Linguistic Inquiry **27**:1–68 (Winter 1996)

THE STRUCTURAL DETERMINATION OF CASE AND AGREEMENT

Maria Bittner,
Rutgers University
Department of Linguistics
18 Seminary Place
New Brunswick, NJ 08903
bittner@zodiac.rutgers.edu

Ken Hale,
MIT
Dep. of Linguistics and Philosophy
20E–225
Cambridge, MA 02139
klhale@athena.mit.edu

Abstract

We analyze Case in terms of independent constraints on syntactic structures — namely, the Projection Principle (inherent Case), the ECP (marked structural Case), and the theory of extended projections (the nominative, a Caseless nominal projection). The resulting theory accounts for (1) the government constraint on Case assignment, (2) all major Case systems (accusative, ergative, active, three-way, and split), (3) Case alternations (passive, antipassive, and ECM), and (4) the Case of nominal possessors. Structural Case may correlate with pronominal agreement because the former can, and the latter must, involve antecedent-government by a functional head. However, neither phenomenon implies the other.

Keywords: Case systems, Case alternations, pronominal agreement, antecedent government.

Contents

THE STRUCTURAL DETERMINATION OF CASE AND AGREEMENT

Maria Bittner,
Rutgers University
Department of Linguistics
18 Seminary Place
New Brunswick, NJ 08903
bittner@zodiac.rutgers.edu

Ken Hale,
MIT
Dep. of Linguistics and Philosophy
20E–225
Cambridge, MA 02139
klhale@athena.mit.edu

Chomsky (1981) introduced the term "structural Case" for abstract Case which is predictably assigned, under government at s-structure, by heads of certain syntactic categories. Stowell (1981) further proposed an adjacency requirement. Initially, structural Case assigners were identified as heads of [-N] categories: V, P, or finite I (Chomsky 1980, 1981, 1986a). In more recent work (Chomsky 1989, 1992), the relevant categories have been taken to be members of the AGR family instead. Also, in addition to government, Case assignment is now taken to require the head-specifier relation. Which Case is assigned (nominative, accusative, etc) is determined by the syntactic category of the assigning head, following conventions which may vary across languages (see, eg., Bok-Bennema 1984, Levin and Massam 1985, Bobaljik 1992, Campana 1992, and Murasugi 1992, for different parametric accounts of accusative and ergative Case systems).

The basic idea which has remained constant is that the ability of a head to assign structural Case is determined by its syntactic category. In this paper, we propose a different theory, where the category is not even relevant to this issue. What matters instead are the syntactic relations in the government domain of the head. These relations determine whether the head stands in a syntactic relation which we refer to as "Case-binding" to any argument. The universal prediction of this theory is that any head, re-

gardless of its category, will assign a *marked* structural Case—i.e., accusative, ergative, or oblique—to any argument which it Case-binds. Otherwise, no marked structural Case can be assigned. Case-binding also constrains the *unmarked* structural Case—i.e., the nominative—which we analyze as Case-less. For a nominative argument, the constraint is that it must *not* be Case-bound.

Unlike the category, the structural relations in the government domain of a head can be altered by syntactic processes. By deriving or destroying Case-binding relations, these processes can therefore bestow or remove the capacity to assign structural Case. This accounts for Case alternations—another hallmark of structural, as opposed to inherent, Case. For instance, in an accusative language, the transitive verb assigns the structural accusative Case to its object in an active sentence, but loses that ability in the related passive. The reason is that passive morphology destroys the Case-binding relation which, in a nominative–accusative sentence, characteristically holds between the verb and its object. An active sentence with the ergative–nominative array resembles a passive to the extent that the verb also fails to Case-bind its object and so cannot assign structural Case. The addition of antipassive morphology—syntactically, a nominal head adjoined to the verb (Baker 1988)—crucially establishes the requisite Case-binding relation, and thereby enables the verb to assign a structural oblique Case to its object.

In generalizing the notion of "marked structural Case" from the direct Cases, accusative and ergative, to obliques of the type represented by antipassive objects we depart from the tradition. We are motivated here by the similarities in the characteristic behavior of these Cases—to wit, the predictability of their assignment and the ability to alternate with other structural Cases. In the theory we propose, both characteristics follow from the fact that all marked structural Cases, direct as well as oblique, are predictably assigned under government and Case-binding. This makes them sensitive to syntactic processes, which may alter these structural relations.

The details of the Case-binding configuration determine which Case is assigned. For the direct Cases—ergative and accusative—the relevant conventions are universal. For example, in all languages, the ergative Case is assigned if the Case-binder is I(NFL), and the accusative Case is assigned if the Case-binder is a verb with an adjoined D. Historically, such a verb may result from reanalysis of an antipassive verb, which contains an adjoined N, or of a verb with an incorporated pronominal object. Universally, then, direct Cases have Case-binders which either are functional themselves or contain functional heads—specifically, I(NFL) or D. In contrast, a purely lexical Case-binder (e.g., antipassive verb) results in a structural oblique Case, as on the object of an antipassive verb. Language-specific conventions determine which oblique Case is assigned.

This characteristic difference, between direct Cases and structural obliques, has implications for pronominal agreement. We analyze pronominal agreement as a syntactic relation between an argument chain and a functional head which governs and binds some position in that chain (cf. Chomsky 1991, 1993).[1] The required binding relation—i.e, c-command and coindexation—is compatible with Case-binding. So by virtue of being licensed *in situ* by Case-binders which are or contain functional heads, ergative and accusative arguments may agree with those heads. Nominative arguments, though Case-less and never Case-bound, may also control agreement. This is possible, for example, if a nominative subject raises to (SPEC,IP), since the foot of the resulting chain is governed by I(NFL), and the head, by C(OMP). A nominative subject, therefore, may agree with either of these functional heads. In contrast, structural obliques, with their purely lexical Case-binders, are generally too far away from any functional head to control pronominal agreement.

The central tenet of this theory is that structural Case assignment is determined by Case-binding relations. Universally, nominative arguments must not be Case-bound, while arguments in marked structural Cases must be. For the latter, the details of the Case-binding configuration determine which Case is assigned, according to conventions

which for the direct Cases, ergative and accusative, are also universal. Cross-linguistic variation in Case-binding relations gives rise to different direct Case systems. In this paper, we analyze the five principal systems which are summarized in table (1), as well as the possibility of splits, i.e., of several Case arrays coexisting in the same language:

(1)

Case system	*Agt-Pat-V*	*Agt-V*	*Pat-V*	*Languages to be discussed*
Accusative	NOM-ACC	NOM	NOM	English, Japanese, etc.
Accusative active	NOM-ACC	NOM	ACC	Acehnese, Eastern Pomo
Ergative	ERG-NOM	NOM	NOM	Dyirbal, Samoan, etc.
Ergative active	ERG-NOM	ERG	NOM	Basque, Georgian
Three-way	ERG-ACC	NOM	NOM	Nez Perce, Pitta-Pitta, etc.

In sections 1–3 below, we make the above theoretical ideas formally precise and propose an initial definition of the Case-binding relation. This definition is sufficient to account for the ergative Case system, including the well-known dichotomy between "syntactic" and "morphological" ergativity (section 4), the ergative active system (section 5), as well as the passive construction (section 6). The final, more general, definition of Case-binding is given in section 7. This preserves the results obtained in the preceding sections and further enables us to account for the antipassive construction (section 8), two types of accusative languages (section 9), accusative active languages (section 10), three-way languages (section 11), the split system of the type found in Austronesian (section 12), and the assignment of structural Case to nominal possessors (section 13). The final section 14 forms the conclusion of the paper.

1. Licensing conditions for nominal arguments

Our theory relies crucially on the notion that Case is a functional head; it is, to be precise, the nominal counterpart of C(OMP). The parallel is shown in (2a-b), below, in which

the extended projections from the lexical categories V and N are depicted (cf., Abney 1987, Grimshaw 1991). Case, we maintain, represents the maximal extension of the nominal projection, while C(OMP) represents the maximal extension of the verbal projection. Thus, a Case-marked nominal is KP, just as a fully extended verbal projection is CP:

(2) a. b.

If Case is a syntactic head, then it is expected that it will exhibit canonical head-like behavior, given the appropriate morphosyntactic condition. The appropriate condition obtains where Case is realized as an adposition (or "case particle", as it is often termed). Thus, in the head-final languages Miskitu and Shokleng (accusative and ergative respectively), overt K, a particle, is final in the Case-marked nominal, as expected:

(3) a. waitna ba sula ba *ra* kaik-an *Miskitu*
[man the] [deer the *ACC*] see-PST.3 (Misumalpan: Nicaragua)
'The man saw the deer.'

b. ti *tõ* ɛ kuyan tɛ kupe wã *Shokleng* [2]
[he *ERG*] [his body the] wash PRG (Gê: Central Brazil)
'He is washing his body.'

And, also according to expectation, these elements are initial in Case-marked nominals in the head-initial languages Khasi (accusative, cf. (4a)) and Samoan (ergative, cf. (4b)):

(4) a. ka la yo''ii *ya* 'u khlaa *Khasi* [3]
she PST see [*ACC* the tiger] (Mon-Khmer: Assam, India)
'She saw the tiger.'

b. 'olo'o uli *e* le teine le ta'avale *Samoan* [4]
PRG drive [*ERG* the girl] [the car] (Austronesian: Samoa)
'The girl is driving the car.'

The conception of Case as the nominal counterpart of the verbal functional head C receives further support from cross-linguistic parallels between "Case drop" and "Comp drop". Lamontagne and Travis (1987) observe that the possibility of non-overt realization of the accusative Case is subject to an adjacency condition, to which the established functional head C is also subject. Thus, in Japanese, both the complementizer *te* and the accusative Case particle *o* can be non-overt, but only when the constituents they head are adjacent to the governing verb—if the constituent is scrambled to a non-adjacent position, C or K must be overt. These observations are exemplified in (5):

(5) *Japanese* [5]
a. Mary-ga John-ni [Koobe-ni iku (*te*)] yuuteta (koto)
M.-TOP J.-DAT [K.-DAT go (*that*)] said (fact)
'Mary told John that she was going to Koobe.'

b. Mary-ga [Koobe-ni iku *(*te*)] John-ni yuuteta (koto)

a'. John-ga dare-(*o*) nagutta no?
J.-TOP who-(*ACC*) hit Q
'Who did John hit?'

b'. dare-*(*o*) John-ga nagutta no?

Following Saito (1984), Lamontagne and Travis attribute the adjacency requirement on "C drop", illustrated in (5a,b), to the Empty Category Principle (ECP, Chomsky 1986b):

(6) *The Empty Category Principle* (ECP):

A non-pronominal empty category must be θ-governed or antecedent-governed.

A non-overt C is empty, and therefore subject to the ECP (cf. Kayne 1981, Stowell 1981). Being in a non-thematic position, it can only satisfy this principle through antecedent-government, and so must be c-commanded by an antecedent-governor, the verb. Assuming binary branching (Hoji 1982, Kayne 1983), the c-command requirement can be met if the CP projection of the empty C is in the complement position, adjacent to the verb (as in (5a)), but not if it is scrambled to some higher position (as in (5b)). By treating Case as a functional head K, structurally parallel to C, Lamontagne and Travis extend this account to the adjacency requirement on "K drop", exemplified in (5a', b').

We take the patterns exemplified in (3)–(5) to reflect the syntax of Case in the most transparent manner. With that in mind, we propose that a nominal in a marked Case (accusative, ergative, or oblique) is a KP, while a nominal in the unmarked Case (nominative) is K-less, a bare DP or NP.[6] This is consistent with the distribution of the overt K's in (3) and (4). The distribution of K-less nominals is constrained by a filter that requires them to be "visible to a K-equivalent"; to be precise, it requires c-command and government by K or its verbal counterpart, C. We refer to this constraint as the *K Filter*, and take it to be part of the theory of extended projection (cf. Grimshaw 1991). The marked Case categories, headed by K, embrace two distinct types which we equate with marked structural Case and inherent Case.[7] Marked structural Cases are underlyingly empty Ks. Like all empty heads, these Ks must be antecedent-governed in order to satisfy the ECP. At s-structure, the antecedent-governor of an empty K licenses its morphological spell-out, which can be accusative, ergative, or oblique. The phe-

nomenon of "Case drop", illustrated in (5a',b'), arises if the s-structure spell-out is optional. For any K which remains empty, the ECP then continues to require antecedent-government, prohibiting scrambling. Finally, inherent Cases are underlyingly filled Ks. These Ks are selected by the governing heads, just as the preposition *on* is selected by the governing verb *depend*. The relevant licensing condition is therefore the Projection Principle, concerned with ensuring that all selectional requirements are met. The table in (7) below summarizes the basic elements of the Case theory we propose:

(7)

	Unmarked Case	*Marked structural Case*	*Inherent Case*
K present?	no	yes	yes
K at d-structure	- - -	empty	filled
Licensing condition	K Filter	ECP	Projection Principle

Within this theory, the traditional notion of "Case assignment" can be analyzed as follows. A head "assigns Case" to an argument, if the structural relation between the two satisfies the relevant licensing condition. Accordingly, a nominative argument is assigned Case by the functional head, C or K, which enables it to satisfy the K Filter. Marked structural Case is assigned by the head which antecedent-governs the corresponding underlyingly empty K. And inherent Case is assigned by the head which selects the corresponding underlyingly filled K. On this view, the familiar government requirement on Case assignment need not be stipulated, since it follows from the independently motivated licensing conditions.

Other characteristics of these three types of Case can also be derived from general syntactic principles. As an instance of selection, inherent Case assignment must take place at d-structure, and cannot take place in Exceptional Case Marking (ECM) configurations, where selection is impossible. From the theory of extended projection devel-

oped by Grimshaw (1991) it further follows that only lexical heads (i.e., V, P, N, or A) can assign inherent Case, since only they can select fully extended complements (here, KP).

In contrast, a marked structural Case is an underlyingly empty K subject to the ECP (6). This requires it to be antecedent-governed in the sense defined in (8b)—a generalization of the canonical antecedent-government relation (8a) (cf. Chomsky 1981):

(8) DEFINITIONS:

a. *α canonically antecedent-governs β*, iff *α* governs and binds *β*.

b. *α antecedent-governs β*, iff *α* governs and either binds or Case-binds *β*.

At s-structure, the empty K is realized by an overt Case-marker provided that it has an overt DP. The choice of the Case-marker is determined by the antecedent-governor of the empty K—a dependency parallel to that by which the agreement features of a bound pronoun are determined by its antecedent. The realization conventions for the direct Cases, ERG and ACC, are given in (9). Both conventions consist of two parts: a universal core component, concerning the assignment of these Cases by I and V; and the parametric option of extending the class of possible assigners to a related category, D or P, respectively. These parameters account for the language-specific options of extending ERG from transitive subjects to nominal possessors; and of extending ACC from objects of verbs to objects of prepositions.

(9) *Direct Case Realizations*

If α Case-binds an overt empty-headed KP β, then the empty K of β is realized as:

(i) ERG, if α is I (or D);

(ii) ACC, if α is V (or P) and has an adjoined D.

If the Case-binder does not meet the universal conditions in (9i–ii), then the empty K which it antecedent-governs is spelled out as some language-specific oblique Case.

For example, in Warlpiri and Inuit, the following language-specific conventions are then applicable (Bittner and Hale, in press, Bittner 1994a):

(10) *Oblique Case Realizations* (Warlpiri)

If α Case-binds an overt empty-headed KP β, and does not meet the conditions of (9.i–ii), then the empty K of β is realized as DAT.

(10′) *Oblique Case Realizations* (Inuit)

If α Case-binds an overt empty-headed KP β and does not meet the conditions of (9.i–ii), then the empty K of β is realized as:

(i) INS, if α is lexical and is c-commanded by β;

(ii) DAT, if α is V and is not c-commanded by β;

(iii) ABL, if α is N and is not c-commanded by β.

Finally, nominative arguments are K-less nominals subject to the K Filter (11). Intuitively, this principle requires them to be assigned Case, by being appropriately related to K or C, and rules out double Case assignment (cf. Case Filter of Chomsky 1980, 1981, 1986a):

(11) *K Filter* :

An argument chain headed by a K-less nominal (DP or NP) contains a position that is c-commanded and governed by K or C, and does not contain any Case-bound position.

Empirically, the K Filter (11) accounts both for the propensity of nominative arguments to raise to (SPEC,IP), a position c-commanded and governed by C, and for the possibility of alternative licensing mechanisms.[8]

Clearly, the success or failure of this theory hinges on the all-important relation of "Case-binding". For almost all of the predictions about structural Case depend on uni-

versal principles which crucially refer to this relation. These principles include the ECP (6), the Case Realization Conventions (9), and the K Filter (11). In (6) and (9), the reference to Case-binding is indirect, implied in the reference to the relation of antecedent-government defined in (8b). The intuitive idea behind Case-binding is that the ability to assign marked structural Case is automatically present in any head whose government domain contains evidence of "competition for Case". In general, a head will Case-bind (i.e., assign marked structural Case to) an argument which it locally c-commands, if it also governs some "Case-competitor" for that argument (cf. Marantz's 1991 notion of "dependent Case"). While Case-competitors are regularly K-less nominal elements, they admit of some variability. As expected, the Case-competitor for an argument may be a co-argument DP or NP; but it may also be an adjoined head, D or N, functioning as a "pseudo co-argument". The formal definitions pertaining to these two types of Case-competitors are given in sections 3 and 7, respectively. But first, we clarify our assumptions concerning two auxiliary relations: "internal subject" and "government".

2. Internal subjects and government

We assume a version of the "VP-Internal Subject Hypothesis" (Koopman and Sportiche 1985, 1987, Kitagawa 1986, Fukui and Speas 1986, *et al.*), subsuming that hypothesis under the general theory of predication developed by Williams (1980). A subject is defined in virtue of its relation to a predicate. For us, as for Williams, a predicate is the maximal projection of a lexical head (AP, NP, PP, or VP). Thus, the secondary predicate *drunk* in (12) is a maximal projection (AP) predicated of *John*. The predication relation is possible because the subject *John* c-commands the predicate and is co-indexed with it.

(12) John$_i$ gave the lecture [$_{AP}$ drunk]$_i$.

However, our principal concern here is primary predication, of the type illustrated by (13a-b):

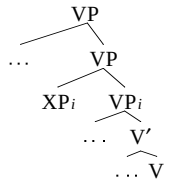
(13) a. John made [$_{VP}$ them$_i$ [$_{VP}$ write to each other]$_i$].

b. They$_i$ have [$_{VP}$ t_i [$_{VP}$ written to each other]$_i$].

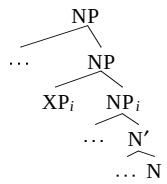
The primary predicates *write to each other* in (13a) and *written to each other* in (13b) are also maximal projections (VPs) related to their subjects under c-command and coindexation. However, in primary predication, the subject forms a constituent with its predicate at the d-structure level, as indicated by the bracketing in (13a–b). The ECM construction (13a) exemplifies the situation in which the s-structure and d-structure positions of an embedded subject (*them*$_i$) coincide, being Case-bound by the main verb. In (13b), the d-structure subject position is also within a constituent containing the predicate. In this case, however, it is represented by a trace (t_i), since the subject is not Case-bound by I, and is therefore forced to raise to (SPEC,IP) for reasons of Case.

In general, we propose that, in primary predication, the subject is the *distinguished adjunct* to the predicate at d-structure; that is, it is that adjunct which is coindexed with the predicate, as required by the predication theory (cf. Koopman and Sportiche 1985, 1987, and Sportiche 1988). We extend this to cover, of course, not only the situation in which the predicate is a VP, as in (13) above and (14a) below, but also that in which the predicate is an NP, as in (14b). Accordingly, in (14a) and (14b) the subject XP is coindexed with its primary predicate, VP and NP, respectively:

(14) a.



b.



In addition to unifying the theory of secondary and primary predication, this conception of the subject relation makes it possible to reconcile the evidence for the "VP Internal Subject Hypothesis" with the seemingly conflicting evidence that the subject is the "external argument" of the verb (cf. Williams's 1980, 1981). In its distinguished ad-

junct position, the subject is dominated by the highest segment of the VP, and so is not excluded by this maximal projection. In that sense, it is indeed internal to the VP. But since not all segments of the VP dominate the distinguished adjunct position, the subject in not included in the VP either.[9] This accounts for its behavior as the external argument in contrast to any internal arguments generated in the complement position (primary object) or the specifier position (secondary object) of the verb. Finally, unlike ordinary adjuncts, the distinguished adjunct position occupied by the subject at d-structure is an A-position, clearly, since it may function as the antecedent of a reflexive or reciprocal element (as in (13a-b); see also Bittner 1994a for evidence from Inuit).

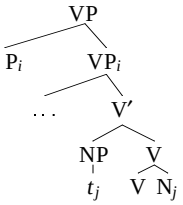
We will frequently make use of the term *small clause*. In the tradition which is now generally accepted in the linguistic literature, this is a technical term for us, and it refers precisely to predicational structures of the type depicted in (14), and only these. This conception of underlying clause structure also motivates the following formalization of Chomsky's (1981) notion of an *A-position*, intuitively characterized as a position of the right kind to be occupied at d-structure by an argument of a verb or other lexical head:

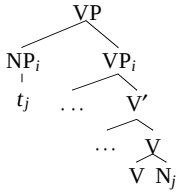
(15) DEFINITION: An *A-position* is the position of a complement, specifier, or distinguished adjunct, of a lexical head.

According to this formalization, (SPEC,IP) is *not* an A-position. It is an A′-position. Though unconventional, this view is supported by cross-linguistic evidence that raising of non-subjects to (SPEC,IP) behaves like movement to an A′-position (e.g., Diesing 1990, Guilfoyle, Hung, and Travis 1992, Bittner 1994a). When a subject raises to (SPEC,IP), the A′-status of its derived position is obscured by the proximity of the trace. As the distinguished adjunct to the verb, the trace is in an A-position and is responsible for the apparent A-properties of the subject (e.g., the ability to license reflexive elements, which the *in situ* subject in (13a) shares with the raised subject in (13b)).

The government relation serves to illustrate the special status of the subject, the external argument, in contrast to the internal, arguments of a lexical head. Since selection takes place under government, only internal arguments can be selected. In particular, only they may be assigned inherent Case. Furthermore, as Baker (1988) has shown in detail, incorporation must obey the Head Movement Constraint (cf. Travis, 1984), a corollary of the ECP, requiring that the host of an incorporated head govern the trace of that head. This is the situation which holds clearly in (16a) below, a prototypical instance of object incorporation in which a noun (N_j) incorporates into a verb out of the complement of the latter:

(16) a. b. *





By contrast, (16b) is impossible. The subject of a verb, although it is an argument thereof, cannot incorporate into it. This follows straightforwardly if, as we maintain, the subject is an adjunct and therefore not governed by the head of its predicate.

The government relation which we assume here is essentially that of Chomsky (1986b):

(17) DEFINITION:

α governs β, iff

(i) α m-commands β;

(ii) there is no barrier between α and β.

The associated definitions in (18-19) are standard, for the most part, except for the inclusion of special provisions permitting exceptional government under a condition which we refer to as *transparency* (cf. Chomsky 1986b, p. 8; Baker 1988, pp. 56–57):

(18) DEFINITIONS:

a. α *m-commands* β, iff α does not include β, and every maximal projection which includes α also includes β.

b. α *c-commands* β, iff α excludes β, every projection which includes α also includes β, and at most one projection segment dominates α but not β.

(19) DEFINITION:

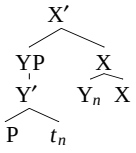
A *barrier* between α and β is an XP, γ, with the X°-head, γ°, such that:

(i) γ excludes α, includes β, and is not an extended projection of β;

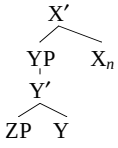
(ii) γ° c-commands β and neither α nor any adjunct of α binds γ°.

In (20a) below, the head X governs ZP. This is an effect of incorporation (of Y into X), since this process has resulted in a configuration to which (19ii) applies, removing YP from the class of barriers. Since an adjunct of X binds (i.e., c-commands and is coindexed with) the head of YP, this intervening maximal projection is *transparent* for government, permitting X to govern ZP. A similar situation obtains in (20b), where X likewise governs ZP. Here again, clause (19ii) is implicated; in this case, however, it is X itself which binds the head of YP, rendering this maximal projection transparent for government.

(20) a.



b.



In general, transparency to government results from syntactic processes which create "discontinuous heads", either through incorporation or binding. The phenomenon of transparency will play an important role at several points in subsequent sections.

3. Case-binding due to competition from K-less co-arguments

We now proceed to make precise the essential components of the Case-binding relation. This is a fundamental notion in this theory, since nominative arguments must not be Case-bound, lest they violate the K Filter, while every marked structural Case originates as an empty K which must be Case-bound, in order to satisfy the ECP. The Case-binding relation crucially requires three elements in a single government domain: a head, an argument, and a K-less nominal element which activates the head by functioning as a Case-competitor for that argument.

Intuitively, the principal domain in which nominal elements compete for structural Case is a small clause. In keeping with this intuition, structural Case-assigning potential is restricted to heads which *delimit* such a domain, in accordance with one or the other of the two provisions of (21):

(21) DEFINITION: A small clause is *delimited* by its lexical head, from below, and by any governing functional head, from above.

A head which delimits a small clause in this sense will Case-bind an argument just in case both of the conditions embodied in (22) are also met: [10]

(22) DEFINITION:

Let α be a head which delimits a small clause, and let β be an argument.

Then α *Case-binds* β, and β's head, iff

(i) α locally c-commands β;

(ii) α governs a Case-competitor for β.

Condition (22i) ensures that Case-binding, like other syntactic binding relations, involves c-command. The other standard requirement, coindexation, is replaced by a set of structural requirements which play the same role of unambiguously identifying

the possible binders and bound elements in any syntactic structure. One of these additional requirements makes Case-binding subject to relativized minimality, since it demands *local* c-command, as defined in (23) (cf. Rizzi 1990):

(23) DEFINITION:

Let α be a head which delimits a small clause, and let β be an argument.
Then α *locally c-commands* β, iff (i) α c-commands β, and (ii) no other argument, or head which delimits a small clause, both c-commands β and is c-commanded by α.

The second requirement, (22ii), makes explicit the sense in which Case-binding, a two-place relation between a head and an argument, crucially involves a third element, the Case-competitor. A head will Case-bind an argument, and thereby assign it some marked structural Case, only if it governs a Case-competitor for that argument.

In general, a Case-competitor for an argument is a K-less nominal. Since the precise definition depends on whether the Case-competitor is a maximal projection (DP or NP) or a head (D or N), we discuss these two alternatives in separate sections. We begin with the intuitively expected situation, in which the Case-competitor is a K-less co-argument, DP or NP. In that situation, the structural relation "Case-competitor" can be defined as in (24). The auxiliary relation "co-argument" is defined in (25), where "A-projection" is the relation which holds between a lexical head and any of its arguments (i.e., its complement, specfier, or distinguished adjunct):

(24) DEFINITION (partial):

γ is a *Case-competitor for* an argument β, if γ is a K-less nominal which is in a chain with a co-argument of β.

(25) DEFINITION:

Let β and γ be arguments. Then γ is a *co-argument* of β, iff (i) and (ii) hold:

(i) LOCALITY: some head which governs or A-projects γ also governs or A-projects β;

(ii) INDEPENDENCE: γ excludes β and is not in a chain with β.

The conception of a "Case-competitor" as a K-less co-argument accounts for a substantial portion of the cross-linguistic Case patterns to be discussed in this paper. Thus, it makes it possible to derive both major types of ergative Case systems, "syntactic" and "morphological" (section 4). The ergative-based active Case system of the type represented by Basque also receives a natural account (section 5). And we further propose a new analysis of the passive which, in addition to explaining its characteristic properties, sheds light on the passive–ergative reanalysis (section 6).

4. Two types of ergative languages

In an ergative language, the unique argument of a monadic verb is in the unmarked, nominative, Case as is the patient argument of a transitive agent-patient verb. The agent argument is in a marked, ergative, Case and is identified as the subject by standard diagnostic tests (control, licensing of reflexive arguments, etc; cf. Anderson 1976).

In the present theory, the transitive ERG–NOM array arises when two conditions are met. One, the verb fails to Case-bind the object; and two, the VP-internal subject is Case-bound by the functional head I, a universal source of the structural ergative Case. This functional head is activated by a Case-competitor for the subject—to wit, the nominative object DP which in an ergative sentence is governed by I. The requisite government relation can be established in different ways. One possibility is that the nominative object DP may raise to (SPEC,IP), a position governed by I. Alternatively, the VP may be rendered transparent to government from I, e.g., by V-to-I movement (cf. Baker 1988, and the definition of barrier in (19)). Either mechanism will activate I to

Case-bind the subject in a transitive sentence, but neither will if the verb is monadic. Having no Case-competitor, the unique argument of a monadic verb cannot be Case-bound, and so cannot be assigned any marked structural Case.

We thus predict two types of ergative languages, to wit, "raising ergative" and "transparent ergative". This theoretical division corresponds roughly to the traditional distinction between syntactic and morphological ergativity (cf. Dixon 1979, Plank 1979). We also account for the absence of rigid SIVO order in ergative languages of either type (Mahajan 1994, Kayne p.c.)—a striking gap in view of the popularity of this order in languages with accusative Case systems. In this theory, the gap follows because Case-binding, like other binding relations, requires c-command. So in an ergative sentence, I must Case-bind the subject while the latter is still in its underlying VP-internal position. On the assumption that unmotivated movement is excluded (Chomsky 1989), the subject will therefore not raise to (SPEC,IP) at s-structure, and so the order SIVO cannot be derived.

In the following discussion of particular ergative languages, Dyirbal and Inuit represent the raising type, and Samoan and Warlpiri, the transparent type. [11]

4.1. Dyirbal and Inuit: "syntactic ergativity" due to raising

The Dyirbal sentence (26) exemplifies the classical intransitive structure which lacks a Case-competitor for its single argument.

(26) *Dyirbal* (Pama-Nyungan: Queensland, Australia)

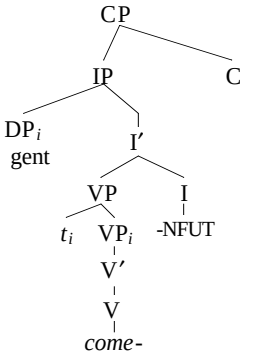
payi yara pani-nyu

CL(NOM) man(NOM) come-NFUT

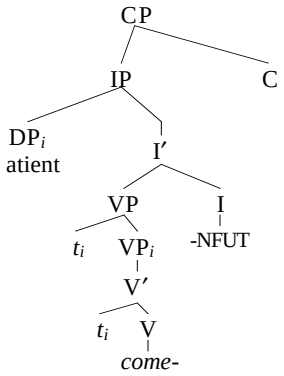
'The man is coming.'

The structural representation of this sentence is (27a) or (27b), depending on whether the verb *pani-* 'come' is unergative or unaccusative: [12]

(27) a.



b.



Consider first the unergative structure (27a). This structure contains a single small clause—to wit, the VP—and this is delimited by V from below, and by I from above. The Case-binding relations are therefore determined by the structural relations in the government domains of these two heads. For each head, the government domain—intuitively, the "field of vision" and "sphere of influence"—is indicated by stipled borders, for clarity. The verb does not Case-bind anything in its domain since it does not c-command any argument. And although I locally c-commands the trace, t_i, in the subject position of the verb, it does not Case-bind this argument either, for lack of a visible Case-competitor. The raised nominative DP$_i$ in (SPEC,IP) meets some of the relevant requirements, being a K-less nominal which is governed by I. But it is not a co-argument of the trace, since it forms a chain with it and therefore fails to meet the independence requirement (25ii). Intuitively, these two nominal elements are not co-arguments, but two pieces of a single argument, and so they do not compete for Case. Thus, there are no Case-bound positions in this unergative structure. This circumstance simultaneously enables the subject to satisfy the K Filter (11), if it is K-less (that is, nominative) and raises to (SPEC,IP); and rules out any marked structural Case, since the underlyingly empty K of the latter would violate the ECP (6). In (27a), the chain headed by the nominative DP$_i$ satisfies the K Filter (11), because DP$_i$ is c-commanded and governed by C, and neither DP$_i$ nor its trace, t_i, is Case-bound.[13]

Similarly, the unique argument in the unaccusative structure (27b) must also be nominative. For here, too, there is no Case-competition and therefore no Case-bound positions.

By contrast, transitive clauses of the type represented by (28), and analyzed in (29), crucially differ in that they contain two nominal arguments, one of which can function as a Case-competitor for the other:

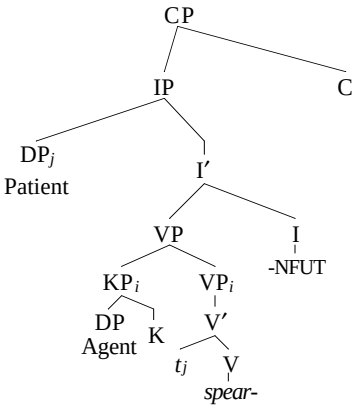
(28) *Dyirbal* (Pama-Nyungan: Queensland, Australia)

payi	parrkan	pangkul	yara-ngku	jurrka-nyu
CL(NOM)	wallaby(NOM)	CL(ERG)	man-ERG	spear-NFUT

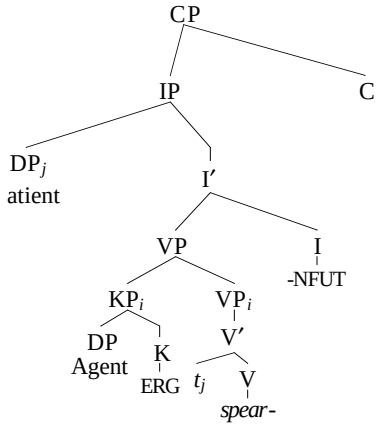
'The man is spearing the wallaby.'

The government domain of the verb in the transitive structure (29a) is just like in the unaccusative structure (27b). In both structures, the verb fails to Case-bind its object, because it does not govern any Case-competitor for it. The subject, the only likely candidate for that role, is invisible to the verb, since it is not governed by it (see section 2 above). So the argument which originates in the object position must be nominative, and must be raised to (SPEC,IP) to satisfy the K Filter.

(29) a.



b.

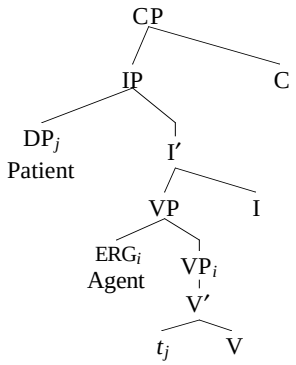


However, the consequences of this raising are quite different for the transitive structure (29a) than for the unaccusative (27b). In (29a), the raised object is not only governed by I, but also qualifies as a Case-competitor for the subject. This is so because it is a K-less nominal (DP_j) and has a trace (t_j) which is a co-argument of the subject. As a visible Case-competitor for the subject, the raised object activates I, which locally c-commands the subject, to Case-bind that argument. The subject, therefore, cannot be nominative. For if it were, then it would violate the K Filter—to wit, the requirement that no position in a chain headed by a bare DP may be Case-bound. But by the same token, the subject can be a KP headed by an empty K, as in (29a), since that K is governed and Case-bound by I, satisfying the antecedent-government requirement of the ECP. And since the antecedent-governor is I, the underlyingly empty K is realized at s-structure as ERG, as in (29b), in accordance with the universal conventions of (9).

In this theory, then, universal principles determine which arguments will be nominative, and which will be in some marked structural Case. The distribution of these two nominal categories, bare DP and empty-headed KP, follows from the K Filter and the ECP, respectively. For the marked KP category, the proposed realization conventions further determine which Case will be assigned, and typically do so, as in (29), without relying on any parametric settings.

S-structure representations like (29b), following case insertion, will henceforth be abbreviated as in (30), where the entire KP is represented by the case name:

(30)



In the present theory, pronominal agreement is a relation between an argument chain (i.e., a chain footed in an A-position) and a functional head which canonically antecedent-governs (i.e., governs and binds) some position in that chain. In most languages, the position at issue is the head of the argument chain (*head agreement*), but it may also be the foot (*foot agreement*). In the latter case, there may be the appearance of "specifier–head" agreement with I, if the argument at issue has raised from the VP-adjoined subject position to (SPEC,IP) (cf. Chomsky 1989ff). Either type of agreement is independent of structural Case. In particular, we predict that structural Case may be preserved while agreement is lost.

This prediction is borne out in Inuit, a raising ergative language with head agreement. In finite clauses, exemplified in (31a,b), direct arguments agree with antecedent-governing functional heads—the nominative with C, and the ergative with I. Thus, when the two agreements are morphologically distinguishable, as in the dependent transitive clause in (31b), I-agreement, with the VP-internal ergative subject, is closer to the verb than C-agreement, with the nominative object in (SPEC,IP): [14]

(31) *Inuit* (Eskimo-Aleut: West Greenland)

a. Juuna nuannaar-a-*mi* _ miiqqat kunip-p-a-i
[J.(NOM)$_i$ happy-DPST-*3SG.PROX*$_i$] pro(ERG)$_i$ children(NOM)$_j$ kiss-IND-[+tr]-3SG$_i$.3PL$_j$
'Because Juuna$_i$ was happy, he$_i$ kissed the children.'

b. Juuna-p miiqqat taku-ga-*mi*-*git* _ nuannaar-p-u-q
[J.-ERG$_i$ children(NOM)$_j$ see-DPST-*3SG.PROX*$_i$-*3PL*$_j$] pro(NOM)$_i$ happy-IND-[-tr]-3SG$_i$
'Because Juuna$_i$ has seen the children, he$_i$'s happy.'

In infinitival clauses, in Inuit as in English, there is no I-agreement; thus, in the transitive infinitive (32b), the ergative subject fails to agree. The nominative agreement in C, with the intransitive subject in (32a) and transitive object in (32b), is still present. The loss of agreement notwithstanding, the ergative Case is still assigned to the

VP-internal subject of the infinitive in (32b), just as it was in the related finite clause in (31b). Such independence is expected given the structure in (30), because the ergative Case is assigned by any I, under government and Case-binding, and these syntactic relations are not affected by the presence or absence of agreement.

(32) *Inuit* (Eskimo-Aleut: West Greenland)

a. Juuna nuannaar-lu-*ni*_ miiqqat kunip-p-a-i
[J.$_i$ happy-INF-*3SG.PROX*$_i$] pro$_i$ children$_j$ kiss-IND-[+tr]-3SG$_i$.3PL$_j$
'Being happy, Juuna kissed the children.'

b. Juuna-p miiqqat taku-llu-*git* _ nuannaar-p-u-q
[J.-ERG$_i$ children$_j$ see-INF-*3PL*$_j$] pro$_i$ happy-IND-[-tr]-3SG$_i$
'Seeing the children, Juuna was happy.'

Furthermore, structural obliques in Inuit show that structural Case can be assigned even to arguments that never control agreement. The obliques at issue, exemplified by INS in (33a) and DAT in (33b), are identified as structural by the predictability of their assignment and their ability to alternate with other structural Cases (here, with NOM):

(33) *Inuit* (Eskimo-Aleut: West Greenland)

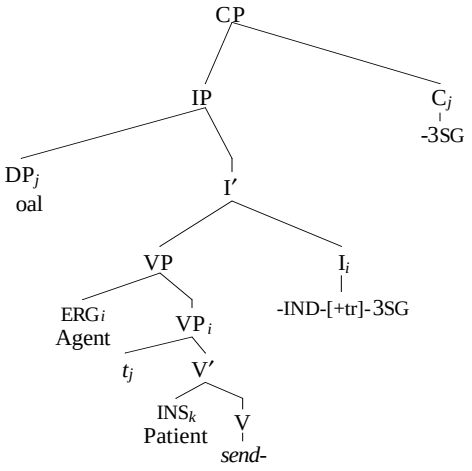
a. Juuna-p Kaali atuakka-nik nassip-p-a-a
J.-ERG$_i$ K.$_j$ book-PL.INS$_k$ send-IND-[+tr]-3SG$_i$.3SG$_j$
'Juuna sent Kaali the books.'

b. Juuna-p atuakka-t Kaali-mut nassi-up-p-a-i
J.-ERG$_i$ book-PL$_k$ K.-DAT$_j$ send-APPL-IND-[+tr]-3SG$_i$.3PL$_k$
'Juuna sent the books to Kaali.'

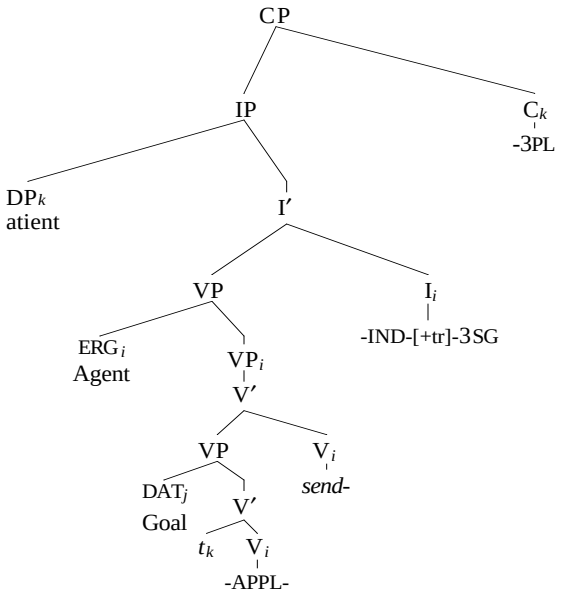
Thus, (33) illustrates a productive alternation. Most triadic verbs in Inuit have a plain form (*nassit-* in (33a)) which occurs with the ERG$_i$-NOM$_j$-INS$_k$ array; and a form augmented with the applicative suffix *-ut*, resulting in a shift to the ERG$_i$-DAT$_j$-NOM$_k$ array (as in (33b)).

Both sentences are given with the pragmatically neutral order of Inuit, ERG-NOM-OBL-V, which we assume to be derived at PF, by the fronting of the ergative subject. The s-structures of these sentences, which account for the thematic relations as well as Case assignment and agreement, are depicted (34a,b) (cf. Larson's 1988 analysis for English):

(34) a.



b.



The two structures yield identical thematic relations, if we assume the cross-linguistic semantics of Bittner (1994b) and analyze the applicative *-ut* as a "pro-verb" bound by the higher verb. Syntactically, this element forms a "discontinuous head" with the verb. Semantically, it is interpreted as a variable of the same logical type as the verb (i.e., $\langle e,\langle e,\langle e,t\rangle\rangle\rangle$ in (34b)) and gets its value from that verb by variable-binding. Assuming the compositional rules of the semantic theory at issue, this binding relation is sufficient to preserve the thematic relations between (34a) and (34b), because the underlying hierarchy of the arguments is kept constant ($\text{Patient}_k < \text{Goal}_j < \text{Agent}_i$). [15]

The same binding relation also has implications for structural Case assignment. By rendering the VP projection of the bound applicative verb transparent, it expands the government domain of the higher verb ('send') as indicated in (34b) (cf. section 2). Since only the higher verb has a distinguished adjunct (ERG$_i$), there is only one small

clause (section 2). This small clause is delimited by the verb 'send' from below and by I(NFL) from above. The functional head I Case-binds the VP-adjoined subject, because it locally c-commands this argument and governs a Case-competitor for it—to wit, the raised nominative object (DP_k) in (SPEC,IP). Crucially, the trace (t_k) of this object is close enough to the subject to qualify as a co-argument, being governed by a head (the verb 'send') which A-projects the subject. Thus, I assigns the ergative Case in the usual manner. As for the verb 'send', this locally c-commands the higher object (DAT_j), and governs a Case-competitor for it, the trace t_k. The latter qualifies as a K-less nominal on the standard assumption that traces inherit the category of their original content (here, DP_k). So the verb 'send' Case-binds the higher object and assigns it the structural dative Case, in accordance with the Inuit-specific oblique conventions of (10′):

(10′) *Oblique Case Realizations* (Inuit)

If α Case-binds an overt empty-headed KP β and does not meet the conditions of (9.i–ii), then the empty K of β is realized as:

(i) INS, if α is lexical and is c-commanded by β;

(ii) DAT, if α is V and is not c-commanded by β;

(iii) ABL, if α is N and is not c-commanded by β.

Finally, the chain headed by the nominative object, DP_k, satisfies the K Filter. For DP_k itself is c-commanded and governed by C, and its trace, t_k, is not Case-bound, since its local c-commander (the applicative verb) fails to delimit a small clause.

The structure in (34a) is simpler, involving no applicative verb. Here, too, there is only one small clause, delimited by the verb 'send' from below and by I from above. Each head Case-binds the argument which it locally c-commands; this is the lower object and the subject, respectively. Since neither head locally c-commands (SPEC,VP), the higher object is not Case-bound and therefore must be licensed in the nominative Case by raising to (SPEC,IP). The entire chain is visible to I and both the raised nominative

(DP_j) and its trace (t_j) qualify as Case-competitors for the subject; from the verb, only trace is visible, serving as a Case-competitor for the lower object. Thus, I continues to assign the ergative Case; while the verb 'send' now assigns the instrumental Case, still in accordance with the Inuit-specific conventions of (10').

In both structures, the functional heads, C and I, agree with the arguments that they antecedent-govern, the nominative in (SPEC,IP) and the V P-adjoined ergative, respectively. But since antecedent-government implies relativized minimality (Rizzi 1990)—i.e., requires *local* c-command—no functional head can antecedent-govern the oblique objects in (34a,b). So although these arguments are also assigned structural Case, under government and Case-binding, they cannot control agreement.

4.2. Samoan and Warlpiri: "morphological ergativity" due to transparency

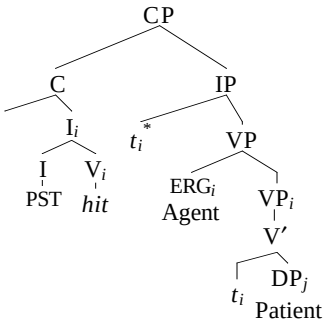
In raising ergative languages, such as Dyirbal and Inuit, the ergative Case is assigned by I to the transitive subject because the nominative object, a bare DP, raises to (SPEC,IP) to satisfy the K Filter. But in fact, the assignment of the ergative Case is orthogonal to raising. It is logically independent, since it involves Case-binding by I, which does not entail DP raising. The conditions for assigning this Case can also be met if all of the relevant nominals remain in their original d-structure positions. This holds, for example, in the Samoan ergative construction (35a), whose s-structure is depicted in (36a).

(35) *Samoan* (Austronesian: Samoa) [16]

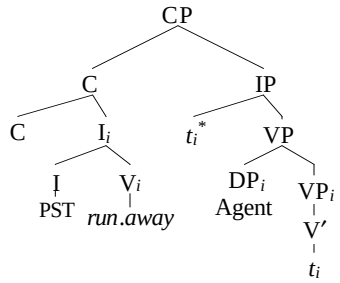
a. sa sasa e le teine le maile
PST hit [ERG the girl] [the dog]
'The girl hit the dog.'

b. sa sola le teine
PST run.away [the girl]
'The girl ran away.'

(36) a.



b.



In Samoan, the verb raises to I, rendering the VP transparent to government, and the resulting inflected verb raises further to C. In the transitive (36a), therefore, the trace of the inflected verb, t_i*, has in its purview both the subject, which it locally c-commands, and the nominative object, DP_j. Seeing Case-competition, the trace t_i* Case-binds the subject.[17] It follows that the subject cannot be nominative—i.e., a bare DP—since it would violate the K Filter. But it can be an empty-headed KP, inasmuch as its empty K will satisfy the ECP. Since a trace inherits the category of its original content, the trace t_i* is of the category I, and therefore assigns the ergative Case. The nominative object, DP_j, is also licensed in its underlying position. For it, too, satisfies the relevant licensing principle, the K Filter. As required, DP_j in (36a) is c-commanded and governed by C, which governs the whole clause as a consequence of V-to-I-to-C movement; and it is not Case-bound, since the locally c-commanding head, the verbal trace t_i, does not govern any other nominal element. Similarly, the absence of Case-competition in the intransitive sentence (35b), with the structure (36b), entails that the unique argument of the verb must be nominative, a bare DP.

Given our assumptions about government (section 2 above), head movement is not the only mechanism which renders maximal projections transparent to government. More generally, transparency is induced by syntactic binding relations (i.e. c-command and coindexation) between the heads involved. The requisite binding relation can be established by head movement, as in (36); or it may be base-generated to make the

structure interpretable, as in the complex triadic structure (34b) of Inuit. The latter circumstance, we maintain, gives rise to transparency in Warlpiri. The result is the well-known mixed system of this language, combining an ergative pattern of Case-marking on the nouns with an accusative pattern of pronominal agreement in the auxiliary:

(37) *Warlpiri* (Pama-Nyungan: Central Australia)

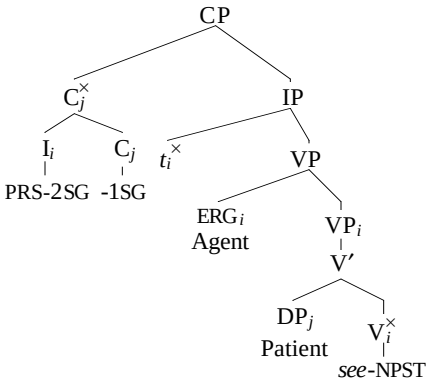
a. nyuntulu-rlu ka-npa-ju ngaju nya-nyi
you-ERG PRS-2SG-1SG me(NOM) see-NPST
'You see me.'

b. nyuntu ka-npa parnka-mi
you(NOM) PRS-2SG run-NPST
'You are running.'

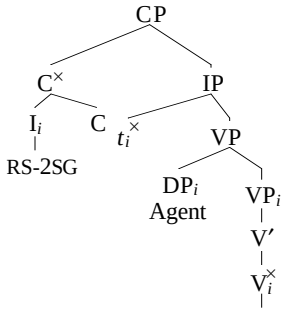
c. ngaju ka-rna parnka-mi
me(NOM) PRS-1SG run-NPST
'I am running.'

Underlying these patterns are the following s-structure representations of the transitive sentence (37a) and the intransitive (37b):

(38) a.



b.



With respect to the government and Case-binding relations, the Warlpiri structures (38a) and (38b) are indistinguishable from (36a) and (36b), respectively, in Samoan. Hence the shared ergative pattern of Case-marking in both languages. In Warlpiri, the I-to-C movement gives rise to a cluster of elements which includes tense and agreement and has been called the "auxiliary" (AUX) in the literature on the language (cf. Hale 1973, 1982, Nash 1986, Simpson 1991). The verb does not move to I, but is instead bound *in situ* by I. In Bittner and Hale (in press), we argue on semantic grounds that the binding relation between I and the verb universally holds at LF. What distinguishes Warlpiri, and other languages of this transparent ergative type, is that I binds the verb already at s-structure. As a consequence, the VP is transparent at s-structure, allowing all the arguments of the verb to be licensed *in situ*.

Intuitively, the combination of head movement (I-to-C) and head binding (of V by I) in Warlpiri creates a discontinuous head. We refer to the special relation thus established, between C, the trace of I, and V, as a "transparency chain" and represent it informally by $\times$-superscripts in the structural diagrams of (38). It is this relation, we maintain, which gives rise to the accusative agreement pattern illustrated in (37a–c), where subjects are treated as a natural class, distinct from the class of objects.[18]

In Warlpiri, as in Inuit, pronominal agreement is a relation between an argument chain and a functional head, C or I, which canonically antecedent-governs the head of that chain. In Inuit, this results in an ergative agreement pattern, which treats nominatives as a natural class, opposed to the ergative. This is due to the raising of nominative arguments to (SPEC,IP), where they are antecedent-governed by C (see section 4.1). In Warlpiri, on the other hand, all of the arguments of a clause are licensed *in situ*, by virtue of transparency. Consequently, the VP-internal subject is consistently antecedent-governed by I (more precisely, by its trace, t_i). Therefore, I consistently agrees with the subject, as in (38a,b), whether that is ergative or nominative.

The relationship between C and agreement in Warlpiri cannot be the direct one seen for Inuit, because the required relation of antecedent-government implies relativized minimality (Rizzi 1990). Precisely because the arguments of the Warlpiri clause are *in situ*, C cannot antecedent-govern any of them, since the trace of I, another functional head, is always a more local potential antecedent-governor. While the required relation cannot be satisfied by C itself, it can be satisfied by the transparency chain headed by C. The most prominent object, controlling object agreement, can be properly identified in relation to that chain. It is the argument which is governed and locally c-commanded by the foot of the transparency chain. In terms of Case itself, the most prominent object is not a homogeneous class, since it is dative if there is one (as in the triadic (39), whose structure is shown in (40) below), otherwise nominative (as in the diadic (37a), whose structure is shown in (38a) above). [19]

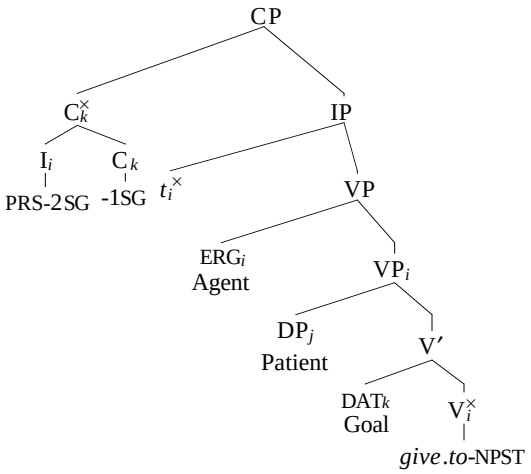
(39) *Warlpiri* (Pama-Nyungan: Central Australia)

nyuntulu-rlu ka-npa-ju maliki-jarra ngaju-ku yi-nyi

you-ERG PRS-2SG-1SG dog-DU.NOM me-DAT give.to-NPST

'You are giving me two dogs.'

(40)



In general, transparent and raising ergative languages differ in regard to the transparency of the VP. This in turn determines whether the nominative argument can satisfy the K Filter *in situ* (as in Samoan and Warlpiri) or must raise to (SPEC,IP) (as in Dyirbal and Inuit). Consequently, these two language types can be distinguished by phenomena which are sensitive to these characteristic differences at the (abstract) syntactic level of s-structure. Pronominal agreement exemplifies a phenomenon of this kind. Others include structural Case assignment, binding and obviation, as well as semantic scope relations (see Bittner and Hale, in press).[20] Because of its raising to (SPEC,IP), the nominative often functions as the prominent argument in ergative languages of the raising type. Since (SPEC,IP) is an A′-position, this mostly holds for A′-dependencies; that is, relativization, questions, topicalization, etc.[21] In languages of the transparent type, on the other hand, all the arguments of the verb are licensed *in situ*, and therefore the prominent argument is generally the subject. Thus, transparent ergative languages tend to pattern with the familiar accusative type.

5. Ergative active languages: Basque and Georgian

In an active system, the agent argument of a transitive agent-patient verb (e.g. 'hit') is Case-marked like the unique argument of an unergative verb (e.g. 'work'), which is also an agent semantically. The patient argument of the transitive verb, on the other hand, is Case-marked like the unique argument of an unaccusative verb (e.g. 'fall'), semantically likewise a patient. Thus, "agents" form a natural class, distinct from the "patients" (cf. Sapir 1917, Van Valin 1990, Mithun 1991).

Active systems are generally closely related to either the canonical ergative or the canonical accusative type. Thus, an ergative active system deviates from the classical ergative type only in that the ergative Case is extended from the subject of a transitive verb to the subject of an unergative. The following sentences illustrate the ergative ac-

tive system of Basque. In this language, unergatives regularly take the form of light verb constructions, exemplified by *hitz egin* 'speak' in (41b) (Levin 1983, Laka 1993).

(41) *Basque*

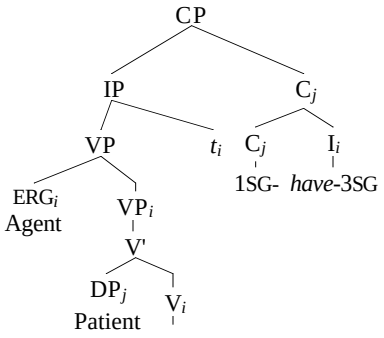
a. Miren-ek ni jo n-au (transitive)
M.-ERG$_i$ me(NOM)$_j$ hit 1SG$_j$-have.3SG$_i$
'Miren hit me.'

b. Miren-ek hitz egin du (unergative)
M.-ERG$_i$ word done have.3SG$_i$
'Miren spoke.'

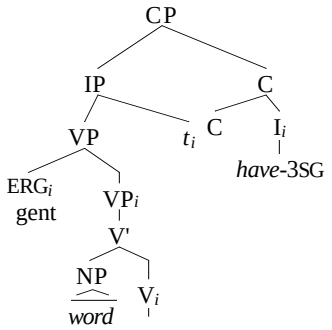
c. Miren erori da (unaccusative)
M.(NOM)$_j$ fallen 3SG$_j$.be
'Miren fell.'

The similarities in agreement suggest that the transitive (41a) and the unaccusative (41c) may be analyzed as in Warlpiri, a transparent ergative language. For the unergative light verb construction (41b), Uribe-Etxebarria (1989) shows that the nominal component (*hitz* 'word') is not incorporated into the verb. Laka (1993) further argues that it is a bare NP, citing evidence from several phenomena which distinguish it from the full DP object of the transitive sentence (41a). Given these structural claims, the present theory immediately derives the extension of the ergative Case from the transitive (41a) to the unergative (41b). This follows, because the replacement of a DP with an NP does not affect the Case-binding relations, as the reader can verify by inspecting the structures in (42a) and (42b). Crucially, either category can serve as a Case-competitor for the subject, and thereby activate the trace (t_i) of I to Case-bind this argument.

(42) a.



b.



These conclusions hold regardless of the semantic functor–argument relations in the unergative (42b), since the co-argument relation (25), which is relevant for Case-competition, is syntactic. In (42b), the NP *hitz* 'word' satisfies the locality requirement (25i), because it is governed by a head (the light verb *egin* 'done') which A-projects the subject. Since the independence requirement (25ii) is also met, this NP qualifies as a (syntactic) co-argument of the subject, and so it is a Case-competitor for it, as required.

In the theory of lexical argument structure developed by Hale and Keyser (1992, 1993), light verb constructions (like *hitz egin* 'word do') universally represent the argument structure of unergative verbs in the lexicon. In most languages, this structure is lost due to noun incorporation prior to the syntactic level of d-structure (resulting, e.g., in the English verb *speak*). The ergative active system of Basque arises because this language preserves unergative light verb constructions in the syntax, a circumstance which gives rise to the assignment of the structural ergative Case to the subject. The crucial s-structure relations may be obscured by subsequent incorporation at PF. The result then is an ergative active system of the type found in Georgian (in the past tense, perfective aspect), where the light verb syntactic structure of the unergative (43b) is not overt. Holisky (1984) describes a similar system in Tsova-Tush.

(43) *Georgian* (South Caucasian: Georgia)[22]

a. vano-m gamozarda dzma (transitive)
V.-ERG$_i$ 3SG$_j$.raised.3SG$_i$ brother(NOM)$_j$
'Vano raised his brother.'

b. bavsv-ma itira (unergative)
child-ERG$_i$ cried.3SG$_i$
'The child cried.'

c. rezo gamoizarda (unaccusative)
R.(NOM)$_j$ grow.3SG$_j$
'Rezo grew up.'

6. Passive

The active-passive alternation is found in languages with every kind of Case system. The following sentences illustrate this alternation in Inuit (ergative), Dutch (accusative), and Nez Perce (three-way):

(44) *Inuit* (Eskimo-Aleut: West Greenland)

a. Juuna-p puisit aallaa-v-a-i
J.-ERG$_i$ seals$_j$ shoot-IND-[+tr]-3SG$_i$.3PL$_j$
'Juuna shot the seals.'

b. puisit (Juuna-mit) aallaa-ni-qar-p-u-t
seals$_j$ (J.-ABL) shoot-PASS-be-IND-[-tr]-3PL$_j$
'The seals were shot (by Juuna).'

(45) *Dutch* [23]

a. de kinderen eten de kaas
[the children]$_i$ ate.3PL$_i$ [the cheese]
'The children ate the cheese.'

b. de kaas werd (door de kinderen) gegeten
[the cheese]$_j$ became.3SG$_j$ (by the children) eat.PASS
'The cheese was eaten (by the children).'

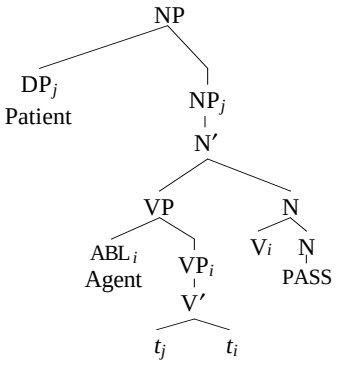
(46) *Nez Perce* (Penutian: Oregon)[24]

a. háama-nm hi-néec-'wi-ye wewúkiye-ne
man-ERG$_i$ 3$_i$-PL$_j$-shoot-PRF elk-ACC$_j$
'The man shot (several) elk.'

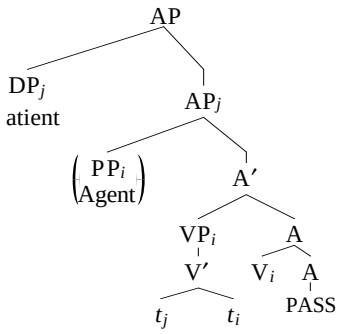
b. mét'u 'óykalo síiw-yi'n hi-w-s-íix
but all(NOM)$_j$ paint-PASS 3$_j$-be-ASP-PL$_j$
'But they$_j$ are all painted.'

In general, a passive is like a raising ergative sentence to the extent that the verb does not assign structural Case to the object, and the latter must raise to satisfy the K Filter. In a passive, however, the object does not move directly to (SPEC,IP), though in an opaque language it may eventually move to this A′-position. Crucially, the object first moves to a higher A-position, where it acquires the properties of a derived subject. Within the present framework of assumptions (section 2), this forces us to assume the presence of a higher lexical head, which we identify with the passive morpheme on the verb. Being lexical, the passive phrase can have a subject, i.e., an adjunct licensed by predication. So by adjoining to the passive phrase and making its index available for predication, the underlying object can become a derived subject, as in (47a,b).

(47) a. Inuit



b. Dutch/Nez Perce



In (47a), the structure proposed for Inuit, the passive head is nominal—to be precise, gerundive. Semantically, this head selects a proposition, i.e., a small clause. Once the object has raised, the structure contains therefore two subjects, one derived and one underlying. Only the derived matrix subject can be controlled, but either one can antecede subject-oriented reflexive and proximate elements.[25] The underlying subject gets structural Case from the passive noun. The requisite Case-binding relation is established by the A-movement of the object and by verb-to-passive incorporation. The former movement enables the passive noun to satisfy the requirement that it delimit a small clause; the latter renders the VP transparent, enabling the passive noun to see a Case-competitor for the subject—to wit, the trace (t_j) of the object.[26] The underlying subject is therefore licensed as an empty-headed KP, since its empty K satisfies the ECP.

The s-structure realization of this K is contingent on the overtness of the complement DP. If the DP is overt, then the empty K is realized as a language-specific oblique, since its Case-binder is purely lexical (N) and so cannot assign any direct Case.[27] By the oblique conventions (10′) of Inuit, the appropriate realization in (47a) is ablative. However, the DP complement of the empty K may also be the silent indefinite category, ARB. In that case, the empty K is not filled, and so the entire subject KP which expresses the agent remains silent. Nevertheless, it is still syntactically present, as evidenced, for example, by its continued ability to license reflexive and proximate elements.

We turn now to (47b), the structure which we propose for passive phrases in Dutch and Nez Perce. Here the passive head (which in Dutch and Nez Perce appears to be adjectival) semantically selects an unsaturated property, i.e., an indexed VP_i, and itself saturates that property *in lieu* of syntactic predication (cf. Jaeggli 1986). If the passive head is adjectival, then it may syntactically enter into the usual adjectival agreement relation with its own derived subject, the nominative DP_j, as in Polish (48b):

(48) *Polish* [28]

a. Marek zastrzeli-l niedzwiedzic-e
M.(NOM)$_i$ shoot-PRT(3SG.M$_i$) female.bear-ACC
'Mark shot the female bear.'

b. niedzwiedzic-a zosta-la zastrzelo-*na* (przez Marka)
female.bear(NOM)$_j$ become-PRT(3SG.F$_j$) shoot-*PASS(SG.F$_j$)* (by M.)
'The female bear was shot (by Mark).'

The indexed VP_i in (47b) need not have an adjoined subject because its verb incorporates into the passive head. This, we maintain, is an alternative mechanism to satisfy the Extended Projection Principle (EPP, Chomsky 1986b), which intuitively requires that all clauses have subjects and which we formalize as follows:

(49) *Extended Projection Principle* (EPP)

A VP, or its head, must be canonically antecedent-governed (at s-structure).

Normally, the EPP (49) is satisfied through the predication relation, in which the adjoined subject governs and binds—i.e., c-commands and is coindexed with—the VP (as in the saturated passive (47a)). However, (49) is formulated to reflect the fact that a VP may satisfy the EPP indirectly through complex predicate formation, a process which involves canonical antecedent government of its X° head. This option is exemplified by the unsaturated passive (47b), where the complex predicate is formed by incorporation,

and by the triadic structure (34b), where the complex predicate is formed by head-binding.

Because the VP in (47b) has no adjoined subject, the structure does not contain any Case-bound position. The passive head, therefore, cannot assign any structural Case. It may, however, still be possible for the agent argument of the verb to be expressed by a prepositional phrase, as in Dutch. This possibility arises if the passive head in (47b) fills the agent argument slot with a free variable, so that this thematic role may be transmitted to a PP specifier by the semantic mechanism of variable binding. Otherwise, no expression of the agent, beyond the passive head itself, will be possible—a circumstance which holds in Nez Perce (Rude 1986).

This analysis has implications for passives based on intransitive verbs. The structural oblique in (47a) is assigned under government and Case-binding, and therefore crucially relies on Case-competition. If the verb is intransitive, as in (50a), then this structural Case cannot be licensed, as its underlyingly empty K would violate the ECP. In other words, the lexical passive head behaves like the functional head I: it may assign marked structural Case if it sees two arguments or more, but not if it only sees one.

(50) a. ippassaq (*inuusuttu-nit) qitin-ni-qar-p-u-q *Inuit*
yesterday (*young.people-PL.ABL) dance-PASS-be-IND-[-tr]-3SG
There was some dancing (*by the young people) yesterday.'

b. er wordt (door de jongens) gefloten *Dutch*
there became (by the young.men) whistled
'There was some whistling (by the young men).'

In contrast, the option of selecting an agent PP (or KP) in Dutch depends on the availability of the relevant meaning for the lexical passive head. It therefore is still available if the VP complement of that head is intransitive, as in (50b).

The presence or absence of a verbal auxiliary also receives a natural account. The theory of extended projection developed by Grimshaw (1991) restricts functional heads to take predictable complements, with which they form "extended projections". Thus, C can only combine with IP, and I, with VP. It follows that the phrase projected by a non-verbal passive head (e.g., N or A) will require an auxiliary (raising) verb—a prediction borne out by all the languages discussed so far. However, the present theory continues to derive the characteristic passive behaviour as long as the passive head is of any lexical category. If the category is V, we obtain a so-called "morphological passive". This type is represented by (51b) in the accusative language Gilbertese, whose basic order is V (O) S (OBL) (Keenan 1985):

(51) *Gilbertese* (Austronesian: Gilbert Island)

a. e kamate-a te naeta te moa
   $3SG_i$ kill-$3SG_j$ [the snake]$_j$ [the chicken]$_i$
   'The chicken killed the snake.'

b. e kamate-aki te naeta (iroun te moa)
   $3SG_j$ kill-PASS [the snake]$_j$ (by the chicken)
   'The snake was killed (by the chicken).'

Finally, this theory sheds light on the well-known fact that ergative constructions often arise through reanalysis of the passive (e.g., Hale 1970, Chung 1976, Dixon 1979, *et al.*) Assuming the structure in (47a), where the passive head selects a full small clause, this reanalysis is predicted to happen if the lexical passive head is reanalyzed as the functional head I—that is, as part of the extended projection of the verb. Since this reanalysis does not affect government or Case-binding relations, the I would continue to antecedent-govern the underlyingly empty K of the agent KP. The empty K, however, would now be realized as a direct Case, the ergative, in accordance with the universal conventions of (9). Also, the agent KP would now be able to control pronominal

agreement, as it would be canonically antecedent-governed by a functional head, I, instead of a lexical passive head. The same shift would also make it necessary to reanalyze the subject position of the passive head as (SPEC,IP). Since that is an A′-position, the raising of the nominative object would then no longer result in any derived subject properties.

In the preceding sections 4 through 6, we have seen that the conception of a "Case-competitor" as a co-argument DP or NP accounts for a variety of constructions where the verb does not assign any structural Case to the object. Clearly, however, there are also well-known constructions where the verb can assign structural Case. To explain this possibility we extend the relation "Case-competitor" to other K-less nominals—specifically, to certain instances of adjoined nominal heads, D or N, which can be thought of as "pseudo co-arguments". We now turn to formalize this notion (section 7), and then show how it accounts for the antipassive construction (section 8), a variety of direct Case systems involving the accusative Case (sections 9–12), as well as Case assignment to nominal possessors (section 13).

7. Case-binding due to competition from K-less pseudo co-arguments

We begin by stating the full definition of the relation "Case-competitor", completing the partial definition given in (24):

(52) DEFINITION:

γ is a *Case-competitor for* an argument β, iff γ is a K-less nominal which is in a chain with a co-argument, or a pseudo co-argument, of β.

The full definition refers to the syntactic *co-argument* relation, already defined in (25), and also to the syntactically similar *pseudo co-argument* relation, defined in (53):

(53) DEFINITION:

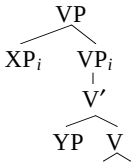
Let β be an argument; δ, a head which delimits a small clause; and γ, a head adjoined to δ. Then γ is a *pseudo co-argument* of β, iff (i) and (ii) hold:

(i) LOCALITY: δ governs β, and γ c-commands β;

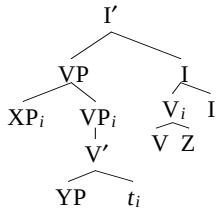
(ii) INDEPENDENCE: γ is not in a chain with the X°-head of β, and β is not in a chain with the subject of the small clause delimited by δ.

To illustrate the latter relation, consider the structures shown below. In (54a), the V-adjoined head Z is a pseudo co-argument of the complement YP of the verb, but fails to meet the locality requirement (53i) in relation to any other argument, e.g., the subject XP_i.

(54) a.



b.

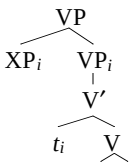


Even if the host verb incorporates into I, as in (54b), the V-adjoined Z is still too far from the subject to qualify as a pseudo co-argument for it. The extra I-segment created by the incorporation makes it impossible for Z to c-command any position outside of the host I (see definition (18b)). Intuitively, the V-adjoined Z in (54b) is too deeply embedded in the morphology to participate in any syntactic process, be it the licensing of a trace or the assignment of structural Case.

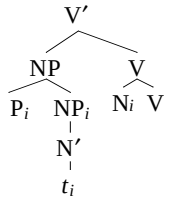
The intuitive concern of the independence requirement (53ii) (as it is for (25ii)) is whether there are enough nominal arguments to warrant the assignment of any marked structural Case. For if there is only one argument—even one distributed over a discontinuous chain—then the unmarked Case, the nominative, should be sufficient. The independence requirement fails to be met, for instance, in (55a). The V-adjoined head Z

does not qualify as a pseudo co-argument of the trace t_i in the object position, because of the chain relation between that position and the VP-adjoined subject, XP_i.

(55) a.



b.



In (55b), the incorporated noun, N_i, is sufficiently independent to qualify as a pseudo co-argument of the NP-adjoined subject, XP_i. But it does not qualify in relation to the NP itself because of the chain relation between N_i and its trace, t_i, the X°-head of the NP.

8. Antipassive

The antipassive is common in ergative languages, both transparent (e.g., Chukchee (56)) and raising (e.g., Inuit (57)). It is rare but also possible in languages where the transitive verb assigns the accusative Case to its object (e.g., the three-way language Pitta-Pitta (58)). Descriptively speaking, the antipassive construction involves affixing a transitive verb with a morpheme, as in the (b)-sentences in (56-58), where the morpheme is glossed 'APASS'. Semantically, this may introduce atelic aspect (as in (57b)) or irrealis mood (as in (58b)), or it may freeze the scope of the object (as in Inuit; see Bittner 1987, 1994a,b). Syntactically, the antipassive sentence is intransitive and has a characteristic Case array: the subject appears in the nominative Case, while the object is optional and, when present, appears in a language-specific oblique (e.g., dative in Chukchee and Pitta-Pitta, instrumental in Inuit, etc; cf. also Heath 1976, Silverstein 1976, Dixon 1979).

(56) *Chukchee* (Paleosiberian: Northeastern Siberia)[29]

a. yemronə-na qərir-ərkən-in ekək
Y.-ERG$_i$ search-PRS-3SG$_i$.3SG$_j$ son(NOM)$_j$
'Yemron is searching for his son.'

b. yemron ine-lqərir-ərkən (akka-gtə)
Y.(NOM)$_i$ APASS-search-PRS-3SG$_i$ (son-DAT)
'Yemron is searching (for his son).'

(57) *Inuit* (Eskimo-Aleut: West Greenland)

a. Juuna-p Anna kunip-p-a-a
J.-ERG$_i$ A.$_j$ kiss-IND-[+tr]-3SG$_i$.3SG$_j$
'Juuna kissed Anna.'

b. Juuna (Anna-mik) kunis-si-v-u-q
J.(NOM)$_i$ (A.-INS) kiss-APASS-IND-[-tr]-3SG$_i$
'Juuna kisses/is kissing (Anna).'

(58) *Pitta-Pitta* (Pama-Nyungan: Central Australia)[30]

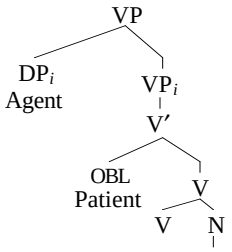
a. nga-thu thaji-ya i-nha-ka kathi-nha
I-ERG eat-PRS this-ACC meat-ACC
'I am eating this meat.'

b. nganja thaji-li-ya (kathi-ku)
I(NOM) eat-APASS-PRS (meat-DAT)
'I would eat meat.'

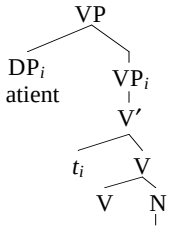
These characteristic properties can be explained if we analyze the antipassive affix as a nominal head which is adjoined to the verb at d-structure, as in (59a) (cf., Baker 1988). In that position, it qualifies as a pseudo co-argument of the object, enabling the verb to Case-bind the latter and assign it structural Case. Since the underlyingly empty

K of structural Case remains empty if its DP is non-overt (here, ARB), the entire object KP may remain silent. It therefore appears to be optional, like the structurally Case-marked agent of the (saturated) passive (47a). Another point of similarity is that the antipassive object is also Case-bound by a head which does not contain any functional category. As a consequence, its empty K cannot be overtly realized as any direct Case (by the universal conventions of (9)) but only as a language-specific oblique (e.g. instrumental in (56b), by the Inuit-specific conventions (10′)). For the same reason, this oblique object cannot control pronominal agreement.

(59) a.



b.



The antipassive subject is necessarily nominative, because it cannot be Case-bound by I—its only potential Case-assigner—for lack of a Case-competitor. Even in a transparent language, the object KP cannot play this role, since it is not K-less; while the V-adjoined antipassive noun is too far away to qualify as a pseudo co-argument of the subject (see section 7 above).

If the antipassive noun could ajoin to an unaccusative verb then, in absence of an expletive subject, it would have no effect on structural Case assignment. The predicted structure is shown in (59b). Here, the underlying object of the verb has raised to the subject position, in order to satisfy EPP. By establishing a chain relation between the two A-positions of the host verb this movement blocks the pseudo co-argument relation between the V-adjoined antipassive noun and the trace, t_i, since the independence requirement is not met. There is, therefore, no Case-bound position in (59b), and so the unique argument of the verb can only be nominative, a bare DP, as shown.

The structure (59b) represents, for example, the Inuit sentence (60b). This sentence contains the antipassive suffix *-si*, whose use with transitive verbs has been illustrated in (57b). This suffix can also combine with unaccusative verbs (e.g., *piqqig-* 'healthy', *ajur-* 'bad', *ajurnar-* 'impossible', *pui-* 'float', etc). On that use, it introduces inchoative aspect, and has no affect on structural Case assignment (compare (60b) with (60a)):

(60) *Inuit* (Eskimo-Aleut: West Greenland)

a. miiqqat piqqip-p-u-t
   children healthy-IND-[-tr]-3PL
   'The children are healthy.'

b. miiqqat piqqis-si-pp-u-t
   children healthy-APASS-IND-[-tr]-3PL
   'The children are getting well.'

Suppose now that the subject position of the unaccusative verb in (59b) could alternatively be filled by an expletive subject. The EPP could then be satisfied while the object remained *in situ*. In fact, the resulting s-structure would be like the diadic (59a), except that the subject would be expletive rather than thematic—a difference with no bearing on Case-binding relations. We would therefore expect also to find unaccusative antipassives of the type represented by (61). These, however, appear to be ungrammatical in all languages (cf. Baker 1988).[31]

(61) *Inuit* (Eskimo-Aleut: West Greenland)

* imma-mi qilalukka-nik pui-si-v-u-q
   sea-LOC whale-PL.INS float-APASS-IND-[-tr]-3SG
   (There floated whales on the surface of the sea.)

What, then, rules out the configuration of (59a) with an unaccusative verb and an expletive subject? The answer, we suggest, is that expletives cannot be licensed in this

configuration. In general, we propose that expletives are licensed through syntactic predication, like thematic subjects. Having no content, however, they depend on the VP to supply a syntactic index. The VP, in turn, will have such an index only if its verb does. Normally, the predication index is provided by the external argument of the verb (cf. Williams 1980), but an external argument, of course, is precisely what an unaccusative verb does not have. The only mechanism by which such a verb can acquire an index is by hosting an adjoined [+N] head which canonically antecedent-governs some other category. The requisite antecedent-government relation can be established by syntactic noun incorporation (resulting in a V-adjoined N_i) or pronominal agreement (with a V-adjoined D_i). By appropriating the index of the adjoined [+N] head, the host verb can then share it with its VP, licensing a syntactic predication relation in the usual manner. The subject will have to be expletive, i.e., devoid of semantic content, as any other subject will be filtered out by the semantics (cf., semantic filters in Bittner 1994a,b).

Under these assumptions, we correctly rule out antipassives of the type represented by (61), because the configuration of (59a) with an unaccusative verb and an expletive subject is impossible. Although the verb hosts an adjoined [+N] head—to wit, the antipassive N—this head has no (syntactically relevant) index as the required relation of canonical antecedent-government cannot be established. Specifically, it cannot be established by head movement, as the antipassive N is base-generated in the V-adjoined position; nor by pronominal agreement, since N is not a functional category. Having thus no predication index, the verb cannot license any subject, not even one which is expletive.

This theory further explains why unaccusative verbs, though universally excluded from antipassives like (61), in many languages allow syntactic noun incorporation (see Baker 1988). Since a noun which incorporates in the syntax antecedent-governs its trace, it has a syntactic index which the unaccusative host verb may appropriate to li-

cense an expletive subject. That, in turn, will make it possible to satisfy the EPP, while the unique semantic argument of the verb remains *in situ* .

Finally, we correctly predict that antipassive obliques may also be licensed in ECM configurations, as in the Inuit sentence (62b):

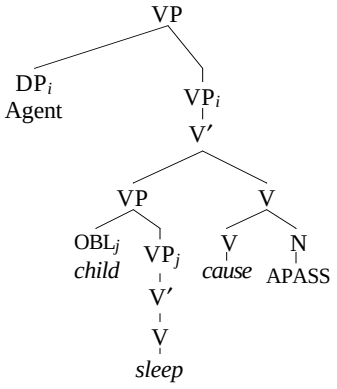
(62) *Inuit* (Eskimo-Aleut: West Greenland)

a. miiraq (ini-mi-ni) sinip-p-u-q
child(NOM) (room-3SG.PROX-LOC) sleep-IND-[-tr]-3SG
'The child$_j$ is sleeping (in his$_j$ room).

b. Juuna miiqqa-mik (ini-mi-ni) sini-tsit-si-v-u-q
J.(NOM) child-INS (room-3SG.PROX-LOC) sleep-cause-APASS-IND-[-tr]-3SG
'Juuna$_i$ made the child$_j$ sleep in his$_{i/j}$ room.'

The antipassive oblique (*miiqqa-mik*), in (62b), is clearly a subject, i.e., a distinguished adjunct. This is shown by its ability to antecede the subject-oriented proximate element (possessor agreement) *-mi* on a par with the nominative subjects of (62b) and (62a). The structure of the relevant portion of the ECM antipassive (62b) is depicted in (63): [32]

(63)



Here the causative morpheme (*-tsit*) is a verb which projects a small clause. The oblique argument is the subject of the lower verb (*sinig-* 'sleep'). This correctly predicts that the antipassive oblique in (63) can antecede subject-oriented reflexive and proximate ele-

ments. In contrast, the antipassive oblique in the simpler structure (59a) is a pure object which lacks this ability. However, (63) and (59a) do not differ in regard to the key government and Case-binding relations. As a consequence, both give rise to the same, nominative-oblique, structural Case array.

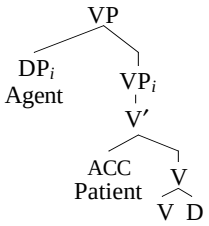
9. Two types of accusative languages

In the accusative languages of the Wellesley Island in Australia (Lardil, Kayardild, Yangkaal, etc), the historical origin of the accusative construction has been shown to be reanalysis of an antipassive (Klokeid 1978, McConvell 1981). We propose that this type of reanalysis may resemble passive-ergative reanalysis (section 6 above) in its basic mechanism. That is, the crucial step may be the reanalysis of a lexical head—to wit, the passive or antipassive morpheme—as a functional category.

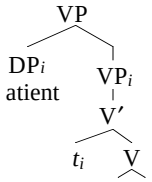
The determination of that category is constrained, in part, by the well-formedness conditions on extended projections (Grimshaw 1991). Thus, in passive-ergative reanalysis, the passive head can only be reanalyzed as I, since no other functional category can extend a VP. However, the well-formedness conditions at issue fail to constrain the functional category which can result from antipassive-accusative reanalysis. Since the antipassive noun is adjoined to the verb, its structural position alone rules it out as a candidate for a functional extension of the VP. However, the language-learner will presumably still look for an analysis which matches the surface facts of the observed Case array. Thus, both types of reanalysis can be expected to result in a functional category which preserves the original Case-binding relations.

Under these assumptions, the V-adjoined antipassive N can only be reanalyzed as D; for that is the only functional category which qualifies as a K-less nominal, and therefore as a Case-competitor for the object. This reanalysis, of N as D, would turn the canonical antipassive (59a) into the accusative construction (64a). If the antipassive has been extended to unaccusatives, as in (59b), then that would further yield (64b):

(64) a.



b.



The driving force for such reanalysis may be the preference of the language-learner for the direct Cases, ERG and ACC, over structural obliques.[33] The direct Cases are realized according to the universal conventions of (9), which presumably do not have to be learned. Thus, in the structure of (64a), the universal convention (9ii) determines that the object KP, when overt, will be accusative.

(9) *Direct Case Realizations*

If α Case-binds an overt empty-headed KP β, then the empty K of β is realized as:

(i) ERG, if α is I (or D);

(ii) ACC, if α is V (or P) and has an adjoined D.

In contrast, in the otherwise similar antipassive structure (59a), the object KP is realized according to language-specific conventions for structural obliques (e.g., (10) in Warlpiri, (10′) in Inuit). Since language specific conventions have to be learned, and since the antipassive implicates these, its acquisition is presumably more difficult.

The accusative structure (64a) may also develop through reanalysis of pronominal object incorporation as pronominal agreement. The former phenomenon involves syntactic head movement, of D out of the object and into V, as in Hebrew (65b) (D is italicized). Since this movement leaves a trace, the object position cannot be filled by any morphologically independent accusative pronoun. The latter, therefore, can only appear if D incorporation has not taken place, as in (65a) (cf. McCloskey and Hale 1984).

(65) *Hebrew* (Semitic: Israel) [34]

a. ani ra'i-ti *ot-xa* (colloquial style)
I(NOM)$_i$ see-PST.1SG$_i$ *ACC-you*
'I saw you.

b. ani ra'i-ti-*xa* (*ot-xa) (formal style)
I(NOM)$_i$ see-PST.1SG$_i$-*you*$_j$ (*ACC-you$_j$)
'I saw you.'

In contrast, pronominal agreement with an accusative object requires an underlying D adjunct on the verb. By functioning as a Case-competitor, the V-adjoined D enables the verb to Case-bind the object. The latter, therefore, is a KP with an underlyingly empty K. Furthermore, if the V-adjoined D is coindexed with the object, it will agree with it, as the requisite canonical antecedent-government relation (i.e., government and binding) will hold. The pronominal agreement features of the V-adjoined D will then license the silent pronominal DP, *pro*, as an "extended head" of the object KP (cf. Chomsky 1981, Grimshaw 1991). Since the X° head K will then remain empty at s-structure (by the realization conventions (9) above), the entire object KP will be silent—like the trace in (65b). The KP differs, however, because it may also be overtly realized, in the accusative Case as in (64a), if its DP is overt. The resulting characteristic agreement pattern is exemplified by the following sentences in the accusative languages Miskitu and Ónavas Pima (the base-generated V-adjoined D is italicized):

(66) a. yang (man ra) *mai*=kaik-i sna *Miskitu*
I(NOM)$_i$ (you ACC)$_j$ *2SG$_j$*=see-PROX be.1SG$_i$ (Misumalpan: Nicaragua)
'I see you.'

b. … ko-n 'aan (müm) *m*-nüid *Ónavas Pima*
… CNJ-1SG$_i$ I(NOM)$_i$ (you-ACC)$_j$ *2SG$_j$*-see.IMPRF (Uto-Aztecan: Mexico)
'…I see you.'

Since accusative object agreement is located in a functional head (D) which is base-generated in the V-adjoined position, it must appear directly on the verb, as in (66a,b), with no intervening functional categories. In this respect, it contrasts both with the incorporated object in (65b) and with nominative object agreement in ergative languages:

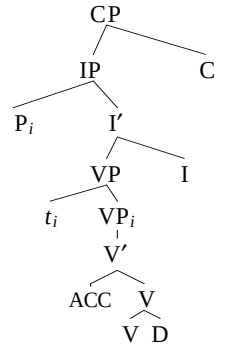
(67) a. Juuna-p (miiqqat) taku-mm-a-*git* … *Inuit*
J.-ERG$_i$ (children.NOM)$_j$ see-DPST-3SG$_i$-*3PL*$_j$ … (Eskimo-Aleut: Greenland)
'When Juuna saw them/the children, …'

b. ngajulu-rlu ka-rna-*ngku* (nyuntu) nya-nyi *Warlpiri*
I-ERG$_i$ PRS-1SG$_i$-*2SG*$_j$ (you.NOM)$_j$ see-NPST (Pama-Nyungan: Australia)
'I see you.'

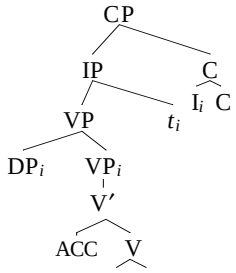
The ergative construction crucially differs in that the verb does not contain any adjoined D. As a consequence, the object is nominative (as it is not Case-bound), and can only agree with C (see section 4). The requisite relation of canonical antecedent-government is satisfied either by C itself (in a raising language, like Inuit) or by the transparency chain headed by this functional head (in a transparent language, like Warlpiri). Being in C, the nominative object agreement is predicted to be most peripheral (as it in fact is in (67a,b)). Specifically, it must be farther from the verb, or the stem of the auxiliary, than any I-agreement with the VP-internal ergative subject.

Like the nominative object of an ergative sentence, the nominative subject of an accusative sentence must satisfy the K Filter. Accordingly, it must be c-commanded and governed by C. This requirement can be met either by raising to (SPEC,IP) as in the ergative (30) or the accusative (68a), or it can be met *in situ* by virtue of transparency, as in the ergative (36a) and (38a) or in the accusative (68b).

(68) a. *Raising* NOM-ACC



b. *Transparent* NOM-ACC



The existence of two types of accusative languages—raising and transparent—is thus predicted, as a theoretical possibility, and it arguably corresponds to actually attested variation, English being a clear example of an accusative language of the raising type (68a), while Japanese and Yiddish have been argued to represent the transparent type (68b) (cf., Kitagawa 1986, Diesing 1990). In raising accusative languages, the nominative DP in (SPEC,IP) heads an argument chain whose foot is in the VP-adjoined subject position. It therefore should be able to agree with either of the local functional heads, C (head agreement) or I (foot agreement). In accusative languages of the transparent type, on the other hand, the nominative subject is licensed *in situ*, and therefore can only agree with I (head agreement; see *in situ* subjects in Warlpiri, in section 4.2).

We thus predict the following canonical hierarchy of pronominal agreement:

(69) *Canonical Agreement Hierarchy*

V-D (ACC agreement) < I (ERG or NOM subject agreement) < C (NOM agreement)

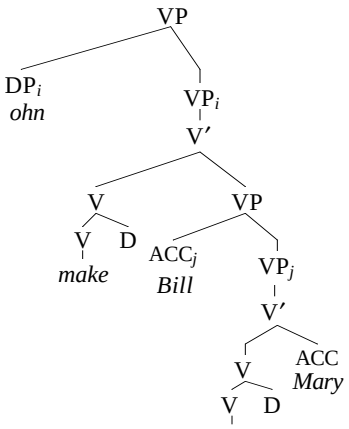
As illustrated throughout this paper, the actually attested pronominal agreement morphemes generally occur in positions consistent with this hierarchy. [35] This provides strong support for the present theory of structural Case and pronominal agreement.

The present theory further predicts that the parallels between antipassive and accusative sentences should extend beyond the simple structures of (59) and (64). Thus, parallel to antipassive ECM constructions of the type represented by (62b) (with the

structure shown in (63)) we correctly predict the existence of the corresponding accusative type (70) (whose structure is (71)):

(70) John made Bill visit Mary.

(71)



With obvious substitutions, the analysis of the causative construction in (71) will generalize to sentences where a higher verb forms a discontinuous predicate with the head of a PP complement (e.g., *load* with *with* in (72a), *give* with *to* in (72b)):[36]

(72) a. John loaded$_i$ the wagon with$_i$ hay.

b. John gave$_i$ the book to$_i$ Mary.

Combined with the appropriate parameter setting in the realization convention (9ii), this analysis will then account for the existence of languages where adpositions assign the structural accusative Case and agree with their objects, as in Hopi:

(73) *Hopi* (Uto-Aztecan: Arizona)[37]

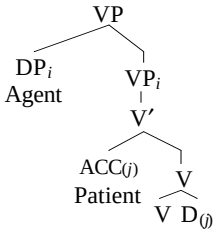
ni′	siiva-t	Po′kaya-t	*′a*-w	maqa
I(NOM)	money-ACC	P.-ACC$_k$	*3SG*$_k$-to$_i$	give$_i$

'I gave the money to Po'kaya.'

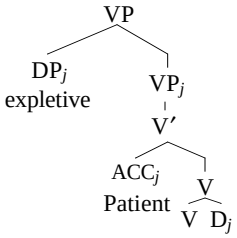
10. Accusative active languages: Acehnese and Eastern Pomo

The theory of expletives proposed in section 8 predicts that an unaccusative verb with a V-adjoined D may license an expletive subject. This follows because expletives are licensed by predication, like other subjects, and the V-adjoined D may provide a predication index if it canonically antecedent-governs the object. Under these circumstances, the theory predicts the following representations of the VP at s-structure:

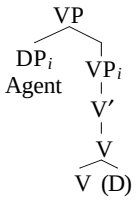
(74) a. *Transitive*



b. *Unaccusative*



c. *Unergative*



Since Case-binding is not sensitive to the distinction between thematic and expletive subjects (cf. definition (22)), it does not distinguish the unaccusative structure (74b) from the transitive (74a). The structural accusative Case, therefore, is assigned to the object, the patient argument, in (74b) as it is in (74a). The agent, on the other hand, occupies the VP-adjoined subject position in the transitive (74a) as well as the unergative structure (74c). In this position it cannot be Case-bound, for lack of a Case-competitor, and so it must be nominative. We thus predict an accusative active system, where agents form a natural class (nominative), opposed to the patients (accusative).[38]

The predicted structures are in fact attested, for example, in Acehnese (75) and Eastern Pomo (76). In Acehnese, V-adjoined Ds are overtly realized as object agreement suffixes on the verb (e.g., *-geuh* in (75a,b)). These suffixes contrast with subject agreement prefixes which together with mood and aspectual prefixes appear to be in I (e.g., *na-lôn-* 'IND-1SG' in (75a), *ka-geu-* 'INCH-3SG' in (75c)). In Eastern Pomo, on the other hand, the syntactic relation of canonical antecedent-government does not give rise to morphological agreement. Though it is less direct, there is still a morphological reflex

of the V-adjoined D, in the form of the accusative Case suffix on the object (*-al* in (76a,b)):

(75) *Acehnese* (isolate in Austronesian: Northern Sumatra) [39]

a. gopnyan na-lôn-timbak'-geuh (transitive)
him(ACC)$_j$ IND-1SG$_i$ -shoot-3SG$_j$
'I shot him.'

b. gopnyan rhêt(-geuh) (unaccusative)
him(ACC)$_j$ fall(-3SG$_j$)
'He fell.'

c. gopnyan ka-geu-jak u-keude (unergative)
he(NOM)$_i$ INCH-3SG$_i$-go to-town
'He went to town.'

(76) *Eastern Pomo* (Hokan: California)

a. míip míip-al sáaka (transitive)
he(NOM) him-ACC killed
'He killed him.'

b. míip-al xáa baakúma (unaccusative)
him-ACC in.the.water fell
'He fell in the water (accidentally).'

c. míip káluhuya (unergative)
he(NOM) went.home
'He went home.'

Regardless of the morphology, the shared syntactic structures (74a–c) of Acehnese and Eastern Pomo are predicted to give rise to characteristic syntactic behavior. Thus, for example, nominative subjects and unaccusative objects should differ with respect to

control. For it follows from the universal constraints on controlled PRO that it may function as a subject, but not as an object. The following control paradigm in Acehnese, where infinitival complements are uninflected, bears out this prediction:

(77) *Acehnese* (isolate in Austronesian: Northern Sumatra) [40]

a. gopnyan geu-tém [_ (*geu-)taguen bu] (transitive)
he(NOM)$_i$ 3SG$_i$-want [PRO$_i$ (*3SG$_i$-)cook rice]
'He wants to cook rice.'

b.* gopnyan geu-tém [_ rhët] (unaccusative)
he(NOM)$_i$ 3SG$_i$-want [PRO$_i$ fall]
('He wants to fall.')

c. gopnyan geu-tém [_ (*geu-)jak] (unergative)
he(NOM)$_i$ 3SG$_i$-want [PRO$_i$ (*3SG$_i$-)go]
'He wants to go.'

In Eastern Pomo, the proposed structures receive support from the obviation system, as the sentences in (78–79) illustrate. The sentences in (78), containing only unergative verbs, exemplify the canonical obviation pattern (cf. (31–32) in Inuit, and Jacobsen 1967, Hale 1969, 1989, Jeanne 1978, Haiman and Munro 1983, Finer 1985):

(78) *Eastern Pomo* (Hokan: California) [41]

a. háa káluhu-*y*, siimáa _ mérqakiihi
[I(NOM)$_i$ went.home-*PROX*] *pro*(NOM)$_i$ went.to.bed
'I went home, and then I went to bed.'

b. háa káluhu-*qan*, míip mérqakiihi
[I(NOM)$_i$ went.home-*OBV*] he(NOM)$_j$ went.to.bed
'I went home, and then he went to bed.'

That is, the head C of the subordinate clause takes one form (proximate *-y*) if the subject of that clause is coreferent with the matrix subject, as in (78a), but a different form (obviative *-qan*), if coreference does not obtain, as in (78b).

Combining these cross-linguistic generalizations about subject obviation with the present analysis of Eastern Pomo clause structure, we also explain the following, seemingly deviant, pattern:

(79) *Eastern Pomo* (Hokan: California) [42]

a. háa xáa qákki-*qan*, _ wi qaalál táala
[I(NOM)$_i$ took.a.bath-*OBV*] *ex*$_i$ me(ACC)$_i$ sick became
'I took a bath, so I got sick.'

b. míip-al kʰí kóx-*qan* _ _ muutítk-*iy* _ _ muudála
[[him-ACC$_j$ he$_i$ shot-*OBV*] *ex*$_j$ *pro*(ACC)$_j$ curled.up-*PROX*] *ex*$_j$ *pro*(ACC)$_j$ died
'He$_i$ shot him$_j$, and he$_j$ curled up, and he$_j$ died.'

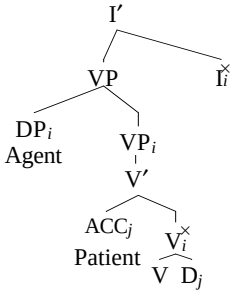
In (79a), both verbs are monadic, and their thematic arguments are coreferential, just as in (78a). Nevertheless, the subordinate clause in (79a) is marked obviative. Although this clause is unergative, the matrix (second) clause is unaccusative. So the syntactic subject of the subordinate clause, which is its thematic argument (*háa* 'I(NOM)$_i$'), is not coreferent with the expletive *pro* (glossed '*ex*$_i$') functioning as the matrix subject.

For the same reason, in (79b), the most deeply embedded, transitive, clause is marked obviative with respect to the next higher, unaccusative, clause. But that clause, in turn, is marked proximate with respect to the matrix clause, which is likewise unaccusative and has a coreferent thematic object (the accusative *pro*$_j$).[43] Crucially, in both of these unaccusative clauses the object is canonically antecedent-governed by, and therefore coindexed with, the V-adjoined D. Furthermore, the index of D is appropriated by the host unaccusative verb to license an expletive subject by predication, as in (74b). Thus, the coreference of the thematic objects in the two unaccusative clauses in (79b) re-

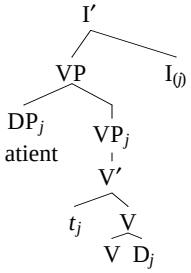
sults in the coindexation of the associated expletive subjects, which in turn licenses the proximate morphology. In Eastern Pomo, then, the proximate morphology requires that the subjects at issue be both coindexed and have the same status with respect to the expletive/non-expletive distinction; the obviative morphology is used otherwise.

In the present theory, structural Case and pronominal agreement are independent phenomena. The former is determined by government and Case-binding relations, the latter by canonical antecedent-government—i.e., government and (standard) binding. A language may therefore have an accusative active pattern of pronominal agreement without the accusative active system of structural Case. This is possible, for example, if the language is of the transparent accusative type and has *foot* agreement (cf. section 4.1). In agreement of that type, a functional head, or a transparency chain headed by a functional head, canonically antecedent-governs the *foot* of an argument chain, as in (80a-c). In these structures, the relevant transparency chains are informally indicated by $\times$-superscripts (cf. Warlpiri, in section 4.2).

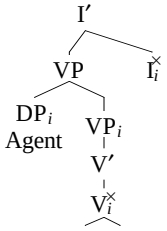
(80) a. *Transitive*



b. *Unaccusative*



c. *Unergative*



This type is arguably represented by Lakhota. As illustrated in (81), this language has an accusative active system of first and second person agreement. However, it does not exhibit the characteristic syntactic behavior associated, via the structures of (74a–c), with an accusative active Case system. Crucially, the unique argument of an unaccusative verb can be controlled, as in (82a). In this regard, it behaves unlike its counterpart in the Acehnese sentence (77b), and like the subject of the unergative verb in (82b):

(81) *Lakhota* (Siouan: South Dakota, Montana, Manitoba) [44]

a. hoksila ki _ a-*ni*-phe (trans. Pat agr.)
[boy the](NOM)$_i$ *pro*(ACC)$_j$ PVB-2*SG*$_j$-hit
'The boy hit you.'

a'. _ hoksila ki a-*ya*-phe (trans. Agt agr.)
pro(NOM)$_i$ [boy the](ACC)$_j$ PVB-2*SG*$_i$-hit
'You hit the boy.'

b. _ *ni*-khuze (unacc. Pat agr.)
pro(NOM)$_j$ 2*SG*$_j$-sick
'You are sick.'

c. _ *ya*-cheye (unerg. Agt agr.)
pro(NOM)$_i$ 2*SG*$_i$-cry
'You cried.'

(82) *Lakhota* (Siouan: South Dakota, Montana, Manitoba)

a. _ [_ (**ma*-)khuze sni] wa-chame
pro(NOM)$_j$ [PRO$_j$ (**1SG.PAT*$_j$-)sick NEG] 1SG$_j$-try
'I try not to be sick.'

b. _ [_ wa-(**ya*-)ksu] wa-l-upike
pro(NOM)$_i$ [PRO$_i$ PVB-(**2SG.AGT*-)do.beadwork] PVB-2SG$_i$-skillful
'You are skillful doing beadwork.'

Under the structural analysis in (80a–c), the control facts, of course, are as expected. The so-called "patient agreement" (-*ni* in (81a,b)) is with the V-adjoined D—that is, with the functional head which canonically antecedent-governs the object of the transitive (80a), or the *foot* of the chain headed by the derived subject of the unaccusative (80b). The "agent-agreement" (-*ya* in (81a',c)) is with the transparency chain headed by I. This functional head canonically antecedent-governs the VP-adjoined

subject of the transitive (80a) and the unergative (80c). Morphologically, agent-agreement is realized on the verb, the foot of the transparency chain. This realization is presumably licensed by the presence of a functional head, D, in the verb (cf. transparent ergative languages, where this realization is impossible). Being realized on the verb, agent-agreement in Lakhota may cooccur with patient-agreement in D, as in (83):

(83) *Lakhota* (Siouan: South Dakota, Montana, Manitoba) [45]

_ _ a-*ma*-*ya*-phe

pro(NOM)$_i$ *pro*(ACC)$_j$ PVB-*1SG*$_j$-*2SG*$_i$-hit

'You hit me.'

The analysis of Lakhota as a transparent accusative language, with foot agreement in the first and second person, is compatible with the fact that third person plural agreement does not exhibit the active pattern. Only the transitive object triggers agreement on the verb (*-wicha-* in (84a)); the underlying object of an unaccusative does not (cf. (84b)). Third person agreement conforms to the canonical hierarchy of (69):

(84) *Lakhota* (Siouan: South Dakota, Montana, Manitoba) [46]

a. hoksila ki suka ki a-*wicha*-pha *pi* (transitive)

[boys the](NOM)$_i$ [dogs the](ACC)$_j$ AFF-*3PL*$_j$-hit *PL*$_i$

'The boys hit the dogs.'

b. wichasa ki huh khuza *pi* (unaccusative)

[men the some](NOM)$_j$ sick *PL*$_j$

'Some of the men are sick.'

c. wiya eya cheya *pi* (unergative)

[women some](NOM)$_i$ cry *PL*$_i$

'Some women cried.'

We conclude that Lakhota does not falsify our theory of accusative active languages because it instantiates a different syntactic type—to wit, the transparent accusative type with foot agreement. Far from presenting a problem, it supports our fundamental claim that structural Case and pronominal agreement are independent phenomena.

11. Three-way languages

In some recent theories of structural Case, the ergative is identified either with the nominative (Bobaljik 1992, Chomsky 1992) or with the accusative (Murasugi 1992, Campana 1992). The three-way system (Sapir 1917, Comrie 1981) represented by Antekerrepenhe (85) and Nez Perce (86) is unexpected on either view. In this system intransitive subjects are in the nominative Case, but transitive sentences exhibit the doubly marked ERG-ACC array:

(85) *Antekerrepenhe* (Arandic: Central Australia) [47]

a. arengke-le aye-nhe ke-ke
dog-ERG me-ACC bite-PST
'The dog bit me.'

b. apwerte-le athe arengke-nhe we-ke
stones-INS I(ERG) dog-ACC pelt-PST
'I pelted the dog with stones.'

c. arengke nterre-ke
dog(NOM) run-PST
'The dog ran.'

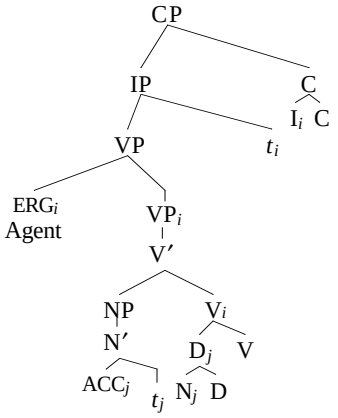
(86) *Nez Perce* (Penutian: Oregon) [48]

a. wewúkiye-ne pée-'wi-ye háama-nm
elk-ACC$_j$ 3$_i$.3$_j$-shoot-PRF man-ERG$_i$
'The man shot an elk.'

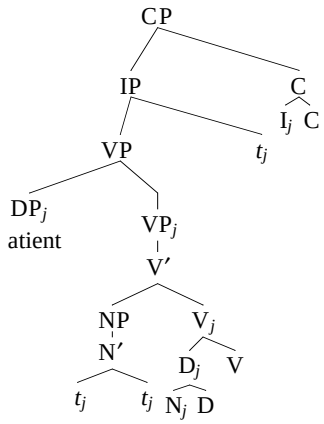
b. hi-páayn-a háama
3$_i$-arrive-PRF man(NOM)$_i$
'The man arrived.'

In the present theory, the VP-adjoined subject is assigned the ergative Case by I, in the presence of visible a Case-competitor. Since the assignment of this Case in three-way languages is contingent on the presence of an object—as in languages of the ergative or ergative active type—this Case-competitor must be somehow supplied by the object. The accusative KP itself cannot fulfill that function, because it is not Case-less. And the V-adjoined D which enables the verb to assign the accusative Case is too far from the subject to play that role either (see definitions (52–53)). We are thus led to conclude that the object of an ERG-ACC construction must have a complex NP-shell structure, as in (87a):

(87) a. *Transparent* ERG-ACC



b. *Unaccusative*



We assume that the head noun of the NP-shell has the morphological property that it is an affix which must attach to a head of the category D. It therefore must

incorporate into the V-adjoined D no later than the morpho-phonological level of PF. In fact it incorporates earlier, at s-structure, in order to license its complement (ACC). Normally, incorporation into an adjoined head is ruled out by the ECP, because the incorporated element fails to c-command its trace (definition (18b)). In (87a), however, the trace t_j of the incorporated noun N_j is "rescued" by the host D_j. Since the latter is a functional head, it can participate in pronominal agreement, a syntactic relation which here involves canonical antecedent-government of the complement (ACC_j) of t_j. If this agreement relation, which is independent of the incorporation process, happens to involve the same index, the host head D_j will also antecedent-govern the trace t_j, enabling the latter to satisfy the ECP. Since the trace and its antecedent-governor are of different categories (N versus D), incorporation of this type may still be ruled out in many languages, explaining the relative rarity of three-way languages. But since it is not prohibited by any universal constraints (e.g., the ECP (6)), there should also be languages which do allow it.

Once the noun has incorporated into the V-adjoined D, leaving a trace, t_j, in the original position, the host verb governs the complement of t_j. In (87a), it also Case-binds that complement, since all of the relevant requirements are met. The verb is the nearest head which delimits a small clause and c-commands the complement of t_j; therefore it locally c-commands that complement. Moreover, the verb governs a Case-competitor—namely, the V-adjoined D. Since the complement of t_j is Case-bound, it must be an underlyingly empty-headed KP. At s-structure, its empty K satisfies the ECP and, in accordance with the universal conventions of (9), is realized as the accusative Case.

The next higher A-position in (87a) is the NP complement of the verb (i.e., the NP shell). Since it is a K-less nominal argument, this NP must satisfy the K Filter (11). As required, the NP is c-commanded and governed by C, in virtue of transparency, and is not Case-bound, for lack of a Case-competitor. Crucially, neither of the nearby K-less nominal heads qualifies as a pseudo co-argument of this NP: the V-adjoined D is not

independent enough (as it antecedent-governs the X°-head of the NP), while the D-adjoined N is too far away (being too deeply embedded to c-command the NP).

The highest A-position in (87a) is the VP-adjoined subject. This, of course, is governed by the trace (t_i) of I. It is also Case-bound by that trace, since transparency enables the trace to govern a Case-competitor—the NP complement of the verb. The subject, therefore, must be an underlyingly empty-headed KP, and its empty K must be realized as the ergative Case at s-structure, by the universal conventions of (9).

In the unaccusative (87b), the verb underlyingly has only an object, and this has the same NP shell structure as in (87a). The head noun of the NP shell incorporates into the V-adjoined D, also as in (87a) and for the same reasons. However, in order to satisfy the EPP, the underlying complement of the incorporated noun must become a derived subject of the verb. In (87b), it accomplishes this by raising and entering into a predication relation with the VP. The resulting chain eliminates all Case-competition in the unaccusative clause. Specifically, the NP complement of the verb is not a co-argument of the derived subject (DP_j), because it dominates its trace (t_j) and thus fails the independence requirement (definition (25)). Also as a consequence of the same chain relation, the V-adjoined D is not independent enough to qualify as a pseudo co-argument of the trace t_j at the foot of the chain (definition (53)). Thus, the unique argument of the unaccusative verb must be nominative, a bare DP, as that category can satisfy the K Filter, whereas an empty-headed KP would violate the ECP.

This theory makes two predictions about three-way languages. First, if canonical antecedent-government by functional heads is morphologically realized as pronominal agreement, then accusative object agreement (in V-adjoined D) will be adjacent to the verb, whereas ergative subject agreement (in I) will be more peripheral. Three-way languages with subject and object agreement which have been described in the literature bear out this prediction, as the following sentences attest:

(88) a. no-e nga-lay cyu:-na-ke-o *Kham* [49]
he-ERG$_i$ me-ACC$_j$ watch-1SG$_j$-PST-3SG$_i$ (Tibeto-Burman)
'He watched me.'

b. háama-nm hi-néec-'wi-ye wewúkiye-ne *Nez Perce* [50]
man-ERG$_i$ 3$_i$-*PL*$_j$-shoot-PRF elk-ACC$_j$ (Penutian: Oregon)
'The man shot (several) elk.'

Secondly, in unaccusative sentences, the canonical antecedent-government relation between the V-adjoined D and the object of the incorporated noun should enable the verb to license an expletive subject (sections 8–9 above). In the resulting structure, the government and Case-binding relations will then be the same as in the transitive (87a), since neither of these syntactic relations distinguishes between expletive and thematic subjects. Thus, it should be possible for the accusative Case to be extended to the unique argument of an unaccusative verb, as it is in languages of the accusative active type. This prediction is borne out by impersonal passives of the type represented by (89c), in Nepali. Here the passive morpheme (*-i*) must be a verb, as there is no verbal auxiliary (section 6 above). The three-way system of Nepali is illustrated in (89a–b):

(89) *Nepali* (Indo-Aryan: Nepal) [51]

a. tes-le mx-lai kut'-io
he-ERG$_i$ me-ACC$_j$ hit-3SG.PST
'He hit me.'

b. tx' kut'-i-is
you(NOM) hit-PASS-2SG.PST
'You were hit.'

c. tx'-lai kut'-i-io
you-ACC hit-PASS-3SG.PST
'Somebody hit you.' (lit. 'It was hit you.')

Finally, this theory is consistent with historical evidence. Rude (1991) argues that the transitive ERG-ACC array in Sahaptian, the language family of Nez Perce, developed through reanalysis of the cislocative construction exemplified in (90a). Here, the verb is augmented with a cislocative suffix (glossed CSL) meaning roughly 'hither'.

(90) *Sahaptin* (Sahaptian: Columbia River)[52]

a. áw i-q'ínum-*im*-a wíns
now 3-look-*CSL*-PST man(NOM)
'Now the man looked this way.'

b. áw=nas xwísaat-nim i-twána-*m*-as
now=me(ACC) old.man-ERG 3-follow-*CSL*-IMPRF
'Now the old man is following me.'

c. áw=nas i-q'ínun-a wíns-nim
now=me(ACC) 3-look-PST man-ERG
'Now the man looked at me.'

The cislocative morpheme can be plausibly analyzed as a preposition incorporated out a PP complement of the verb (cf. Baker 1988). If that complement were reanalyzed as another lexical [–V] category, i.e., NP, the resulting structure would be (87a), and that, in turn, would yield the ERG-ACC Case array of (90b) and (90c).

12. The split system of Austronesian

A central tenet of the present theory is that direct Case assignment is determined, independently for each sentence, by the interaction of the s-structure representation with universal syntactic principles (to wit, the ECP, the K Filter, and the universal component of the realization conventions). This view is consistent with the well-known fact that many languages have split Case systems, manifesting more than one of the three basic Case arrays (NOM-ACC, ERG-NOM, and ERG-ACC) in transitive clauses (see Dixon

1979 for a typological survey). For example, all the three arrays cooccur in Austronesian languages, represented by the Malagasy sentences in (91). In this language, the Cases assigned are typically revealed not in morphological Case-marking but in verb morphology and word order:

(91) *Malagasy* (Austronesian: Madagascar)[53]

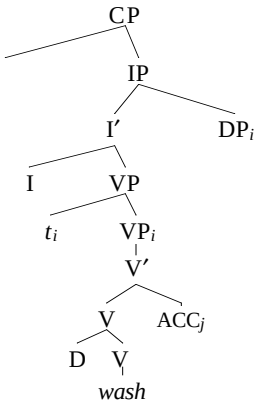
a. n-*an*-asa ny lamba (amin' ny savony) Rasoa
ASP-*D*-wash the clothes (with the soap) Rasoa
ACC_j PP_k NOM_i
'Rasoa washed the clothes (with the soap).'

b. no-sasa-*n* Rasoa (amin' ny savony) ny lamba
ASP-wash-*INFL* Rasoa (with the soap) the clothes
ERG_i PP_k NOM_j
'Rasoa washed the clothes (with the soap).'

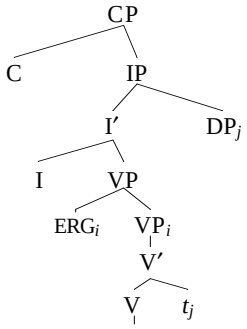
c. n-*an*-asa-*n* Rasoa ny lamba ny savony
ASP-*D*-wash-*INFL* Rasoa the clothes the soap
ERG_i ACC_j NOM_k
'Rasoa washed the clothes with the soap.'

Guilfoyle, Hung and Travis (1992) argue that verb morphology in Austronesian languages determines the assignment of structural Case, and thereby the order of the nominal arguments. The s-structures they propose are as set out in (92) with a few modifications to conform to the account presented here: [54]

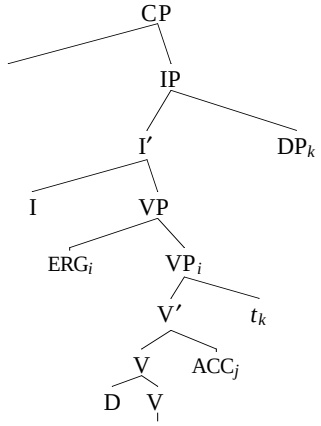
(92) a. *Raising* NOM–ACC



b. *Raising* ERG–NOM



c. *Raising* ERG–ACC



First, the structures in (92) reflect our assumption, justified in the preceding sections, that the subject originates as the distinguished adjunct of the VP, not as its specifier. In Malagasy, this assumption is consistent with the fact that the location of the VP-internal subject does not conform to the head-initial parameter setting of this language. If the VP-internal subject were in (SPEC,VP), then we would predict the order in (91c) to be V-ACC-ERG-NOM, contrary to fact. Secondly, this modification leaves the (SPEC,VP) position open for the secondary object (nominative) to originate there in (91c), as depicted in (92c), whereas Guilfoyle, Hung and Travis generate this argument as a sister of the primary object (accusative) within V′. For us sister relations are biunique. Third, concerning the prefix *an-* on the verb in (91a,c), we not only assume that it is a V-adjoined head, as do Guilfoyle, Hung and Travis, but further claim, that this head is of the category D, as in (92a,c). And finally, we identify the Case of the VP-internal subject, in (91b,c), as ergative rather than genitive.

From the point of view of the analysis proposed by Guilfoyle, Hung, and Travis, all of these modifications are minor, leaving the essential predictions unaffected. But combined with the present theory of structural Case, they allow us to simplify their analysis in one important respect. Guilfoyle, Hung, and Travis propose idiosyncratic rules of structural Case assignment which they claim to be specific to the small class of

Austronesian languages they discuss. According to one of these rules, for instance, the prefix *an-* in Malagasy, which we analyze as a V-adjoined D, assigns the accusative Case. In the present theory, on the other hand, these language-specific rules can be dispensed with. Given the s-structures in (92a-c), which Guilfoyle, Hung and Travis motivate on independent grounds, the Case arrays follow entirely from the universal principles already established, obviating the need for any language-specific stipulations.

Thus, in each structure, the nominative argument (bare DP) originates in a position which is not Case-bound and satisfies the K Filter by raising to (SPEC,IP). Since Malagasy is head-initial throughout, this specifier position is rightmost in the clause, giving rise to the renowned VOS order of this language. In (92a) and (92c), where the verb contains an adjoined D, it Case-binds its (primary) object and assigns the accusative Case in the usual manner.[55] And in (92b) and (92c), where the raised nominative argument is a primary or secondary object, it is this raised nominal which enables I to Case-bind the VP-internal subject and assign it the ergative Case. The raising ERG-ACC pattern of (92c) furnishes additional illustration of the general point already made in previous sections to the effect that a particular pattern of Case-marking may be derived in more than one way. Here, the Case-competitor enabling I to assign ergative case to the subject is not an NP complement of the verb, as in (87a), but a bare DP, the secondary object *ny savony* 'the soap', raised to (SPEC,IP) in order to satisfy the K Filter.

This analysis departs from tradition in assigning the label "ergative" to the agent in Malagasy sentences of the type represented by (91b,c). These are normally said to be passive constructions. The present proposal is supported by the so-called "double passive", exemplified in (93b) below, and by the "passive-based" imperative, exemplified in (94b):

(93) *Malagasy* (West Austronesian: Madagascar)[56]

a. te=h-am-ono _ nyomby Rabe
want=[$_{IP}$ FUT-D-kill PRO$_i$ [the cow]$_j$] Rabe$_i$
ACC NOM
'Rabe wants to kill the cow.'

b. tia-n dRabe ho-vono-ina _ _ ny omby
want-INFL Rabe$_i$ [$_{IP}$ FUT-kill-INFL PRO$_i$ t_j] [the cow]$_j$
ERG NOM
'Rabe wants to kill the cow.'

(94) *Malagasy* (West Austronesian: Madagascar)[57]

a. m-*am*-onóa azy
INFL-*D*-kill him (ACC)
'Kill him.'

b. vonoy izy
INFL.kill he (NOM)
'Kill him'.

The logical relations in (93b) are the same as in the corresponding "active" sentence (93a), and both sentences involve control of a non-overt argument, the agent of the complement clause, represented by PRO. Similarly, the logical relations in (94b) are the same as in the "active" imperative (94a); in both, the non-overt second person addressee corresponds to the agent argument. That is, the agent in Malagasy sentences of the type represented by (91b,c) exhibits the syntactic behaviour which is typical of ergative subjects, and is not otherwise attested for oblique agents of undisputed passives. We feel justified, therefore, in analyzing these agent phrases as ergative rather than oblique.

This analysis is also supported by the morphological evidence from the related language Kapampangan, which has both Case-marking and agreement:

(95) *Kapampangan* (Austronesian: Philippines)[58]

a. s*um*ulat ya ng poesia ing lalaki
D-write $3SG_i$ [ACC+D poem]$_j$ [D boy]$_i$
'The boy will write a poem.'

b. *i*-sulat na+ya (= ne) ing poesia n-ing lalaki
FUT-write $3SG_i$+$3SG_j$ [D poem]$_j$ [ERG-D boy]$_i$
'The boy will write a poem.'

In (95a), the infix -*um*- is the D adjunct which enables the verb to assign the accusative Case, visible in the form of the particle *ng*, which we analyze as a complex head formed by D-to-K movement. The subject is nominative, a bare DP, assuming the particle *ing* to be a pure determiner. Agreement morphology is associated with this argument alone. In (95b), the subject is in the ergative Case, and the object is nominative, functioning as a Case-competitor for the subject. Both arguments are associated with agreement morphology, in the expected order, with the ergative agreement closest to the verb.

The agreement facts show that (95b) is an ergative construction, not a passive, though that is what it is usually termed (cf., eg., Keenan 1985). The oblique argument of the passive construction cannot control agreement (cf. section 6), while agreement with an ergative subject is very common. Furthermore, the prefixal morphology involved in these Kapampangan forms is involved in the marking of tense, as shown in (96). This is expected on the present analysis, which identifies these elements with I.

(96) *Kapampangan* (Austronesian: Philippines)

a. *i*-sulat me ing sulat
FUT-write $2SG_i$+$3SG_j$ [D letter]$_j$
'You will write a letter.'

b. *su*-sulat me ing sulat
PRS-write $2SG_i$+$3SG_j$ [D letter]$_j$
'You are writing a letter.'

c. s-*in*-ulat me ing sulat
PST-write $2SG_i$+$3SG_j$ [D letter]$_j$
'You wrote a letter.'

13. Nominal possessors

Many languages which employ the ergative Case use it both for the subject of a transitive VP and the subject of a possessed NP, i.e., the possessor. This holds not only for classical ergative languages, like Inuit, but also for languages with three-way or split Case systems, exemplified by Nez Perce and Malagasy, respectively:

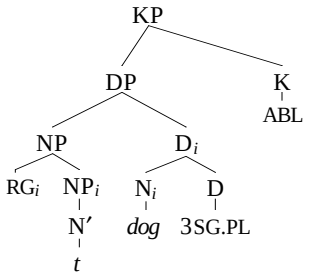
(97) a. Juuna-p _ qimmi-i-nit — *Inuit*
[[J.-ERG$_i$ t_n] dog$_n$-$3SG_i$.*PL*]-ABL — (Eskimo-Aleut: Greenland)
'from Juuna's dogs'

b. 'icwéew'lcix-nim _ nusnúu-∅-pkin'ix — *Nez Perce* [59]
[[monster-ERG t_n] nose$_n$-SG]-ABL — (Penutian: Oregon)
'from the monster's nose'

c. ny entan' dRakoto _ — *Malagasy* [60]
the things$_n$ [Rakoto t_n] — (Austronesian: Madagascar)
ERG
'Rakoto's things'

In our analysis, we do not take this coincidence in Case-marking to indicate a special kinship between the lexical categories noun and verb, as is sometimes done. We do, however, recognize a parallel, and we attempt to express it. We locate the parallelism in the extended projections of the nominal and verbal categories (cf. Grimshaw, 1991). The Case-binder responsible for assigning ergative case is a *parallel* functional head in the two systems of extended projection—I in the verbal system, D in the nominal system. For example, the manner in which Case is assigned in the Inuit possessive DP construction can be seen in the following structure, corresponding to (97a) above:

(98)



In general, the functional head D takes as its complement an NP. In a possessive construction, as here, this will be a nominal small clause, as indicated; and the possessor will be the subject of that small clause. The latter will be delimited by its own head, from below, and by the governing functional head, D, from above. If the head of the nominal small clause incorporates into D, as we assume it does in possessive nominals of the type represented by (97a–c), then it will function as a Case-competitor enabling D to Case-bind the possessor. The incorporated N activates the host D, because it qualifies as a pseudo co-argument of the possessor. In the relevant respects (definition (53)), the structural relation between the incorporated N and the possessor is like that between a V-adjoined D and the object (cf. also the ECM construction (71a)). Without incorporation, there would be no Case-competitor in (98), since the most likely alternative, the NP complement itself, fails to qualify as a co-argument of the possessor (definition (25)).

Being Case-bound, the possessor argument in (98) is licensed as an empty-headed KP, since its empty K satisfies the ECP. The realization of this K depends on the setting of the relevant parameter in the otherwise universal conventions (9) for direct Case realizations. In languages where the ergative Case is extended from transitive subjects to possessors, as in (97a–c), it is assigned not only by the verbal functional head I, but also by the structurally parallel nominal head, D. Common as this parameter setting is, it is not obligatory. That is, it is also possible for the ergative Case to be assigned only by I, leaving D to assign some language-specific structural oblique. The latter parameter setting is exemplified by Hindi, where I assigns the ergative Case, as in (99a,b), but the structural Case assigned by D is genitive, as in (99c). The structure of the bracketed nominal infinitive is set out in (100):

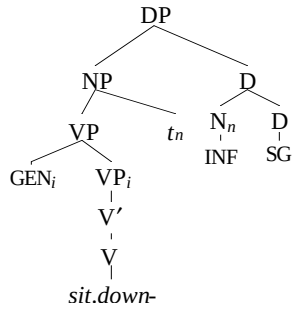
(99) *Hindi* [61]

a. raam-*ne* kuttoN-ko khariid-aa hai
   R.-*ERG* dogs-ACC buy-PRF.SG.M be.PRS.3SG
   'Ram has bought the dogs.'

b. raam-*ne* kele khariid-e haiN
   R.-*ERG* bananas(M)$_i$ buy-PRF.PL.M$_i$ be.PRS.3PL$_i$
   'Ram has bought the bananas.'

c. raam-*ke* baiTh-ne-par maaN-ne us-ko khaanaa diy-aa
   [R.-*GEN*$_i$ sit.down-INF.SG]-LOC mother-ERG him-ACC food(M)$_j$ give-PRF.SG.M$_j$
   'When Ram sat down, mother gave him food.'

(100)



14. Some final remarks.

The distinctive feature of the Case theory developed here consists in the idea that the ability to assign marked structural Case is determined by the syntactic relations in the government domain of a head regardless of its syntactic category. Universally, marked structural Case is assigned under a type of antecedent-government, which requires government and a structural relation we have called *Case-binding*. Nominative Case is absence of marked Case, restricted to arguments which are not Case-bound and stand in the appropriate structural relation to a Case-like head.

Case assignment, as viewed here, is fundamentally a structural matter. Moreover, we believe its behavior to be determined by structural factors which exist in grammar quite independently of Case itself. While our analysis makes reference to technical definitions of some complexity, most of these are fundamentally the same as definitions already established in the linguistic literature. For example, the licensing of nominative, K-less, arguments involves entirely conventional notions, c-command and government, that have nothing in particular to do with Case. And the licensing of nominals in morphologically marked Cases—the category KP, headed by empty K at d-structure—likewise involves a standard notion, that of antecedent-government, and a universal principle, the ECP, whose domain of applicability extends far beyond marked structural Case. In general, a nominal argument will be in a marked structural Case only if it is Case-bound, since only then will its empty K be able to satisfy the antecedent-

government requirement of the ECP. If the argument is not Case-bound, then it will be licensed in the nominative, K-less form, if it meets the provisions of the K Filter. It is the Case-binding relation whose proper determination involves moderate complexity, and it is this relation which has occupied a large measure of our attention.

Case-binding is a structural relation between a nominal argument and a head that locally c-commands it. This is not all there is to it, of course. In order for a head to Case-bind an argument, it must do so within a certain structural domain whose limits are identified by two features. First, the Case-binding head must delimit a small clause, a lexical projection (from V or N, say) which contains a subject. And second, it must govern another nominal element, distinct from the argument it Case-binds. This second nominal is what we have referred to as the Case-competitor. It is itself K-less, and it must be sufficiently close to the nominal argument it competes with, and yet independent enough, to qualify as a syntactic co-argument (if it is DP or NP) or as a pseudo co-argument (if it is D or N).

To be sure, this theory is more complex than the idea that structural Case is assigned by predictable syntactic categories (e.g., [–N] categories, as in Chomsky 1980, 1981; or AGR categories, as in Chomsky 1989, 1992). However, there are some advantages to our strictly relational view of structural Case assignment. First, parametrization is limited to the morphological realization of marked structural Case categories and is not involved in the issue of whether or not structural Case is assigned. Second, for the direct Cases ACC and ERG even the realization conventions are essentially universal. Third, many other Case categories, heretofore thought to be "quirky" or idiosyncratic, are assimilated to the category of marked structural Case, being predictably assigned under government and Case-binding and differing only in respect to their morphological realization. To the extent that this is true, it greatly reduces the burden on the language learner.

In the present theory, structural Case and agreement are mutually independent phenomena. Nevertheless, we predict a non-trivial correlation between pronominal agreement and the direct Cases (NOM, ACC, ERG). This follows, because pronominal agreement necessarily involves canonical antecedent government (i.e., government and the conventional binding relation) between a functional head and a nominal argument. Unlike structural obliques, nominal arguments in the direct Cases are always governed by functional heads.

ACKNOWLEDGMENTS

We have been very fortunate in receiving a great deal of very helpful and stimulating feedback throughout the process of working on this paper. We particularly wish to thank two anonymous reviewers for *Linguistic Inquiry*, as well as Christopher Manning, Kumiko Murasugi, Charles Randriamasimanana, and Jerrold Sadock, for extensive written comments and questions on earlier versions of the paper. For stimulating discussions, we also thank Veneeta Dayal, Richard Kayne, and our audiences at CUNY, MIT, the University of Pennsylvania, the Australian Linguistic Institute at LaTrobe University in Melbourne, the University of Beer-Sheva, and the University of Alberta at Calgary, where portions of this material were presented. We are very grateful to Sabine Iatridou at Penn and to Peter Austin and Edith Bavin at LaTrobe for making it possible for us to present our work in two extended series of talks. The research reported here was supported by National Science Foundation companion grants to MIT (BNS-9108331) and Rutgers (BNS-9108381).

REFERENCES

Abney, S. (1987) *The English Noun Phrase in its Sentential Aspect*, Doctoral dissertation, MIT, Cambridge, Massachusetts.

Anderson, S. (1976) "On the Notion of Subject in Ergative Languages," in C. N. Li, ed., *Subject and Topic*, Academic Press, New York.

Andrews, A. (1982) "The Representation of Case in Modern Icelandic," in J. Bresnan, ed., *The Mental Representation of Grammatical Relations*, MIT Press, Cambridge, Massachusetts.

Aoki, H. (1979) *Nez Perce Texts*, University of California Publications in Linguistics, vol. 90, University of California Press, Berkeley and Los Angeles.

Baker, M. (1988) *Incorporation: A Theory of Grammatical Function Changing*, The University of Chicago Press, Chicago.

Bandhu, Ch. (1973) "Clause Patterns in Nepali," in A. Hale and D. Watters (eds.) *Clause, Sentence, and Discourse Patterns in Selected Languages of Nepal, Part II: Clause*, Summer Institute of Linguistics, University of Oklahoma, Norman, pp. 1–79.

Bell, S. (1976) *Cebuano Subjects in Two Frameworks*, distributed by IULC, Bloomington, Indiana.

Bell, S. (1983) "Advancements and Ascensions in Cebuano," in D. Perlmutter, ed., *Studies in Relational Grammar* 1, The University of Chicago Press, Chicago, 143–218.

Belletti, A. (1988) "The Case of Unaccusatives," *Linguistic Inquiry* 19, 1–34.

Besten, Hans den (1981) "Government, syntaktische Struktur und Kasus," in M. Kohrt and J. Lenerz, eds., *Sprache, Formen und Strukturen*, Akten des 15. lingustischen Kolloquiums Münster 1980. Volume 1. Max Niemeyer Verlag, Tübingen, 97–108.

Bittner, M. (1987) "On the Semantics of the Greenlandic Antipassive and Related Constructions," *IJAL* 53:194–231.

Bittner, M. (1988) *Canonical and Noncanonical Argument Expressions*, Doctoral dissertation, The University of Texas at Austin.

Bittner, M. (1994a) *Case, Scope, and Binding.* Kluwer, Dordrecht.

Bittner, M. (1994b) "Cross-Linguistic Semantics," *Linguistics and Philosophy* 17:53–108.

Bittner, M. and K. Hale (in press) "Ergativity: Towards a Theory of a Heterogeneous Class," *Linguistic Inquiry* 27(4).

Bittner, M. and K. Hale (1995) "Remarks on Definiteness in Warlpiri," in E. Bach, E. Jelinek, A. Kratzer, and B. Partee, eds., *Quantification in Natural Language*, Kluwer, 81–106.

Blake, B. (1979) "Degress of Ergativity in Australia," in F. Plank (ed.) *Ergativity*. Academic Press, London, etc.

Blake, B. (1987) *Australian Aboriginal Grammar*. Croom Helm, London etc.

Boas, F. and E. Deloria (1939) *Dakota Grammar*. Memoirs of the National Academy of Sciences, vol. 23, no. 2.

Bobaljik, J. (1992) "Nominally Absolutive is Not Absolutely Nominative," *WCCFL* 11.

Bok-Bennema, R. (1984) "On Marked Pronominal Anaphors and Eskimo-pro," in J. Guéron, H.-G. Obenauer, and J.-Y. Pollock, eds., *Grammatical Representation*, Foris, Dordrecht, 1–18.

Bok-Bennema, R. (1991) *Case and Agreement in Inuit*, Doctoral dissertation, Katholieke Universiteit Brabant, Netherlands.

Bok-Bennema, R. and A. Groos (1984) "Ergativiteit," *GLOT* 7, 1–49.

Buechel, E. (1970) *Lakhota-English Dictionary*. Red Cloud Indian School, Pine Ridge, SD.

Burzio, L. (1981) *Intransitive Verbs and Italian Auxiliaries*, Doctoral dissertation, MIT, Cambridge, Massachusetts.

Burzio, L. (1986) *Italian Syntax*, D. Reidel, Dordrecht.

Campana, M. (1992) *A Movement Theory of Ergativity*, Doctoral dissertation, McGill University, Montreal.

Chomsky, N. (1980) "On Binding," *Linguistic Inquiry* 11.

Chomsky, N. (1981) *Lectures on Government and Binding*, Foris, Dordrecht.

Chomsky, N. (1986a) *Knowledge of Language: Its Nature, Origin and Use*, Praeger, New York.

Chomsky, N. (1986b) *Barriers*, MIT Press, Cambridge, Massachusetts.

Chomsky, N. (1989) "Some Notes on Economy of Derivation and Representation," in I. Laka and A. Mahajan, eds., *Functional Heads and Clause Structure*, MIT Working Papers in Linguistics, MIT, Cambridge, Massachusetts, volume 10, 43–74.

Chomsky, N. (1992) "A Minimalist Program for Linguistic Theory," MIT Occasional Papers in Linguistics, Number 1, MIT, Cambridge, Massachusetts.

Chung, S. (1976) *Case Marking and Grammatical Relations in Polynesian*, Doctoral dissertation, Harvard University, Cambridge, Massachusetts.

Comrie, B. (1979) "Degrees of Ergativity: Some Chukchee Evidence," in F. Plank, ed., *Ergativity*, Academic Press, London, 219–240.

Comrie, B. (1981) *Language Universals and Linguistic Typology*, The University of Chicago Press, Chicago.

Diesing, M. (1990) "Verb Movement and the Subject Position in Yiddish," *NLLT* 8, 41–80.

Dixon, R. (1972) *The Dyirbal Language of North Queensland*, Cambridge University Press, Cambridge, England.

Dixon, R. (1979) "Ergativity," *Language* 55, 59–138.

Durie, M. (1985) *A Grammar of Acehnese on the Basis of Dialect of North Aceh.* Foris, Dordrecht.

Durie, M. (1987) "Grammatical Relations in Acehnese," *Studies in Language* 11, 365–99.

Farrell, P., S. Marlett, and D. Perlmutter (1991) "Notions of Subjecthood and Switch Reference: Evidence from Seri," *Linguistic Inquiry* 22, 431–456.

Finer, D. (1985a) "The Syntax of Switch-Reference," *Linguistic Inquiry* 16, 35–56.

Foley, W. and R. van Valin (1984) *Functional Syntax and Universal Grammar*, Cambridge University Press, Cambridge, England.

Fukui, N. and P. Speas (1986) "Specifiers and Projection," in N. Fukui, T. R. Rapoport, and E. Sagey, eds., *MIT Working Papers in Linguistics*, vol. 8, MIT, Cambridge, Massachusetts, 128–72.

Grimshaw, J. (1991) "Extended Projection," ms.

Guilfoyle, E., H. Hung, and L. Travis (1992) "SPEC of IP and SPEC of VP: Two Subjects in Austronesian Languages," *NLLT* 10, 375–424.

Haiman, J. and P. Munro, eds. (1983) *Switch-Reference and Universal Grammar*, John Benjamins Publishing Company, Amsterdam.

Hale, K. (1968) Review of Hohepa, *A Profile Generative Grammar of Maori.* Memoir 20 of *IJAL* (1967).

Hale, K. (1969) "Papago /cim/," *IJAL* 35, 203–212.

Hale, K. (1970) "The Passive and Ergative in Language Change: The Australian Case," in S.A. Wurm and D. C. Laycock, eds., *Pacific Linguistic Studies in Honour of Arthur Capell*, distributed by A. H. & A. W. Reed, Sydney etc.

Hale, K. (1973) "Person Marking in Walbiri," in S. Anderson and P. Kiparski (eds.) *Festschrift for Morris Halle*. Holt, Rinehart and Winston, Inc, New York, 308–344.

Hale, K. (1982) "Some Essential Features of Warlpiri Verbal Clauses," in S. Swartz (ed.) *Papers in Warlpiri Grammar: In Memory of Lothar Jagst, Work-Papers of SIL-AAB*. Series A, Volume 6. Summer Institute of Linguistics, Berrimah, Australia, 217–315.

Hale, K. (1989) "Subject Obviation, Switch Reference, and Control," ms., MIT.

Hale, K. and S. J. Keyser (1992) "The Syntactic Character of Thematic Structure," in I. M. Roca (ed.) *Thematic Structure: Its Role in Grammar*. Foris, Berlin etc.

Hale, K. and S. J. Keyser (1993) "On Argument Structure and the Lexical Expression of Syntactic Relations," in K. Hale and S. J. Keyser (eds.) *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*. The MIT Press, Cambridge, MA.

Harris, A. (1981) *Georgian Syntax*, Cambridge University Press, Cambridge, England.

Harris, A. (1982) "Georgian and the Unaccusative Hypothesis," *Language* 58, 290–306.

Heath, J. (1976) "Antipassivization: A Functional Typology," *BLS* 2, 202–211.

Hoffman, M. (1991) *The Syntax of Argument-Structure Changing Morphology*, Doctoral dissertation, MIT, Cambridge, Massachusetts.

Hohepa, P. W. (1967) *A Profile Generative Grammar of Maori.* Indiana University Publications in Anthropology and Linguistics. Memoir 20 of the *International Journal of American Linguistics.* vii, 134 pp.

Hoji, H. (1982) "X'-Theory and the * Parameter," ms., University of Washington and MIT.

Holisky, D. A. (1984) "The Case of the Intransitive Subject in Tsova-Tush (Bats)," ms., George Mason University.

Jacobsen, W. (1967) "Switch-reference in Hokan-Coahuiltecan," in D. Hymes and W. Bittle, eds., *Studies in Southwestern Ethnolinguistics: Meaning and History in the Languages of the American Southwest*, Mouton, The Hague, 238–263.

Jaeggli, O. (1986) "Passive," *Linguistic Inquiry* 17, 587–622.

Jakobson, R. (1936) "Beitrag zur Algemeinen Kasuslehre," in *Selected Writings*, Hague, Mouton, volume 2, 23–71.

Jeanne, L. (1978) *Aspects of Hopi Grammar*, Doctoral dissertation, MIT, Cambridge, Massachusetts.

Johns, A. (1992) "Deriving Ergativity," *Linguistic Inquiry* 23, 57–88.

Kayne, R. (1981) "ECP Extensions," *Linguistic Inquiry* 12.

Kayne, R. (1983) *Connectedness and Binary Branching*, Foris, Dordrecht.

Keenan, E. L. (1975) "Some Universals of Passive in Relational Grammar," in *Papers from the Twellfth Annual Meeting of the Chicago Linguistic Society,* Chicago Linguistics Society, Department of Linguistics, University of Chicago, Chicago, Illinois.

Keenan, E. L. (1980) "Passive is Phrasal (not Sentential or Lexical)," in T. Hoekstra, H. van der Hulst, and M. Moortgat (eds.) *Lexical Grammar*, Foris, Dordrecht.

Keenan, E. L. (1985) "Passive in the World's Languages," in T. Shopen, ed., *Language Typology and Syntactic Description*, Cambridge University Press, Cambridge, England, vol. 1, 243–281.

Kibrik, A. E. (1979) "Canonical Ergativity and Daghestan Languages," in F. Plank, ed., *Ergativity*, Academic Press, London, 61–78.

Kitagawa, Y. (1986) *Subjects in Japanese and English*, Doctoral dissertation, University of Massachusetts at Amherst.

Klokeid, T. (1978) "Nominal Inflection in Pama-Nyungan, a Case Study in Relational Grammar," in W. Abraham (ed.) *Valence, Semantic Case and Grammatical Relations.* John Benjamins, Amsterdam, 577-615.

Koopman, H. and D. Sportiche (1985) "Theta Theory and Extraction," in *Glow newsletter* 14, 57–58.

Koopman, H. and D. Sportiche (1987) "Subjects," ms., UCLA, Los Angeles, California.

Kuroda, S.-Y. (1988) "Whether We Agree or Not: A Comparative Syntax of English and Japanese," in W. J. Poser, ed., *Papers from the Second International Workshop on Japanese Syntax*, CSLI, Stanford, 103–144.

Laka, I. (1993) "Unergatives the Assign Ergative," in J. Bobaljik and C. Phillips, eds., *Papers on Case & Agreement* 1, MIT Working Papers in Linguistics, vol. 18, MIT, Cambridge, Massachusetts, 149–172

Lamontagne, G. and L. Travis (1987) "The Syntax of Adjacency," *WCCFL* 6, 173–186.

Larson, R. (1988) "On the Double Object Construction," *LI* 19, 335–392.

Laughren, M. (1989) "The Configurationality Parameter and Warlpiri," in L. Marácz and P. Mysken (eds.) *Configurationality.* Foris, Dordrecht, 319–354.

Levin, B. (1983) *On the Nature of Ergativity*, Doctoral dissertation, MIT, Cambridge, Massachusetts.

Levin, J. and D. Massam (1985) "Surface Ergativity: Case/Theta Relations Reexamined," *NELS* 15, 286–301.

Mahajan, A. (1994) "The Ergativity Parameter: *have-be* Alternation, Word Order and Split Ergativity," *NELS* 24, 317–331.

Marantz, A. (1981) *On the Nature of Grammatical Relations*, Doctoral dissertation, MIT, Cambridge, Massachusetts.

Marantz, A. (1984) *On the Nature of Grammatical Relations*, MIT Press, Cambridge, Massachusetts.

Marantz, A. (1991) "Case and Licensing," *ESCOL.*

McCloskey, J. and K. Hale (1984) "On the Syntax of Person-Number Inflection in Modern Irish," *NLLT* 1, 487–534.

McConvell, P. (1981) "How Lardil became Accusative," *Lingua* 55.141-79.

McLendon, S. (1978) "Ergativity, Case, and Transitivity in Eastern Pomo," *IJAL* 44,1–9.

Mithun, M. (1991) "Active/Agentive Case Marking and Its Motivations," *Language* 67, 510–546.

Mohanan, T. (1990) *Arguments in Hindi*, Doctoral dissertation, Stanford University, California.

Mosel, U. and E. Hovdhaugen (1992) *Samoan Reference Grammar*. Scandinavian University Press, The Institute for Comparative Research in Human Culture, Oslo.

Murasugi, K. (1992) *Crossing and Nested Paths: NP Movement in Accusative and Ergative Languages*, Doctoral dissertation, MIT, Cambridge, Massachusetts.

Nash, D. (1986) *Topics in Warlpiri Grammar*, Outstanding Dissertations in Linguistics, Garland, New York.

Permutter, D. (1978) "Impersonal Passives and the Unaccusative Hypothesis," in J. J. Jaeger and A. C. Woodbury (eds.) *Proceedings of the Berkeley Linguistics Society* 4, Berkeley, California, 157–189.

Phinney, A. (1934) *Nez Perce Texts*, Columbia University Contributions to Anthropology, vol. 25, Colombia University Press, New York.

Plank, F., ed. (1979) *Ergativity*, Academic Press, London.

Postal, P. (1977) "Antipassive in French," *NELS* 7, 273–313.

Rabel, L. (1961) *Khasi, a Language of Assam*, Luisiana State University Press, Baton Rouge.

Rischel, J. (1971) "Some Characteristics of Noun Phrases in West Greenlandic," *Acta Linguistica Hafniensia* 13.2, 213–216.

Rischel, J. (1972) "Derivation as a Syntactic Process in Greenlandic," in F. Kiefer, ed., *Derivational Processes*, Research Group for Quantitative Linguistics, Stokholm, 60–73.

Rizzi, L. (1990) *Relativized Minimality*, MIT Press, Cambridge, Massachusetts.

Rude, N. (1985) *Studies in Nez Perce Grammar and Discourse*, Doctoral dissertation, University of Oregon.

Rude, N. (1986) "Topicality, Transitivity, and the Direct Object in Nez Perce," *IJAL* 52, 124–153.

Rude, N. (1991) "On the Origin of the Nez Perce Ergative NP Suffix," *IJAL* 57, 24–50.

Sadock, J. (1980) "Noun Incorporation in Greenlandic: A Case of Syntactic Word Formation," *Language* 56, 300–319.

Sadock, J. (1986) "Some Notes on Noun Incorporation," *Language* 62, 19–31.

Saito, M. (1983) "Case and Government in Japanese," *WCCFL* 2, 247–259.

Saito, M. (1984) "On the definition of c-command and government," *NELS* 14, 402–417.

Sapir, E. (1917) "Review of Uhlenbeck, C. C., 'Het Passieve Karakter van het Verbum Transitivum of van het Verbum Actionis in Talen van Noord America' ('The Passive Character of the Transitive Verb or of the Active Verb in Languages of North America')," *IJAL* 1:82–86.

Silverstein, M. (1976) "Hierarchy of Features and Ergativity," in R. M. Dixon, ed., *Grammatical Categories in Australian Languages* (linguistic Series 22), Australian Institute of Aboriginal Studies, Canberra.

Simpson, J. (1991) *Warlpiri Morpho-Syntax*. Kluwer, Dordrecht.

Sportiche, D. (1988) "A Theory of Floating Quantifiers and Its Corollaries for Constituent Structure," *LI* 19, 425–450.

Stowell, T. (1981) *Origins of Phrase Structure*, Doctoral dissertation, MIT, Cambridge, Massachusetts.

Travis, L. (1984) *Parameters and Effects of Word Order Variation*, Doctoral dissertation, MIT, Cambridge, Massachusetts.

Urban, G. (1985) "Ergativity and Accusativity in Shokleng (Gê)," *IJAL* 51:164–187.

Uribe-Etxebarria, M. (1989) "Some Notes on the Structure of IP in Basque," ms., UConn, Storrs.

Van Valin, R. (1990) "Semantic Parameters of Split Intransitivity," *Language* 66, 221–260.

Watters, D. (1973) "Clause Patterns in Kham," in A. Hale (ed.) *Clause, Sentence, and Discourse Patterns in Selected Languages of Nepal*, I: *General Approach*, Summer Institute of Linguistics, Norman OK, 39–202.

Williams, E. (1980) "Predication," *Linguistic Inquiry* 11, 203–238.

Williams, E. (1981) "Argument Structure and Morphology," *The Linguistic Review* 1:81–114.

Williamson, J. S. (1984) *Studies in Lakhota Grammar*, Doctoral dissertation, University of California at San Diego, La Jolla.

Williamson, J. S. (1987) "An Indefiniteness Restriction for Relative Clauses in Lkhota," in E. Reuland and A. ter Meulen (eds.) *The Representation of (In)definiteness*. The MIT Press, Cambridge, MA.

Woodbury, A. C. (1975) *Ergativity of Grammatical Processes: A Study of Greenlandic Eskimo*. Master's Thesis, The University of Chicago, Illinois.

[1] Pronominal agreement necessarily includes person features. The proposed analysis need not extend to adjectival or participial agreement, which does not include those features.

[2] Data from Urban (1985).

[3] Data from Rabel (1961).

[4] Data from Chung (1976).

[5] Data from Saito (1983, 1984)

[6] This embodies the traditional idea that nominative arguments are case-less (cf. Jakobson 1936, Andrews 1982). It appears that nominatives are DPs, if the language has the category D (as in English), and NPs, if the category D is missing (as in Warlpiri; see Bittner and Hale 1995, to appear).

[7] We focus here on nominal *arguments*. Case-marked modifiers (eg. in Polish *nozem* 'knife-INS' in *kroic chleb nozem* 'cut bread with a knife') are analyzed as adjunct KP's which are licensed in the same way as adjunct CP's, PP's, etc.

[8] Apart from the well-known literature on raising to (SPEC,IP) of nominative subjects, see Dixon (1972), Bittner (1988, 1994a), Guilfoyle, Hung and Travis (1992), etc., on raising to (SPEC,IP) of nominative non-subjects; and Koopman and Sportiche (1985, 1987), Kitagawa (1986), Fukui and Speas (1986), Kuroda (1988), *et al*, on nominative subjects which are licensed in their underlying VP-internal position.

[9] The technical terms "include" and "exclude" are used here as defined by Chomsky (1986b). That is, in an adjunction structure of the form

$$\dots\ \alpha\ \dots\ [_{XP}\ \beta\ [_{XP}\ \dots\ \gamma\ \dots\ ]]$$

the complex XP projection, consisting of two segments, *includes* γ (since both segments dominate γ); *excludes* α (since neither segment dominates α); and neither includes nor excludes β (since one segment dominates β and one does not).

[10] Throughout the paper, the term *argument* is to be understood in the standard syntactic sense—i.e., it is a phrase in an A-position (defined as in (15)).

[11] For relevant evidence and alternative analyses see, e.g., Dixon 1972, Marantz 1981, 1984, and Levin 1983, on Dyirbal; Woodbury 1975, Bittner 1988, Bok-Bennema 1991, and Johns 1992, on Inuit; Chung 1976,

and Mosel and Hovdhaugen 1992, on Samoan; and Hale 1973, 1982, Levin 1983, Laughren 1989, and Simpson 1991, on Warlpiri.

[12] The thematic role labels have been added for the sake of readability; they have no theoretical significance. For reasons discussed in Hale and Keyser (1992, 1993) and Bittner (1994a, b), the authors consider "theta-role assignment" to be an epiphenomenon resulting from the interaction of syntactic structure and compositional semantic rules. The relation of "theta-government" in the ECP (6) is to be understood in purely syntactic terms: α *θ-governs* β, iff α governs and A-projects β (i.e., α is a lexical head, and β, an internal argument of α; cf. Chomsky 1986b, pp. 13–14).

[13] In (26), C is non-overt but we assume that it is still present in the extended projection of the verb.

[14] This holds regardless of the order of the actual nominal arguments in the clause, which may be scrambled at PF. The gloss DPST in (31) abbreviates "dependent past".

[15] Recall ftn. 12 on the epiphenomenal nature of "theta-role assignment". Also, the structures in (34a, b) correctly predict different scope relations (see Bittner 1994a, b, for relevant semantic discussion of Inuit and English).

[16] Data from Mosel and Hovdhaugen (1992).

[17] The object DP_j qualifies as a Case-competitor for the subject under definition (24). It exemplifies the circumstance in which a co-argument is in a *trivial* chain, i.e., one whose head and foot coincide.

[18] The fact that C(OMP), the trace of I(NFL), and the verb, jointly form a discontinuous head at s-structure has also many other consequences throughout the syntax and semantics of Warlpiri. See Bittner and Hale (in press) for detailed evidence and discussion.

[19] In the triadic structure (40), all of the Cases are structural and are assigned as in Inuit (34a), except that the complement KP is realized in the dative case, as required by the oblique convention (10) of Warlpiri. Beginning with (40), government domains are indicated for *Case-binding heads* only.

[20] The evidence provided by surface word order and word boundaries is difficult to interpret, because of the possibility of late scrambling and incorporation at PF (which, for example, obscure the key s-structure relations in Inuit).

[21] For example, only nominatives are accessible to relativization in Dyirbal and Inuit, and to topic chaining in Dyirbal (see Dixon 1972 and Levin 1983, on Dyirbal; and Woodbury 1975 and Bittner 1994a, on Inuit).

[22] Data from Harris (1982), glosses supplemented with the grammatical information from Harris (1981).

[23] Data from Perlmutter (1978)

[24] Data from Rude (1986)

[25] See Bittner (1994a) for data and discussion. Bi-clausal passive structures may also explain similar binding facts in the passive of Hindi (Mohanan 1990), a language with a split Case system; and similar obviation facts in the passive of the accusative language Seri (Farrell, Marlett, and Perlmutter 1991).

[26] In the present framework of assumptions (sections 2–3 above), the VP in (47a) is in an A-position, since it is a complement of a lexical head, N (definition (15)). But it does not block local c-command of its subject by the passive N, because it does not exclude this adjoined argument, and therefore does not c-command it (cf. definitions (18b) and (23)).

[27] This follows from the universal realization conventions (9) for the direct Cases, ERG and ACC.

[28] Since this agreement is not pronominal—i.e., it does not involve person features—it does not require any functional head. Also, the structural relation of canonical antecedent-government need not hold.

[29] Data from Comrie (1979).

[30] Data from Blake (1987).

[31] Based on a pilot study with one consultant, Bittner (1988) (also cited in Bok-Bennema 1991) cites (61) as well-formed. In subsequent research with six other consultants, antipassive sentences of this type were systematically rejected as clearly ungrammatical.

[32] This structure is simplified in ways which preserve the Case-binding relations, as these are the principal concern of this paper. The simplified structure (63), however, wrongly predicts that the antipassive oblique in (62) will be dative rather than instrumental (by the oblique conventions (10′) of

Inuit). See Bittner (1994a) for a solution to this problem, as well as evidence that the Inuit antipassive is *not* an accusative construction (contra Bok-Bennama 1991).

[33] There is at least anecdotal evidence for such a preference. For instance, one of the authors has a brother who was born after the emigration of his parents from Poland to England. The parents continued to speak only Polish at home. As expected, he speaks English natively; and Polish fluently but with imperfect grammar. Specifically, he appears to use only the direct accusative Case for the object. This is true even in the presence of negation, where native speakers of Polish require the genitive Case—a structural oblique which this language-learner has not yet acquired.

[34] We thank Yael Sharvit for the data in (65).

[35] The theory allows certain exceptions. See, e.g., the analysis of agreement in Lakhota in section 10 below.

[36] See Hoffman (1991) for a similar syntactic proposal, and Bittner (1994b) for a compositional semantics.

[37] Data from Jeanne (1978).

[38] Cf. the original description in Sapir (1917), as well as the survey articles by van Valin (1990) and Mithun (1991).

[39] Data from Durie (1985, 1987). In the glosses, IND abbreviates 'indicative mood', and INCH, 'inchoative aspect'.

[40] Data from Durie (1985, 1987).

[41] Data from McLendon (1978:8). McLendon does not gloss the item *siimáa* or explain its function. The glosses reflect the present analysis.

[42] Data from McLendon (1978:8), with our analysis.

[43] McLendon reports that when the thematic arguments of two unaccusative clauses are not coreferential, the subordinate clause is marked obviative. We thank Christopher Manning for reminding us of this fact, and thereby providing the initial stimulus for our theory of expletive subjects.

[44] The data in (81) and (82) are from Williamson (1984), except for the unaccusative (81b). The latter is

from Boas and Deloria (1939), or Buechel (1970), as cited in Foley and Van Valin (1984). The glosses reflect the present analysis.

[45] This example is constructed based on the data in Williamson (1984), specifically, her examples (81a,a') and the full agreement paradigm which she gives on page 107.

[46] Data from Williamson (1984, 1987). The glosses reflect the present analysis.

[47] Data from field notes of Hale (Dajarra, Qld., 1960) and from field notes and draft grammar of Gavan Breen (early 1970's).

[48] Data from Rude (1985).

[49] Data from Watters (1973)

[50] Data from Rude (1986).

[51] Data from Bandhu (1973).

[52] Data from Rude (1991).

[53] Data from Keenan (1985). In (91b-c), the ergative subject forms a phonological unit with the verb, traditionally written *nosasan-dRasoa* and *nanasan-dRasoa*, respectively. Our English translations reflect the grammatical relations in these Malagasy sentences, but not necessarily their aspectual and pragmatic features (Charles Randriamasimanana, p.c).

[54] Bell (1976,1983) develops a similar analysis for Cebuano (Austronesian: Philippines) in the Relational Grammar framework.

[55] An anonymous reviewer for *LI* informs us that many transitive verbs assign accusative Case in the absense of the prefix *an-* , e.g. *mihinana* 'eat', *mividy* 'buy'. We assume that for these verbs, V-adjoined D is not overt. Also, some intransitive verbs have this prefix, but do not assign accusative Case, e.g. *mandeha* 'go'. This is not surprising, as the unique argument of an intransitive has no Case-competitor (cf. the unaccusative structure (64b)).

[56] Data from Keenan (1975, 1980), whose discussion of (93b) implies that that nominative *ny omby* 'the cow' is raised into (SPEC,IP) of the matrix, but who otherwise analyzes this construction as a "double passive". See Bittner (1994a) for a discussion of a similar control construction in Inuit, an

uncontroversially ergative language.

[57] Keenan (1975) correctly points out that Maori makes use of "passive-based" imperatives of the type represented by Malagasy (94b). Our analysis, therefore, implies that Hohepa (1967) may have been correct in attributing an ergative construction to Maori—if so, Hale (1969) was wrong in arguing against this idea.

[58] The Kapampangan sentences in (95) and (96) are from Keenan (1985). The glosses reflect the present analysis.

[59] Data from Phinney (1934:22), as cited by Rude (1985).

[60] Data from Keenan (1985). An anonymous reviewer for *LI* confirms this analysis, noting that the possessor in (97c) is in the same Case as the agent in (91b-c) and that the head N has moved giving the surface NSO order.

[61] We thank Veneeta Dayal for the data in (99a) and (99b), and for checking (99c), cited by Mohanan (1990).