Ergativity: Argument Structure and Grammatical Relations

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I wish to present a codification of syntactic approaches to dealing with ergative languages and argue for the correctness of one particular approach, which I will call the Inverse Grammatical Relations hypothesis.[1] I presume familiarity with the term 'ergativity', but, briefly, many languages have ergative case marking, such as Burushaski in (1), in contrast to the accusative case marking of Latin in (2). More generally, if we follow Dixon (1979) and use A to mark the agent-like argument of a transitive verb, O to mark the patient-like argument of a transitive verb, and S to mark the single argument of an intransitive verb, then we can call ergative any subsystem of a language that groups S and O in contrast to A, as shown in (3).

(1) a.

ne	hír-e	phaló	bók-i
the.MASC	man-ERG	seed.PL.ABS	SOW.PRET-3SG.MASC.SUBJ

'The man planted the seeds.'

b.

ne	hir	yált-i
the.MASC	man.ABS	yawn.PRET-3SG.MASC.SUBJ

'The man yawned.'

(2) a.

puella	veni-t
girl.NOM	come-PRES.IND.3SG

'The girl comes.'

b.

puer	puella-m	audi-t
boy.NOM	girl-ACC	hear-PRES.IND.3SG

'The boy hears the girl.'

(3)

$$\begin{array}{lcl} \text{Nominative} \left\{ \begin{array}{c} \text{A} \\ \\ \text{S} \end{array} \right. & & \text{Ergative} \\ & \left. \begin{array}{c} \text{S} \\ \\ \text{O} \end{array} \right\} & \text{Absolutive} \\ \text{Accusative} & \text{O} & \end{array}$$

[1]This paper is drawn from my 1994 Stanford dissertation of the same name (copies of which are available from http://kinks.phil.cmu.edu/manning/papers/, or by contacting the author), which should be consulted for further information, acknowledgements and references.

Some History (Anderson 1976, Dixon 1979)

It was widely assumed by pregenerative grammarians that the different morphological marking in ergative languages means that the languages concerned have a fundamentally different syntactic character from familiar accusative languages. The most common view held that ergativity is something like a passive: the O bears the same grammatical relation to the verb as the S of an intransitive while the A bears a different grammatical relation. This allows a simple link between morphological form and syntactic function, but it complicates the statement of the mapping between semantics and syntax, where it is often assumed that, universally, an agent argument should map onto the subject position in the basic verbal voice.

Anderson (1976) challenged this traditional analysis, arguing that, for most languages with ergative morphology, the morphology is misleading. Syntactic operations show that these languages have a grammatical relation of subject grouping A and S, just like accusative languages, and despite the differences in case marking. For example, in accusative languages, a subject NP can always bind an object reflexive. Observe, then, example (4), which shows how in Basque an absolutive reciprocal can be bound by an ergative NP (4a), while the reverse is impossible (4b). Reciprocals never appear in the A or S subject positions, but an S can also bind an oblique reciprocal (4c):

(4) a. Gudari-ek elkar hiltzen zuten
soldiers-ERG RECIP.ABS kill AUX
'The soldiers$_i$ killed each other$_i$.'

b. *Gudari-ak elkarr-ek hiltzen zituen/zituzten
soldiers-ABS RECIP-ERG kill AUX

c. Lagun-ak elkarr-ekin joan dira
friend-ABS RECIP-with go AUX
'The friends$_i$ have gone with each other$_i$ (i.e., together).'

Another widely used test is coordination reduction. In accusative languages, an S or A subject NP can be gapped in the second clause of a coordination, as in the translations of (5–6). Examples (5–6) show that similar gapping is possible in Basque and Lezgian, respectively, despite the ergative morphological marking.

(5) Seme-a eskola-n utzi (zuen) eta klase-ra joan zen
son-ABS school-at leave AUX and class-to go AUX
'S/he left her/his son at school and went to class.'

(6) Gada xta-na wa ktab q̃ačor-na
boy.ABS return-AOR and book.ABS take-AOR
'The boy returned and took the book.'

I accept that Anderson's claim is correct for many languages with ergative morphology. Such languages are syntactically accusative in all respects. In such languages, morphological ergativity can be present for essentially diachronic reasons – just like the widespread phenomenon of dative experiencer subjects.

However, Anderson notes that this is not true for all languages. This argument was made earlier by Dixon (1972) who argues that Dyirbal has proceses of coordination reduction, equi-NP deletion, and relativization that work on an ergative basis. For syntactically ergative languages like Dyirbal, phenomena sensitive to grammatical relations pick out a grouping of S and O. The conjunction reduction data from Dyirbal in (7) contrast with that from Basque and Lezgian in that clause linking requires the clauses to share an S or O NP:

(7) a. bayi yara baŋgul gubi-ŋgu munda-n baŋgun jugumbi-ru
I.ABS.TH man.ABS I.ERG.TH gubi-ERG bring-NFUT II.ERG.TH woman-ERG
balga-n
hit-NFUT
'The gubi [shaman] brought the man here and the woman hit (him).'

b. bayi burrbula baŋgul gubi-ŋgu bara-n baji-gu
I.ABS.TH Burrbula.ABS I.ERG.TH gubi-ERG punch-NFUT fall.down-PURP
'The gubi punched Burrbula$_i$ and [he$_i$] fell down.'

Later authors such as Marantz (1984) and Dowty (1991) have accepted, and perhaps even expanded, the dichotomy between syntactically ergative and syntactically accusative langauges. In particular, syntactic ergativity is predicted to be an all or nothing affair. Dowty (1991:582) focuses his discussion on languages where the ergative-absolutive contrast is "the basis of syntactic organization throughout the grammar of the language, just as the subject-object contrast is for other kinds of languages." But focussing on this alleged pure form of ergativity is mistaken when languages that might exhibit it are extremely rare. Dyirbal is the only example that has ever been credibly advanced. As Van Valin (1981) has argued, a situation of partial syntactic ergativity, or so called mixed-pivot languages is much more common. From here Van Valin (1981), Kazenin (1994) and others have argued for an implicational hierarchy of degrees of syntactic ergativity; but such accounts have provided few constraints on what patterns of mixed pivot behavior are possible. I wish to argue that the data can be given a much more restrictive account than a general theory of graded syntactic ergativity would imply.

Another general problem is that Philippine languages have sat uneasily outside this classification, even though people have repeatedly observed the similarity between Philippine and various other ergative languages. Let me briefly review them here.

Tagalog

In Tagalog sentences, there is normally one distinguished NP, marked by the particle *ang*, and which is variously referred to as the subject or topic. A system of so-called voice markers on the verb indicates the semantic role which is borne by this NP. In (8), the *ang*-marked NP is in turn the agent, the theme and the location:

(8) a. B-um-ili ang=lalake ng=isda sa=tindahan
PERF.AV-buy NOM=man GEN=fish DAT=store
'The man bought fish at the store.'

b. B-in-ili-∅ ng=lalake ang=isda sa=tindahan
PERF-buy-OV GEN=man NOM=fish DAT=store
'The man bought the fish at the store.'

c. B-in-ilh-an ng=lalake ng=isda ang=tindahan
PERF-buy-DV GEN=man GEN=fish NOM=store
'The man bought fish at the store.'

Schachter (1977) points out that Tagalog has a split in apparent 'subject properties' (in roughly the sense of Keenan (1976)) between those borne by the *ang*-marked NP and those borne by what he calls the Actor – the A or S NP. See (9).

(9)

Ang-marked NP	Actor
Obligatory element of every clause	Reflexive binding
Launches floating quantifiers	Equi target
Relativization	Imperative addressee

Schachter describes the topic as regularly definite, or more carefully as a term whose reference is presupposed. This was indicated very approximately in the difference in the translation between (8a) and (8b).

Another key property of the Topic is that it is the only position that can be relativized on. This is illustrated in (10) where active voice and objective voice are used when relativizing the actor and patient respectively. (11) shows that it is not possible to form relative clauses unless the gap representing the relativized NP is in the Topic slot.

(10) a. Iyon ang=babae=ng b-um-ili ng=baro
that NOM=woman=LNK PERF.AV-buy GEN=dress
'That's the woman who bought a dress.'

b. Iyon ang=baro=ng b-in-ili ng=babae
that NOM=dress=LNK PERF-buy.OV GEN=woman
'That's the dress that a/the woman bought.'

(11) *Iyon ang=baro=ng b-um-ili ang=babae
that NOM=dress=LNK PERF.AV-buy NOM=woman

On the other hand, Schachter shows that the Actor can always control a reflexive (regardless of whether it is the Topic) – see (12a–b), while it cannot itself be a reflexive (12c):

(12) a. Nag-aalala ang=lolo sa=kaniyang sarili
AV-worry NOM=grandfather DAT=his self
'Grandfather worries about himself.'

b. Inaalala ng=lolo ang=kaniyang sarili
OV.worry GEN=grandfather NOM=his self
'Grandfather worries about himself.'

c. *Inaalala ang=lolo ng=kaniyang sarili
OV.worry NOM=grandfather GEN=his self

Also, in the basic pattern of control, it is always the actor that is the gapped controllee, regardless of the verbal voice of the complement. For example, (13a) shows a topic actor controllee, while (13b) shows a non-topic actor controllee.[2]

(13) a. In-iwas-an ko=ng t-um-ingin kay=Lorna
PERF-AVOID-DV I.GEN=COMP AV-look.at DAT=Lorna
'I avoided looking at Lorna.'

b. B-in-awal-an ko si=Maria=ng awit-in ang "Dahil sa iyo"
PERF-forbid-DV I.GEN NOM=Maria=COMP sing-OV NOM because DAT you.SG
'I forbade Maria to sing "Because of you".'

Inuit

But this problem – where 'subject properties' are split between two NPs – is not confined to the Philippine languages. A very similar split occurs in various ergative languages – in fact, I wish to argue that such a split occurs in all syntactically ergative languages. For example, the Eskimo languages have been widely regarded as only morphologically ergative,[3] but Woodbury (1977) and Bittner (1994) notice that there is a mixture of evidence for both S/O and S/A pivots in Greenlandic, as indicated in (14).

(14)

Absolutive marked NP	Actor
Subcategorized element of every clause	Reflexive binding
Relativization	Equi target
Specific/Wide Scope	Imperative addressee
-niq nominalizations	Derivational morphology
Agreement	Controller/controllee of adverbial clauses

All verbs subcategorize for an absolutive argument (although it may not appear overtly because of free pro-drop). Relative clauses are restricted so that the relativized role must be the absolutive within the relative clause.[4] (15a–b) show relativization of O and S NPs in West Greenlandic, while (15c) shows that relativization of an A NP is impossible.

(15) a. nanuq Piita-p tuqu-ta-a
polar.bear Piita-ERG kill-TR.PART-3SG
'a polar bear killed by Piita'

[2]See Kroeger (1993:39, 99) for more extensive paradigms. The controller is determined on semantic grounds, and can be either a non-topic (13a) or a topic (13b). This follows from the sort of semantic theory of controller selection given in Sag and Pollard (1991) and Pollard and Sag (1994) (where in (13a) the controller is an EXPERIENCER and in (13b) an INFLUENCED participant).

[3]E.g., Anderson (1976), Johnson (1980), Marantz (1984), Givón (1984).

[4]Relative clauses in Inuit are actually participial nominalizations, but I am essentially accepting a functional definition of what a relative clause is, following Comrie (1981:136).

b. miiraq kamat-tu-q
child.ABS angry-REL.INTR-SG
'the child that is angry'

c. *angut aallaat tigu-sima-sa-a
man.ABS gun.ABS take-PRF-REL.TR-3SG.SG
*'the man who took the gun'

Thirdly, the absolutive NP has special interpretive properties, which the traditional literature has interpreted as definiteness, or specificity, and which Bittner (1987) accounts for in terms of scope. The Central Arctic Eskimo sentence in (16a) differs from the intransitivized variant in (16b) because of a presupposition of specificity or givenness associated with the absolutive NP in (16a).

(16) a. Jaani-up tuktu taku-vaa
Jaani-ERG caribou.ABS see-IND.TR.3SG.3SG
'Jaani sees the caribou.'

b. Jaani tuktu-mik taku-vuq
Jaani.ABS tuktu-MOD see-IND.INTR.3SG
'Jaani sees a caribou.'

On the other hand, some properties seem to be sensitive to a notion of 'subject' linking A and S. This is the kind of evidence that has often been taken to suggest that most ergative languages are syntactically accusative. (17) shows that a possessive reflexive can be bound by an A or S NP (17a–b), but not by an O NP (17c):[5]

(17) a. ataata-ni Juuna-p tatig(i-v)-a-a
father-4SG.SG Juuna-ERG trust-IND-TR-3SG.3SG
'Juuna$_i$ trusts his$_i$ father.'

b. Arnaq iglu-mi-nut tikit-tuq (Qairnirmiut)
woman.ABS house-4SG-DAT arrive-PART.INTR.3SG
'The woman$_i$ arrived at her$_i$ house.'

c. *Anaana-mi Piita nagligi-jaŋa (Inuktitut)
mother-4SG.ERG Piita.ABS love-3SG.3SG
'His$_i$ mother loves Piita$_i$.'

In cases of control, the controllee NP is again the A or S and not the O; see (18).

(18) a. Miiqqat __ Juuna ikiu-ssa-llu-gu] niriursui-pp-u-t
children.ABS [ERG Juuna.ABS help-FUT-INF-3SG] promise-IND-INTR-3PL
'The children promised to help Juuna.'

b. Miiqqat __ qiti-ssa-llu-tik niriursui-pp-u-t
children [ABS dance-FUT-INF-4PL] promise-IND-INTR-3PL
'The children promised to dance.'

[5]In Inuit, possessor agreement is suffixed to nouns. A separate set of reflexive agreement affixes are customarily referred to as the 4th person.

Mayan languages

A similar breakdown of properties is also present in the syntactically ergative Mayan languages such as Mam. Relativization, question formation and focussing are sensitive to an ergative pivot of S and O, while properties such as control pick out the A and S arguments.

The correlation of properties between Philippine languages and certain other ergative languages – compare (9) and (14) – is quite impressive, but does not seem to have gained wide currency. It has, however, been noted by Johnson (1980), who refers to the "remarkable coincidence of results" between her work on Central Arctic Eskimo and Schachter's (1977) discussion of Tagalog, and Blake (1988) who compares Tagalog to Kalkatungu (Pama-Nyungan, Australia).[6] I thus conclude that within a syntactic typology, the basic voices of Tagalog and Inuit should be analyzed the same.

Grammatical Relations

What, then, is the subject of Inuit and Tagalog sentences? Schachter (1977) concludes that the *ang*-marked NP is the Topic, but that various other properties key off the macrorole of Actor, and that Subject isn't a useful notion in the description of Tagalog. However, this is undesirable. If we have any conception whatsoever of universals of human language then we should make subject a syntactic notion that can be applied across languages of different typological sorts. This is the *condition of generality* of Chomsky (1957:50).

We have two choices: Either the Philippine Topic and the Eskimo absolutive is the subject or the Philippine Actor and the Eskimo S/A NPs are the subject. Given the convergence of properties between the two language families that I have outlined, it would be typologically irresponsible to consider any other possibilities.

Before deciding we must clarify what we mean by subject. Some frameworks and analyses define 'subject' in terms of a system of surface grammatical relations, others (such as Dixon (1979)) consider 'subject' as a basically semantic notion, while yet others seem to confuse these different criteria. I believe Schachter (1976) is right in suggesting that we need two dissociable prominence hierarchies, each with its own most prominent term.[7]

The first notion to establish is the grammatical subject – the privileged term in a system of surface grammatical relations. This notion is similar to the notion of subject in traditional grammar, but it is more clearly seen in Dixon's usage of pivot, the notion of final 1 in RG or subject in LFG. In GB, the configurational positions of NPs at s-structure are basically equivalent to grammatical relations.

[6]And Payne (1982) makes a similar argument with respect to Yup'ik (Eskimo-Aleut, Alaska).

[7]Schachter was not the first to distinguish these two notions of subjecthood, although pre-generative work did not generally distinguish surface grammatical relations independent of morphological form. Allen (1964:337) wrote: "Discussions of this type often distinguish between a grammatical and a semantic subject. The former is formally definable and usually refers to the noun or pronoun which is in a particular (e.g. 'nominative') case and/or in concord with the verb or with a particular verbal element. The latter (also variously described as 'real' or 'psychological') generally remains undefined and intuitive, since situational or logical correlates such as 'actor' or 'topic' break down in a number of instances."

The distinguished NP is the subject not the topic

Kroeger (1993) argues extensively that the correct analysis of Tagalog is that Schachter's Topic is actually the grammatical subject. This distinguished NP has many properties that are bestowed on subjects in other languages: a verb can optionally agree in number with it, only it can launch floated quantifiers, or be the target of raising, relativization (Keenan and Comrie 1977) or conjunction reduction constructions.[8] It is further picked out by examination of control of secondary predicates, subject obviation, and possessor ascension. These are properties of grammatical subjects. Conversely, the properties appearing to favor what Schachter calls the Actor (possible antecedent of reflexives, imperative addressee and equi target) have a more semantic flavor – I will argue later that they are better treated at the level of argument structure, as construal processes, to use the term of Kiparsky (1987). On the other hand the distinguished NP need not be a topic – studies by Cooreman et al. (1984) show that it does not possess the high degree of salience and continuity normally taken as defining properties of discourse topics. Moreover, there is a separate topicalization construction in Tagalog, which can apply both to the distinguished NP (19a) and to other NPs (19b), as shown in (19):[9]

(19) a. Ito=ng tasa, binili ko sa=pamilihan
this=LNK cup PERF-buy-OV 1.SG.GEN DAT=market
'This cup, I bought at the market.'

b. Si=Juan linutu niya ang=pansit
NOM=Juan PERF-cook-OV 3.SG.GEN ANG=noodles
'Jan, he cooked the *pansit* [noodles].'

Since the Objective Voice – with the O or S NP as the grammatical subject – is basic in Tagalog (as argued by Cena (1977)[10]), this means that Tagalog has an essentially ergative character.[11]

By parallelism, these same arguments extend over to Inuit, and I would therefore like to conclude that the absolutive NP is the grammatical subject of Inuit sentences.

[8]Once conjunction reduction is properly distinguished from cases of zero anaphora; see Kroeger (1993).

[9]Topicalization of the distinguished NP normally requires a resumptive pronoun.

[10]The arguments are summarized in Foley and Van Valin (1984:137).

[11]I take Kroeger (1993) as my main reference on Tagalog. A 'morphologically' ergative analysis of Philippine languages was proposed earlier by Gerdts (1988) and De Guzman (1988) and in various other works (Blake (1988), Payne (1982), Mithun (1994), Gibson and Starosta (1990), and by various other people mentioned in this last reference). The Relational Grammar analysis of Gerdts and De Guzman differs considerably from Kroeger's in two ways: it simultaneously maintains notions of final 1 and 2 yielding accusative 'subjects' as well as the relations ergative and absolutive, and it generates Active Voice by antipassivization whereas Kroeger argues that the genitive patient in the Active Voice is still a term (hence using the term 'voice' is somewhat misleading, but I have retained it for want of a better term). The binding facts discussed below support Kroeger against almost all other analyses in suggesting that none of the 'voices' of Tagalog result from processes of passivization or antipassivization that demote terms. The claim that the Topic is the subject in Tagalog was also put forward without argument in various early treatments of Tagalog such as Bloomfield's, and was explicitly argued for earlier by H. McKaughan (see Kroeger 1993:19 for references). Cena (1977) gives the same analysis for objective voice sentences as Kroeger; he doesn't make clear how he intends the other voices to be generated.

An extension of the typology of Johnson (1977)

If one is working in a categorical or discrete framework (as opposed to one with squishes), then, regardless of whether the terms of reference are configurational positions, grammatical relation labels or positions in subcategorization lists, there are only so many fundamentally different approaches for capturing the syntactic aspects of ergativity. A clear classification of possible syntactic approaches was first provided in the Relational Grammar work of Johnson (1977) and Postal (1977). In (20) I present a rewording and extension of their classification.[12]

(20) 1. Syntactic Accusativity:

$$\begin{array}{ll} \text{Subject} \left\{ \begin{array}{l} \text{A} \\ \\ \text{S} \end{array} \right. & \\ \\ \text{Object} \quad \text{O} & \end{array}$$

2. Ergative-as-passive:

$$\begin{array}{ll} \text{A} & \text{Oblique}_{ag} \\ \\ \left. \begin{array}{l} \text{S} \\ \\ \text{O} \end{array} \right\} & \text{Subject} \end{array}$$

3. The Oblique Analysis:

4. The Inverse Analysis:

$$\begin{array}{ll} \text{A} & \text{Object}_{\text{GR}} \\ \\ \left. \begin{array}{l} \text{S} \\ \\ \text{O} \end{array} \right\} & \text{Subject} \end{array}$$

5. Absolutive-S-as-object:

$$\begin{array}{ll} \text{A} & \text{Subject}_{\text{GR}} \\ \\ \left. \begin{array}{l} \text{S} \\ \\ \text{O} \end{array} \right\} & \text{Object} \end{array}$$

6. The Four Relations Analysis

$$\begin{array}{lll} \text{Subject} \left\{ \begin{array}{l} \text{A} \\ \\ \text{S} \end{array} \right. & & \text{Ergative}_{\text{GR}} \\ & & \\ \text{Object} \quad \text{O} & & \end{array} \qquad \left. \begin{array}{l} \text{S} \\ \\ \text{O} \end{array} \right\} \text{Absolutive}_{\text{GR}}$$

Syntactic Accusativity. According to syntactic accusativity, A and S arguments are in the subject position, while O arguments are in the object position, just as in familiar accusative languages. Some Relational Grammar work, such as Johnson (1977) has argued that this is the correct analysis for all ergative languages, including Dyirbal.

Ergative-as-Passive. Under the ergative-as-passive analysis, ergative clauses result from the obligatory passivization of transitive verbs. S and O NPs become subjects, and A

[12] The necessary rewording is largely due to the fact that the initial proposal preceded the adoption of the Unaccusative Hypothesis in Relational Grammar and other theories.

NPs agentive obliques. This analysis is mentioned in Hale (1970) and advocated as the analysis of Dyirbal by George (1974) and Jake (1978).

The Oblique Analysis. The oblique analysis base-generates the same surface configuration as in 2. under the assumptions that the language has no transitive clauses, and that O and S NPs become the subject. Recent advocates of this analysis are Mel′čuk (1988) for Lezgian, and Bok-Bennema (1991:25) and Kiparsky (1987) for Dyirbal.

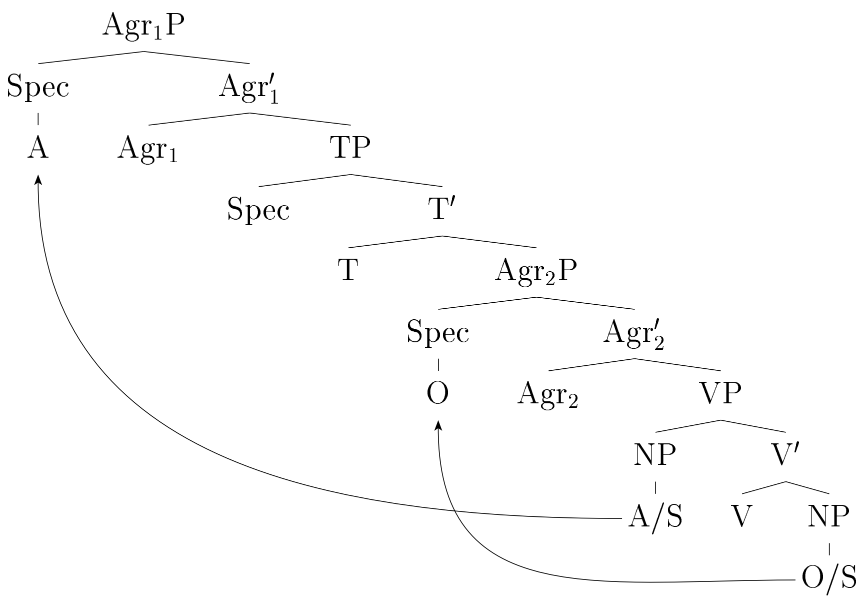
Absolutive-S-as-Object. The absolutive-S-as-object analysis postulates that A NPs are subjects while both O and S NPs are direct objects. Perhaps the first proposal of this form appears in Trager's (1946) analysis of Taos. Another analysis of this type is Larsen's (1987) treatment of Quiché.

The Inverse Analysis. Under the Inverse Analysis S and O NPs are subjects and A NPs are direct objects. This approach is advocated by Dixon (1972) for Dyirbal, by Dowty (1991) and Trechsel (1982) for Dyirbal and Quiché, and Marantz (1984) for languages he regards as syntactically ergative (Dyirbal and Central Arctic Eskimo).

The Four Relations Analysis. The four relations analysis argues that one must recognize all four of the grammatical relations subject, object, absolutive, and ergative, as shown. Different languages will have different rules sensitive to various of these grammatical relations. This is the analysis of Postal (1977) and Woodbury (1977).

Nearly all treatments of ergativity can be classified into one of these six classes, and doing so is a useful starting point for cross-theory comparison. To take just one example, Bobaljik (1992) proposes that all languages have the articulated IP structure shown in (21).[13]

(21) Bobaljik (1992) WCCFL



[13]This analysis is refined in Bobaljik (1993), into an analysis that can be thought of as having multiple levels, of the type discussed below in the discussion of Bittner (1994). I choose the simpler formulation here, for purposes of exposition.

A and O NPs move as shown in (21) in all languages, but S NPs move to [Spec, Agr_1] in accusative languages, and [Spec, Agr_2] in ergative languages, yielding the different case marking patterns. This analysis is clearly a case of the Absolutive-S-as-Object analysis of Trager. Absolutive S NPs behave like O NPs.

I argued earlier that the S and O NPs are the grammatical subject in syntactically ergative languages, such as Inuit and Tagalog. So the hypothesis of syntactic accusativity for all languages and the absolutive-S-as-object analysis cannot be maintained. As I will show below, the Four Relations analysis is wrong because, although two prominence hierarchies are needed to capture the properties of syntactically ergative languages, there isn't symmetry between them. In syntactically ergative languages, the properties of absolutive NPs are the properties of grammatical subjects. The properties of A and S NPs derive instead from their prominence at the level of argument structure.

This leaves distinguishing the Inverse Analysis from the Oblique Analysis and the Ergative-as-Passive analysis. To show that the Inverse Analysis is correct, it is sufficient to show that syntactically ergative languages possess sentences that are syntactically transitive. This is straightforward in Inuit. It is slightly more difficult for Dyirbal, where the oblique analysis has been most often proposed, but nevertheless, I believe it can be done beyond reasonable doubt. Several arguments come from the fact that verbs in Dyirbal are strictly transitive or intransitive. On the oblique analysis, this would have to be described by saying that some verbs disallow agentive obliques, presumably for semantic reasons, but this seems unlikely since there are pairs of verbs which are semantically identical except that one is transitive and the other intransitive (such as *walma-nyu* 'to wake up (intr.)': *walmbi-n* 'to wake up (tr.)' and *jana-nyu* 'to stand up (intr.)': *jara-n* 'to stand up (tr.)'). Another problem is the case marking of pronouns, which follows a nominative-accusative pattern, see (22).

(22) a. ŋaja ya-nu
1SG.NOM go-NFUT
'I went.'

b. ŋaja ŋinu-na bura-n
1SG.NOM 2SG-ACC see-NFUT
'I saw you.'

On the oblique analysis we would have to say that subject pronouns appear in one form with verbs which license an agentive oblique and in another form with verbs that do not. Further, this second form (the nominative under other analyses) is also used when pronouns appear as agentive obliques. But the nominative is clearly the unmarked case in the pronoun system, and on most typological and theoretical accounts of morphological marking, an unmarked case form should not appear on an agentive oblique.

Argument structure

So, the S and O NPs are the grammatical subject in syntactically ergative languages, but the brief survey of Tagalog and Inuit before also showed that not all parts of the syntax are structured around the hierarchy of grammatical relations. I wish to propose that in all languages there is a principled division between purely syntactic processes, like relativization and topicalization which are sensitive to the hierarchy of grammatical relations, and the more semantic properties of binding, control and imperative addressee which are sensitive to prominence at a level of argument structure. Syntactically ergative languages appear ergative only with regard to operations that are sensitive to grammatical relations. Thus my analysis differs markedly from work such as Dowty's (1991:582) which regards a canonical syntactically ergative language as one in which everything works on an ergative-absolutive basis. Provision of these two levels also captures the essence of Schachter's (1977) and Guilfoyle, Hung and Travis's (1992) analyses of Tagalog by providing two domains of prominence. I will call my analysis the Inverse Grammatical Relations analysis to stress that it is more limited than previous versions of the Inverse Analysis.

My conception of argument structure is as a syntactic level (as in Bresnan and Zaenen (1990)), not as a purely semantic level.[14] Also, argument structure is not just an attribute of lexical items (as in Grimshaw (1990)). Rather, larger units like clauses and sentences have compound argument structures (akin to the CONTENT corresponding to these units in HPSG or their a-structure correspondent in LFG). My notion of argument structure is thus in some ways similar to VP-internal relationships in recent versions of GB and Minimalist work. The basic argument structure for a verb is an ordered list of the verb's arguments, as in (23).

(23) a. yawn$\langle\boxed{1}\rangle$ $\boxed{1}$*John yawned.*

b. finish$\langle\boxed{1}, \boxed{2}\rangle$ $\boxed{1}$*Sarah finished* $\boxed{2}$*her book.*

c. present$\langle\boxed{1}, \boxed{2} |\ \boxed{3}\rangle$ $\boxed{1}$*Judith presented* $\boxed{2}$*an award to* $\boxed{3}$*Cynthia.*

There are two principles governing the obliqueness ordering of arguments within a single level argument structure. First, direct arguments precede obliques. This separate ordering of direct and oblique arguments has been previously motivated by Hellan (1988). Within each of these groupings, arguments are ordered according to thematic obliqueness. Thus the obliqueness hierarchy at this level has an essentially accusative character: agents outrank patients in the basic verbal voice, for example.

I propose that valence changing operations such as passive, causative, etc. apply at argument structure – not to grammatical relations as in RG and early LFG – and produce complex nested argument structures. I follow Mohanan (1988) who suggested a representation for monoclausal or 'clause union' causatives where they are biclausal at argument structure but monoclausal at the level of grammatical relations.[15] The argument structure of Inuit causatives is as in (24a). The first argument of CAUSE is the causer, and the second is the causee. The causee role is fused with the theme of the base predicate. Similarly light verbs and derivational affixes with meanings like 'want' have a representation like (25a).

[14]This is because working out the consequences of these proposals for languages with expletives would appear to require representing the expletives at argument structure, which is precisely what some advocates of more 'semantic' argument structures (e.g., Alsina (1993)) do not wish to do. See Bresnan and Zaenen (1990:53) for independent evidence from resultatives that nonthematic arguments interact with the rest of argument structure.

[15]An idea adopted by Alsina and Joshi (1991), Alsina (1993), and Butt (1993).

(24) a. CAUSE⟨—, —, look.after⟨—, —⟩⟩

b. Aani-p miiqqat uan-nut paari-tip-pai
Aani-ERG children.PL.ABS me-TERM look.after-CAUS-IND.TR.3SG.3PL
'Aani had me look after the children.'

(25) a. want⟨—, help⟨— ...⟩⟩

b. Aani-p miiqqat ikiur-uma-v-a-i
Aani-ERG children.ABS help-want-IND-TR-3SG.3PL
'Aani wants to help children.'

Analyses such as Kiparsky (1987), Bresnan and Zaenen (1990), and Grimshaw (1990) have assumed that the argument structure of a passive verb is roughly as in (26). The argument structure is the same as for the active verb, except that the logical subject (or external argument) has been suppressed.

(26) look.after⟨—, —⟩
∅

In contrast, I believe the argument structure of passives should rather be as in (27). Passive is represented as a higher predicate that modifies the argument structure of the basic root.[16] The single nominal argument of the passive affix's argument structure is identified with the patient of the stem's argument structure.

(27) PASS⟨—, look.after⟨—, —⟩⟩

Antipassives are regarded as an abstract noun by Baker (1988). But this choice seems mainly motivated by theory-internal rather than typological reasons. I will represent antipassives as a higher predicate in parallel with passives, as shown in (28). Such a representation seems much more consistent with the behavior of Inuit antipassive morphemes.

(28) ANTIP⟨—, look.after⟨—| —⟩⟩

The class of most prominent arguments at argument structure is similar to Dixon's (1979) use of the term 'subject', Schachter's notion of Actor, and Jespersen's notion of logical subject. However, I believe this is not exactly the category we need, but rather the class of all arguments that are first on some level of argument structure – what I will call *a-subjects*. While all logical subjects are a-subjects, the compound argument structures that result from derivational operations, like passive and causative, yield additional a-subjects. The logical subject and the promoted patient of passives are both a-subjects, as are the causer and the causee of a causative verb. The other half of 'subjecthood' in Inuit and other

[16] Essentially the same representation for the passive is proposed by Pinker (1989:239). Although the many differences in framework make precise comparison difficult, there is also a clear conceptual relationship with the transformational analysis of Hasegawa (1968).

languages is thus not properly described by the grouping A and S, but by the larger set of all a-subjects. This proposal thus explains why causees and passive agents can bind reflexives in the overwhelming majority of languages.

Given the two levels of argument structure and grammatical relations, we need to determine two mappings. I will not discuss *argument projection* from a verb's meaning to its argument structure. See Dowty (1991) for such a theory. For this talk it is sufficient to know that agents and experiencers normally become a-subjects. At least three possibilities for the *linking* between argument structure and grammatical relations seem to be observed crosslinguistically.[17] Western Austronesian languages allow great flexibility in which argument at argument structure becomes the subject. Depending on the voice marker chosen, a variety of mappings are possible without demotion of higher arguments to oblique roles. Secondly, there are many languages which always use a 'straight-through' mapping, in which the obliqueness ordering of terms is the same at argument structure and at grammatical relations; see (29a). This gives syntactic accusativity. Finally there are languages that always use an inverse mapping for transitive verbs, as in (29b). Then the obliqueness ordering of grammatical relations in the basic verbal voice does not match the obliqueness ordering at argument structure. Such languages are syntactically ergative.[18] For both these last two language types, the mapping is invariant, and different surface realizations of arguments can occur only as a result of derivational morphology, like passive, that leads to compound argument structures.

(29)	a. **gr-structure**		**a-structure**	
	SUBJ	←	a-subject (agent)	Syntactic Accusativity
	OBJ	←	patient	
	b. **gr-structure**		**a-structure**	Syntactic Ergativity –
	SUBJ		a-subject (agent)	Inverse Grammatical
	OBJ		patient	Relations analysis

Binding

Binding is generally taken to require some kind of command relationship defined on some form of hierarchical structure. Most work has assumed that binding theory applies to surface structure or surface grammatical relations, and if not that, to a level of logical form. However, evidence from Tagalog, Inuit and other ergative languages shows quite clearly that binding

[17] I am using the term 'linking theory' for the mapping from argument structure to grammatical relations, but note that the term is sometimes used to refer to something more like a theory of argument projection, or a theory that maps directly from 'the semantics' to surface grammatical relations (for instance, in Alsina (1993)). I believe that the ergative syntactic phenomena that I study here show quite clearly that it is wrong to try to do linking directly between the semantics and surface grammatical relations. Rather, an independent level of argument structure is strongly motivated and the the factorization of the mapping into two parts is to be greatly preferred.

[18] I am unaware of any syntactically ergative languages that have ditransitive verbs (where all three arguments are terms), and so the interesting question of how the mapping would look in such cases appears not to arise.

theory is not defined on surface structure, but rather can be correctly captured by defining binding relationships at argument structure (the command relationship will thus be called a-command). That at least some parts of binding may be sensitive to argument structure (or simply thematic relations) has been suggested in many places, including work by Jackendoff (1972), Hellan (1988), Wilkins (1988), Grimshaw (1990), and Williams (1994), but I wish to propose defining all binding on a single level of syntacticized argument structure that is clearly distinguished from both grammatical relations and theta roles.

Tagalog provides initial confirmation of this approach. Recall that binding is not sensitive to surface grammatical relations, but rather, the correct command relationships are given by the obliqueness hierarchy of argument structure. (30–31) show that an a-subject can bind the theme regardless of whether it is the grammatical subject or not, while the reverse binding relationship is impossible, even if the theme is the grammatical subject. Binding isn't restricted to a-subjects, in general something can bind something else that is more oblique, as shown in (31b).

(30) a. Iniisip nila ang=kanilang sarili
DV.think.about GEN.they NOM=their self
'They think about themselves.'

b. Nag-iisip sila sa=kanilang sarili
AV-think.about NOM.they DAT=their self
'They think about themselves.'

c. *Iniisip sila ng kanilang sarili
DV.think.about NOM.they GEN.their self

(31) a. Sinaktan ng=babae ang=kaniyang sarili
DV.hurt GEN=woman NOM=her self
'A/the woman hurt herself.'

b. Sinabi ni=Juan kay=Maria ang=katotohanan tungkol sa=sarili niya
PERF.TELL.OV GEN=Juan DAT=Maria NOM=truth about DAT=self 3SG
'John$_i$ told Mary$_j$ the truth about self$_{i/j}$.'

Andrews (1985) argues that binding in Tagalog can be captured simply by reference to a thematic hierarchy. This is largely true because the different voices in Tagalog are directly generated without application of demotion operations like passive or antipassive. As Kroeger (1993) argues, the patient remains a term in the active voice, for example. The binding evidence thus supports Kroeger's analysis over other ergative analyses of Tagalog such as those of Gerdts (1988) and De Guzman (1988), where the active voice is generated by antipassivization.

If the binder of reflexives or the controller of gaps is restricted, my claim is that it will generally be restricted to a-subjects. Informally, binding theory is as in (32):

(32) a. Command is defined on argument structure.

b. If antecedence is restricted, it is restricted to a-subjects.

c. If antecedence depends on obliqueness, it is obliqueness at the level of argument structure.

Returning to Inuit, closer examination of binding confirms that we were correct in not choosing the A and S NPs as the grammatical subject. Earlier it was suggested that binding in Inuit was accusative, which could be captured by proposing a 'subject' grammatical relation grouping S and A. However, more careful analysis (due mainly to Bittner (1994), but also Sadock (forthcoming) and Woodbury (1985)) shows clearly that although the majority of cases of binding have the anaphoric pronoun or suffix bound by an A or S NP,[19] recall (17), other a-subjects can also bind reflexives and be the controller of gaps.

There are two classes of cases to consider. One is derived verbs containing 'double transitive suffixes' (Kleinschmidt 1851), that is causative and similar suffixes (including in Inuit suffixes meaning 'think' and 'tell'). The other case is passives. My prediction is that both a-subjects of passives – the agent and the surface subject – should be able to bind NPs that they a-command. (33) confirms this prediction.

(33) Naja Tobiasi-mit uqaluttuun-ni-qar-p-u-q taa-ssu-ma
Naja.ABS Tobias-ABL tell-PASS-IND-INTR-3SG [DEM-SG-ERG
itigartis-sima-ga-a-ni
turn.down-PRF-PRT.TR-3SG-4SG]
'Naja$_j$ was told by Tobias$_i$ that he$_k$ had turned self$_{i/j}$ down.'

The verb in (34a) is a derived form with a double transitive suffix, which has the complex argument structure shown in (34b). As expected, the oblique reflexive can be bound by either a-subject, whereas a reflexive associated with a simplex verb with the same surface arguments can only be bound by the ergative; see (35).

(34) a. Kaali-p Pavia immi-nit
Kaali-ERG Pavia.ABS self -ABL
angi-nir -u -sinnaa-nngin-nirar-p -a -a
big -CMP-BE-can -NEG -say -IND-TR-3SG.3SG
'Kaali$_i$ said that Pavia$_j$ couldn't be taller than self$_{i/j}$.'

b. SAY⟨—, —, could.not.be.bigger⟨—, —⟩⟩

(35) Juuna-p Kaali immi-nik uqaluttuup-p-a-a
Juuna-ERG Kaali.ABS self-INSTR tell-IND-TR-3SG.3SG
'Juuna$_i$ told Kaali$_j$ about self$_{i/*j}$.'

In syntactically ergative languages it can be seen clearly that accounts of binding based on either surface phrase structure configurations or surface grammatical relations are unsatisfactory. However, it must be stressed that this argument structure based account of binding

[19] I do not illustrate here a direct equivalent to a plain transitive such as *John cut himself* because a language-particular condition prohibiting binding of coterms in Inuit means that such a sentence has no syntactic form preserving translation. Binding theory has to allow certain language particular syntactic restrictions on binding, in addition to the general theory outlined in the text. Note also that Inuit allows long distance antecedents, so the binder need not be in the same clause, but can be in a higher clause.

is not a proposal designed only to account for the strange binding behavior of ergative languages. Rather, I would submit that an argument structure based approach to binding is necessary in general to explain the typological generalization that the causees of causatives and the logical subects of passives can generally antecede a reflexive. This phenomenon has been noted in many accusative languages as well, including Japanese, Sanskrit, Russian, Turkish, Chi-Mwi:ni, and so on. Indeed, much of the evidence in the literature for doing morphology in the syntax, such as Baker (1988) and both prior and subsequent literature, in which all a-subjects are treated as 'subjects' at some stage in the syntactic derivation, can be reinterpreted as evidence for an argument structure based approach to binding. The clear dissociation between surface grammatical relations and argument structure which is seen most vividly in syntactically ergative languages argues against a syntactic approach which tries to lump them together as NPs that are 'subjects' at some level. An argument-structure-based treatment of binding and derivational morphology then becomes a necessary, and satisfactory solution. However, once argument structure is recognized as a separate level, there is nothing to be gained by postulating operations of verb movement to generate complex derivational forms, and so a simpler lexicalist theory of syntax is to be preferred for reasons of economy.

Dyirbal

Finally, let me return to Dyirbal. How well does it fit the theory I have been exploring? The most commonly cited evidence for the syntactic ergativity of Dyirbal is coordination ('clause chaining'), recall (7). A series of clauses can be coordinated only if each clause shares the S/O NP.

Similarly, an S/O pivot is used for relativization. The role of the head noun in the relative clause must be S or O; see (36).

(36) a. bayi yara miyanda-ŋu yanu
[I.ABS.TH man.ABS [laugh-REL]] go.NFUT
'The man who was laughing went.'

b. balan yibi baŋgul yara-ŋgu miyanda-ŋu-ru bura-n
[II.ABS.TH woman.ABS] [I.ERG.TH man-ERG [laugh-REL-ERG]] see-NFUT
'The man who was laughing saw the woman.'

c. baŋgu yugu-ŋgu gunba-ŋu-ru baŋgul yara-ŋgu ŋaygu-na birri-ju balga-n
[IV.ERG.TH tree-ERG [cut-REL-ERG I.ERG.TH man-ERG]] I-ACC almost-EMPH hit-NFUT
'The tree which the man had cut nearly fell on me.'

d. bayi yara jilwal-ŋa-ŋu bagun guda-gu yanu
[I.ABS.TH man.ABS [kick-ANTIP-REL II.DAT.TH dog-DAT]] go.NFUT
'The man who kicked the dog went.'

This data is what I would expect if S and O NPs are the grammatical subject. However, an apparent problem for my theory is the existence of sentences such as those in (37).

(37) a. yabu ŋuma-ŋgu giga-n banaga-ygu
mother.ABS father-ERG tell-NFUT [return-PURP]
'Father told mother to return.'

b. ŋaygu-na baŋgul gubi-ŋgu giga-n bagul waŋal-gu
I-ACC I.ERG.TH gubi-ERG tell-NFUT [I.DAT.TH boomerang-DAT
baŋul-jin-gu yara-ŋuny-jin-gu wugal-ŋa-ygu
I.GEN.TH-OGEN-DAT man-GEN-OGEN-DAT give-ANTIP-PURP
'The gubi told me to give the man's boomerangs (to him).'

c. ŋaja bayi yara giga-n gubi-ŋgu mawa-li
I.NOM I.ABS.TH man.ABS tell-NFUT gubi-ERG examine-PURP
'I told the man to be examined by the gubi [doctor].'

Dyirbal constructions such as these have been analyzed in the generative literature as cases of complementation with equi-NP deletion, or a controlled PRO by Anderson (1976:17), Levin (1983:259–267), and Bok-Bennema (1991:11)). Under such an analysis, *giga-n* 'tell' in (37) is similar to (logical) object control verbs from European languages.[20] Note now the behavior of the supposed complements: they display an apparently ergative pattern: in (37a), the subject S is controlled, in (37b) antipassivization has occurred so that the logical subject has become an S and again the subject is controlled. Example (37c) show that if the purposive verb form is not antipassivized, then it is the subject O that is controlled, not the A (Dixon 1994:169). It is impossible for this construction to occur with control of the A position.

This is an apparent exception to my theory where control should always work off argument structure, which results universally in an accusative pattern of control. Dyirbal appears to deviate by being too ergative, in that even control works on an ergative basis. However, I believe this impression is mistaken and that here we are actually not dealing with controlled complements at all.

This different behavior of what appear semantically to be complements is probably a consequence of more general features of Australian languages. Hale (1976) notes how in many Australian languages clause embedding is avoided, and instead subordinate clauses are adjoined. Dixon (1991) notes that there are no clausal nominalizations in Dyirbal. He also states the view (implicit in Dixon (1972)) that Dyirbal has no complement clause constructions.

The grammar of Dixon (1972) does not distinguish the above 'complement clause' use. Rather it provides a unified treatment of the ending *-li/-gu*.[21] This ending is referred to by Dixon as the 'purposive inflection'. The above use of it appears not particularly common. It is used much more frequently to explain the goals of a previous action. But it clearly cannot

[20] And there are other verbs, such as *walŋgarra-nyu* 'want' that appear to behave as (logical) subject control verbs.

[21] The choice of form depends on the conjugation class of the verb).

be analyzed as equivalent to the infinitives of purpose of various European languages either. Consider example (38). In the text, the 'first man' had hidden sharp pieces of quartz where two women used to sit, and then sentence (38) follows:

(38) baŋum balagarra ŋurba-nyu nyina-yarra-nyu gunba-li baŋgu
TH.ABL two.people.ABS return-NFUT sit-start-NFUT [cut-PURP IV.ERG.TH]
'The two [women] returned from there, and started to sit down, only for them [the sharp quartz pieces] to cut [the women].'

Clearly in this example, the final clause is in no sense serving as a purpose clause. Rather, I think that this form should in general be analyzed as a clause chaining construction. Dixon (1972:67) refers to this ending as occurring on "implicated verb complexes" and this seems much nearer the mark. As in this example, the so-called purposive ending can be employed on any clause providing it refers back to a previous event that set the stage for it (Dixon 1972:68).[22]

It is not the case that the S/O NP of the purpose clause is necessarily gapped (although it usually is – Dixon 1972:67).[23] All that is required is coreference: (39) is a dramatic example of this from a creation myth where the boil is the child.

(39) anyja baŋgul burrubay julma-n bayi nyalŋga mayi-yarra-ygu
PTCL I.ERG.TH boil.ABS squeeze-NFUT I.ABS.TH child.ABS come.out-begin-PURP
'He squeezed the boil, with the result that a male child came out.'

Also, if we take a verb of the *promise*-class of Sag and Pollard (1991), then on a semantically based theory of controller selection, the controller of the complement event should be the one who promises, that is, the a-subject of the main clause. In the sentence *Sandy promised Tracy to leave the party early*, it is Sandy who will leave. However, if a purposive clause is attached to a clause with such a verb in Dyirbal the necessary coreference relationship is still between the S/O NPs of both clauses, and not with the logical subject promiser or threatener, as shown in (40).

(40) bayi yara baŋgun yibi-ŋgu yajijarra-n baŋgul gubi-ŋgu
[I.ABS.TH man.ABS II.ERG.TH woman-ERG threaten-NFUT] [I.ERG.TH gubi-ERG
baga-li
spear-PURP]
'The woman threatened the man that the gubi would spear him.'

Thus I conclude that we are here dealing with a form of clause serialization construction, and that is the reason why it is sensitive to the pivot (as in coordination) rather than to argument structure relations. In general, Dyirbal has appeared 'more ergative' than other languages, both because of the misanalysis of this construction, and because some other constructions which are sensitive to argument structure cannot be tested in Dyirbal – for

[22] Among other evidence, the sheer textual frequency of this verb form suggests that it is not appropriate to compare it with purpose clauses from European languages. For example, in Text XV from Dixon (1972:368–382) subordinate clauses with the purposive inflection occur in 22 of the 82 pivot chains (loosely, sentences) (27%), sometimes more than once. In another 5 of the sentences, the main verb is in the purposive form.

[23] Pace Levin (1983:260–261, 266, 279) who describes them as "structures of obligatory control."

example, reflexives are formed by intransitivization. The behavior of Dyirbal is, however, completely consistent with the split of properties that is predicted for syntactically ergative languages according to the Inverse Grammatical Relations hypothesis.

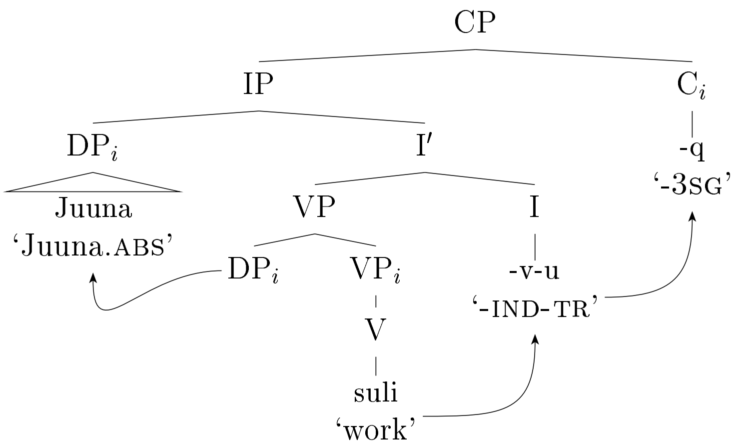
Conclusion/Typology

I have tried to motivate and substantiate a new typology of ergative languages. The typology maintains two classes, namely syntactically and morphologically ergative languages, but greatly expands the class of languages that are classified as syntactically ergative to include Philippine and other mixed pivot languages.

This new classification results from a proposal about levels of linguistic representation. I have argued that syntactic theory must recognize two levels, a level of surface grammatical relations and a level of syntactic argument structure. While others have argued for a level of argument structure separate from both the surface syntax and a notion of thematic roles (or theta-structure), syntactically ergative languages show most clearly that these two levels both exist, that they can be dissociated, and that they have their own prominence relationships.

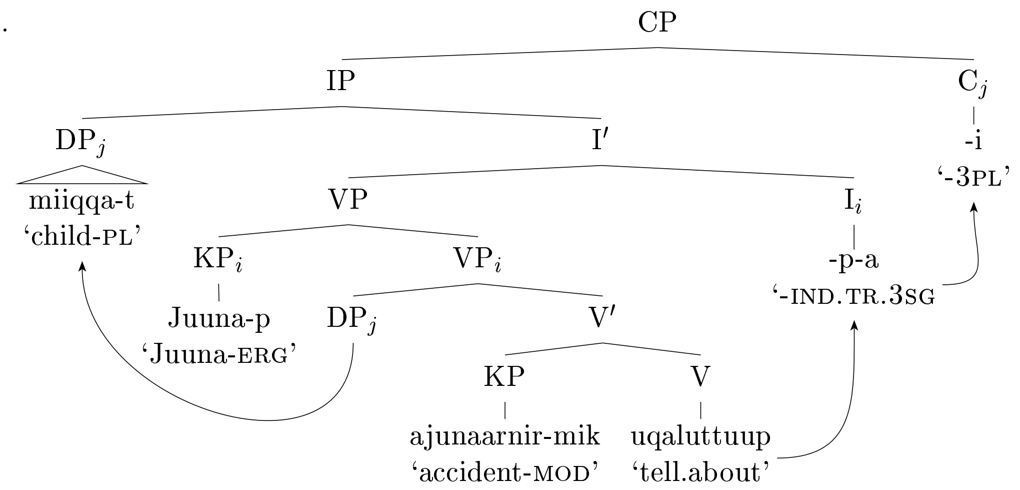
The main remaining alternative is to keep two levels, but to define them differently. This is how I interpret Bittner's (1994) approach. Bittner proposes the structures shown in (41) for intransitive and transitive Inuit sentences.

(41) a. Bittner (1994)



'Juuna works.'

b.



'Juuna told the children about the accident.'

By adopting the VP-internal subject hypothesis, Bittner is able to make use of two domains of prominence. Configurational relationships within the VP are one level of prominence: S and A arguments are both the distinguished adjunct of V, giving an accusative-like language organization. However, both S and O arguments move to the A′ position [Spec, IP] at S-structure, and this positioning results in an analysis similar to, but not identical with, the oblique analysis.

I agree with Bittner about postulating two syntactic levels, but I disagree about their nature. Bittner appears to regard the VP internal level as akin to grammatical relations – to the extent that grammatical relations have meaning in a GB-like framework. The distinguished adjunct of V position is an A position and this is the position where the Extended Projection Principle requirement that every sentence must have a subject is taken as applying. In contrast, [Spec, IP] is treated as an A′ position. This theoretical move has the useful effect that noun phrases that move there will reconstruct down for the purposes of binding theory, but the analysis makes the wrong typological predictions. Although NPs reconstruct down from [Spec, IP] for purposes of binding, they must remain in their higher position for purposes of semantic interpretation. More generally, absolutive NPs in Inuit and the distinguished NPs in Tagalog do not behave as if they were in an A′ position – positions normally reserved for NPs with a particular discourse function – rather, they have the properties of grammatical subjects.

The present theory constrains the possibilities for "mixed pivot languages". If a language is syntactically ergative, all phenomena sensitive to grammatical relations should be ergative or neutral. If a language is syntactically accusative, all phenomena sensitive to grammatical relations will be accusative or neutral. Phenomena sensitive to argument structure will always have an accusative-like nature.

Johnson (1977) argues that all languages are syntactically accusative, so as to maintain a universal assignment of initial grammatical relations (in RG), and because processes such as causatives, inchoatives, and applicatives appear to refer to a syntactically accusative level of organization. But both these desiderata are satisfied by adopting a level of argument structure, reinforcing the motivation for argument structure that has appeared on independent grounds in much recent work.[24] Adoption of a level of argument structure allows us to recognize that syntactic phenomena in ergative languages *can* be better explained by adopting an Inverse Grammatical Relations analysis. Such an analysis can explain Johnson's (1977) own observation (p. 39) that processes of relativization, topicalization, coreferential deletion and question formation regularly fail to apply to ergative NPs, whereas Johnson's (1977) proposal for dealing with these data was self-confessedly ad hoc.

Thus, I would like to maintain that universally there are features of language that are sensitive to each of the two levels of grammatical relations and argument structure; see (42).

(42) **Sensitive to grammatical relations**

1. Obligatory element of every clause
2. Relativization (role in subordinate clause)
3. Quantifier Float (launcher)
4. Topicalization/Focussing/Cleft-formation
5. *Wh*-question Formation
6. Presupposed reference/wide scope
7. Word order
8. Normally external agreement marker
9. Raising (raised element)
10. Coreferential omission in coordination
11. Switch reference?

Construal processes (sensitive to argument structure)

1. Imperative addressee
2. Binder of reflexives
3. Equi target
4. Control of adverbial clauses
5. Derivational morpholog/complex predicate formation
6. Incorporation
7. Idioms?

My conception of syntactic ergativity is more limited (and hence the class of languages it covers is broader) because I only expect certain processes – the ones sensitive to surface grammatical relations – to behave differently in a syntactically ergative language. Other processes like binding and control – processes of construal, to use Kiparsky's term – are universally sensitive to argument structure, which has a roughly accusative nature. This captures the generalization of Ken Hale that, in a transitive sentence with an agent and a theme, it is always the theme that is encoded as a reflexive pronoun coindexed with the agent. Languages are complicated and variable things, but I believe a mass of evidence converges on a split of properties roughly along these lines.

[24] Including Alsina (1993), Grimshaw (1990), and Rosen (1989).

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