

GRAMMATICAL RELATIONS IN ERGATIVE LANGUAGES

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ABSTRACT

Two of the most important issues in the discussion of ergativity concern the pattern of syntactic organization and notion of subject in ergative languages. A number of scholars have claimed that most morphologically ergative languages are in fact syntactically accusative. Data from four ergative languages (Archi, Enga, Jacaltec and Dyrbal) are examined with regard to these two questions. It is found that each of these languages differs from the others both in syntactic organization and notion of subject, and these facts call into question recent claims about the syntax of ergative languages.

1. Introduction¹

Despite the significant amount of research carried out in recent years on languages exhibiting ergative morphology, there is still considerable controversy regarding fundamental issues such as the notion of syntactic subject and the organization of grammatical relations in these languages. One of the most interesting results of this research has been the claim that in many morphologically ergative languages grammatical relations (as defined by syntactic processes) appear to follow a different pattern from that exhibited by the case marking morphology. Specifically, whereas the subject of intransitive verbs (S, following Dixon 1972) and the patient of transitive verbs (O) form a single morphological category, absolutive, to the exclusion of the actor of transitive verbs (A) in the ergative case, the syntactic behavior of these NPs is such that A and not O is syntactically identified with S, thereby yielding syntactic categories [S,A] ('subject') and [O] ('object'). Since these syntactic groupings match those found

in morphologically and syntactically accusative languages such as English, the conclusion has been drawn that 'from a syntactic point of view these [ergative] languages are organized in the same way as accusative languages, and that the basically syntactic notion of 'subject' has essentially the same reference in both language types' (Anderson 1976:16). The same observation has been made in Dixon 1979a, Comrie 1978, Chung 1978, and Li & Lang 1979, among others, and it is usually stated in terms of a claim that most morphologically ergative languages are syntactically accusative.

The purpose of this paper is to investigate grammatical relations in a small sample of ergative languages in order to uncover the principles of syntactic organization and the notion of subject in each. The languages are Archi (USSR), Enga (Papua New Guinea), Jacalteco (Guatemala) and Dyirbal (Australia). The results of this inquiry will serve to clarify a number of the issues which have been raised concerning the syntax of ergative languages.

Following Anderson 1976 grammatical relations will be defined in terms of the *syntactic pivots* (Dixon 1979a) of the syntactic processes in a language. Thus, for example, if in a language a particular operation, e.g. equi-NP-deletion, applies to S and A equally but not to O, then we would say that for this language the syntactic pivot for equi-NP-deletion is [S,A]. If all of the major syntactic processes in a language have [S,A] pivots, then we would say that the grouping [S,A] constitutes the syntactic subject in that language and furthermore that the language is syntactically accusative. Conversely, the grammatical processes of a language could treat S and O alike, yielding [S,O] as the syntactic pivot, and in such a case we would say that the syntactic subject in this language is [S,O] and hence that the language is syntactically ergative. It must be emphasized that no assumption is made that a language must fall neatly into one category or the other. The classification of the syntactic organization of a language is an empirical question, and it is quite possible that a language may exhibit features of both types or of neither.

The discussion will proceed as follows. In sections 2-5 data from the four languages named above will be examined and the results summarized in section 6. In the final section a number of recent claims about the syntax of ergative languages will be evaluated in the light of these results.

2. Archi

We begin our investigation of grammatical relations in ergative languages with Archi, a member of the Daghestan language family spoken in the Caucasus in the USSR. The data are taken from Kibrik 1979a. Archi exhibits an ergative

pattern morphologically both in case marking and verb agreement, as in 1.

- (1a) buwa- \emptyset d-ir \bar{x}_O in
mother(II)-ABS IIsg-work
'Mother works.'
- (1b) buwa-mu \bar{x}_O alli- \emptyset b-ar- ξ b-i
mother(II)-ERG bread(III)-ABS IIIsg-bake-PROG IIIsg-AUX
'Mother is baking the bread'.

Archi has a system of noun classes, and the class of each noun is indicated by a Roman numeral. In 1a *buwa* 'mother' is the single argument of *ir \bar{x}_O in* 'work', and consequently it is in the absolute case (i.e., unmarked) and triggers the occurrence of an agreement prefix (*d-*) on the verb which expresses its noun class and number. In 1b *buwa* is the actor and takes the ergative case marker, while \bar{x}_O *alli* 'bread', the undergoer, is unmarked in the absolutive case. Verb agreement is again with the absolutive NP as both the verb and the auxiliary have prefixes (*b-*) agreeing with the class III noun \bar{x}_O *alli* 'bread'. This agreement pattern is extended to all elements in a clause which are related to the verb in some way.

- (2) buwa-mu *b-ez* di \bar{f} a-*b-u* \bar{x}_O alli- \emptyset
mother(II)-ERG IIIsg-1sgDAT early-IIIsg bread(III)-ABS
a-b-u
bake-IIIsg-PAST
'Mother baked me the bread early'.

Both the dative pronoun and the adverb agree with the undergoer, as does the verb. There is no agreement with the actor in 1b and 2.

In certain tense/aspect combinations Archi exhibits a second type of sentence pattern. This is illustrated in 3.

- (3a) buwa- \emptyset d-ir \bar{x}_O im-mat d-i
mother(II)-ABS IIsg-work-CONT IIsg-AUX
'Mother goes on working.'
- (3b) buwa- \emptyset \bar{x}_O alli- \emptyset b-ar-mat d-i
mother(II)-ABS bread(III)-ABS IIIsg-bake-CONT IIsg-AUX
'Mother goes on baking the bread.'

3a differs from 1a only in the aspect marking on the verb and the occurrence of the auxiliary, whereas 3b exhibits several important differences from 1b. First, both actor and undergoer are in the absolutive case in 3b, and second, verb agreement is split; the verb still agrees with the undergoer, as in 1b, but the auxiliary agrees with the actor. Kibrik reports that Archi has seventeen tense/aspect forms, four synthetic and thirteen analytic (gerund plus 'be'); the synthetic forms require the pattern in 1, four of the analytic forms require the pattern in 3, and the remainder can co-occur with either pattern. When there are additional elements in a clause with the double absolutive pattern, they agree with the actor rather than the undergoer.

- (4) buwa- \emptyset d-ez dīta-r-u x̄_oalli- \emptyset
 mother(II)-ABS Isg-1sgDAT early-IIsg bread (III)-ABS
 b-ar-ši e-r-di
 IIIsg-bake-PROG Isg-AUX
 'Mother was baking me the bread early.'

The dative pronoun, adverb and auxiliary agree with the actor, while the verb agrees with the undergoer. Kibrik argues that these are in fact complex constructions in which the first verb is actually embedded under the AUX 'be'; accordingly, the absolutive argument with which the AUX agrees is in the main clause, and the other absolutive argument is in the subordinate clause. Consequently, it would appear that something like equi-NP-deletion is involved in these constructions (see below).

Syntactically, Archi lacks any kind of voice opposition or raising operation. In complex sentences, it does exhibit phenomena which can be analyzed as equi-NP-deletion and coreferential deletion across conjunctions,² but 'the syntactic or semantic role of NPs imposes no constraints on [them]' (Kibrik 1979a:71). Kibrik 1979a presents the following examples of equi-NP-deletion.

- (5a) adamli [k'arāši xit'-boli] č'ele goIroI-ab̄ti
 man-[ERG] down push-GER stone-[ABS] roll-AOR
 'The man rolled the stone, having pushed it down.'
- (5b) [man-ERG [man-ERG stone-ABS push down] stone-ABS roll]
- (5c) os Helekulin lo [jab
 one hen-[GEN] child-[IVsg-ABS] this-[IIIsg]
 liqI'ili oḡali oqIali
 eagle-[IIIsg-ERG] carry=away-[IVsg-GER] disappear-[IVsg-AOR]
 'One of the chicks disappeared, carried away by an eagle.'

- (5d) [chick-ABS [eagle-ERG chick-ABS carry away] disappear]
 (5e) bošor [k'oaHan soli]
 man-[Isg-ABS] stick-[IVsg-ABS] hold-[IVsg-GER]
 weIṛšū
 run-[Isg-AOR]
 'The man ran, holding the stick.'
- (5f) [man-ABS [man-ERG stick-ABS hold] run]

In each of these sentences one or more NPs in the subordinate clause has been omitted under coreference with the NPs in the main clause. The 'full' forms are given in the b-sentences with the elements omitted from the a-forms in italics. In terms of morphological case marking these sentences exhibit ERG=ERG, ABS=ABS, and ABS=ERG coreference; in terms of syntactico-semantic function, they present A=A, S=O and S=A coreference.

Verbs like *begin* and *want* are the classic equi verbs in many languages, and their Archi counterparts, *bej-eḡas* 'begin' and *k'an* 'want', are no exception. However, like the sentences in 5, there is no single NP type in the subordinate clause which necessarily functions as the pivot. The following examples are from Kibrik 1979b.

- (6a) moHammad- \emptyset noḡ' a - s bej-e-w-ḡū
 (I)-ABS house(IV)-ABS build-IVsg begin-Isg-TNS
 'Mohammad began to build the house.'
- (6b) [Mohammad-ABS [Mohammad-ERG house-ABS build] begin]
- (6c) tor- \emptyset dija-mu d-irḡus bej-e-r-ḡū
 3sg(II)-ABS father(I)-ERG Isg-look=for begin-IIsg-TNS
 'She began to be looked for by her father.'
- (6d) [she-ABS [father-ERG she-ABS look for] begin]
- (7a) w-ez w-irx_omus k'an-ši w-i
 I-1sgDAT Isg-work want-PROG Isg-AUX
 'I want to work.'
- (7b) [I-DAT [I-ABS work] want]
- (7c) w-ez buwa-mu w-irḡus k'an-ši w-i
 I-1sgDAT mother(II)-ERG Isg-look=for want-PROG Isg-AUX
 'I want my mother to look for me.'
- (7d) [I-DAT [mother-ERG I-ABS look for] want]

In the a-sentences the A (ergative NP) in the lower clause is omitted under

coreference with the S (absolutive NP) of the main clause. In the c-examples, however, it is the O (absolutive NP) of the lower clause which has been elided under coreference with the S (absolutive NP in 6 and dative in 7) of the matrix sentence. This can be seen clearly in the fact that both predicates in the c-sentences agree with the S of the main clause. Thus, as in 5, there is S=A and S=O coreference, and the latter is particularly significant. Here again we see no definable general syntactic pivot for equi. In the examples in 3 and 4 there is S=S (3a) and S=A (3b,4) coreference, which would seem to be a function of the semantics of the construction. That is, since these forms involve the expression of tense/aspect combinations which modify the action of the subordinate verb, it is to be expected that the S of the auxiliary verb (i.e. the main verb) will necessarily be coreferential with the doer of the qualified action, hence the S=S and S=A coreference in these constructions. Indeed, Kibrik (personal communication) has pointed out that the constraints on the controllers and pivots in equi-NP-deletion which exists are not a function of the syntactic system of the language but rather follow from the semantics of the matrix predicate.

There are likewise no syntactic constraints on relativization; NPs in the ergative, absolutive, dative and locative cases may be relativized upon. Kibrik 1979a gives the following examples.

- (8a) tuxt'ulli kořut ř'or
 doctor-[ERG] give-[PART]pill
 'The pill given by the doctor', or 'the pill which the doctor gave'.
- (8b) kaRəra ři-abuřu wis uřđu
 letter-[ABS] write-[PART] my brother
 'My brother who has written the letter'.
- (8c) zari ř'an beřdeřu bořor
 I-[ERG] ram-[ABS] buy-[PART] man
 'The man from whom I bought the ram'
- (8d) řiIel erxirřut řa'at
 rain-[ABS] fall-[PART] hour
 'The hour when (at which) the rain falls'.

In all of these examples the verb in the relative clause is in a participial form, and the relative clause precedes the head noun.

The lack of constraints on these syntactic processes in Archi precludes the existence of definable syntactic pivots for them. To say e.g. that any NP may

be omitted under co-reference with any other, as in 5-7, means that equi-NP-deletion does not apply to one particular class of NPs to the exclusion of another class and consequently that this syntactic operation has no pivot. Thus, in Archi these major syntactic processes (equi-NP-deletion, co-referential deletion across conjunctions and relativization) yield no well-defined notion of syntactic subject or object, nor do they fall into either an ergative or accusative pattern. Indeed, there seems to be little motivation for positing any kind of grammatical relations for this language beyond semantic case roles. Case marking and verb agreement can be stated directly in terms of them, as Kibrik does, and no non-semantic syntactic relations are required for the statement or operation of grammatical processes. Thus Archi 'exhibits a rigid correlation between the underlying case frames of [verbs] and surface cases' (Kibrik 1979a:67).

3. Enga

Enga is a Papuan (non-Austronesian) language of Papua New Guinea. It may be considered representative of many Papuan languages, as it presents many of the syntactic and morphological features typical of Papuan languages, according to Li & Lang 1979. The data are taken from Lang 1973 and Li & Lang 1979. Like Archi, Enga exhibits the typical pattern of ergative NP case marking, as in 9.

- (9a) akáli dóko p-é-á
 man DEF go-PAST-3sg
 'The man went'.
- (9b) namba-mé mená dóko p-í-ó
 I-ERG pig DEF hit-PAST-1sg
 'I hit (killed) the pig'.

The single argument of the intransitive verb in 9a is morphologically unmarked and agrees with the verb. The A of *pya* 'hit/kill' is inflected with the ergative suffix *-me*, while the O is unmarked as in 9a. However, the verb agrees with the ergative NP rather than the absolutive in 9b, and consequently verb agreement, unlike NP case marking, has an accusative pattern. Such a split between ergative NP case marking and accusative verb agreement is found in a number of languages, e.g., Walbiri (Hale 1973).

An interesting feature of NP case marking in Enga is that there are constructions in which both A and O occur in which the A does not receive ergative marking and there are constructions in which an S receives ergative marking.

- (10a) baa-(?mé)³ akáli ká-ly-a-nyá mási-ly-a-mo
 he (ERG) man be-INF-desire think-PRES-3sg-PARTICLE
 'He wants to be a man'.
- (10b) baa-(?mé) mená méndé nyá-la-nyá mási-ly-a-mo
 he (ERG) pig INDEF get-INF-desire think-PRES-3sg-PARTICLE
 'He wants to get a pig'.
- (10c) baa-mé mená dóko pyá-la-nyá mási-ly-a-mo
 he-ERG pig DEF kill-INF-desire think-PRES-3sg-PARTICLE
 'He wants to kill the pig'.
- (10d) baa-(?mé) mená méndé nya-la pe-ly-á-mo
 he (ERG) pig INDEF get-INF go-PRES-3sg-PARTICLE
 'He is going (somewhere) to get a pig'.
- (10e) baa-(?mé) mená dóko pya-la pe-ly-á-mo
 he (ERG) pig DEF kill-INF go-PRES-3sg-PARTICLE
 'He is going (somewhere) to kill the pig'.

In 10a-10c *baa* 'he' is the A of the transitive verb *masi*- 'think' and the S or A of the complement verb; these are constructions in which *equi* (see below) has eliminated the second occurrence of *baa*. In 10d-10e the matrix verb is *pu/pa*- 'go', which is intransitive. What is interesting about these sentences is the occurrence of the ergative case marker: it is disfavored in 10a and 10d, favored in 10b and 10e, and obligatory in 10c. Since the matrix verb is the same and the subordinate verbs differ in 10a-10c, the factor conditioning the use of the ergative marker must be related to the subordinate verb. Li and Lang argue that 'the need of the ergative marker correlates with the need of the subordinate verb for an agent' (1979:321). In 10a the subordinate verb is *kata*- 'be' which does not take an agent, and consequently the occurrence of *-me* is optional but disfavored. The subordinate verbs in 10b and 10c are both transitive, *nya*- 'get' and *pya*- 'kill' respectively; the subject of *pya*- must be an agent, hence *-me* is obligatory in 10c, while *nya*- requires a less agentive subject and accordingly *-me* is optional but preferred. The same relationship is exhibited in 10d-10e in which the matrix verb is *pu/pa*- 'go': in 10d the ergative marker is preferred if the 'getting' is emphasized, otherwise it is disfavored, while in 10e the *-me* is not obligatory as in 10c but nevertheless is strongly favored. Note that even though the matrix verb is *intransitive* in these last two sentences, the ergative marker nevertheless may occur. Thus the occurrence of *-me* in these constructions is directly linked to the agentiveness of the subject *baa* 'he', and consequently the ergative case marker can be viewed as a positive indicator

of semantic agency in 10a-10e.⁴

Enga does not have any kind of voice opposition, passive or antipassive, and it lacks raising operations as well. Here again it is similar to Archi. Like other Papuan languages, Enga lacks conjunctions altogether and accomplishes sentential co-ordination and sub-ordination by means of suffixes on medial verbs which signal the relationship between two clauses, e.g., sequential or simultaneous action, as well as switch reference. For example, the clauses in 11 may be joined to form 12.

- (11a) báá p-é-á
 he go-PAST-3sg
 'He went'.
- (11b) baa-mé kalái p-i-á
 he-ERG work do-PAST-3sg
 'He did work'.
- (12) baa-mé pa-o kalái p-i-á
 he-ERG go-SAME work do-PAST-3sg
 'He went and did work (at the same time)'.

Only the final verb in such a sequence exhibits tense and verb agreement. According to Lang 1973, switch reference and the concomitant syntactic process of clause chaining are sensitive to whether there is A=A, S=S, A=S, or S=A co-reference across clauses and not O=O, O=S or S=O co-reference. Thus for the purpose of switch reference and clause chaining the syntactic pivot is defined as [S,A]. When there is no co-reference between the pivots of two clauses, a construction like that in 12 cannot be used; rather, both verbs retain tense and verb agreement, and different suffixes appear on the first verb.

- (13a) *nambá pa-o baa-mé kalái p-i-á
 I go-SAME he-ERG work do-PAST-3sg
- (13b) nambá p-e-o-pa baa-mé kalái p-i-á
 I go-PAST-1sg-DIFF he-ERG work do-PAST-3sg
 'I went and he worked'.

A second syntactic process which makes use of a [S,A] pivot is *equi*-NP-deletion.

- (14a) namba(-mê) Wápaka pá-a-nya mási-ly-o
I (-ERG) Wabag go-INF-desire think-PRES-1sg
'I want to go to Wabag'.
- (14b) namba-mé émba Wápaka pú-p-í lá-o mási-ly-o
I-ERG you Wabag go-PAST-2sg utter-COMP think-PRES-1sg
'I want you to go to Wabag'.
- (14c) baa-mé mená dóko pyá-la-nya mási-ly-a (=10c)
he-ERG pig DEF kill-INF-desire think-PRES-3sg
'He wants to kill the pig'.

Both the controller and target of equi must be S or A; no deletion of O under co-reference with a higher S, A, or O is possible. Thus we may conclude that the syntactic pivot for equi-NP-deletion in Enga is [S,A], which follows the pattern of verb agreement but not NP case marking.

The final syntactic process in Enga to be discussed is relativization. Enga relativizes by deletion and lacks relative pronouns.

- (15a) akáli yána p-i-á-mo dokó-mé mená ne-ly-á-mo
man dog hit-PAST-3sg-DECL DEF-Actor meat eat-PRES-3sg-DECL
'The man who hit the dog is eating meat'.
- (15b) akáli nambá kuáka kanda-p-ú dokó-mé búku
man I yesterday see-PAST-1sg DEF-Actor book
méndé samb-é-á
INDEF buy-PAST-3sg
'The man I saw yesterday bought a book'.
- (15c) akáli andipá epe-ly-á-mo dóko alémbo
man now come-PRES-3sg-DECL DEF day-before-yesterday
p-é-á
go-PAST-3sg
'The man who is now coming left two days ago'.

The determiner *doko* delimits the relative clause, which appears to be headless; note that there is no ergative suffix on the A within the relative clause in 15a and 15b. There are no semantic constraints on relativization, and the only syntactic one is that it may not apply to the object of a comparative construction (R. Lang, personal communication). Consequently, relativization in Enga lacks a definable pivot.

Three major syntactic processes in Enga have been examined, and two

employ [S,A] pivots while the third has none. We may therefore conclude that [S,A] constitutes the category of syntactic subject in Enga and that the syntactic operations in this language pattern accusatively, as does verb agreement. Enga thus appears to be ergative only in terms of NP case marking and not its syntactic organization.

4. Jacalteco

Ergativity in Enga appears to be only a superficial morphological phenomenon, and the same comment has also been made with respect to Jacalteco, a Mayan language spoken in Guatemala.

The ergativity of Jacalteco is not a deep phenomenon. No rule of syntax needs to refer in its structural description to a specific case (Craig 1977:126).

In this section the syntactic processes of Jacalteco will be investigated in order to ascertain the pattern of its syntactic organization. Jacalteco data are taken from Craig 1977 and Datz 1980.

Unlike Archi and Enga, case marking in Jacalteco is carried out primarily by means of verbal cross-reference rather than NP inflection.

- (16a) x- \emptyset -to-pax heb naj winaj
ASP-3ABS-go-back PL CL/the man
'The men returned'.
- (16b) x- \emptyset s-mak naj winaj no' txitam
ASP-3ABS-3ERG-hit CL/the man CL/the pig
'The man hit the pig'.

The NPs in both sentences are not morphologically marked to indicate their syntactic or semantic function; this is signalled by the cross-reference affix(es) in the verb. In 16a the single argument is indicated by \emptyset , the third person absolutive indicator. In 16b there is likewise a third person absolutive \emptyset as well as the third person ergative affix *s*. The two postverbal full NPs are differentiated functionally by their order: the first unmarked NP after the verb is interpreted as the A, the second as the O. Case marking in Jacalteco, then, is accomplished through verbal cross-reference and word order.

Again, unlike Archi and Enga, Jacalteco has a passive construction; in fact, it has four of them. In all of them the derived intransitive subject (derived-S [d-S]) is in the absolutive case, and there can be an agent phrase marked by

the preposition *-u* 'by'.

- (17a) x- \emptyset c'och-lax/ot ixim ixim (y-u ix)
ASP-3ABS-shell-PASS CL/the CL/corn (3ERG-by CL/she)
'The corn was shelled (by her)'.
- (17b) laño x- \emptyset lok-lo hin camiñ w-u an
barely ASP-3ABS-buy-PASS my shirt 1sgERG-by 1sg
'I could barely afford my shirt'.
- (17c) ch-ach col-cha w-u an
ASP-2sgABS help-PASS 1sgERG-by 1sg
'I help you' (like defending you from someone).

Only third person agents are allowed with *-lax* and *-ot* passives, while there is no such restriction on *-lo* and *-cha* passives. Each of these constructions differs semantically from the other three (see Craig 1977:77-83), but these differences will be glossed over as they are not directly relevant to the discussion. Jacaltec also possesses a syntactic antipassive which will be discussed below.

Jacaltec has two rules of equi-NP-deletion, one triggered by the main clause subject and the other by the matrix direct object. Subject-triggered equi occurs with both verbs of motion and desire.

- (18a) xc-ach to sajch-oj
ASP-2sgABS go play-IRR
'You went to play'.
- (18b) *xc-ach to ha-sajchi
ASP-2sgABS go 2sgERG-play
'You went to play'.
- (18c) ch- \emptyset (y)-oche naj cañalw-oj
ASP-3ABS-3ERG-like CL/he dance-IRR
'He likes to dance'.
- (18d) *ch- \emptyset (y)-oche naj s-cañalwi
ASP-3ABS-3ERG-like CL/he 3ERG-dance
'He likes to dance'.

In these constructions the subject-marking pronominal is obligatorily omitted in the complement verb, which bears the irrealis suffix *-oj*. Subject-triggered equi in Jacaltec differs from equi in Archi and Enga in a very important way: it applies *only* to S and *never* to A or O in transitive clauses. Moreover, it does

not apply to the derived-S of passive constructions, and there is an additional constraint that the S must be an agent.

- (19a) *ch- \emptyset (y)-oche naj col-lax-oj
ASP-3ABS-3ERG-like CL/he help-PASS-IRR
'He likes to be helped'.
- (19b) ch- \emptyset (y)-oche naj s-col-lax-i
ASP-3ABS-3ERG-like CL/he 3ERG-help-PASS-SUFF
'He likes to be helped'.
- (19c) *ch-in to col-o' hach
ASP-1sgABS go help-FUT you
'I go to help you'.
- (19d) ch-in to hach hin-col-o
ASP-1sgABS go you 1sgERG-help-FUT
'I go to help you'.

This rule is thus limited to the S of active intransitive verbs; when the embedded clause is transitive, the A cannot be deleted, and the clause occurs in an aspectless form with accusative rather than ergative case marking (i.e., ergative marks S and A, and absolutive marks only O). Thus the syntactic pivot for subject-triggered equi is [S], with the additional constraint that both triggering and target NPs must be the controllers of the action expressed by their verbs.

The second equi rule is governed by the O of transitive verbs of causation such as *iptze* 'force', *chej* 'order', and *cuytze* 'teach', and unlike subject-triggered equi, it is optional.

- (20a) x- \emptyset (y)-iptze naj ix munlah-oj
ASP-3ABS-3ERG-force CL/he CL/she work-IRR
'He forced her to work'.
- (20b) ch-oñ s-chej ya' way-oj
ASP-1p1ABS 3ERG-order CL/he sleep-IRR
'He orders us to sleep'.
- (20c) ch-oñ s-chej ya' cu-wayi
ASP-1p1ABS 3ERG-order CL/he 1p1ERG-sleep
'He orders us to sleep'.

Another difference between this rule and the other equi rule is that this one may apply to the derived-S of a passive construction.

- (21a) xc-in il-lax-i y-u ya' doctor
 ASP-1sgABS see-PASS-SUFF 3ERG-by CL/the doctor
 'I was seen by the doctor'.
- (21b) xc-in y-iptze naj il-lax-uj y-u ya'
 ASP-1sgABS 3ERG-force CL/he see-PASS-IRR 3ERG-by CL/the
 doctor
 'He forced me to be seen by the doctor'.

However, object-triggered equi, like subject-triggered, cannot apply to the A or O in a transitive clause, and consequently the pivot for this rule is [S,d-S].

Equi-NP-deletion in Jacaltec can be summarized as follows. Subject-triggered equi applies only to S, whereas the object-triggered rule affects both S and derived-S. Neither rule can delete the A of a transitive clause, and consequently Jacaltec equi is very different from that in Archi and Enga.

There is an optional rule in Jacaltec which serves to promote the animate subject of a verb embedded under one of the intransitive aspectual verbs *ichi* 'begin, start', *tuci* 'stop, quit', or *tani* 'cease' to be the derived subject of the aspectual verb. It is illustrated in 22.

- (22a) x-Øichi ha-munlayi
 ASP-3ABS-begin 2sgERG-work
 'You began to work' (literally: 'it began — you work').
- (22b) xc-ach ichi ha-munlayi
 ASP-2sgABS begin 2sgABS-work
 'You began to work' (literally: 'you began — you work').

This is a copying rather than a raising rule, as the form of the embedded clause is unaffected by its operation. For some speakers this process is restricted to S, while for others it may apply to both S and A. Thus the sentences in 23 are acceptable to some but not all Jacaltec speakers.

- (23a) (*)xc-in ichi hach hin-mak-ni
 ASP-1sgABS begin you 1sgERG-hit-SUFF
 'I began to hit you'.
- (23b) (*)xc-oñ tuci Ø cu-tzote-n j-abxubal
 ASP-1p1ABS quit it 1p1ERG-talk-SUFF 1p1ERG-language
 'We quit talking our language'.

To complicate matters further, some speakers also allow the derived-S of a passive construction to be promoted.

- (24) (*)xc-in ichi-coj hin-mak-lax-i
 ASP-1sgABS begin-DIR 1sgERG-hit-PASS-SUFF
 'I began to be hit'.

According to Craig 1977, speakers fall into two groups: those with a restricted rule which has a simple [S] pivot, and those with a less restricted rule which can apply to [S,A,d-S]. This rule produces a derived-S of the aspectual verb which, when embedded, cannot be deleted by object-triggered equi, unlike the derived-S of a passive. When the aspectual verb is embedded, promotion is obligatory.

- (25a) xc-ach y-iptze ix ha-tuci ha-bey yulaj
 ASP-2sgABS 3ERG-force CL/she 2sgERG-quit 2sgERG-go into
 finca
 plantation
 'She forced you to quit going to the plantation'.
- (25b) *xc-ach y-iptze ix ___-tuci-uj ha-bey yulaj
 ASP-2sgABS 3ERG-force CL/she ___-quit-IRR 2sgERG-go into
 finca
 plantation
- (25c) *xc-ach y-iptze ix s-tuci ha-bey yulaj
 ASP-2sgABS 3ERG-force CL/she 3ERG-quit 2sgERG-go into
 finca
 plantation

In 25b equi has applied to delete the derived-S of *tuci*, rendering it ungrammatical; in 25c promotion has not occurred. The ungrammaticality of 25b is no doubt linked in part to the obligatory operation of promotion in that embedded aspectless verbs must be inflected for S of their complement verb, and either the application of equi or the non-application of promotion would violate this constraint.

One of the major features of the languages of the Kanjobalan (including Jacaltec), Mamean, and Quichean subgroups of the Mayan family is that relativization, WH-question formation, and clefting do not apply to A but only to O and S (Larsen and Norman 1979). This can be seen for Jacaltec in 26.

- (26a) ha' ix x- \emptyset (y)-il naj
 CLEFT CL/she ASP-3ABS-3ERG-see CL/he
 'It is she whom he saw'. (*'It is she who saw him'.)
- (26b) mac x- \emptyset (y)-il naj
 WH ASP-3ABS-3ERG-see CL/he
 'Whom did he see?' (*'Who saw him?')
- (26c) w-ohtaj ix x- \emptyset (y)-il naj
 1sgERG-know CL/she ASP-3ABS-3ERG-see CL/he
 'I know the woman whom he saw'. (*'I know the woman who saw him'.)

In order for an A to be clefted, relativized, or questioned, the ergative marker in the verb must be deleted and the suffix *-n(i)* added to the verb; this is a form of antipassivization.

- (27a) ha' naj x- \emptyset -'il-ni ix
 CLEFT CL/he ASP-3ABS-_-see-ANTI CL/she
 'It is he who saw her'. (*'It is him whom she saw')
- (27b) mac x- \emptyset -'il-ni ix
 WH ASP-3ABS-_-see-ANTI CL/she
 'Who saw her?' (*'Whom did she see?')
- (27c) w-ohtaj naj x- \emptyset -'il-ni ix
 1sgERG-know CL/he ASP-3ABS-_-see-ANTI CL/she
 'I know the man who saw her'. (*'I know the man whom she saw'.)

Since antipassivization is an obligatory part of the clefting, questioning, and relativizing of an A, while S and O undergo these processes directly, we may conclude that Jacaltec employs a [S,O,d-S] pivot for these operations.⁵

We may summarize in 28 the syntactic pivots in the grammatical processes in Jacaltec that have been discussed.

(28)	Syntactic Rule	Syntactic Pivot
1.	Subject (S,A)-triggered equi-NP-deletion	[S]
2.	Object(O)-triggered equi-NP-deletion	[S,d-S(passive)]
3.	Promotion (target NP)	Dialect 1: [S]

- | | |
|--------------------------|--------------------------------|
| must be animate) | Dialect 2: [S,A,d-S (passive)] |
| 4. Relativization | [S,O,d-S(antipassive)] |
| 5. WH-question formation | [S,O,d-S(antipassive)] |
| 6. Clefting | [S,O,d-S(antipassive)] |

The most striking aspect of 28 is that for the speakers of what I have labelled 'dialect 1', *no syntactic rule can apply directly to the A of a transitive verb*. Moreover, A can *never* be deleted by either equi rule, nor promoted. The difference between dialect 1 and dialect 2 centers around the restrictiveness of the rule of promotion: speakers of dialect 1 limit it to animate S, whereas speakers of dialect 2 allow it to apply to animate S, A, and derived-S of a passive construction. The dialect 2 constructions with promoted A deserve another look, as they appear to be the only instance where a syntactic process applies directly to A. The relevant examples are repeated in 29.

- (29a) (*)xc-in ichi hach hin-mak-ni (=23a)
 ASP-1sgABS begin you 1sgERG-hit-SUFF
 'I began to hit you'.
- (29b) (*)xc-oñi tuci \emptyset cu-tzote-n j-abxubal (=23b)
 ASP-1p1ABS quit it 1p1ERG-talk-SUFF 1p1ERG-language
 'We quit talking our language'.

The important thing to note about these sentences is that the embedded verbs both end in *-n(i)*, the same suffix involved in antipassivization. Craig argues that it is a different suffix from the one in sentences like 27a - 27c; her argument appears to be based on the assumption that antipassivization necessarily involves both the deletion of the ergative marker and the addition of *-n(i)*, and since the ergative marker is not deleted in 29a - 29b, she claims that the same operation is not involved. However, it is entirely possible that the deletion of the ergative marker is a necessary part of the questioning, relativizing, or clefting of A but not of antipassivization per se. Moreover, it is possible that antipassivization could have different functions in different syntactic environments with concomitant formal differences. A more detailed examination of *-n(i)* is called for.

Craig notes that *-n(i)* is a *detransitivizing* suffix; this is shown by the fact that it co-occurs with the intransitive future/irrealis suffix *-oj*. This is true in both relative and aspectless complement clauses.

- (30a) \dot{x} - \emptyset s-lok-o' naj no' cheh
ASP-3ABS-3ERG-buy-FUT CL/he CL/the horse
'He will buy the horse'.
- (30b) w-ohtaj naj \dot{x} - \emptyset -lok-n-*oj* no' cheh
1sgERG-know CL/he ASP-3ABS-__-buy-ANTI-FUT CL/the horse
'I know the man who will buy the horse'.
- (30c) mach ch- \emptyset u s-to naj hach y-il-n-*oj*
NEG ASP-3ABS-can 3ERG-go CL/he you 3ERG-see-*ni*-FUT
'He cannot go to see you'.

In 30a the transitive verb *-lok-* 'buy' takes the future suffix *-o'*, while in 30b the antipassivized form takes the intransitive future/irrealis suffix *-oj*, as does the verb of the aspectless complement in 30c. Thus *-n(i)* is clearly a detransitivizing suffix, and detransitivization is fundamental to antipassivization (see Heath 1976). Note further that in the aspectless complement clause in 30c the undergoer is not coded on the verb at all and occurs as an independent pronoun; only the actor is directly expressed in the verb. This is the classic antipassive pattern in which the actor, but not the undergoer, remains in direct syntactic relation to the verb.

The similarity between the verbal inflection in clauses out of which an A has been extracted and that in aspectless complement clauses is so strong that they must be viewed as having undergone different but related processes of antipassivization involving *-n(i)*. The claim being put forth here is that *-n(i)* is the general marker of the syntactic antipassive in Jacaltec and that this antipassive has different albeit related functions with concomitant formal differences in various syntactic environments. In finite clauses it is associated with the deletion of the ergative marker in the verb as part of the questioning, clefting, or relativizing of an A; the case marking of the O is unaffected. In certain types of embeddings aspectless complement clauses are antipassivized with *-n(i)*, resulting in the occurrence of the O as an independent pronoun without verbal cross-reference; in this construction the antipassivized, non-finite verb expresses only its derived-S argument (the A of the finite verb).⁶ This variation in the function of an antipassive is not unusual at all, as Heath 1976 amply documents.

This re-analysis of *-n(i)* in aspectless complement clauses is directly relevant to the analysis of the promotion rule in 29, for it means that the argument copied out of the embedded clause into the matrix clause is syntactically *not A but derived-S*. Hence the pivot for promotion in dialect 2 is not [S,A,d-S (passive)] as in 28 but rather [S,d-S(both)]. The extension of the application

of promotion to the animate derived-S of an antipassive is very natural, since it would be an agent in most cases; and Dixon 1979a argues that with verbs like *try*, *begin*, *finish*, and *must* S and A are usually treated alike because the notions of control and agency are part of the meaning of these verbs. This is true in dialect 2 in Jacaltec, although the agent shows up syntactically as derived-S. The extension of the rule to apply to the derived-S of a passive is much less natural, since it would never be an agent. One possible explanation might be 'syntactic analogy': once speakers extended the rule form S to the derived-S of antipassive, they came to apply it to any derived-S, regardless of its source. We may now restate 28 and 31 in light of this re-analysis.

(31)	Syntactic Rule	Syntactic Pivot
	1. Subject(S,A)-triggered equi-NP-deletion	[S]
	2. Object(O)-triggered equi-NP-deletion	[S,d-S(passive)]
	3. Promotion (target NP must be animate)	Dialect 1: [S] Dialect 2: [S,d-S(both)]
	4. Relativization	[S,O,d-S(antipassive)]
	5. WH-question formation	[S,O,d-S(antipassive)]
	6. Clefting	[S,O,d-S(antipassive)]

Again, it is highly significant that *none of these syntactic processes can apply directly to the A of a transitive verb, and the equi rules can never apply to an A*. Even though S, A and O can all be the triggers of equi, only S and derived-S(passive) can be targets.

The discussion of Jacaltec has thus far centered on syntactic processes in simple and embedded clauses. The last aspect of Jacaltec syntax to be investigated is the nature of the co-reference relations holding across sequences of clauses in discourse. Jacaltec has neither deletion of co-referential arguments across conjunctions, as in e.g., English, nor switch reference, as in Enga. Rather, there are preferred ways of structuring clauses so that certain co-reference relations obtain between the pronouns in them. According to Datz 1980, the preferred co-reference relations are S=S, S=A, A=S and A=A; that is, it is preferable to have what Datz calls the 'theme' of the discourse occurring as S or A in each clause. This is illustrated in 32 from Datz (1980:83).⁷

- (32) *ha' x'apni naj, xilnitij naj balankañ hune' no' cheh;*
 arrived *he_i* saw *he_i* belly=up one CL horse
stzumbeniloj naj no' usmij tu'; x'oc naj spatznajiloj;
 chased=away *he_i* CL buzzards began *he_i* to=skin
xa'nicoj naj yatz'amil; stajtzen naj yiñ caw c'ul.
 put=on *he_i* salt dried *he_i* on=il very well
 'Upon arriving, he saw a horse, belly up; he chased
 away the buzzards, and he began to skin (it); he put
 salt on (it), and he dried its surface thoroughly'.

The italicized pronouns all refer to the central protagonist or 'theme' of the discourse. In the first clause the 'theme' is S and in all the rest A. When it is semantically the undergoer in a clause, there is a very strong tendency to use a passive construction so that it will occur as (derived-) S. This is exemplified in 33 and 34, both from Datz (1980:103, 105).

- (33) *scawilal tu' xil naj hurie' nach'en tz'ulik; betu' x'octoj*
 near that saw *he_i* one cave small there entered
naj yeba' sba. saylax naj yaj mañtic'a ch'ilcha naj.
he_i to=hide self was=looked=for *he_i* but never was=seen *he_i*
 'Nearby he saw a small cave; there he entered to hide.
 He was looked for but he was never seen'.
- (34) *xinitij naj yanma yul yin, stzabi naj swixic'*
 brought *he_i* his=heart in=him grasped *he_i* their=shoulders
heb ix; x'ilaxtoj naj xol cake'; hat xca yilaxtoj
 PL CL was=carried *he_i* through air there was=carried
naj xtxam coñob.
he_i edge town.
 'Gathering his courage, he grasped the women's shoulders,
 and he was carried through the air, and there he was carried to
 the edge of town'.

In these two examples the co-referential 'theme' is again italicized, and the passive suffixes on the verbs are italicized bold face. These two examples, along with 32, show that in Jacaltec discourse there is a strong preference for having the main protagonist appear as A, S or the derived-S of a passive. Taking subject in Jacaltec to be [S,A,d-S(passive)], Datz argues that 'an animate nominal, subject of the matrix verb, is the strongly preferred theme in Jacaltec. . .'(1980:

111).

We may summarize these favored co-reference relations as a [S,A,d-S(passive)] pivot and thereby complete the discussion of syntactic processes in Jacaltec. The final version of the chart of syntactic rules and pivots is given in 35.

(35)	Syntactic Rule	Syntactic Pivot
	1. Subject(S,A)-triggered equi-NP-deletion	[S]
	2. Object(O)-triggered equi-NP-deletion	[S,d-S(passive)]
	3. Promotion (target NP must be animate)	Dialect 1: [S] Dialect 2: [S,d-S(both)]
	4. Relativization	[S,O,d-S(antipassive)]
	5. WH-question formation	[S,O,d-S(antipassive)]
	6. Clefting	[S,O,d-S(antipassive)]
	7. Cross-clause co-reference (preferred)	[S,A,d-S(passive)]

On the basis of these syntactic processes no clear-cut candidate for syntactic subject in Jacaltec emerges. The only argument type which is involved in all of these operations is S. If we divide these processes up in terms of their respective domains of application, some patterns begin to surface. The two types of equi-NP-deletion and promotion apply to embedded clauses, and their application is restricted to either S or derived-S, the exact nature of the latter varying with the particular rule. These rules do not apply to the arguments of a transitive verb in a transitive clause, and consequently as far as their operation is concerned, such clauses are subjectless. The next three rules, relativization, WH-question formation and clefting, all result in similar structures and, not surprisingly, are subject to the same constraints. Their pivot is defined on an ergative basis, since they apply freely to S and O but not to A, which must undergo antipassivization as a part of their operation. Finally, in sequences of main clauses the favored pattern of co-reference involves S, A and derived-S (passive), a pattern which is straightforwardly accusative. It must be concluded, then, that Jacaltec has no single unified relation of syntactic subject and that its syntactic organization resists classification as ergative or accusative; rather, it must be viewed as a complex system in which certain subsystems operate

on one basis, others follow a different pattern, and some fall into neither category.

5. Dyirbal

A brief mention of Dyirbal (Dixon 1972) completes the survey of grammatical processes in ergative languages. Dyirbal has been widely discussed in the last few years because it is a well documented instance of a language whose syntax, not just morphology, has an ergative pattern.⁸ The basic data of Dyirbal case marking are presented in 36.

- (36a) bayi yaṛa waynydyi-n
man-ABS go=uphill-TNS
'Man went uphill'.
(36b) bayi yaṛa baṅgun dyugumbiṛu buṛa-n
man-ABS woman-ERG see-TNS
'Woman saw man'.

Morphological ergativity in Dyirbal is manifested in its NP case marking; there is no verb agreement or verbal cross-reference. First and second person pronouns are inflected on an accusative pattern. In Dyirbal co-ordinate structures deletion under co-reference is possible only when both the target and controller NPs are S or O, i.e., in the absolutive case for full NPs.⁹

- (37a) bayi yaṛa waynydyi-n haṅgun dyugumbiṛu _____ buṛa-n
man-ABS go=uphill-TNS woman-ERG see-TNS
'Man went uphill and woman saw [him]'.
(37b) bayi yaṛa baṅgun dyugumbiṛu buṛa-n _____ waynydyi-n
man-ABS woman-ERG see-TNS go=uphill-TNS
'Woman saw man and [he/*she] went uphill'.

In 37a there is S=O co-reference and in 37b O=S. The fact that 37b cannot be interpreted as '... and she went uphill' indicates that an ergative NP cannot control co-referential deletion in such constructions. Nor can it be a target, as 38 shows.

- (38a) *balan dyugumbil waynydyi-n bayi yaṛa _____ buṛa-n
woman-ABS go=uphill-TNS man-ABS see-TNS
'Woman went uphill and saw man'.

- (38b) *balan dyugumbil baṅgul yaṛaṅgu buṛa-n bayi yuṛi
woman-ABS man-ERG see-TNS kangaroo-ABS
_____ бага-n
spear-TNS
'Man saw woman and speared kangaroo'.

In 38a the A of the second clause is deleted under co-reference with the S of the first clause, and the result is ungrammatical. In 38b both the controller and target NPs are As, again yielding an ungrammatical sentence.

In order for an A to be a target for deletion under co-reference, it must be the derived-S of a *ḡay*-antipassive construction, which, if it were not deleted, would be in the absolutive case. In this construction the undergoer, the erstwhile absolutive O, occurs most commonly in the dative case.

- (39) bayi yaṛa waynydyi-n _____ baḡun dyugumbilḡu
man-ABS go=uphill-TNS woman-DAT
buṛal-ḡa-nyu
see-ANTI-TNS
'Man went uphill and saw woman'.

There are two possible constructions which permit the A to be the controller of co-reference. At the beginning of a discourse the *ḡura*-construction may be used, in which the suffix *-ḡura* is added to the verb in the target clause to indicate a change in the co-reference relations governing the deletion.

- (40) bayi yaṛa baṅgun dyugumbiṛu buṛa-n _____ waynydyi-ḡuṛa
man-ABS woman-ERG see-TNS go=uphill-ḡura
'Woman saw man and [she/*he] went uphill'.

The S in the second clause has been deleted under co-reference with the A rather than the O of the first clause. Within a discourse the *ḡay*-construction may be used, as in 41.

- (41) bayi yaṛa bani-nyu _____ baḡun dyugumbilḡu buṛal-ḡa-nyu
man-ABS come-TNS woman-DAT see-ANTI-TNS
_____ waynydyi-n
go=uphill-TNS
'Man came, saw woman and went uphill'.

In this example the derived-S in the second clause is both target and controller of the deletion in the third clause. The syntactic pivot for co-referential deletion in co-ordinate structures is [S,O,d-S(antipassive)].

Relativization in Dyirbal is by deletion, and it is subject to the same constraint as co-referential deletion: the deleted NP must be S,O or derived-S (antipassive). The two sentences in 42 may be combined to form two possible relative clauses, only one of which is grammatical.

- (42a) bayi yaṛa banaga-nyu
man-ABS return-TNS
'Man is returning'.
- (42b) bayi yuṛi baṅgul yaṛaṅgu бага-
kangaroo-ABS man-ERG spear-TNS
'Man speared kangaroo'.
- (43a) baṅgul yaṛaṅgu banaga-ṅu-ru bayi yuṛi бага-
man-ERG return-REL-ERG kangaroo-ABS spear-TNS
'Man who is returning speared kangaroo'.
- (43b) *bayi yaṛa бага-ṅu-∅ bayi yuṛi banaga-nyu
man-ABS spear-REL-ABS kangaroo-ABS return-TNS
'Man who speared kangaroo is returning'.

43b is ungrammatical because the NP relativized upon is the A of the relative clause, and consequently in order to produce this sentence correctly the relative clause must be antipassivized so that the NP co-referential with the head noun is in derived-S function.

- (44) bayi yaṛa baḡal-ṅa-ṅu-∅ baḡul yuṛiḡu banaga-nyu
man-ABS spear-ANTI-REL-ABS kangaroo-DAT return-TNS
'Man who speared kangaroo is returning'.

Thus the syntactic pivot for relativization in Dyirbal is [S,O,d-S(antipassive)], the same as that for co-referential deletion across clauses.

On the strength of these major syntactic processes we may conclude that the syntactic subject in Dyirbal is defined as [S,O,d-S(antipassive)] and that the syntax of this language is organized on an ergative pattern.

6. Summary

We are now in a position to summarize the results of this investigation of

Archi, Enga, Jacaltec and Dyirbal syntax. The syntactic rules and their pivots found in these languages are listed in Table 1.¹⁰

Table 1

Syntactic Rule	Syntactic Pivot
1. Archi (Kibrik 1979a)	
Equi-NP-deletion	none
Co-referential deletion	none
Relativization	none
2. Enga (Lang 1973, Li & Lang 1979)	
Equi-NP-deletion	[S,A]
Switch reference	[S,A]
Relativization	none
3. Jacaltec (Craig 1977, Datz 1980)	
Subject (S,A)-triggered equi-NP-deletion	[S]
Object (O)-triggered equi-NP-deletion	[S,d-S(passive)]
Promotion (Target NP must be animate)	Dialect 1: [S]
	Dialect 2: [S,d-S(both)]
Relativization	[S,O,d-S(antipassive)]
WH-question formation	[S,O,d-S(antipassive)]
Clefting	[S,O,d-S(antipassive)]
Cross-clause co-reference (preferred)	[S,A,d-S(passive)]
4. Dyirbal (Dixon 1972)	
Co-referential deletion	[S,O,d-S(antipassive)]
Relativization	[S,O,d-S(antipassive)]

The first question to be raised with respect to each of these languages concerns the existence of a syntactic subject in the language. In section 1 it was stated that syntactic subject in a language is defined in terms of syntactic pivots. By this criterion Enga and Dyirbal may be said to have clear-cut notions of syntactic subject, while Archi appears to have none; Jacaltec is very complex in this regard. Because Archi lacks definable syntactic pivots for its major syntactic processes, there is no motivation for positing a syntactic notion of

subject on top of the semantic role (or thematic) relations which hold between a predicate and its arguments. Kibrik 1979b argues that languages such as Archi and Chechen, a north-central Caucasian language, lack purely syntactic relations of any kind, a view supported by Nichols' 1980 analysis of Chechen. Enga and Dyrbal, on the other hand, do have well-defined syntactic pivots, and moreover they are internally consistent, that is, for the Enga operations with a specific pivot it is always [S,A] and in Dyrbal [S,O,d-S(antipassive)]. Thus we may conclude that each of these languages has a notion of syntactic subject, albeit quite different from the other. Whereas all of the syntactic processes discussed for Jacaltec have well-defined pivots, they vary greatly, depending upon the syntactic operation, and consequently it is impossible to postulate a notion of syntactic subject which underlies the entire grammatical system. A distinction between deep and surface subject cannot overcome these difficulties because neither deep nor surface transitive subjects may undergo subject (S,A)-triggered equi-NP-deletion and promotion (in dialect 1); and object(O)-triggered equi-NP-deletion can apply only to the surface subject of a passive and S, and promotion to these and the surface subject of an antipassive (in dialect 2). Moreover, the surface subject defined by relativization, WH-question formation and clefting is quite different from that of the equi and promotion rules as well as that of the cross-clause co-reference constraints. In short, for Jacaltec no unified notion of subject is possible, and syntactic processes must be stated in terms of combinations of five relations; S, A, O, derived-S(passive) and derived-S(antipassive).

The variation in the syntactic subjects posited for Enga and Dyrbal and the lack of clearly defined syntactic subjects in Archi and Jacaltec renders extremely problematic any attempt to establish a cross-linguistically valid notion of subject for these languages. Nevertheless, there are certain similarities among some of the languages which are obscured if one is concerned solely with finding the same notion of syntactic subject in them. It was commented in section 2 that Archi 'displays a rigid correlation between the underlying case frames of [verbs] and surface cases' (Kibrik 1979a:67). The 'underlying case frame of a verb' refers to the lexical entry of a verb which specifies its arguments and their semantic (or thematic) relations to it (see Fillmore 1971). A 'rigid correlation' between these lexically determined relations and the 'surface cases' exists if there is only one possible realization for each argument bearing a particular semantic role relation to its verb. In Archi the actor is always A, the undergoer O, and the experiencer, benefactive or recipient Dative with a transitive verb. There is no syntactic voice opposition which would allow the under-

goer to occur as surface derived-S. Hence the surface grammatical status of an argument is predictable from its underlying semantic role (or thematic) relation to its verb. The same is true in Enga as well; the surface realization of each verbal argument is determined by its semantic relation to its verb, and Enga lacks a syntactic voice opposition which would alter the surface expression of these relations. Enga and Archi differ in that Enga imposes constraints on equi-NP-deletion and switch reference and the analogous processes in Archi are not so constrained. Thus despite the apparent differences in the grammatical organization of these two languages, there is a fundamental similarity between them in the 'rigid correlation' between underlying semantic role relations and their surface expression.

Such a correlation does not exist in Jacaltec and Dyrbal, for both languages have syntactic means for changing the surface realization of underlying semantic role relations. Jacaltec is particularly rich in this regard, having four passives and one antipassive construction. The actor and undergoer need not occur as A and O in the ergative and absolutive cases, respectively; rather, they may occur as derived-S in a passive (in Jacaltec) or antipassive construction (in Jacaltec and Dyrbal). Not only do both languages have voice oppositions, but these constructions exhibit certain functional similarities. It was shown in the discussion of Jacaltec that in strings of clauses in discourse there is a strong tendency for the main protagonist or 'theme' to be expressed by S or A, and if it is the undergoer in a clause, a passive may be used to make it derived-S, hence the [S,A,d-S(passive)] pivot for cross-clause co-reference. The *ɲay*-antipassive construction has an analogous discourse function in Dyrbal (Silverstein 1976). The main protagonist is referred to by what Dixon 1972 calls the 'topic NP' which occurs in the absolutive case¹¹ in 'topic chains', and in simple transitive and intransitive clauses this is O or S. If the main protagonist functions as the A of a transitive verb, then the clause must be altered so that it occurs as 'topic' in the absolutive case, and this is accomplished by the *ɲay*-antipassive. Since repeated 'topics' are deletable, the pivot for this process is that of co-referential deletion, [S,O,d-S(antipassive)]. In both languages the main protagonist, 'theme' or 'topic' of a discourse takes on a particular syntactic status to which a voice opposition is keyed. This special discourse-related syntactic status of an NP in a clause is captured in the notion of *pragmatic peak* proposed in Van Valin 1977, 1980 and Van Valin & Foley 1980. Despite the difference in syntactic pivots in Jacaltec and Dyrbal for cross-clause co-reference and co-referential deletion, the functional identity of the two operations is captured in a discourse-oriented analysis. It must be noted that neither Archi nor Enga

has the category of pragmatic peak because in both languages the syntactic status of an NP is entirely *semantically* determined, and discourse factors have no effect on the surface expression of underlying semantic role relations (see Van Valin 1980, Van Valin & Foley 1980 for further discussion).

The final question to be raised in this section concerns the classification of the syntactic organization of these languages as ergative or accusative. As with the question of subject, Enga and Dyirbal are clear-cut, and Archi and Jacaltec are problematic, albeit for different reasons. Enga syntactic organization may be classified as accusative and that of Dyirbal as ergative. Because it lacks well-defined syntactic pivots, Archi resists classification altogether. Jacaltec, on the other hand, has syntactic pivots, but they do not lend themselves to classification as a single type because of their diversity: the two kinds of equi-NP-deletion and promotion fall into neither category; relativization, WH-question formation and clefting pattern on an ergative basis; and cross-clause co-reference operates on an accusative pattern. The heterogeneity of these four languages indicates clearly the complexity of the question of the syntactic organization of languages exhibiting ergative morphology.

7. Some recent claims

In this section several claims will be discussed which have been made regarding the syntax of ergative languages. One of the most influential recent studies of ergativity has been Anderson 1976, in which syntactic processes in a wide range of morphologically ergative languages are examined. The methodology of Anderson's study is the same as the present one: in each language a major syntactic operation is investigated to determine its syntactic pivot, which is taken to be indicative of the notion of syntactic subject found in the language. He looks at equi-NP-deletion in Basque, subject raising in Tongan, conjunction formation in Kâte (Papua New Guinea) and reflexivization in Abaza and Abkhaz (Caucasus), and he argues that in every case the notion of subject which these processes refer to is the same as that found in accusative languages. He reaches the following conclusions.

Rules such as those we have been considering, when investigated in virtually any ergative language, point unambiguously in the direction we have indicated. They show, that is, that from a syntactic point of view these languages are organized in the same way as are accusative languages, and that the basically syntactic notion of 'subject' has essentially the same reference in both language types (Anderson 1976: 16).

Anderson is making two claims here: first, the syntactic organization of ergative languages follows an accusative pattern, and second, ergative languages have the same notion of subject as accusative languages. The accusative language which Anderson takes as his typical example is English, and he shows that equi-NP-deletion, subject raising and conjunction formation (a.k.a. co-referential deletion across conjunctions) operate with an [S,A,d-S(passive)] pivot; he also discusses reflexivization in Danish. It must be noted that Anderson acknowledges Dyirbal to be an exception to these claims and allows that it does have an ergative notion of subject which is distinct from the accusative notion found in the other ergative languages.

An examination of Anderson's two claims in the light of the facts discussed in this paper shows them to be quite problematic. Of Archi, Enga and Jacaltec, only Enga can be said to be syntactically accusative, as argued in section 6. By Anderson's criterion Archi cannot be considered accusative (or ergative either), and Jacaltec also defies accusative classification, since of the seven grammatical processes discussed in section 4, only *one* has an accusative pivot. Further difficulties for this claim accrue from the fact that these languages are not unique. Kibrik 1979a states that 'Archi is of the same type as Avar and Chechen' (67), two other Caucasian languages (see Černý 1971, Nichols 1980; also Kibrik 1979b). Jacaltec is not alone in the Mayan family in exhibiting split ergative-accusative syntax; Tzutujil, a language of the Greater Quichean subgroup of the Mayan family, also has relativization, WH-question formation and clefting operating on an ergative basis (Dayley 1978) and cross-clause co-reference on an accusative pattern (Butler & Peck 1980). Finally, Dyirbal is not the only example of a language having [S,O,d-S(antipassive)] pivots. Anderson mentions that Hurrian, an ancient language of the Middle East, may have had constraints similar to Dyirbal. Other languages which have such a pivot for at least some of their syntactic processes include Yidin^y (Dixon 1977), Bandjalang (Crowley 1978), Tongan (Dixon 1979a) and Eskimo (Woodbury 1975). Thus the number of morphologically ergative languages which constitute exceptions to Anderson's first claim is greater than just the two he mentions, and this, together with their typological diversity, significantly weakens his claim.

Anderson's second claim is that 'the notion of 'subject' in ergative languages is, despite morphological indications which appear to indicate otherwise, essentially the same as that in accusative languages' (1976:23). By this criterion of grammatical processes this claim appears to be true only for Enga, as it

is the only language of the four which has [S,A] for all of its pivots. However, there are good reasons to question whether it is correct to say that Enga has the same notion of syntactic subject as accusative languages. Recall that Anderson's example of a typical accusative language is English, in which equi-NP-deletion, co-referential deletion and subject raising apply to S and A and to the derived-S of a passive. That these rules operate on derived-S is particularly important, for it means that more than just the actor argument of a transitive verb can undergo these rules. Accordingly, the surface syntactic status of an NP argument in English is *not* predictable from its underlying semantic role relation to the verb, as the actor may occur as either subject (A) or object of a preposition, the undergoer as direct object (O) or subject (d-S), and the benefactive, or recipient as object of a preposition, direct object or subject (d-S). As in Jacaltec and Dyirbal, the surface realization of an argument in English may be affected by discourse conditions, i.e., subject in English is a pragmatic peak (Van Valin & Foley 1980). In Enga, on the other hand, the surface syntactic status of an argument *is* predictable from the semantic role relation it bears to the verb, as argued in section 6, and consequently subject in Enga is entirely semantically (lexically) determined and is not a pragmatic peak. Thus the apparent similarity of subjects in Enga and English obscures a fundamental difference. These four languages are all exceptions to Anderson's second claim, and consequently it is called seriously into question.

The final claim to be discussed likewise concerns the notion of subject. In her analysis of case marking and grammatical relations in Polynesian languages, Chung 1978 takes the position that 'all languages have rules referring to subject and direct object, which are central to syntactic organization' (99-100). Chung, like Anderson, takes subject to be [S,A], and accordingly the data discussed in sections 2-5 are as problematic for her claims as they are for Anderson's. Again, Enga is the only language which seems to be compatible with this position. Even though Archi has rules which apply to S, A and O, they do not apply to a particular grouping of them to the exclusion of other arguments, and therefore subject qua [S,A] is not central to the syntactic organization of Archi. The syntactic complexities of Jacaltec require that subject be decomposed into S, A, O derived-S(passive) and derived-S(antipassive),¹² as different syntactic processes operate on different combinations of these more basic relations. The [S,A] grouping, when supplemented with derived-S (passive), plays only a very limited role in the syntactic system of Jacaltec. Dyirbal is an obvious problem for Chung's claims. In short, attempts to postulate a single, unified notion of syntactic subject applicable to both accusative and ergative (or

even just to all ergative languages) are doomed to failure in the face of the syntactic diversity of ergative languages.

NOTES

1) I would like to thank Kenneth Whistler, Linda Schwartz, Jeffrey Heath, R.M.W. Dixon, Johanna Nichols, Sandra Thompson, Anthony Woodbury, James Collins, Thomas Larsen, A.E. Kibrik and Issac Sh. Kozinsky for comments on earlier drafts. All errors are my own. The abbreviations used in glossing examples are: ABS=absolutive, ANTI=antipassive, AOR=aorist, ASP=aspect, AUX=auxiliary, CL=classifier, CONT=continuative, DAT=dative, DECL=declarative, DEF=definite, DIFF=different subject, DIR=directional marker, ERG=ergative, FUT=future, GEN=genitive, GER=gerund, INDEF=indefinite, INF=infinitive, IRR=irrealis, PART=participle, PASS=passive, PL=plural, PRES=present, PROG=progressive, REL=relative marker, SAME=subject, SUFF=suffix, TNS=tense.

2) The exact treatment of these phenomena in terms of a transformational rule or base-generated structure is of no consequence for the discussion in this paper.

3) In these examples, '(? . . .)' means that the sentence is less acceptable if the element in parenthesis occurs, and '(? (. . .))' means that it is less acceptable if the parenthesized element does not occur.

4) Since *baa* 'he' bears the same syntactic relation to *masi*-'think' in 10a-c and to *pú/pa*-'go' in 10d-e, i.e. A and S, respectively, the case assignment rule governing *-me* cannot be sensitive solely to syntactic relations but rather must be sensitive to semantic role relations as well in these constructions. This is counterevidence to one of the claims of relational grammar, namely that 'case assignment [is] sensitive to term relation [i.e. subject, direct object or indirect object-RVV] but not to the various conceptual relations [i.e. semantic role relations-RVV] which are assigned termhood' (Klokeid 1978:581).

5) Datz 1980 reports two additional lexical antipassive rules in Jacaltec. She gives the following examples.

- (i) x- \emptyset mak-wa naj y-iñ ix
 ASP-3ABS-hit-ANTI₁ CL/he 3ERG-on CL/she
 'He hit on her.'
- (ii) x- \emptyset mak-wi ix naj
 ASP-3ABS-hit-ANTI₂ woman CL/he
 'He hits women (women-hits).'

The first construction involves a demotion of the O to oblique status, and the second incorporates the O into the verb where it cannot be modified by noun classifiers, adjectives, or demonstratives and can have only a generic interpretation.

6) This obligatory antipassivization and suspension of the ergative case marking pattern in aspectless complement clauses in Jacaltec conforms to the hierarchy of logical relations between clauses proposed in Silverstein 1976 (p. 163). Silverstein argues that the tighter the syntactic and semantic relationship between two clauses is, the more likely it is that the dependent clause will be antipassivized, lose ergative case marking or undergo nominaliza-

tion. Aspectless complements like 29a-b contrast with full-blown sentential complements as in (i) which have full tense/aspect marking independent of the main clause and need not share any arguments with it.

- (i) \check{x} - Φ (y)-al ix chubil x- Φ s-mak
 ASP-3ABS-3ERG-say CL/she that ASP-3ABS-3ERG-hit
 naj winaj no' txitam
 CL/the man CL/the pig
 'She says that the man hit the pig.'

By contrast, the complements in 29a-b are dependent upon the main verb for their tense/aspect marking and also share an argument with it. Hence the two clauses are tightly bound to each other, both syntactically and semantically, and it is in such a situation in an ergative language that Silverstein's hierarchy predicts obligatory antipassivization and accusative case marking.

7) The transcription in the examples from Datz 1980 has been regularized to agree with that used in Craig 1977. Datz does not provide morpheme-by-morpheme breakdowns and glosses.

8) For a dissenting view on the syntactic ergativity of Dyirbal, see Heath 1979; see Dixon 1979b for a reply to Heath.

9) Certain complications involving first and second person pronouns are omitted for the sake of brevity. See Dixon 1972:130-7.

10) Reflexivization and imperative formation are often cited as grammatical processes the control of which is indicative of subjecthood, but they have not been discussed here because their pivots are largely predictable on semantic grounds. Actors are the primary controllers of reflexivization, particularly of other verbal arguments, and in many languages they are the exclusive controllers. Consequently reflexivization can reveal little about the typology of grammatical processes in a language. The same can be said of imperative formation, as actors are addresses of imperatives due to the inherent semantics of the construction. See Dixon 1979a for further discussion of this point.

11) See footnote 9.

12) Further distinctions are necessary for the analysis of other languages. In Eastern Pomo (McLendon 1978) switch reference is sensitive to whether an S is an argument of a stative or active verb. The same is true in Arikara (F. Merlan, personal communication). For these languages it would appear that what Dixon 1979a calls 'split-S marking' has syntactic consequences, and hence that for these languages one must distinguish S(active) from S(stative) both morphologically and syntactically.

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