatdi *pro* ;?
      R3s-take   PN D.   the children Loc. last.night Q   R3s-scold
      'Dolores took the children last night. Did (she) scold (them)?'

In (207a), the empty pronoun Patient appears in an embedded clause, and takes the matrix subject (Agent) as its antecedent; in (207b), the antecedent of the pronoun is the matrix Patient.

In the structures underlying these examples, the subjects of the clauses containing the pro-objects do not count as potential identifiers, since they are themselves non-lexical. This means that the closest nominal element to the empty pronoun Patients will be AGR.s in the verbal complex. As this constitutes the proper identifier, the GCR will be satisfied, and the sentences are predicted to be well-formed. Sentences containing lexical Agents should be ruled out, however, since these NPs count as potential identifiers. The following examples indicate that this prediction is correct (ibid, p.122):

171

(208) <u>Lexical subjects/empty objects</u>
      a. *Pära u-patmada i lähi *pro*
         Fut. S3s-slap   the boy
         'The boy will slap (her)'
         (but OK: 'She will slap the boy')

      b. *[Yänggin tumangis tä'lu *i pätgun* ᵢ], pära u-kastiga   si Maria *pro* ᵢ
         if   cry(UM) again the child   Fut. S3s-punish PN M.
         'If the child cries again, Maria will punish (him)'
         (but OK: 'If the child cries again, he will punish Maria')

(208a-b) have two potential interpretations, one that is attested and one that isn't. In the attested interpretation, the null argument is construed as an Agent, while in the unattested one it corresponds to the Patient. The non-occurring interpretations can be explained by assuming that in both (208a-b), the Agent is closer to the empty pronoun Patient than its legitimate identifier, AGR.s. The pronouns therefore end up being locally L-bound, in violation of the DJR. The generalization then, is that Chamorro behaves in the way expected of a language where arguments remain in VP at S-structure. There is even further evidence for this proposal based on sentences involving lexical pronoun objects. These will be discussed below.

Lexical pronoun objects

      If object pronouns are lexical in Chamorro, their well-formedness should not depend on having to be identified. The following data indicate, however, that while other combinations are possible, lexical pronoun Patients may not occur in the presence of an overt Agent (data is from fieldnotes):[83]

(209) <u>Object pronouns</u> (Chamorro)
      a. Ha-fa'tinas si Maria [i statue siha]
         R3s-make   PN M. the statue pl
         'Maria made the statues'   [Lex.subj/lex.obj]

      b. Ha-fa'tinas *pro* [i statue siha]
         R3s-make   the statue pl
         '(She) made the statues'   [Pro.subj/lex.obj]

      c. Ha-fa'tinas *pro* siha
         R3s-make   them
         '(She) made them'   [Pro.subj/pro.obj]

      d. *Ha-fa'tinas siha si Maria.
         R3s-make them PN M.
         'Maria made them'   [Lex.subj/pro.obj]

---

[83] The normal (S-O) order of subjects and direct objects is reversed in some of the examples for reasons that will be discussed below; these sentences would be ungrammatical in any case, however.

The distribution of lexical pronoun Patients in Chamorro is identical to that of empty ones in Mam, which we analyzed in terms of Identification Theory. (209a) contains two full-NPs, so the GCR does not apply. In (209b), the subject (Agent) is a null pronoun, which would be identified by rich agreement. In (209c) there appear to be two pronouns, although if the object-Patient is lexical the GCR should not apply to it. The ill-formedness of (209d) is unexpected, however, given these assumptions. It seems to be ruled out by the DJR, since the only difference between this example and (209c) is the presence of a lexical Agent. Still, this is paradoxical since Identification Theory should not apply to non-null pronouns.

Further evidence that the GCR and DJR are responsible for (209) can be adduced from sentences involving first- or second-person object pronouns. In Mam, these forms are exempt from the principles of identification which govern full-NPs and empty pronoun distribution. The following data show that first- and second-person Patient pronouns are also unaffected in Chamorro by the presence of lexical Agents (ibid):

(210) 1st & 2nd object pronouns (Chamorro)
     a. Ha-li'i' yo' si Maria.
        R3s-see me PN M.
        'Maria saw me'

     b. Ha-chiku hao si Maria.
        R3s-kiss you PN M.
        'Maria kissed you'

Unlike (209d), the sentences in (210) are considered grammatical. Since the same exceptions that occur in Mam are also evident in Chamorro, it is reasonable to assume the same principles determine the pattern of full-NPs and (third-person) object pronouns. These we take to be the GCR and DJR.

In the following section, we develop an account of why lexical object pronouns in Chamorro should behave the same as empty pronouns do with respect to Identification Theory. For the time being, however, let us assume that (209d) is ruled out by the DJR, or that the lexical Agent NP is the nominal element closest to the pronoun in object position. This follows naturally from our proposal that transitive subjects in an ergative language are associated with AGR.o, and that an object pronoun in its base position must be licensed by a higher nominal element.

4.3.2 Clitic-pronoun pairs

In this section we discuss how Identification Theory can be extended to lexical object pronouns, even though only empty ones are mentioned by the GCR. The claim will be that so-called lexical pronouns are really clitics, which are in turn co-indexed with an empty pronoun in object position. One piece of evidence for this is that object (Patient) 'pronouns' are seldom separated from the verb, as in the following (fieldnotes):

(211) Adjacency of object pronouns
      a. Ha-li'e' yo' si Maria
          R3s-see me PN M.   [VOS-order]

      b. *Ha-li'e' si Maria yo'
          R3s-see PN M.   me   [VSO-order]

      Both: 'Maria saw me'

In (211b) a proform appears in object (VSO) position but the sentence is ungrammatical. Another reason why these forms should not be considered as independent pronouns is that they cannot appear clause-initially in the subject-initial construction (to be discussed in detail in 4.4). The relevant examples are given here (ibid):

(212) Focussed NPs
      a. munañu   i lähi/gui'
          swim(UM) the boy/he   [VS-order]

      b. i lähi/*gui' munañu
          the boy/he swim(UM)   [SV-order]

      Both: 'The boy/he swam'

(212a) represents the standard verb-initial order, (212b) the subject-initial construction: as indicated, only full-NPs are well-formed in the latter. The inability of an absolutive proform in Chamorro to be fronted or separated from the verb can be explained by assuming that these two elements form a unit at D-structure: in this respect, the proform could be regarded as a verbal clitic. Then, as the verb moved through Infl at S-structure, it would take the clitic along with it.

In the literature on clitics (cf. Borer, 1984), it is standardly assumed that a clitic is linked to an empty category in the position otherwise occupied by a lexical NP. Consider the following sentences from French, for example, where a clitic is associated with a *pro*-NP in object position:

(213) Clitics (French)
      a. Marie a vu *les enfants*
          'Marie has seen the children'

b. Marie *les* ₁ a vu *pro* ₁
   M.   them-has seen
   'Marie has seen them'

In (213b), the clitic *les* is co-indexed with an empty category in the same position occupied by 'les enfants' in (213a). Suppose then that an empty category also occupies the object position of Chamorro sentences with verbal clitics. The following would represent the D-structure underlying (209d):

(214) _Chamorro object clitics_ (D-structure)
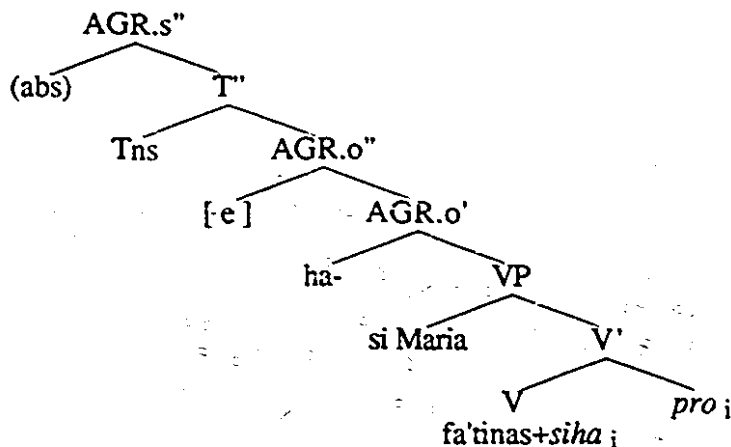
e.g. *Ha-fa'tinas siha si Maria.
    R3s-make   them PN M.
    'Maria made them' (=209d)

In this structure, the verb and clitic are depicted as a single unit, and will remain inseparable throughout the derivation. At S-structure then, (209d) will appear as follows:

(215) _Chamorro object clitics_ (S-structure)

175

This structure shows how the verb has moved through AGR.o and Tense to AGR.s, along with the clitic. The GCR will apply to (215), co-indexing the empty pronoun with the closest nominal element. If the clitic remained in VP as in (214), it could have been considered as a legitimate identifier of the empty pronoun Patient since it moves, however, the lexical Agent in Spec. of VP is the closest, and ends up 'misidentifying' the Patient in the familar way.
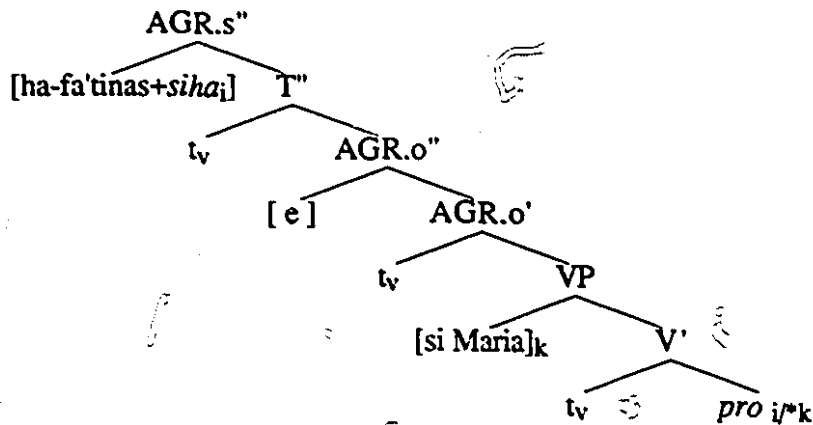
To summarize, we have shown how the behaviour of object proforms in Chamorro follows from the principles of Identification Theory operating on a particular underlying structure. In this structure, a lexical Agent is closer to the proform than its legitimate identifiers, which is to be expected if arguments remain in VP at S-structure. In addition, I have suggested that object proforms consist of two parts, a lexical clitic and an empty pronoun in object position. The latter might have been regarded as a clitic trace, as in e.g. Aoun (1985). If this were so, however, there could be no explanation of the distribution of object pronouns based on Identification Theory, which pertains to pronouns but not to variables. In this respect, the data presented here argues in favor of the empty pronoun theory. This will be substantiated in the next section, where it is shown that identification of empty proforms can result in anaphoric interpretations.

4.3.3 Pronouns as anaphors

In 3.3 we mentioned that object proforms in Chamorro (what we now refer to as clitic-pronoun pairs) may also double as anaphors. As such, they must be bound in their governing categories, and will never violate the DJR. As an empty pronoun, however, the second member of a clitic-pronoun pair is still subject to the GCR. We thus predict that in the presence of a lexical Agent, the second part of a clitic-pronoun pair can only have an anaphoric function, referring to the Agent. The following examples confirm our prediction (fieldnotes):

(216) <u>Anaphoric pronouns</u>
    a. Ha-li'i' gui' *pro* ᵢ *i palao'an* ᵢ
        R3s-see+her   the woman
        'The woman saw herself'

    b. Ma-kastiga siha *pro* ᵢ *i famagu'un* ᵢ
        R3p-punish+them   the children
        'The children punished themselves'

These examples are grammatical with obligatory co-reference only. Disjoint reference would entail a non-anaphoric usage, in which case the empty pronoun Patient would be 'misidentified', hence ungrammatically bound. In the structure underlying (216) then, the

empty category in object position is an anaphor, co-indexed with a lexical Agent in Spec. of VP. It is bound grammatically. Instead of violating the DJR, an object-anaphor satisfies Principle A of the Binding Theory.

A second prediction that follows from this approach concerns the inherent feature-sharing between the members of a clitic-pronoun pair. I assume that *pro*-NPs are specified for the same features as the clitics with which they are co-indexed. In addition, however, anaphors can only be bound by a category with the appropriate person-number features (cf. *John shot myself). It follows then that a clitic-pronoun pair could never function as an anaphor if the Agent is specified for different person-number features. The relevant case is given below, along with its S-structure (details omitted):

(217) <u>Inappropriate binding</u>
  a. *Ha-chiku siha si Juan
    R3s-kiss them PN J.
    'Juan kissed them(*selves)'

  b. [$_{AGR_s''}$ ha-chiku+*siha* $_i$ [$_{v''}$ *si Juan* $_j$ [$_{v'}$ t$_v$ *pro* $_{i/*j}$]]]

The empty category in object position shares the feature [+plural] with the clitic attached to the verb. On the other hand the Agent is [-plural], hence cannot function as an appropriate antecedent. (217a) will thus be ruled out if the object (Patient) functions as an anaphor (by Principle A), or if it functions as a pronoun (by the DJR, or Principle B).

The ability of an object pronoun to function as an anaphor seems to be parameterized. In Mam, for example, *pro*-objects are universally ill-formed in the presence of a lexical NP subject, hence not admitting of an anaphoric function. Chamorro and Palauan, on the other hand, apparently permit it. For the time being, I will leave this matter open. More importantly, we have seen how the anaphoric function of clitic-pronoun pairs is consistent with the structure we are assuming for an ergative language.

4.3.4 Exceptional pronoun binding

So far, the evidence clearly indicates that empty pronoun Patients are ungrammatical in the presence of a lexical NP Agent. Nevertheless, there are certain exceptions to this generalization which we take note of here. The following sentences from Italian have lexical subjects (Agents) and empty pronoun Patients but are not ruled out (data from Rizzi, 1986:501):

(218) <u>Object pronoun binding</u> (Italian)
  a. Questo conduce *pro* alla seguente conclusione
    'This leads *(people) to the following conclusion'

177

    b. Gianni e sempre pronto ad accontentare *pro*
       'Gianni is always ready to please *(people)'

In the version of Identification Theory we are assuming, the embedded object pronouns in (218) should be bound by the lexical subjects, as in their English counterparts. According to Rizzi, the pronouns in these examples are interpreted as arbitrary, licensed by generic time reference; non-arbitrary (i.e. referential) pronouns are unacceptable in the same circumstances. Even so, Identification Theory must be refined to account for the Italian facts. Rizzi's solution is to allow languages to choose whether certain head-governors (e.g. verbs) may be included in the set of potential identifiers.[84] Italian takes this option, whereas English doesn't. The reason that the sentences in (218) are not ruled out is thus because the empty pronouns are identified by their governing verbs. In order to recapture the object pronoun binding facts in Mam and Chamorro, however, it is necessary to stipulate that verbs do not qualify as identifiers in these languages; this would then force the binding of an empty pronoun object (Patient) by a lexical NP subject (Agent). On this analysis, agreement would still play a role in identifying empty object pronouns, in addition to determining the type of empty category that is allowed (i.e. referential in Mam, arbitrary in Italian).

Animacy

The sensitivity of object pronouns to lexical subjects in Chamorro was first observed by Chung (1981), who attributed it to the following condition:

(219) No transitive clause can have a direct object that outranks the
      subject on the hierarchy: pronoun > animate > inanimate

Animate and inanimate NPs are understood as lexical in (219), although there is some uncertainty as to what is meant by pronoun (cf. Woolford, 1991 for some discussion). The crucial aspect of (219) is that it governs the distribution of animate and inanimate NPs. This is necessary to account for sentences like the following (from Chung, 1981:319):

(220) <u>Inanimate subjects</u> (Chamorro)
    a. *Ha-na'ma'a'ñao i susedimentu-ñiha i bebbi
       R3s-frighten   the experience-3p the girl
       'Their experience frightened the girl'

    b. *Ha-na'kati   i manenghing i pätgün
       R3s-make.cry the cold   the child
       'The cold made the child cry'

---

[84] Rizzi does not use the terminology of Identification Theory, however.

In (220a-b), an inanimate subject (not an Agent) 'outranks' an animate object (Experiencer) on the scale (219). Identification Theory, on the other hand, is silent with regard to these examples.

A further problem for Identification Theory can be seen in the following examples (from Chung,1984:129, and Woolford,1991), where an inanimate pronoun object (Theme) co-occurs with a lexical NP subject (Agent):

(221) Empty inanimate objects
    a. Pära u-tatmi   si nana-hu *pro*
       Fut. S3s-plant PN mother-1s
       'My mother is going to plant (it)'   [Chamorro]

    b. Ø-x-il   s-mam   naj Pel *pro*   (=198)
       A3-E3-see E3-father cl. P.
       'Peter's father saw (it)'   [Jacaltec]

(221a) contradicts the Chamorro condition (219): the object is a pronoun that outranks the (lexical) subject on the hierarchy. Both (221a-b) contradict Identification Theory, since the empty pronouns in object position would be identified by lexical subject-Agents and ruled out by the DJR (there is no possibility of an anaphoric interpretation here). Conceivably, inanimate pronouns lack the features to be bound in the first place. Alternatively, verbs in Jacaltec and Chamorro might be able to exceptionally identify just this type of object in the spirit of Rizzi (1986). In either case, the question of animacy remains a problem for our analysis.

Summary

In section 4.3, we have shown that object pronouns in Chamorro are licit whenever they can be identified without being locally bound, or when they can be interpreted as anaphors. The distribution is the same for clitic-pronoun pairs as it is for unassociated empty objects that refer to NPs in the discourse: both are ungrammatical whenever the VP-internal subject is lexical. With regard to underlying structure, these facts prove that empty object pronouns can be identified (i.e. by AGR.s), and that the subject (Agent) is closer to the object (Patient) than its legitimate identifier. This is consistent with the underlying structure proposed for languages where arguments remain *in situ* at S-structure. In the next section we examine these assumptions in light of a construction where the Agent moves away from Spec. of VP prior to this level.

4.4 The subject-initial construction

The account of object pronoun binding in Chamorro (and in ergative languages in general) rests on the assumption that the subject (Agent) is closer to an empty object (Patient) pronoun than its legitimate identifier in the verbal complex. We then expect that if the subject moves to a position higher than the verbal complex, a *pro*-object may be identified without triggering the DJR, as in e.g. Palauan. Here this prediction will be tested, using a construction where the subject NP appears clause-initially (4.4.1). At first glance, the subject-initial construction suggests that Chamorro is an accusative language. It is argued, however, that underlying accusativity could not account for the basic properties that are exhibited by this language (4.4.2). We then propose that the subject occupies a special topic position, the specifier of TP, which only exists when it is visible at S-structure (4.4.3).

4.4.1 Object pronoun binding

Subject-initial orders are common in Chamorro, and occur without any changes in morphology or sentence intonation. For the most part, they are used to place importance on the subject, which is considered old information. Direct arguments in transitive sentences are always definite (Gibson, 1980). The following represents a typical pair of sentences with alternate VSO and SVO word orders (from fieldnotes):

(222) Standard/subject-initial orders
    a. Ha-fa'gasi si Juan   i kareta ni häpbun.
       R3s-wash   PN J.   the car Obl. soap   [VSO-order]

    b. *Si Juan* $_i$ ha-fa'gasi t_i i kareta ni häpbun.
        PN J.   R3s-wash   the car Obl. soap   [SVO-order]

    Both: 'Juan washed the car with soap'

(222b) indicates that the subject has moved to clause-initial position, presumably from the Spec. of VP.

Now when the object is a proform (or the second member of a clitic-pronoun pair), the following situation obtains: instead of functioning as an anaphor – the only solution in verb-initial orders – the object may refer to other NPs (Chung,1981). The contrast in referentiality brought about by the change in word order is illustrated below (fieldnotes):

(223) Disjoint reference (SVO)
      a. Ha-li'i'+gui' *i palao'an* $_i$ *pro* $_{i/*j}$
         R3s-see+her the woman
         'The woman saw (herself)'   [VSO-order]

b. *i palao'an* ᵢ ha-li'i'+gui' *t* ᵢ *pro* ᵢ/ⱼ
the woman R3s-see+her
'The woman saw (her/herself)'   [SVO-order]

In (223b), the closest nominal element to the *pro*-NP in object position is the subject (Agent) trace. This not being lexical, however, it is not considered as an identifier. Moreover, the subject has moved to clause-initial position, so it can't identify the object either, leading to an anaphoric interpretation. Instead, the *pro*-NP can be identified by AGR.s, enabling it to remain free. This is in accordance with our predictions. What remains to be determined is the nature of the clause-initial position in (223b). This is taken up below.

4.4.2 Chamorro as an 'accusative' language

Up to now, we have maintained that the distribution of null pronouns in an ergative language provides evidence that the subject is in Spec. of VP at S-structure. As we saw in 4.2.3, however, the same facts can obtain in an 'accusative' language where both arguments of a transitive verb depend on agreement morphemes for their Case. The question we ask here is whether subject-initial sentences in Chamorro cannot also be construed as evidence for underlying accusativity – contrary to our earlier assumptions. Here we argue that they cannot, and that the properties which surround the subject-initial construction follow from the proposals that have been made so far.

Let us begin by supposing that Chamorro is an accusative language, and that the subject (Agent) which normally moves to AGR.s at LF does so at S-structure in the subject-initial construction. The S-structure underlying (223b) might then be represented as follows:

(224) S-structure (accusative hypothesis of SVO)

181
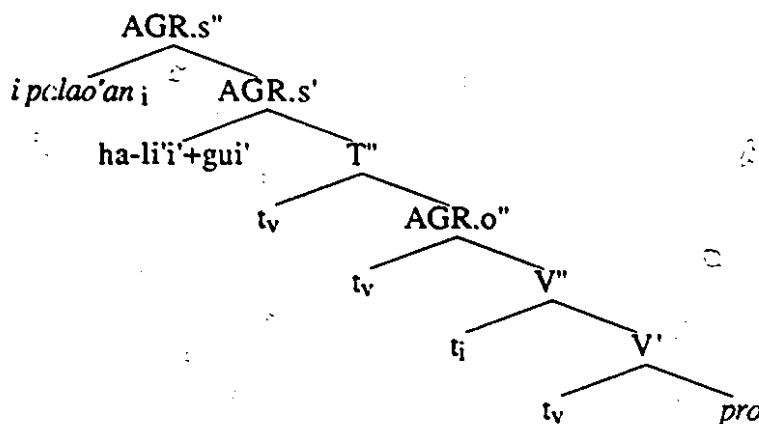
e.g. *i palao'an* ᵢ   ha-li'i'+gui' *t* ᵢ   *pro* ᵢ/ⱼ
     the woman   R3s-see+her
     'The woman saw (her/herself)' (=223b)

The subject NP in (224) is associated with AGR.s. Whether it occupies the specifier of this agreement projection or adjoins to it is another matter to be considered. More importantly, this structure is consistent with our assumptions concerning object pronoun binding: agreement in the verbal complex is closer to the *pro*-object than the subject NP, allowing it to be free in reference.

Although the structure shown in (224) makes the correct predictions with regard to identifying *pro*-objects, there are other facts surrounding the subject-initial construction which militate against an accusative analysis. For one thing, the accusative hypothesis predicts that transitive subjects will undergo movement easily, or without a change in verbal morphology. This is because nothing intervenes between a wh-phrase in COMP and a subject trace in Spec. of AGR.s (or adjoined to it). As we saw in Chapter three, however, wh-movement of transitive subjects in Chamorro requires special marking. Secondly, whatever principle is used to rule out transitive subject movement would have to allow for wh-movement of intransitive subjects, which is grammatical. Thirdly, an accusative analysis would have to account for the following facts concerning quantifiers (from Chung, 1990):

(225) <u>Transitive subject quantification</u>
      a. *Ha-fa'tinasi yu' siya käda taotao
         R3s-make   me chair each man
         'Each man built me a chair'   [V-initial]

      b. Käda taotao ha-fa'tinasi yu' siya
         each man   R3s-make   me chair
         'Each man built me a chair'   [S-initial]

(226) <u>Unergative subject quantification</u>
      a. *Kumati   käda patgun
         cry(UM) each child
         'Each child cried'   [V-initial]

      b. Käda patgun kumati
         each child   cry(UM)
         'Each child cried'   [S-initial]

These data indicate that quantification of transitive and unergative subjects is grammatical in subject-initial orders, which is not the case in verb-initial orders. At first glance, it might seem that the contrasts shown in (225) – (226) actually support an accusative analysis, where clause-initial subjects appear in AGR.s, c-commanding Tense. The scope
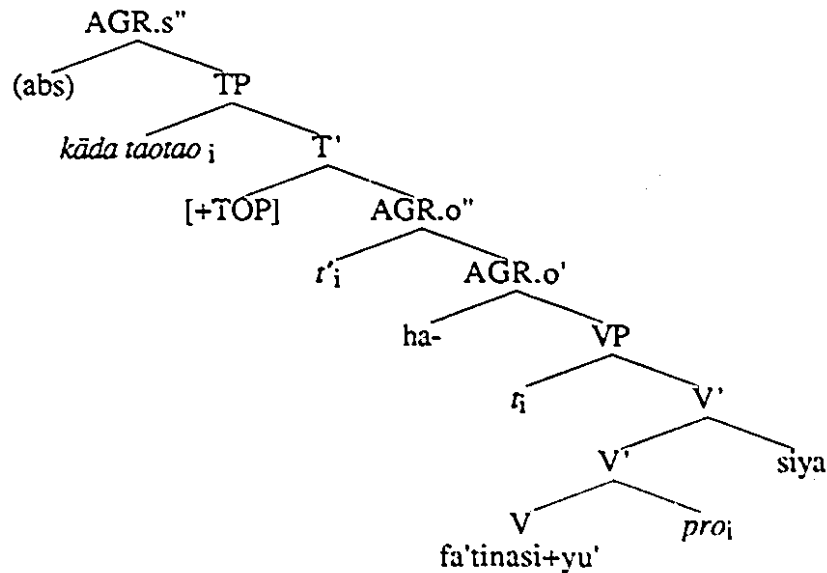
requirement on quantified NPs holds at LF, however, not at S-structure (otherwise, e.g. objects could never be quantified grammatically). At this level, the structure underlying verb-initial sentences would be the same as for subject-initial sentences. There is thus no way of explaining the difference in grammaticality between the two sentence-types.

Pronoun binding in subject-initial sentences is consistent with the hypothesis that Chamorro is an 'accusative' language, and that NPs occupy their Case-positions at S-structure instead of LF. This view proves to be deficient in relation to wh-movement and quantifier raising, however. Transitive subjects are expected to undergo wh-movement easily, but don't; in addition, they are predicted (incorrectly) to pattern with intransitive subjects. In Chapter three we claimed that transitive subject traces are neither head- nor antecedent-governed following QR, and that unergative subject traces (adjoined to AGR.o) are not head-governed. The accusative analysis incorrectly predicts that traces left by LF-movement will be just as licit in terms of government as those resulting from movement at S-structure. Having lost the distinctions between subject-initial and verb-initial sentences, we reject the accusative analysis of Chamorro.

4.4.3 An ergative analysis

An ergative analysis of subject-initial sentences forces us to assume that transitive and unergative subjects derive their Case from AGR.o, just as in verb-initial sentences. Nevertheless, grammatical quantification of these relations suggests that the clause-initial position is one which legitimately represents quantifier scope. The Spec. of AGR.o therefore does not qualify as a possible landing site for subjects in this construction. Moreover, the position of these subjects could not be a final landing site for wh-phrases, or else there would be no way to rule out basic cases of ungrammatical (subject) extraction. In other words, it could not be the Spec. of CP either. I propose instead that the subject (typically an Agent) moves to Spec. of TP in this construction, which in turn contains a special topic morpheme. This is shown in the following structure (verb movement not shown):

(227) S-structure (ergative hypothesis of SVO)

```
                    AGR.s"
              _____
          (abs)          TP
                    _____
              kāda taotao ᵢ      T'
                          _____
                      [+TOP]       AGR.o"
                              _____
                          t'ᵢ          AGR.o'
                                   _____
                                 ha-          VP
                                         _____
                                       tᵢ           V'
                                               _____
                                             V'         siya
                                         _____
                                       V         proᵢ
                               fa'tinasi+yu'
```

e.g. Kāda taotao ha-fa'tinasi yu' siya
     each man   R3s-make me chair
     'Each man built me a chair' (=225b)

The subject has moved from its base position in VP through AGR.o to the Spec. of TP. Although it is not indicated, I assume the verbal complex only moves as far as Tense at S-structure, moving on to AGR.s at LF. This accounts for the increased prominence of the subject. The closest nominal element to the empty pronoun Patient is the clitic in the verbal complex, closer than the Agent; the Patient can therefore be identified without being locally bound.

Quantifiers

The proposal that the subject moves to Spec. of TP in subject-initial sentences means that transitive and unergative subject quantifiers will be able to satisfy their scope requirement. I assume that traces left by such movement are head-governed by the [+TOP] morpheme under Tense, much like certain traces left by wh-movement are head-governed by the feature [+agr] in COMP. Movement to the Spec. of TP may not occur at LF, however. For this to happen, an empty pleonastic pronoun would have to occupy the specifier position at S-structure. Such a form could only be identified by AGR.s, but this would result in a feature-clash, since an ergatively Case-marked NP (the subject) eventually replaces it. The assumption is that a [+TOP] morpheme is only present when it is visible – i.e. at S-structure, through the occupation of its specifier position.

<u>Movement</u>

The proposed analysis of subject-initial sentences also predicts that transitive subjects cannot undergo further movement e.g. as in questioning. etc. As before. this is because an absolutive NP will be adjoined to AGR.s at LF. blocking antecedent-government of the subject trace, now in Spec. of TP. In addition. the fact that the landing site of subject-fronting is an L-position predicts that L-bar movement of another constituent can occur across a fronted subject grammatically. The following sentence (from Woolford, 1991) seems to confirm this:

(228) <u>Wh-movement across a fronted subject</u>

    *Hayi*ᵢ si Juan ha-sangan-i   hao [PRO bumisita rᵢ   si Rita]?
    who   PN J. R3s-say-Dat. you   visit(Inf.)   PN R.
    'Who did Juan tell you visited Rita?

Here an embedded subject has been grammatically moved across the matrix fronted subject, 'si Juan'. Now if subject-fronting resulted in an L-bar chain, subsequent L-bar movement would be blocked by Relativized Minimality. Presumably then, wh-movement is permitted in (228) because the fronted subject occupies an L-position.

The proposal that fronted NPs occupy an L-position in transitive sentences leads us to expect that only subjects can undergo this type of movement. This is because transitive subject NPs occupy the Spec. of AGR.o at LF, another L-position. Movement of a non-subject NP to the Spec. of TP would therefore have to cross an L-position, in violation of Relativized Minimality: the subject would count as a closer potential antecedent of the object trace, blocking antecedent-government. We thus predict that nothing like an OVS word order can be derived in Chamorro, at least not without a change in intonation or morphology. This prediction is confirmed below:

(229) <u>Non-subject fronting</u>

    a. *I kareta ha-fa'gasi si Juan.
       the car R3s-wash PN J.

    b. I kareta fina'gase-ña si Juan.
       the car wash(IN)-3s PN J.

    both: 'THE CAR Juan washed'

(229a) shows that object-fronting is ungrammatical, presumably because the subject NP intervenes between the object and its trace. The grammatical (229b) contains the infix *-in-*, which designates a focussed object NP. Thus, only subjects can occupy the Spec. of TP position in Chamorro, which is an L-position.

Summary

In this section, we have proposed that subject-initial constructions in Chamorro involve a special topic position (Spec. of TP) which interacts with object pronoun binding in the predicted way. This is not the only construction where the Spec. of TP plays a role, however: in 2.4 it was suggestd that PRO-subjects moved there to remain ungoverned, while in 3.5 we argued that it provided an intermediate landing site for transitive subjects undergoing wh-movement. The difference between the subject-initial construction and the others, however, is that only in the former does a feature [+TOP] coincide with Tense, which must be saturated by a lexical NP at S-structure.

The subject-initial construction also interacts with animacy effects (cf. 4.3.4). In short, combinations of inanimate and animate NPs that would be ungrammatical in verb-initial orders improve when the (inanimate) subject is fronted (from Chung, 1981:327):

(230) Animacy effects (SVO)
    ?I manenghing ha-na'kati   i pätgun
    the cold   R3s-make.cry the child
      'The cold made the child cry'

Since our analysis of similar facts concerning object pronouns is based on Identification Theory, it is not obvious how the improved status of (230) can be accounted for. Conceivably, inanimate NPs are incompatible with AGR.o, which usually implies agentivity in Chamorro; then the feature [+TOP] might assign a special kind of Case in the SVO construction. How ergative agreement continues to be registered in this example remains a mystery, but I will not attempt to solve it here.

4.5 The Chamorro morpheme *ma-*

In this section, we examine the facts surrounding the Chamorro morpheme *ma-*, a transitive subject prefix that interacts with several of the processes discussed so far. These include identification, quantifier-raising, circularity, and topicalization. Our claim is that the distribution of this morpheme provides support for the underlying structure of Chamorro, and of ergative languages in general. This assumes that transitive subjects are checked for Case by L-movement to the Spec. of AGR.o, a position occupied by an empty pleonastic pronoun at S-structure. First it is observed that transitive sentences containing *ma-* (which also doubles as a passive morpheme) are ungrammatical unless the object is or contains an anaphor referring to the subject (4.5.1). This is reminiscent of exceptional subject extraction in Chamorro, and a movement analysis is proposed (4.5.2). We then consider why third-person plural subjects would undergo this process in the first place

(4.5.3). This may have to do with the features that are responsible for identifying the empty pleonastic pronoun in the Spec. of AGR.o itself. The passive function of *ma-* is considered (4.5.4), followed by a brief summary.

4.5.1 An ambiguous morpheme

The prefix *ma-* has two main functions in Chamorro grammar, as a third-person plural marker of transitive subjects, and as a passive morpheme. In addition, however, a very large number of verbs and adjectives begin with what appears to be the same form. According to Topping (1973), these are fossilized prefixes. Some examples are given below:

(231) <u>Fossilized *ma-*</u>
     a. Malago' yo' ni lepblo
        forget I   Obl. book
        'I forgot the book'

     b. Ma'a'ñao gui' as Maria.
        be.afraid he Obl. M.
        'He is afraid of Maria'

For the most part, we will not be concerned with the fossilized forms of *ma-*. Still, the Case arrays of arguments appearing with them are exactly those produced by the passive: an absolutive (intransitive) subject, and an optional oblique NP. The following examples illustrate the passive usage of *ma-*, along with that of another morpheme, *-in-* (data is from Topping, 1973 and Chung, 1982b):

(232) <u>Passive forms</u>
     a. Man-ma-dúlalak siha ni famagu'un.
        Pl.-Pass-chase   they Obl. children
        'They were being chased by the children'   [*ma-*]

     b. Pära u-fan-binisita   i famagu'un ni ma'estra.
        Fut. S3s-Pl.-visit(IN) the children Obl. teacher
        'The children will be scolded by the teacher'   [*-in-*]

According to Gibson (1980), the *ma-* form of the passive is used whenever the Agent is plural and/or non-specific. This is shown in (232a). The infix *-in-*, on the other hand, is reserved for passive Agents which are singular and specific (232b). This infix has a second function in Chamorro, as a wh-agreement marker of transitive objects (Themes). Since passives tend to highlight objects anyway, the two functions of *-in-* are quite close, although the syntax of the sentences in which they occur is very different.

At first glance, the properties surrounding the agreement morpheme *ma-* appear to be the same as those concerning *ha-* ([3s]), at least in relation to object pronoun binding (clitic-pronoun pairs). Thus when transitive subjects are lexical, only the anaphoric interpretation is allowed; when the subjects are themselves empty, object 'pronouns' may be disjoint in reference. These facts are reflected in the data below (fieldnotes):

(233) <u>Lexical subjects/empty objects</u>

    a. Ha-fa'gasi+gui' *i patgun*$_i$ *pro*$_{i/*j}$
       R3s-wash+him   the child
       'The child washed himself'   [*ha-*]

    b. Ma-fa'gasi+siha *i famagu'un*$_i$ *pro*$_{i/*j}$
       R3p-wash+them the children
       'The children washed themselves'   [*ma-*]

(234) <u>Empty subjects/empty objects</u>

    a. Ha-li'i'+gui' *pro*$_i$ *pro*$_{i/j}$
       R3s-see+him
       '(He) saw him(self)'   [*ha-*]

    b. Ma-li'i'+siha *pro*$_i$ (*pro*$_{i/j}$)
       R3p-see+them
       '(They) saw them(selves)'
       (also: 'They were seen')   [*ma-*]

The ungrammatical interpretations in (233a-b) are due to the DJR, where the non-anaphoric function of the *pro*-objects forces the lexical subject NPs to identify them. The grammatical interpretations represent the anaphoric function of the *pro*-objects. (234a-b) allow for two interpretations, owing to the absence of a lexical identifying NP: one of them is anaphoric, the other is pronominal (both *pro*-NPs are identified by agreement).

(234b) differs slightly in that it also has a passive interpretation, indicated by the gloss. This follows from the passive usage of the morpheme *ma-*. This difference also surfaces when empty *pro*-subjects co-occur with lexical NP objects, as in the following sentences:

(235) <u>Empty subjects/lexical objects</u>

    a. Ha-chiku *pro* i neni.
       R3s-kiss   the baby
       '(She) kissed the baby'   [*ha-*]

    b. Ma-chiku *pro* i neni.
       R3p-kiss   the baby
       '(They) kissed the baby'
       (also: 'The baby was kissed'   [*ma-*]

The passive interpretations associated with the agreement marker *ma-* are practically indistinguishable from passive sentences in which the oblique Agent fails to surface. This casts doubt as to whether (234b) and (235b) are transitive at all. We return to these cases in 4.5.2 below.

Ungrammatical sentences

Singular and plural agreement forms diverge completely in sentences containing two lexical NPs. As the following data show, sentences with the prefix *ma-* are ungrammatical, in contrast to those containing *ha-* (data adapted from Chung, 1981):

(236) Lexical subjects/lexical objects (VSO)
    a. Ha-bisita si Juan   i manatungo'-hu gi hospität
      R3p-visit PN J.   the friends-1s   Loc. hospital
      'Juan visited my friends at the hospital'   [*ha-*]

    b. *Ma-bisita i manatungo'-hu si Juan   gi hospität.
      R3p-visit the friends-1s   PN J.   Loc. hospital
      'My friends visited Juan at the hospital'   [*ma-*]

    c. Ma-bisita   si Juan   ni manatungo'-hu   gi hospität
      PASS-visit PN J.   Obl. friends-1s   Loc. hospital
      'Juan was visited by my friends at the hospital'   [Pass]

The order of major constituents in (236a-b) is VSO, an important factor in the grammar of Chamorro. (236b) is ungrammatical, but its meaning can be expressed via passivization (236c).

It is not always the case that lexical subjects and direct objects cannot appear with *ma-*. As the following data show, sentences are well-formed when the object is or contains an anaphor referring to the subject (ibid):

(237) Exceptional plural subjects
    a. Ma-dúlalak+siha   *i famagu'un* ᵢ *pro* ᵢ/*ⱼ
      R3p-chase   them   the children
      'The children chased themselves'

    b. Ma-chiku *i lalahi* ᵢ [NP i famagu'un-ñiha *pro* ᵢ/*ⱼ]
      R3p-kiss the men   the children-3p
      'The men kissed their own children'

    c. Ma-fa'tinas [NP i statue   nu *siha* ᵢ/*ⱼ] ni   klé   *i famalao'an* ᵢ
      R3p-make   the statue Obl. them   Obl. clay the women
      'The women made statues of themselves with clay'

In (237a), a *pro*-object refers directly to the subject, hence is interpreted as an anaphor. The *pro*-object in (237b) is a possessor, identified by the rich agreement suffix *-ñiha*

([3p]); at the same time, however, it is co-indexed with the matrix subject. In (237c), the co-referring pronoun is a noun complement.

The sentences in (237) correspond exactly to the cases of exceptional subject extraction discussed in 3.3. There we saw that transitive subject NPs could be questioned, relativized, etc. if the direct object was or contained an anaphor referring to the subject. This suggests that transitive sentences containing *ma-* are derived by movement of some kind. Although it is not visible on the surface, movement of the subject could occur at LF. Alternatively, the empty pleonastic pronoun associated with AGR.o could be the element that undergoes movement. As a final piece of evidence favoring a movement-based approach, consider the following sentences in which *ma*-subjects appear clause-initially (from Chung, 1981):

(238) <u>Clause-initial plural subjects</u>
      a. I manatungo'-hu ma-bisita si Juan gi hospitat
         the friends-1s   R3p-visit PN J.   Loc. hospital
         'My friends visited Juan at the hospital'
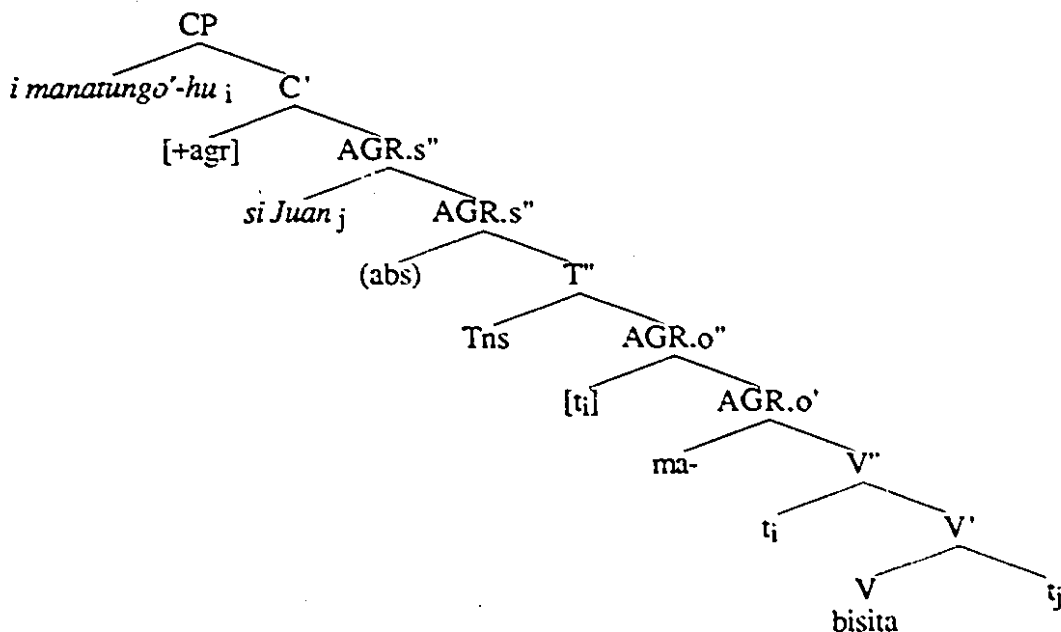
      b. I famagu'un siha pära uma-fa'gasi i kareta
         the children pl.   Fut. S3p-wash the car
         'The children are going to wash the car'

Unlike their verb-initial counterparts, the subject-initial sentences in (238) are grammatical. In the previous section (4.4) we proposed that subjects in Chamorro could move to the Spec. of TP without violating any principles. Plausibly then, the sentences in (238) are grammatical because movement has occurred. In the next section, we develop an analysis of *ma-* in terms of movement.

4.5.2 A movement analysis of *ma-*

Let us begin by supposing that the subject of a transitive sentence containing *ma-* moves to the Spec. of CP at LF. This would derive a structure like the following (verb movement is not shown):

(239) <u>Transitive subject movement</u> (LF)

```
                    CP
           ┌─────────┴─────────┐
  i manatungo'-hu ᵢ           C'
                      ┌────────┴────────┐
                   [+agr]            AGR.s"
                            ┌──────────┴──────────┐
                         si Juan ⱼ             AGR.s"
                                        ┌─────────┴─────────┐
                                     (abs)                 T"
                                                   ┌────────┴────────┐
                                                  Tns             AGR.o"
                                                          ┌─────────┴─────────┐
                                                        [tᵢ]               AGR.o'
                                                                    ┌─────────┴─────────┐
                                                                   ma-                 V"
                                                                            ┌──────────┴──────────┐
                                                                           tᵢ                    V'
                                                                                         ┌────────┴────────┐
                                                                                        V                 tⱼ
                                                                                     bisita
```

e.g. *Ma-bisita i manatungo'-hu si Juan gi hospität.
     R3p-visit the friends-1s   PN J.   Loc. hospital
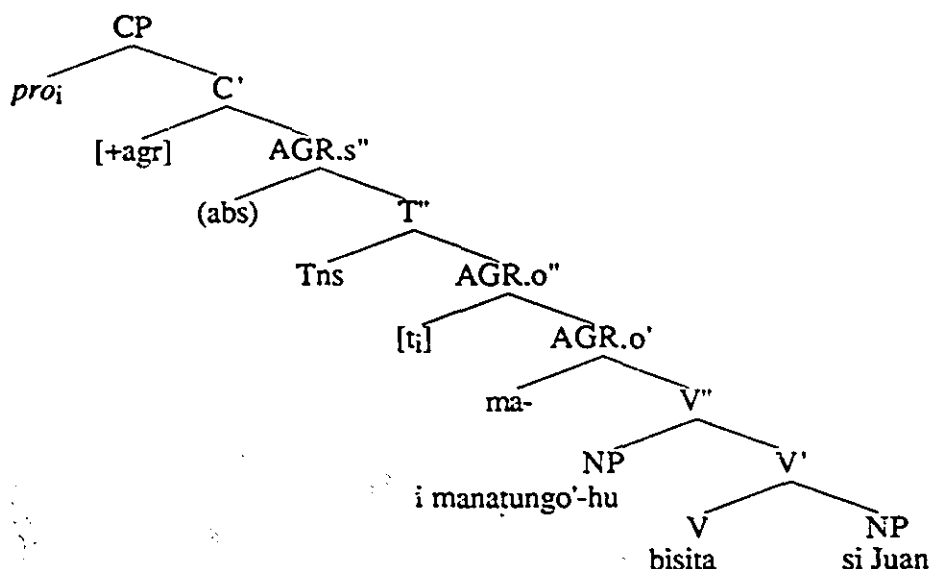   'My friends visited Juan at the hospital' (=236b)

The structure shown here represents the ungrammatical sentence (236b). The reason that this sentence is ruled out would be that an absolutive NP adjoined to AGR.s blocks antecedent-government of the subject trace in Spec. of AGR.o. Moreover, an analysis based on (239) could explain the sentences containing *ma-* where the absolutive NP is or contains an anaphor referring to the subject (237): the ban on Circularity would prohibit an absolutive NP from blocking antecedent-government.

Nevertheless, an analysis of *ma-* based on movement of the transitive subject lacks independent motivation. Why should subjects move to COMP at LF? Sentences involving *ma-* which do manage to surface are not given any special status, as if e.g. the subject became operator-like. Moreover, subjects in clause-initial position could not move to COMP in any case, if transitive objects are adjoined to AGR.s. Apparently what these structures have in common is that the Spec. of AGR.o – instead of being filled with an empty pleonastic pronoun – is filled with some kind of trace at S-structure. Such a situation might be necessary if the pleonastic pronoun could not be identified.

In the following section, I discuss the reasons why the pronoun linked to *ma-* cannot be identified. Here, however, I assume that it cannot, hence must be eliminated at S-structure to satisfy the GCR. This can either be achieved by moving the pronoun to

191

COMP, or by moving the subject to Spec. of TP, through the Spec. of AGR.o. Suppose now that the structure underlying (236b) is as follows (verb-movement not shown):

(240) <u>Pleonastic pronoun movement</u> (S-structure)

e.g. *Ma-bisita i manatungo'-hu si Juan gi hospität.
R3p-visit the friends-1s   PN J.   Loc. hospital
'My friends visited Juan at the hospital' (=236b)

(240) shows that the Spec. of AGR.o is occupied by a trace, which does not need to be identified. The empty pronoun in Spec. of CP is still subject to the GCR; here I will assume that [+agr] is capable of identifying it even though this agreement morpheme does not carry person-number features. It may be that empty pleonastics – like empty inanimate pronouns – can be identified by language-specific governing heads, a proposal that was advanced by Rizzi (1986).[85]

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[85] In German, the lexical complementizer *daß* can license an empty pleonastic pronoun, but not an empty argument. This is shown in the data below (from Travis,1984):

(i) <u>Governed pleonastics</u> (German)
    a. Ich denke daß (*es) getanzt wurde.
       I   think that   it   danced   was

    b. Ich denke *(es) wurde getanzt.
       I   think   it   was   danced
    Both: 'I think there was dancing'

Whether or not the licensing of pleonastics can be derived from Identification Theory is a separate issue, however, one which I will not attempt to deal with here.

192

An analysis based on (240) predicts that transitive sentences will be ruled out, unless the absolutive NP is or contains an anaphor, etc. This is because the absolutive NP still adjoins to AGR.s at LF, potentially blocking antecedent-government. The LF-structure of (236b) then, is in fact (239). The difference in the two approaches concerns the level at which movement first takes place; in (240) it occurs at S-structure, forced by principles of Identification Theory. In this respect, the approach to movement taken here resembles Huang's (1984) original proposal, in which empty objects in Chinese can only be interpreted as variables.

In the structure underlying subject-initial *ma*-sentences (238), the subject would be in Spec. of TP, and a trace would occupy the Spec. of AGR.o. Consequently, there would be no empty pleonastic pronoun that had to be identified. This explains why these sentences are grammatical. Recall, however, that the Spec. of TP must be occupied at S-structure, since a pronoun cannot be properly identified there (4.4.3). This rules out the possibility of a *pro*-subject moving to clause-initial position in (234b) and (235b). Moreover, the *pro*-subjects in these sentences could not appear in COMP, except in cases where the *pro*-objects have an anaphoric function. We conclude there is no grammatical derivation of transitive *ma*-sentences whose objects are disjoint (or which contain a subject-oriented anaphor); these sentences are intransitive, with a passive interpretation.[86]

To summarize, I have proposed that the agreement morpheme *ma*- is incapable of identifying a pleonastic pronoun in the Spec. of AGR.o, which fails to satisfy the GCR. Ungrammaticality can be avoided by moving the pronoun to the Spec. of CP, where [+agr] can identify it, or by moving the subject through AGR.o to Spec. of TP, which eliminates it. The former option is governed by the usual constraints on subject movement in an ergative language, yielding a pattern similar to subject extraction proper. The latter option is available for lexical subjects only.

4.5.3 Non-identification by *ma*-

In this section we consider how it is that a pleonastic pronoun in the Spec. of AGR.o fails to be identified by the agreement morpheme *ma*-. The reason, we claim, has

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[86] Intransitive subjects trigger number agreement in the form of *man*- ([pl]), which predicts that sentences like

    i) Ma-lalatdi i famagu'un siha
      Pass-scold the children pl
      'The children were scolded'

will not surface without the morpheme *man*- (compare: *Man-ma-lalatdi i famagu'un siha*). Although sentences like i) are attested, I assume it is because *man*- is optional.

to do with the features that a language recognizes as essential in maintaining distinctions of person, number, etc. Recall once more the paradigm of ergative agreement in Chamorro, which must certainly be considered 'rich' in that a different form exists for every person-number combination:[87]

(241) Ergative agreement (Chamorro)

	Singular	Plural
First	hu-	ta-/un- (Incl./Excl., resp.)
Second	in-	un-
Third	ha-	ma-

The organization of the paradigm implies that three person features [1,2,3] are required to distinguish the forms in (241), and two numbers [sing., pl.]. Given that the features are themselves expressed in terms of binary values, however, not all of them are needed to characterize each form uniquely. A third person form like *ha-*, for example, only has to be specified for the feature [+sing.] to distinguish it from *ma-*([-sing.]), rendering the feature [plural] superfluous. I would like to suggest that languages are required to select only those features which are necessary in maintaining the distinctions in a given paradigm.

Being economical in terms of agreement does not mean that languages cannot be redundant: a language other than Chamorro might use two features ([-sing., +pl.]) to specify plural agreement forms instead of one. The reason we maintain this option is that third-person plural *pro*-NPs are not unidentifiable in every language.

Suppose now that Chamorro selects the features [first] and [second] to characterize agreement morphemes with respect to person, and the feature [sing.] with respect to number. The following depicts how each of the agreement forms in (241) would be specified:

(242) Agreement features (Chamorro)

hu-	[+1,-2/+sing.]
in-	[-1,+2/+sing.]
ha-	[-1,-2/+sing.]
ta-	[+1,-2/-sing.]
un- (Ex)	[+1,+2/-sing.]
un- (2p)	[-1,+2/-sing.]
ma-	[-1,-2/-sing.]

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[87] The addition of categories like 'fourth person', 'dual', etc. would increase the maximal number of possible combinations, but these need not concern us here.

Each of the agreement morphemes in (242) is specified for a different combination of person-number features. Moreover, the distinctions are maintained with the minimal number of features possible (three).[88]

From (242) we may see what causes the failure of *ma-* to identify an empty pronoun: this morpheme is the only one that is not specified for a positive feature. The claim then, is that only morphemes which are positively specified are capable of identifying empty pronouns (underspecifying certain morphemes would produce the same results). It is thus a consequence of the person-number features selected by Chamorro that prevents third-person plural *pro*-NPs from surfacing in the Spec. of AGR.o. This is not to say that *ma-* is not capable of checking subject NPs for Case; like AGR.s in English, it may govern subject NPs without identifying them.

As we saw in 4.5.2 then, the inability of *ma-* to identify a *pro*-NP in its specifier position effectively forces movement to COMP or TP, depending on whether topicalization is involved.

4.5.4 Conflating the functions of *ma-*

Up to now, we have concentrated mainly on the agreement morpheme *ma-*, and have said very little about the passive. Still, it would be desirable to relate these two functions to one form. A major obstacle to achieving this concerns the realization of the Agent. In transitive sentences, for example, the Agent is by definition a direct argument, while in passives it is indirect, and is obliquely Case-marked when it surfaces at all. Nevertheless, if there were a single morpheme *ma-*, the argument structure of the stem to which it attaches should be uniform.

One way of resolving this dilemma would be to show that oblique Case is suppressed in sentences where the Agent appears to be a direct argument. Alternatively, we could argue that direct arguments are marked obliquely in sentences that are understood as passive. The first hypothesis holds that *ma-* is basically a passive morpheme, the second that it functions mainly as an agreement marker. A third possibility is that some other truly optional process is responsible.

As it turns out, neither of the first two hypotheses can be maintained. First, while definite NPs are marked overtly with oblique Case in Chamorro, indefinite NPs are not. This is shown in the sentences below (adapted from Topping, 1973), where the oblique morpheme *ni* is regarded as a contracted form of *nu* +*i* (the latter a definite article):

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[88]I have chosen to express the Exclusive/Inclusive distinction by means of person features, in part to capture the homophony between the first-person plural exclusive and second-person plural forms.

(243) Oblique NPs (Chamorro)
    a. Malagó yó ni lepblo.
      want   I   Obl. book(s)
      'I want the book(s)'

    b. Malagó yó lepblo.
      want   I   book(s)
      'I want a book/books'

(243b) shows that indefinite oblique NPs are not marked overtly. Now if *ma-* were a passive morpheme, and if for some reason the oblique form *nu* were suppressed in transitive *ma-*sentences, we would expect to find sentences with indefinite subject NPs as well, i.e. where the Agent is not marked with overt oblique Case. Nevertheless, Gibson (1980) states that this is impossible. The following sentences – based on Gibson's statement – would not be well-formed:

(244) Indefinite oblique subjects
    a. *Ma-dúlalak siha famagu'un
      R3p-chase them (Obl.) children
      'Children chased themselves' (sic)   [VSO-order]

    b. *Famagu'un-siha pära uma-fa'gasi i kareta
      children-pl   Fut. S3p-wash the car
      'Children are going to wash the car'   [SVO-order]

We thus conclude that *ma-* could not function solely as a passive morpheme, i.e. where Agents are realized indirectly, sometimes with suppressed oblique Case-marking.

    Consider next the hypothesis that *ma-* is an agreement morpheme, and that Agents are direct arguments which are sometimes marked with oblique Case. First we may assume that if the argument structure of all *ma-*stems is uniform, the arguments will be projected uniformly, in accordance with the UTAH (Baker, 1988). This means that Agents will be realized to the left of Themes in structures underlying standard VSO sentences. We also predict that oblique Agents will surface to the left of Themes in sentences that are understood as passive. In all of the examples we have seen, however, oblique NPs Agents appear to the right of direct arguments, including Themes. Chung (1982) states that the order of Chamorro sentences is VSOX, where X ranges over oblique NPs. Based on this statement, the following sentence would be ungrammatical:

(245) Ungrammatical oblique 'subjects'
        *Man-ma-lalatdi ni palao'an i famagu'un
        Pl.-Pass-scold Obl. women the children
        'The children were being scolded by the women'

Given the problems encountered by word order then, *ma-* could not function only as agreement morpheme, where direct Agent arguments are sometimes marked with oblique Case.

It seems that the two functions of *ma-* cannot be reconciled to derived stems with a uniform argument structure. Still, a partial solution might be achieved if the different functions of *ma-* could be attributed to the level at which affixation occurs. Suppose, for example, that this prefix has the ability of attaching to a stem either in the lexicon or in the syntax.[89] If *ma-* attaches in the lexicon, the verb stem will assign it the role of Agent. Then, whenever Agent is expressed syntactically, it will have the status of an adjunct, e.g. along the lines proposed by Grimshaw (1990). Under these circumstances, the Agent will be marked with oblique Case. In addition, the AGR.o projection would be inert, at least in situations where the remaining direct argument (Theme) depends on AGR.s for Case. In effect then, lexical attachment would derive the passive function of *ma-*.

If *ma-* is not attached in the lexicon, it will be generated under AGR.o, where it assumes the status of an agreement morpheme (albeit one that cannot identify an empty pronoun). The argument structure of the verb would not be affected, hence both arguments would have to be realized syntactically. Under these circumstances, the Agent will depend on *ma-* for Case. Syntactic affixation is effected through head movement, and accounts for dual function of this affix. In adopting this proposal, we also gain some insight into how *ma-* could be fossilized in so many Chamorro words: as a morpheme that can attach to stems in the lexicon, it interacts with other lexical processes such as re-analysis.[90]

Summary

In this section, we have focussed our attention on a different aspect of Identification Theory, the forced movement of an empty pronoun to escape the effects of the GCR. In Huang's (1984) theory, empty categories that could not be identified as pronouns were thought to be variables instead, bound by a *pro*-topic. Here we saw that sentences containing *ma-* resembled subject movement, and proposed an analysis whereby a pleonastic pronoun moved from Spec. of AGR.o to COMP, or else was eliminated by subject-fronting. The motivation for this resulted from the economical usage of person-number features in distinguishing agreement forms. Finally, we suggested how the different function of *ma-* could be given a unified treatment.

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[89] A similar proposal has been made for Navajo and Dogrib (Athapaskan) by Hale (1988).

[90] In many respects, the Chamorro morpheme *ma-* resembles the clitic *se* in French: it is used in passives, middles, and appears lexically on (some) accusative verbs.

Conclusion

This thesis has investigated the relationship between surface Case-marking and syntactic structure in a number of ergative languages. On one hand, syntactic processes like reflexivization and control do not follow an ergative pattern in these languages, suggesting that transitive subjects (Agents) c-command their objects (Themes or Patients) at S-structure. On the other, wh-movement and QR pattern along the lines of Case, implying that subjects are in a different relationship with objects. This somewhat paradoxical situation was resolved by assuming that transitive sentences have different representations at S-structure and LF, or that the command relation was reversed between these levels. An absolutive NP at LF becomes the highest c-commanding NP in a Case position, in a sense an LF-subject.

The theory outlined here addresses the morphological and syntactic properties of ergative languages in terms of LF-movement. The type of marking on the NP is pre-determined by the agreement morpheme that it moves to at this level. The reason that a transitive subject (Agent) is marked uniquely in an ergative language is that only this argument canonically moves to the lower of two agreement projections. The failure of transitive subjects to participate in certain processes can henceforth also be explained in terms of movement, owing to the intervention of universal principles.

A movement theory of ergativity does not treat the correspondence between Case-marking and syntactic behaviour as accidental: Case-marking reflects the relative position of arguments at LF. We may then speculate that the role of Case in Universal Grammar is to pick out grammatical relations (so-defined) at this level. In accusative languages the correspondence between Case-marking and LF-relations is trivial, since nothing significant changes past S-structure. Only in an ergative language does the role of Case become apparent.

Acquisition

From the language learner's point of view, knowing that Case-marking underscores grammatical relations at LF means that s/he will not have to grapple with the mismatches that occur between Case and arguments at S-structure. It will not be necessary for a child to learn that although transitive objects (Patients) and intransitive subjects (Agents) both have absolutive Case, these two arguments behave differently for purposes of control or raising. Simply put, surface Case-marking cannot obscure processes that pertain to the relative prominence of Agents over Patients at this level. On the other hand, mismatches between arguments and Case would surely seem confusing if the latter did *not* refer to LF grammatical relations. Worse still, after having mastered them, the child would soon

discover that some processes (extraction) were exceptionally *consistent* with Case-marking. This would then lead us to predict that ergative languages are more difficult to learn, although there is no evidence in support of it (cf. Slobin,1992:15-371).

Case-checking at S-structure and LF

Another issue which we have identified concerns the locality condition on Case-assignment. Previously, ergative languages had been problematical for theories where each NP received its Case under Government at S-structure. The assumption was that Case had to be assigned, instead of checked. Under these conditions, locality (=Government) could only be achieved by overt movement – in marked contrast to the word order exhibited by many languages. In the true spirit of the Principles & Parameters approach, our strategy has been to allow for the locality condition to be met at S-structure or LF, such that word order may not be affected. This accounts for the distribution of Case in an ergative language, but without requiring Case-checking to apply at one level or another.

Finally, the theory of ergativity presented here strongly correlates absolutive Case in an ergative language with nominative Case in languages like English. Morphologically, these two Cases share similar properties of markedness and distribution. Syntactically, both are associated with NPs that undergo extraction easily. At the same time, however, ergative Case does not correlate with accusative. Instead it reflects a distinct projection of agreement, in contrast to the accusative Case assigned by verbs. Other theories attempt to show that ergative Case corresponds to nominative, and absolutive to accusative Case. Such theories fail to explain the marked syntactic behaviour of transitive subjects in the languages in question.

The essence of ergativity

Ergative languages are those in which a) verbs are not capable of assigning Case to objects, and b) the lower agreement morpheme (AGR.o) is morphologically stronger than the one that dominates Tense. AGR.o is thus responsible for checking the most prominent argument of the verb for Case (typically an Agent), while other direct arguments (Patients, subjects of intransitives) are checked for Case by AGR.s.

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