Ergativity, accusativity and topicality

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1. Introduction

1.1. Introductory remarks

It has often been claimed that so-called 'ergative languages' and 'accusative languages' have different topic/topicality organizations. The specific statements of this claim differ among themselves, but they can be roughly summarized and classified as follows:

(a) Regarding case-marking system:

In the ergative(–absolute) system (A≠S=O; ERG≠ABS=ABS), the ABS is the prime topic position, and the ERG is the secondary topic position, while in the (nominative-)accusative system (A=S≠O; NOM=NOM≠ACC) the NOM is the prime topic position, and the ACC is the secondary topic position. Similarly, in the ergative system the patient is topical/the topic, while in the accusative system the agent is topical/the topic. (See, for instance, Plank 1979a: 15, 19, 28).

(b) Regarding transitive constructions:

The ERG–ABS constructions are patient–oriented, i. e. the patient is the topic, or is more topical than the agent, while the NOM–ACC constructions are agent-oriented, i. e. the agent is the topic, or is more topical than the patient. (See, for instance, Plank 1979a: 15, 28, Comrie 1981b:69; and also Wierzbicka 1981 : 68 on the ERG–ABS constructions only.)

(c) Regarding syntactic pivot:

Languages with the ergative syntax (i. e. syntax with the S/O pivot) are patient –oriented, i. e. the patient is the primary topic, or is more topical/more salient/more prominent than the agent. The ABS marks the more topical/more salient/more prominent/central entity, and the ERG refers to the less topical/peripheral/non–central entity. On the other hand, languages with the accusative syntax (i. e. syntax with the S/A pivot) are agent–oriented, i. e. the agent is the primary topic, or is more topical/more prominent/more salient than the patient. The NOM describes the more prominent/more salient entity and the ACC the less promi-

nent/less salient entity. (See, for instance, Van Valin 1980, Van Valin and Foley 1980 : 338-42, Foley and Van Valin 1984 : 108-15, Comrie 1981a:114, Wierzbicka 1981 : 70, and Verhaar 1985:45, 57. I am indebted to Talmy Givón (p. c.) for drawing Verhaar's work to my attention.)

I will refer to the views (a), (b) and (c) jointly as 'the correlationalist view'. [1] (The reason for this designation will become obvious shortly.)

On the other hand, it has also been asserted that ergative languages and accusative languages do not show such a difference and that the agent is universally more topical than the patient. I will term this position 'non-correlationalist view'. This view is put forward in works such as Heath (1980), Cooreman, Fox and Givón (1984), and Cooreman (n. d.). (Cooreman (n. d.) is a revision of the chapter 5 of her 1985 Ph. D. thesis. However, as I have no access to the latter, my reference is only to the former, a copy of which Cooreman kindly supplied.)

The correlationalists in effect maintain that there is a correlation between the morphosyntactic properties of case-marking system and syntactic pivot on the one hand and the pragmatic matter of the relative topicality of the agent and the patient (hereafter, the agent-vs.-patient topicality) on the other. In contrast, the non-correlationalists deny this correlation.

This paper looks into the controversy between these two positions. In doing so, it will also be concerned with issues such as the following.

What is usually implicit — and sometimes explicit — behind the correlationalist view is the assumption that the two members in each of the following pairs are respectively equivalent or symmetric: (i) ABS and NOM case, (ii) S/O and S/A pivot, and (iii) antipassives (or, simply ANTIs) and passives. This paper scrutinizes this assumption, paying careful attention to the role that ANTIs play.

As is widely known, apparently the S/A pivot is common among the world's languages, whereas the S/O pivot is extremely rare (cf. Dixon 1979 : 126, Comrie 1981a : 114). If these two types of pivot were really equivalent, then why is their crosslinguistic distribution so uneven? This paper attempts to provide an answer to this important question in typological research.

On the basis of these investigations, this paper will address one of the most vexing and intriguing questions in current linguistic inquiry, namely, the relationship between morphosyntax and pragmatics. Specifically, it will attempt to determine whether

or not morphosyntactic properties such as case-marking system and syntactic pivot
have any pragmatic function regarding topicality or the like. Ultimately, it will aim
to contribute towards ascertaining whether the interaction between pragmatics and
morphosyntax varies across languages (i. e. it is language-specific) as is maintained by
Van Valin and Foley (1980:331) and Foley and Van Valin (1984:14), or they are
independent of each other as is suggested by Heath (1980:886).

The format of this paper is as follows. The rest of Section 1 presents a brief sur-
vey of some of the relevant works (1. 2) and theoretical and methodological prelimi-
naries (1. 3), while Section 2 furnishes data on the S/O pivit and ANTIs in the
Warrungu language of northeast Australia.[2] Section 3 looks at the aforementioned contro-
versy. Preceded by preliminaries in 3. 1, that section considers transitive case frames
(3. 2), syntactic pivots (3. 3) and case-marking systems (3. 4). It then explores
theoretical implications of the results obtained in this paper (3. 5). Finally, Section
4 provides the summary and conclusion. In addition, Appendix I supplies further com-
ments on the correlationalist view, and Appendix II points out the differences between
the present work and similar works.

This paper incorporates portions of the following works of mine: Tsunoda 1985a,
1987b (written in June 1985), forthcoming (written in October 1985), 1986a (written in
May 1986), 1986b (written in August 1986), and 1987a (written in December 1986). In
particular, the data on Warrungu presented in Section 2 are largely repeated (though
expanded) from Tsunoda forthcoming, 1986a, and the statistical figures on Warrungu
and other languages discussed in Section 3 are elaborated on those supplied in Tsunoda
1986a, 1986b, 1987a.

1. 2. Previous studies

Dixon (1972:71-74, 79-80, 130-35) demonstrated that Dyirbal, immediately north
of Warrungu, has a strong requirement on patterns in coreferential deletion. Namely,
the acceptable patterns are S=[S], S=[O], O=[S] and O=[O], with both the S and
the O in the ABS case — at least for the nouns. (But, see note 19.) A sequence of
NPs in such a pattern, which revolves around the S/O pivot, was called 'a topic chain'
(Dixon 1972:71-73). Dixon's description of Dyirbal was the first — and subsequently
very influential — documentation of syntactic ergativity, i. e. syntax with the S/O
pivot — also known as ergative syntax or deep ergativity (cf. Comrie 1978:343-50,
Dixon 1979 : 124-30). (The definitions of the S/O and S/A pivots adopted in the

present paper are slightly different from Dixon's (1979:121). See Note 20.)

Zubin (1979) showed that in German the NOM case as against the ACC and the DAT indicates 'prominence in discourse' and 'speaker's focus of interest'. Specifically, on the assumption that the prominence of an entity in a given discourse would correlate with the frequency and the continuity (among other things) of its mention, he demonstrated statistically that the NOM refers to the prominent entity/entities. Thus, frequently-mentioned entities tend to occur in the NOM; the NOM tends to mark those entities which are often mentioned; the NOM tends to refer to the same entity successively and continuously; and so on. In contrast, this is not true of the ACC or the DAT.

Dixon and Zubin were only concerned with Dyirbal and German, respectively, and neither of them made any typological claim regarding the relationship between morphosyntax and pragmatics. However, their works have been influential in subsequent works. Virtually all of the correlationalists (cf. 1. 1 above) refer to, or base their argument on. Dixon's work and/or Zubin's.

The correlationalist view has been received sceptically, for instance, by Larsen (1981:145), Goddard (1982:188-89), and van Oosten (1984:383). In particular, it has been criticized most eloquently by Heath (1980:885-89), by Cooreman (1982a:283, n. d.), Givón (1983a:22, 1984:166-67), and by Cooreman, Fox and Givón (1984:4-5).

The correlationalist view is beset with at least three problems, which are all closely interrelated:

(i) neglect of discourse data, with concentration on (often single) sentences in isolation from connected discourse;

(ii) inherently morphosyntactic definitions of topic, topicality, etc., and:

(iii) lack of an explicit means for identifying a topic or for specifying the degree of topicality.

I shall comment on these problems in the following.

〔1〕 Neglect of discourse data. Brown and Yule (1983:83) and van Oosten (1984:384, note 1), for instance, emphasize how pointless it is to talk about the topic of a single (and constructed) sentence without looking at any accompanying discourse. In investigating issues such as topic, topicality, etc., we need to look at connected discourse. (Some of the correlationalists' works did not just ignore discourse data; they did not even supply one single example to support their view.)

〔2〕 Morphosyntactic definition of topic/topicality. Here, I shall merely cite two

works which speak clearly for the invalidity of the correlationalist approach. Thus, Heath (1980:885) states in effect that the correlationalist view 'is largely based on intellectual rationalizations of the case-marking system'. Cooreman, Fox and Givón (1984) stress that 'none of the works' advocating this view 'are based on quantified frequency studies of the actual topicality of agents and patients in connected discourse. Rather, they rely on examples pulled selectively out of texts, and on an inherently circular *syntactic* (sic) definition of the notion "topic" ' (p. 5). Furthermore, on p. 30, they state:

We propose... that purely structural definions of what is "topic" and what is "more topical" are circular, since they simply mean calling some morphologically–defined NP—"the topic". Such a definition has no independent status, and to the extent that it conflicts with the function-based defnition derived from discourse behavioral properties of NPs, it is bound to also be misleading.

(Specific examples of the inherently morphosyntactic nature of the notions of topic and topicality in the correlationalists' approach will be illustrated in [7] in 3.3.2, 3. 5.3, note 17, and Appendix I. See also note 18.)

[3] Lack of an explicit means. As has often been pointed out, concepts such as topic, topicality or the like are 'vague' (Givón 1983a:5) and 'indeterminate' (Zubin 1979:477). Correlationalists do talk about the relative topicality of the agent and the patient, but they have not presented any explicit means for the measurement thereof.

There was thus an urgent need to devise 'an a priori valid means' 'for specifying with greater precision' (Zubin 1979:477) topic/topicality. It was Zubin and Givón who rectified this situation by proposing explicit means for this purpose. (Their methods will be elaborated on in 1.3. below. Incidentally, it is ironical that Zubin, who is often quoted and heavily drawn on by correlationalists such as Van Valin and Foley, in fact based his arguments on an extensive corpus of connected discourse.)

Returning to non–correlationalists, their conclusions are naturally opposed to those of correlationalists. Thus, Heath (1980) suggests that languages show 'no major differences among them[selves — TT] in basic discourse organizations (as opposed to specific morphological features, coreference-indicating devices, etc.' (p. 886) and that these morphosyntactic features and 'discourse categories are independent' of each other (p.

886). In his view, the agent 'is more central' than the patient (p. 885).

Being a review article, Heath (1980) does not furnish any discourse data to justify his position. But, Cooreman, Fox and Givón (1984) on Chamorro and Tagalog, and Cooreman (n. d.) on Dyirbal do supply statistical data based on Givón's method, and conclude that the agent is more topical than the patient in these ergative languages, in support of their claim that this is true universally, irrespective of a given language's morphosyntactic types.[8]

I fully concur with the criticisms, suggestions and conclusions put forward by these non–correlationalists. The present paper will provide additional evidence to support their position. (It differs, however, from the works by Cooreman, Fox and Givón in several important respects; see Appendix II.)

Furthermore, indirect support for the non–correlationalist view is supplied by Shibatani (1982, 1983), who—after carefully examining possible pragmatic functions case–marking might possess, taking into consideration some of the correlationalists' works — concludes that he is unable to establish any connection between case–marking and these alleged functions.

1. 3. Theoretical and methodological preliminaries

This paper employs the terms 'topic' and 'topicality' in conformity with the way they are used by correlationalists. Thus:

(a) topic: 'what the utterance is about' (Foley and Van Valin 1984 : 124), 'entity focused upon by the speaker' (Wierzbicka 1981:72), and 'referential prominence' and 'pragmatic centre' (Plank 1979a:14, 15).

(b) topicality: 'pragmatic prominence' (Plank 1979a:14), and 'prominence' and 'cognitive prominence' (Wierzbicka 1981:66, 70).

Next, it is important to distinguish between topic, topicality, etc. and their manifestations. Many works treat NPs as topics or as being topical. However, as Chafe (1976:28) points out, it is not an NP, but its referent that can be a topic; an NP can merely embody a topic. In what follows, if I say that a certain NP is a topic or is topical, what I really mean is that its referent is a topic, or is topical. (The significance of this paragraph will be seen in [7] of 3.3.2 below. See also note 17.)

Now, the quantitative methods proposed by Zubin (1979) and by Givón (1983a) are not exactly identical with each other. Nonetheless, they aim to measure essentially the same thing, i. e. the degree of topicality, although their aims are phrased differ-

ently: 'prominence in discourse' and 'speaker's focus of interest' by Zubin, and 'importance in discourse' by Givón. In particular, they share one important assumption and a specific method based on it. Namely, they both assume that what is more topical/ more prominent/more important in a given discourse will be mentioned/referred to more repeatedly/more continuously, i. e. the number of successive/continuous mention of an entity will correlate with its degree of topicality. The specific method based on this assumption is the counting of the number of successive and continuous mentions of an entity. (See 'successive reference in discourse' in Zubin (1979:491–95) and 'topic persistence' in Givón (1983a:14–15).) It is this particular method that will be adopted in this paper. It will be referred to as the Zubin–Givón method.

(It is not clear when Givón's method first appeared in print. At least, before its publication in Givón (1983a), it had already been applied to Chamorro (Cooreman 1982a, 1982b) and a fair number of languages, including Chamorro (Cooreman 1983), in Givón (1983b).)

In this method, counting of successive mentions includes not only overt mentions, but also zero anaphoras as well (cf. Zubin 1979:494, fn. 16, and Givón 1983a:14). Zero anaphoras are no less important than overt mentions of an entity in maintaining topic continuity in a connected discourse, and this justifies their inclusion in mentions.

More than one linguist has raised misgivings on the validity of Zubin's and Givón's methods. Admittedly, these methods may not be perfect. But, there is no perfect research method. I do believe that the aforementioned assumption and method are adequate for the purppse of measuring relative topicality, for which Zubin's and Givón's methodology is the only one currently available. At least, this approach is much more constructive than a morphosyntactic discussion of topic/topicality, with no evidence from connected discourse.

Now, before turning to the main issues of the present paper, it is first necessary to present relevant data on Warrungu.

2. Data on Warrungu

2. 1. Basic points of Warrungu grammar

Warrungu has a type of 'split–ergativity' (cf. Silverstein 1976), in which the casemarking system is, roughly speaking, ergative (A≠S=O; ERG≠ABS=ABS) for the nouns, but accusative for the pronouns (A=S≠O; NOM=NOM≠ACC). (There are, however, just a few deviations from this generalizations. Namely, among the pronouns,

the third person dual and plural can take the ERG case for the A, resulting in the 'tripartite system' (Comrie 1978:332) (A≠S≠O), as is always the case with the interrogative word 'who'. Among the nouns, the vowel-final kinship and proper nouns can take the ACC for the O, again displaying the tripartite system.)

Examples involving nouns:

(1) pama+ngku kantu+φ palka+n
     man+ERG   dog+ABS hit+P/P   'A man hit/hits a dog.'

(2) pama+φ   nyina+n
     man+ABS sit+P/P   'A man sat/sits (down).'

Examples involving pronouns:

(3) ngaya   nyunya   palka+n
     1SG+NOM 3SG+ACC hit+P/P 'I hit him/her/it.'

(4) ngaya   nyina+n
     1SG+NOM sit+P/P   'I sat/sit (down).'

Warrungu has antipassive constructions whose correspondence with transitive constructions can be shown as follows:

transitive	A	O	Vtr
	ERG or NOM	ABS or ACC	
antipassive	derived S	OBL	Vtr+*kali*–
	ABS or NOM	DAT or INST	

Examples involving nouns. Compare (5) and (6):

(5) pama+ngku kamu+φ   yangka+n
     man+ERG   water+ABS search+P/P   'A man looked/looks for water.'

(6) pama+φ   kamu+wu   yangka+kali+n
     man+ABS   water+DAT search+ANTI+P/P   'As (5).'

As another pair of examples:

(7) pama+ngku kamu+φ   pitya+n
     man+ERG   water+ABS drink+P/P   'A man drank/drinks water.'

(8) pama+φ   kamu+ngku   pitya+kali+n
     man+ABS   water+INST drink+ANTI+P/P   'As (7).'

The ex. (6) has the DAT for the OBL slot, while the ex. (8) has the INST for the same slot.[4]

A description of Warrungu grammar is in Tsunoda (1974). For further details of

Warrungu ANTIs, not all of which are relevant to the present paper, see Tsunoda (forthcoming).

2.2. Coreference in Warrungu

The following account of coreference in Warrungu is largely repeated (though expanded) from Tsunoda (1986a, forthcoming) From now on, the Warrungu examples provided are taken from actual texts, rather than artificially constructed.

2.2.1. Preliminary remarks

In what follows, I shall look at deletion and related phenomena in coreference in Warrungu, paying careful attention to the role that antipassivization plays. I shall deal with each of the following three levels of clause linkage: subordination, coordination and sentence-sequence. The statistics provided below is based on the texts 72/31 to 72/34 — about a third of my twelve-hour-long texts.

Like many other Australian languages, Warrungu lacks conjunctions for marking subordination or coordination.

For subordination, I shall only be concerned with purposive subordination, which is by far the most frequent type of subordination. The exclusion of other types, each of which has only less than 10 examples in the portion of the texts under study, does not affect our argument at all.

The purposive forms of verbs can be used finitely, indicating intention, volition, future, etc., e. g. the first clause of (11). They can also have the non-finite function, to be employed as the subordinate-clause predicates, expressing purpose, consequence or successive action. It is this type of subordination that I shall look at in the following.

Coordination simply employs parataxis, i. e. juxtaposition of two (or more) clauses. The verbs involved share an identical conjugational category, e. g. the past/present as in 'I went and I sat down'. If they have different conjugational categories, as in 'I caught a fish. I will eat it', then the clause-linkage type involved is sentence-sequence, which includes all other types of clause-linkage, comprising narration-and-conversation — and within conversation — statement-and-response, statement-and-question, question-and-answer, etc. We also have sentencesequence when the second clause begins with the adverb*nguna+ugnmay* 'and then (lit. that+after)', which seems to interrupt the flow of topic continuity to a certain degree. Such a sequence of clauses cannot be equated with coordination.

Tsunoda (1986a, forthcoming) proposes 'sentence-sequence' as a clause-linkage

level distinct from and above coordination (and subordination). No such distinct level seems to have been recognized in the literature. (For example, previous studies of coreference in ergative languages virtually concentrated on subordination, and at best on coordination as well. The proposal that is perhaps the closest to mine is in Silversten (1976:163), to whom I owe the concept of clause-linkage. He recognizes several clause-linkage levels, among which 'clause sequence (sequitur)' and 'clause sequence (non-sequitur)' seem to jointly correspond to what I term sentence-sequence.) However, it is vital to distinguish sentence-sequence. As Hinds (1986:1) says, 'Conversation is the most common form of language'. It is sentence-sequence that represents the dialogue portions of the texts. Furthermore, the Warrungu data presented below will demonstrate the importance of recognizing a distinct level of sentence-sequence for investigation of pragmatic factors; see 2. 2. 5. and 3. 5. 3.

(I prefer the term 'sentence-sequence' to 'clause sequence', for the following reasons. Firstly, subordination and coordination, too, are sequences of clauses. Secondly, 'sentence-sequence', which describes statement-and-response, statement-and-question, question-and-answer, etc., usually consists of independent sentences, not just any clauses.)

The following discussions on coreference are onfined to:

(a) three core syntactic functions: A, O and S (including d–S), and;

(b) those instances in which the control/antecedent is explicitly mentioned and it is in the immediately preceding clause. (Ellipsis with no explicit control is not uncommon in Warrungu texts, but it will be excluded from consideration, being reserved for future research.)

I shall distinguish the following four types of control–plus–target combination (with the d–S bing included in the S):

(i) ergative patterns: S=O, O=S;

(ii) accusative patterns: S=A, A=S;

(iii) neutral patterns: A=A, O=O, S=S, and;

(iv) aberrant patterns: A=O, O=A.

(Tsunoda (1987b) has named the aberrant patterns as such for they appear to be universally disfavoured or prohibited in coreferential deletion, irrespective of a given language's preference in deletion patterns. See (12) from Warrungu, and (32) and (33) from English. This disfavour/prohibition is reflected in the figures presented in

Tables 13 and 14. See also 3.3.1., 3.3.2. and note 20.)

2.2.2. Coreference in purposive subordination without antipassives

Table 1 shows the number of the relevant examples in purposive subordination that involves no ANTI.

Table 1. Coreference in purposive subordination without antipassives

		target		deletion	
		retained	deleted		
ergative	S=O	2	1	16	(17%)
	O=S	5	15		
neutral	A=A	2	27	74	(77%)
	O=O	5	31		
	S=S	0	16		
accusative	A=S	0	0	5	(5%)
	S=A	3	5		
aberrant	A=O	3	1	1	(1%)
	O=A	1	0		
total		21 (18%)　　96 (82%)		96	(100%)
		117 (100%)			

With respect to the deletion patterns, the ergative patterne (S=O, O=S) (16 examples) and the neutral patterns (A=A, O=O, S=S) (74 examples in all) are common, whereas the accusative patterns (S=A, A=S) (5 examples) and the aberrant patterns (A=O, O=A) (1 example) are not. The ergative patterns (16 examples) are far more frequent than the accusative patterns (5 examples). Examples of ergative-pattern deletion include (9), which involves a noun target, and (10), which contains a pronoun target.

(9) ngaya　　　　yinu　　　kalngana+φ　pirri+lka　　[TT yinu

1SG+NOM(A)　2SG+GEN　uncle+ABS(O)　send+APPR　[2SG+GEN

kalngana+φ]　　yarru+n+ta　　nyina+yal

uncle+ABS(O)]　here+LIG+LOC　stay+PURP　　(O=[S])

'I might send your uncle so he can stay here.'

(10) (A kangaroo was speared.)

nyula　　　　tyulpa+n　nguni+n+ta　　kantu+ngku　[TT nyunya]

3SG+NOM(S)　hop+P/P　there+LIG+LOC　dog+ERG(A)　[3SG+ACC(O)]

patya+lku

bite+PURP　　(S=[O])

'It hopped away, but a dog bit it there.'

2.2.3. Coreference in purposive subordination with antipassives

Table 2 concerns purposive subordination in which the main and/or the subordinate clause(s) contain(s) an ANTI.

Table 2. Coreference in purposive subordination with antipassives

effect of ANTI			target		deletion	
			retained	deleted		
A=O	→	d-S=O	1	0	5	(6%)
O=A	→	O=d-S	0	5		
A=S	→	d-S=S	0	2	70	(90%)
S=A	→	S=d-S	0	68		
A=A	→	d-S=d-S	0	1	1	(1%)
A=A	→	d-S=A	0	1	2	(3%)
A=A	→	A=d-S	0	1		
total			1 (1%)	78 (99%)	78	(100%)
			79 (100%)			

Before discussing the deletion patterns, I shall first examine the effects of anti-passivization. This process changes the A (ERG or NOM) into the d-S (ABS or NOM) (cf. 2.1), and in the instances listed in Table 2, it has one of the following four types of effect:

(a) aberrant　→　ergative:　　A=O　→　d-S=O;　　O=A　→　O=d-S;

(b) accusative　→　neutral:　　A=S　→　d-S=S;　　S=A　→　S=d-S;

(c) neutral　→　neutral:　　A=A　→　d-S=d-S;

(d) neutral　→　accusative: A=A　→　d-S=A;　　A=A　→　A=d-S.

These four types of effect will be exemplified below.

　(a) Aberrant → ergative, e. g. O=A　→　O=d-S:

(11) ngaya　　　　　pama+ϕ　　muka+lku　[TT pama+ϕ]　　　puri+wu

　　　1SG+NOM(A)　man+ABS(O)　get+PURP　[man+ABS (d-S)]　　wood+DAT

　　　kunma+kali+yal

　　　cut+ANTI+PURP　　　　(O=[d-S])

　　　'I will get a man to [make him] cut wood.'

This sentence was derived by antipassivizing the second clause of:

(12) TT ngaya   pama+φ   muka+lku pama+ngku puri+φ

　　　　1SG+NOM(A) man+ABS(O) get+PURP man+ERG(A) wood+ABS(O)

　　kunma+lku

　　cut+PURP   (O=A)   'As (11).'

Subsequently, the second occurrence of *pama+φ* in (11) was deleted under identity with its first occurrence. Before antipassivization applied, the coreference involved was O=A (aberrant pattern). (The ex. (12), which I composed for this paper, would most probably an awkward Warrungu sentence. Similarly for the other sentences I composed, to be presented below.)

(b) Accusative → neutral, e. g. S=A → S=d-S:

(13) ngaya   yani+φ [TT ngaya]   papa+kali+yal

　　1SG+NOM(S) go+P/P [1SG+NOM (d-S)]   spear+ANTI+PURP

　　yuri+wu

　　kangaroo+DAT   (S=[d-S])   'I went to spear a kangaroo.'

This sentence was derived by antipassivizing the second clause of:

(14) TT ngaya   yani+φ ngaya   papa+lku   yuri+φ

　　　　1SG+NOM(S) go+P/P 1SG+NOM(A) spear+PURP kangaroo+ABS(O)

　　(S=A)   'As (13).'

Subsequently, the second occurrence of *ngaya* in (13) was deleted. Before antipassivization applied, the coreference involved was S=A (accusative pattern). (Note that the function of the second occurrence of *ngaya* changed from the A in (14) to the d-S in (13), although this change is not reflected in its case-marking; the pronouns in Warrungu generally have just the NOM for both the A and the S — cf. 2.1.)

(c) Neutral → neutral: A=A → d-S=d-S:

(15) yinun+ku   nyula   yangka+kali+n   [TT nyula

　　2SG+DAT 3SG+NOM (d-S)   search+ANTI+P/P   [3SG+NOM (d-S)

　　yinun+ku]   nyaka+kali+yal

　　2SG+DAT]   see+ANTI+PURP   (d-S=[d-S])

　　'He is looking for you to see you.'

These two clauses were respectively antipassivized from:

(16) TT yina   nyula   yangka+n   nyula   yina

　　　　2SG+ACC(O) 3SG+NOM(A) search+P/P 3SG+NOM(A) 2SG+ACC(O)

nyaka+Iku

see+PURP　　　　(A=A)　　　　'As ⒄.'

(d) Neutral → accusative, e. g. A=A → A=d-S:

⒄ nyula　　　　　[TT winkar+ɸ]　papa+n　　　[TT nyula

3SG+NOM(A)　[　　fish+ABS(O)]　spear+P/P　[　　3SG+NOM(d-S)

winkar+ku]　puramu+wu　　　　　　　kanytyi+kali+yal

fish+DAT]　　ceremonial ground+DAT　carry+ANTI+PURP　(A=[d-S])

'He speared [some fish] and carried [them] to the ceremonial ground.'

This sentence was derived by antipassivizing the second clause of:

⒅ TT nyula　　　　winkar+ɸ　papa+n　　nyula　　　　winkar+ɸ

3SG+NOM(A)　fish+ABS(O)　spear+P/P　3SG+NOM(A)　fish+ABS(O)

puramu+wu　kanytyi+lku

c. g. +DAT　carry+PURP　　(A=A)　　　'As ⒄.'

The original coreference was A=A (neutral pattern).

As we saw above in Table 1, ergative-pattern deletion (16 examples) is preferred over accusative-pattern deletion (5 examples). Indeed, this preference is even stronger in Table 2. At first glance, this is not obvious, for there are 2 examples of accusative-pattern deletion (d-S=A; A=d-S) as against only 5 examples of ergative-pattern deletion (O=d-S), while the vast majority of examples involve a neutral pattern (71 examples).

In fact, such a comparison of the figures is not revealing at all. What is crucial about antipassivization is its effect, and not the resultant pattern itself. Thus, in the effect 'aberrant → ergative' (A=O → d-S=O; O=A → O=d-S), which has 5 examples of deletion, antipassivization positively changes the coreference into an ergative pattern. In the effect 'accusative → neutral' (A=S → d-S=S; S=A → S=d-S), which has as many as 70 examples, antipassivization functions to avoid accusative patterns. (We shall refer to these two types of effect as 'ergativizing effect'.) In sharp contrast, it is only in 2 examples of the effect 'neutral → accusative' (A=A → d-S=A; A=A → A=d-S) that antipassivization renders the coreference compatible with an accusative pattern. (We shall refer to this as 'accusativizing effect'.) That is, in Table 2, the ergative patterns are overwhelmingly preferred in deletion to the accusative patterns — even more strongly than in Table 1 — and antipassivization effects this preference, manifesting a typical instance of syntactic ergativity, i. e. syntax with the S/O pivot.[5]

(For the definition of the S/O pivot and also for that of the S/A pivot adopted in this paper, see note 20.)

The preceding discussion has demonstrated that what are important about syntactic ergativity or the S/O pivit are not just deletion patterns but also the effect that antipassivization creates.

It should be noted here that, in Warrungu, although the pronouns generally have the accusative case–marking system (A=S≠O; NOM=NOM≠ACC) (cf. 2.1), they strongly prefer ergative syntax, with the S/O pivot (A≠S=O), in coreferential deletion just like the nouns, which overall possess the ergative case–marking system (A≠S=O; ERG≠ABS=ABS). Examples involving a pronoun target in the S/O pivot include (10) and (13). (For a further discussion, see Tsunoda (1987b).)

2.2.4. Coreference in coordination and sentence–sequence

In the following, I shall briefly present the data and examples concerning coreference in coordination andsentence–sequence. These results, together with those from purposive subordination, will be summarized in 2.2.5.

[1] Coordination without antipassives.

Consider Table 3. An example of S=A (accusative pattern) deletion is:

(19) (In a myth, two mice tracked down a blue tongue lizard, which was lying on top

Table 3. Coreference in coordination without antipassives

		target		deletion
		retained	deleted	
ergative	S=O	7	1	3 (1%)
	O=S	5	2	
neutral	A=A	55	82	212 (88%)
	O=O	36	57	
	S=S	64	73	
accusative	A=S	17	1	25 (10%)
	S=A	28	24	
aberrant	A=O	3	0	0 (0%)
	O=A	3	0	
total		218 (48%)	240 (52%)	240 (100%)
		458 (100%)		

kalu＋φ   kalu＋φ yani＋φ   yuray＋yuray＋φ   〔TT kalu＋ngku〕

mouse＋ABS(S)   go＋P/P quiet＋REDUP＋ABS 〔   mouse＋ERG(A)〕

pangkarra＋φ   palpa＋n

b. t. l. ＋ABS(O) roll＋P/P   (S＝〔A〕)

'The mice sneaked up and rolled the blue tongue lizard 〔from the spring〕.'

(This sentence happens to contain two occurrences of *kalu*＋φ. But, repetition of a noun is not a means for deriving a dual noun in Warrungu.)

  〔2〕 Coordination with antipassives.

Consider Table 4. An example of S＝d-S (neutral pattern) deletion is:

⒇ waypala＋φ   kulpilangal nguni＋n＋ta   tyana＋karra＋n

    white man＋ABS(S) in the south there＋LIG＋LOC stand＋REP＋P/P

    〔TT waypala＋φ〕   nyaka＋kali＋n yalka＋ngku

    〔 white man＋ABS (d-S)〕   see＋ANTI＋P/P road＋INST   (S＝〔d-S〕)

    'The white man is standing there in the south and watching the road.'

Table 4. Coreference in coordination with antipassives

effect of ANTI		target		deletion
		retained	deleted	
A＝S	→ d-S＝S	0	5	30 （86%）
S＝A	→ S＝d-S	2	25	
A＝A	→ d-S＝d-S	2	4	1 （11%）
A＝A	→ d-S＝A	1	1	4 （3%）
A＝A	→ A＝d-S	1	0	
total		6 (15%)	35 (85%)	35 （100%）
		41 (100%)		

  〔3〕 Sentence-sequence without antipassives.

Consider Table 5. An example of S＝O (ergative pattern) deletion is:

�21 (We were travelling.)

    ngali   panta＋n

    1DU＋NOM(S) emerge＋P/P

    'we came out 〔to their camp from the scrub〕.'

    nguna＋ngumay pantyu＋n 〔TT ngali＋nya〕

of a spring.)

that+after　　　ask+P/P　　[　　1DU+ACC(O)]　　　(S=[O])

'Then [they] asked us [a question].'

[4]　Sentence-sequence with antipassives.

Table 5. Coreference in sentence-sequence without antipassives

| | | target | | deletion |
		retained	deleted	
ergative	S=O	13	6	9　(　7%)
	O=S	26	3	
neutral	A=A	58	34	108　(84%)
	O=O	41	47	
	S=S	89	27	
accusative	A=S	22	2	7　(　5%)
	S=A	16	5	
aberrant	A=O	4	1	4　(　3%)
	O=A	8	3	
total		277 (68%)　　128 (32%)		128　(100%)
		405 (100%)		

Table 6. Coreference in sentence-sequence with antipassives

| effect of ANTI | | | target | | deletion |
			retained	deleted	
A=O	→	d-S=O	5	1	1　(14%)
O=A	→	O=d-S	5	0	
A=S	→	d-S=S	4	2	5　(71%)
S=A	→	S=d-S	3	3	
A=A	→	d-S=d-S	1	0	0　(　0%)
A=A	→	d-S=A	7	0	1　(14%)
A=A	→	A=d-S	10	1	
total			35 (83%)　　7 (17%)		7　(100%)
			42 (100%)		

Consider Table 6. An example of O＝d–S (ergative pattern) retention (rather than deletion) is:

(22) yinta   nganya   mayka＋ɸ
     2SG＋NOM(A)   1SG＋ACC(O)   tell＋IMP
     'Tell me [something].'

     ngaya   ngawa＋kali＋ɸ   yinun＋ku
     1SG＋NOM (d–S)   hear＋ANTI＋P/P   2SG＋DAT   (O＝d–S)
     'I am listening to you.'

2. 2. 5. Summary of coreference

The data presented from 2.2.2 to 2.2.4 can be summarized as shown in Table 7. (The frequency of ANTIs in subordination (i. e. 41%) is the ratio of the examples involving an ANTI (i. e. 79 examples in Table 2) to all the examples (i. e. 79 examples in Table 2 and 117 examples in Table 1.) That is, 79/(79＋117)＝0.41. Similarly for the frequency of ANTIs in coordination and in sentence–sequence. The figures for the ergativizing and the accusativizing effect concern both retention and deletion.) On the basis of the facts provided in Tables 1 to 7, we can make the following generalizations.

Table7. Summary of coreference

	subordination	coordination	sentence–sequence
frequency of ANTI	highest (41%)	lowest (8 %)	(9 %)
affect of ANTI			
ergativizing	highest (96%)	(78%)	lowest (55%)
accusativizing	lowest (3 %)	(7 %)	highest (43%)
deletion/retention			
deletion	highest (89%)	(55%)	lowest (30%)
retention	lowest (11%)	(43%)	highest (69%)
deletion probability	most obligatory/ most automatic		most optional

First, there is a close correlation among the following.

(a) frequency of ANTIs;

(b) rate of their ergativizing effect (A/O → d–S/O; S/A → S/d–S), and;

(c) rate of deletion.

They are all highest in subordination, and lowest in sentence–sequence, each showing a intermediate figure in coordination.

    Second, conversely, there is a close correlation between the following:

(d) rate of ANTIs' accusativizing effect (A/A → d–S/A), and;

(e) rate of retention.

They are both lowest in subordination, and highest in sentence–sequence.[6]

For example, in subordination, the effect of antipassivization is almost obligatory (96%) (Table 7), and when it is used (Table 2), deletion is virtually compulsory (99%). It thus effects the preference to ergative patterns in deletion.

On the other hand, in sentence–sequence, antipassivization is not nearly as effective in maintaining this preference. Note in particular that, even when it is used (Table 6), deletion is far less frequent (17%) than retention (83%). (The ex. (22) is an instance from sentence–sequence which involves an ANTI and yet retains (rather than deletes) the target.) Nonetheless, even in sentence–sequence, the ergativizing effect (55%) is stronger than the accusativizing effect (43%). Moreover, if we focus on deletion (but not on retention), which is the norm in discussions of syntactic ergativity, even in sentesce–sequence (Table 6), the ergativizing effect (86%, 6/7) is far stronger than the accusativizing effect (14%, 1/7).

Deletion probability thus correlates with the tightness of clause–linkage. That is, coreferential deletion in Warrungu is overall most automatic/most obligatory in subordination, where the clause–linkage is tightest, whereas it is least so/most optional in sentence–sequence, where the clause–linkage is weakest.

This in turn indicates that, as pointed out in Tsunoda (1986a:201, forthcoming), coreferential deletion in Warrungu is most in the nature of a purely syntactic operation in subordination, while on the other hand it is most likely to be influenced by pragmatic factors in sentence–sequence, where the speaker has the maximal option between retention and deletion. The significance of this statement will be expounded in 3.5.3. below.[7]

(Infinitive constructions, e. g. *I want [I] to go*, which happen to be absent in Warrungu, would be placed on the left of subordination in terms of Table 7, for their clause–linkage is even tighter, with the deletion of the complement–clause subject being completely obligatory. For discussions of clauase–linkage, see Silverstein (1976: 162–63), Givón (1980), Austin (1981), and Foley and Van Valin (1984:238–320).)

To sum up this subsection (2.2), Warrungu in the main strongly prefers the S/O pivot to the S/A pivot in coreferential deletion. This preference is strongest in subordination, but it is still retained in coordination and sentence–sequence as well. Indeed,

Warrungu is what Cooreman, Fox and Givón (1984:5) might call 'the quintessential deep-ergative language'. See also 3. 5. 1.

3. Discussion

3. 1. Preliminaries

Section 3 looks into the controversy between the correlationalist view and the non-correlationalist view in the light of the Warrungu data presented above and further Warrungu evidence cited below, supplemented by data from several other languages. It will look at transitive case frames (3. 2), syntactic pivots (3. 3), and case-marking systems (3. 4), followed by discussions of theoretical implications of the findings of this paper (3. 5).

The outline of the morphosyntax of the languages discussed below is shown in Table 8.

Table 8. Outline of the morphosyntax of the six selected languages

	German	English	Japanese	Warrungu	Dyirbal	Kalkatungu	Djaru
noun	A=S≠O		A=S≠O	A≠S=O	A≠S=O	A≠S=O	A≠S=O
	A=S=O	A=S=O	A=S=O	A≠S≠O			
free pronoun	A≠S≠O	A=S≠O	A=S≠O	A=S≠O	A=S≠O	A≠S=O	A≠S=O
	A=S=O	A=S=O	A=S=O	A≠S≠O			A=S=O
bound pronoun	...	...	...	...	...	A=S≠O	A=S≠O
passive or antipassive	pass.	pass.	pass.	anti.	anti.	anti.	...
pivot	S/A	S/A	S/A	S/O	S/O	S/O, S/A	...

The texts used for the quantitative studies that follow are all taken from the spoken languages (with one exception — see the comments on English) — in order to avoid employing different genres for comparison. (As I have no access to recording of spoken German texts, I have not made a quantitative study of this language.) Comments on the individual languages follow.

[1] German. Certain nouns and pronouns have the accusative system (A=S≠O; NOM=NOM≠ACC), but other nouns and pronouns have the 'neutral system' (cf. Comrie 1978:332) (A=S=O). Therefore, strictly speaking, the latter NPs lack the NOM case (A/S as opposed to O). However, in Zubin's (1979) study, an NP in this system seems to be counted as the NOM when it marks the A or the S; and as the ACC when it marks the O.

[2] English. Similarly in English, only certain pronouns (i. e. those other than *you* and *it*) have the accusative system, while *you*, *it* and all the nouns have the

neutral system. Nonetheless, the latter NPs will be assigned to the NOM or to the ACC as in German. This is largely in order to faciliate the comparison of the results of study with those of Zubin's; the same applies to Japanese below. The text used is an approximately 45 minutes' recording of a monologue in Miyake (1986). In Table 14, this is supplemented with the chapters 1 and 2 of *Alice in Wonderland*.

[3] Japanese. Both nouns and pronouns have the accusative system. In the spoken language, however, the NOM and the ACC case markers are often deleted, resulting in the neutral system. Furthermore, both in the spoken and the written languages, these two case markers are — indeed, often — obliterated by one of the thematic/modal markers, the most famous of which the topic marker *wa*. In the latter two instances, the NPs referring to the A or the S will be counted as the NOM, and those expressing the O will be regarded as the ACC. Japanese has passives and the S/A pivot. The text used is about one hour's recording in Inoue (1986). For Tables 9 and 10, this is supplemented by the recording in Hirai (1986) and Mizutani (1986). The three of them constitute the total of about three hours' recording.

[4] Warrungu (cf. Tsunoda 1974) and Dyirbal (cf. Dixon 1972). The case–marking system is, roughly speaking, accusative for the pronouns, and ergative for the nouns (including the noun markers in Dyirbal), while a few NPs can — or always do — take the tripartite system. Both languages have ANTIs and strongly prefer the S/O pivot to the S/A pivot. The Warrungu texts used are taken from about a third of my twelve–hour–long texts, and the Dyirbal texts employed are the first two of the three texts published in Dixon (1972).

[5] Kalkatungu of western Queensland, Australia (cf. Blake 1979). Both nouns and free pronouns have the ergative system (and in this respect, this language is 'purely ergative'). The bound pronouns have the accusative system (but their frequency in the texts is extremely low and consequently they are virtually negligible for the purpose of this quantitative study). Kalkatungu has ANTIs that create the S/O pivot. However, its syntactic ergativity is limited to subordination, and its coordination has the S/A pivot. (See 3.5.1.) The texts used are all of the seven texts published in Blake (1979).

[6] Djaru of Western Australia (cf. Tsunoda 1981a, 1981c). This language resembles Kalkatungu in that its case–marking system is ergative for both the nouns and the free pronouns, and accusative for the bound pronouns. However, it differs from

the latter in the following respects. First, in the texts the bound pronouns are extremely frequent, occurring in virtually every clause, but the free pronouns hardly ever occur. Second, the ERG marking of the free pronouns is optional, and consequently they can have the neutral system (A=S=O) in addition to the ergative system. Third, Djaru lacks ANTIs (and also passives), and it does not appear to have any clear pivot in coreferential deletion (see note 12). The texts used are five texts (including the first two of the three texts published in Tsunoda 1981a) out of about one hundred texts.

In this paper, I use the terms 'agent' and 'patient' in broad senses. By agents, I mean all the referents of the A, and also the d-S of ANTIs or the agent NPs of passives — depending on the language. For example, they refer to not only 'agent' in a narrow sense, but also entities that do seeing/looking, searching, etc. Similarly, by patients I mean all the referents of the O, and also the OBL object of ANTIs or the d-S of passives — depending on the language. Thus, they describe entities to which something is done, entities that are seen/looked at, searched for, etc. That is, my use of these terms is similar to that of the terms 'actor' and 'undergoer' in Foley and Van Valin (1984:28-32), rather than the narrower use of similar terms in Fillmore (1968:24-25).

3. 2. Transitive case frames and topicality

This subsection looks at topicality in terms of two contrasting transitive case frames: ERG–ABS and NOM–ACC. Namely, it examines that aspect of the correlationalist view which asserts a correlation between:

(a) the primary/central/highest topic position and:

the ABS and/or the patient; and the NOM and/or the agent, respectively, and;

(b) the peripheral/secondary topic position and:

the ERG and/or the agent; and the ACC and/or the patient, respectively.

Counting of successive mentions of a given case is started after its non-elliptical occurrence. Furthermore, the counting of this given case is started after its (non-elliptical) occurrence in a clause in which both the A and the O are non-elliptical.

(This is in order to keep constant the conditions under which the counting of the cases is conducted.) For example, ocnsider the following hypothetical discourse:

(23) (a) [man$_i$+ERG(A)]   woman$_j$+ABS(O)

     (b) man$_i$+ERG(A)   woman$_j$+ABS(O)

(c)   man$_i$+ERG(A)   [woman$_j$+ABS(O)]

(d)   [man$_i$+ERG(A)]   child$_k$+ABS(O)

(e)   he$_i$+NOM(A)   he$_k$+ACC(O)

(f)   [he$_i$+NOM(A)]   [he$_k$+ACC(O)]

(g)   he$_i$+NOM(S)

As the first non–elliptical ERG–ABS is in (b), counting of ERG and that of ABS start from (c). That is, (23) contains two successive mentions of *man$_i$+ERG* (A) — i. e. in (c) and (d) — and one successive mention of *woman$_i$+ABS* (O) — i. e. in (c). (*Child$_k$+ABS* (O) in (d) is not regarded as its succesive mention, since the referents are different.) Similarly, after the non–elliptical occurrence of NOM–ACC in (e), *he$_i$+NOM* (A) and *he$_i$+ACC* (O) have one successive mention esch. According to this method, the sentence (a) is irrelevant to the counting. (Note that zero anaphoras, e. g. *woman$_j$+ABS* (O) in (c), are included in successive mentions. This is in conformity with the method employed by Zubin and that by Givón; see 1.3 above.)

Examples from Warrungu follow. Involving the ERG–ABS frame:

(24) (A fight was coming up.)

(a)   pama+kuman+tu   kuku+φ   kuypa+n

man+other+ERG(A)   word+ABS(O)   give+P/P

'The other men (i. e. the men from another tribe) sent a message around.'

(b)   [TT pama+kuman+tu]   nganya   palka+lku

[man+other+ERG(A)]   1SG+ACC(O)   hit, kill+PURP

'They were going to kill me.'

The ex. (24) contain one successive mention of ERG(A).

An example involving the NOM–ACC frame:

(25) (a)   nganya   nyula   papa+n

1SG+ACC(O)   3SG+NOM(A)   spear+P/P   'He speared me.'

(b)   [TT nganya   nyula]   palka+n

[1SG+ACC(O)   3SG+NOM(A)]   hit+P/P   'He hit me.'

(c)   nganya   [TT nyula]   kuwuy+nga+n

1SG+ACC(O)   [3SG+NOM(A)]   ghost+make+P/P

'He made me unconscious (lit. made me a ghost).'

This sequence centains two successive mentions each of NOM(A) and ACC(O).

The statistical data on the relevant languages are presented in Table 9. (The case

labels in small letters (i. e. 'nom' and 'acc') concern bound pronouns, while those in capital letters have to do with independent NPs. Djaru is not included in this table; non-elliptical occurrences of ERG-ABS and nom-acc are extremely infrequent (only 12 examples in the five. texts), and no siginificant figures have been obtained.)

Table 9. Transitive case frames

Warrungu				
	ERG (A)	ABS (O)	NOM (A)	ACC (O)
number of examples of successive mention	11	10	28	28
largest number of successive mention	8	6	6	5
average number of successive mention	2. 27	1. 70	2. 46	2. 25

Dyirbal				
	ERG (A)	ABS (O)	NOM (A)	ACC (O)
number of examples ...	5	6	3	1
largest number of ...	4	2	2	1
average number of ...	2. 20	1. 17	1. 33	1. 00

Kalkatungu				
	ERG (A)	ABS (O)	nom (A)	acc (O)
number of examples ...	10	11	0	0
largest number of ...	7	7	0	0
average number of ...	2. 70	2. 00	0. 00	0. 00

English		Japanese	
NOM (A)	ACC (O)	NOM (A)	ACC (O)
number of examples ... 46	15	19	17
largest number of ... 4	1	3	3
average number of ... 1. 41	1. 00	1. 42	1. 12

First, regarding the NOM-ACC frame, in each relevant language, the NOM tends to be mentioned more continuously than the ACC. Thus, in Japanese, the average number of successive mentions of the NOM is 1. 42 times, whereas that of the ACC is 1. 12 times. These figures demonstrate that in these relevant languages the NOM is more topical than the ACC (according to the Zubin-Givón method). It might therefore look as if the figures presented in Table 9 supported the correlationalist view. However, Table 9 as a whole invalidates this view.

When we turn to tho ERG-ABS frame, it is not the ABS as the correlationalists would predict, but rather the ERG, that is involved in the longer chain of successive

mentions. That is the ERG is more topical than the ABS — contra the correlationalist view. Note that this is true even in a morphologically 'pure-ergative' language such as Kalkatungu.

What these two facts jointly indicate is that the agent is more topical than the patient, regardless of the transitive case frame employed (NOM-ACC or ERG-ABS). (The same applies even to the NOM-ACC frame in ergative languages.) That is, there is no correlation between the agent-vs.-patient topicality and specific transitive case frames. This negates the correlationalist view.[8], [9]

3.3. Syntactic pivots and topicality

3.3.1. Statistical data and examples

This subsection (3.3) turns to that aspect of the correlationalist view which concerns syntactic pivots, namely, the view that the patient and/or the ABS are more topical than the agent and/or the ERG in those languages with the S/O pivot, whereas the agent and/or the NOM are more topical than the patient and/or the ACC in those languages with the S/A pivot.

Section 2 already illustrated, using Warrungu materials, how the S/O pivot is created by means of antipassivization. What follows demonstrates how the S/A pivot is effected by means of passivization, essentially following Comrie (1978:346-50), with examples from English.

English allows coreferential deletions of S=[A] or A=[S] in coordination, e. g.:

(26) Joh (S) came here and [Joh (A)] slapped Bob (O). S=[A]

(27) Joh (A) slapped Bob (O) and [Joh (S)] came here. A=[S]

But, it disallows deletion of the type S=[O] or O=[S], e. g.:

(28) *Flo (S) came here and Hazel (A) slapped [Flo (O)]. S=[O]

(29) *Hazel (A) slapped Flo (O) and [Flo (S)] came here. O=[S]

Application of passivization to (28) and (29) produces grammatical sentences, changing the O into the d-S of passives:

(30) Flo (S) came here and [Flo (d-S)] was slapped by Hazel. S=[d-S]

(31) Flo (d-S) was slapped by Hazel and [Flo (S)] came here. d-S=[S]

Deletion of the type A=[O] or O=[A], which seem to be universally prohibited or disfavoured (2.2.1), is disallowed in English as well. Thus, in stead of:

(32) *Joh (A) slapped Bob (O) and Hazel (A) kicked [Joh (O)] back. A=[O]

(33) *Joh (A) slapped Bob (O) and [Bob (A)] kicked Flo (O) back. O=[A]

we have:

⑶ Joh (A) slapped Bob (O) and [Joh (d-S)] was kicked back by Hazel.　A=[d-S]

⑶ Bob (d-S) was slapped by Joh and [Bob (A)] kicked Flo (O) back.　　d-S=[A]

That is, the functions of antipassivization and passivization regarding the S/O and the S/A pivots respectively, can be shown as in Table 10. (Those patterns in a parenthesis are identical with the corresponding 'underlying' patters, i. e. they have undergone no voice change.)

Table 10. S/O and S/A pivot

		S/O pivot	S/A pivot
		A ≠ S = O	A = S ≠ O
		d-S ↑	d-S ↑
		by ANTI	by pass.
'underlying' pattern		'surface' pattern	'surface' pattern
ergatie	S=[O]	(S=[O])	S=[d-S]
	O=[S]	(O=[S])	d-S=[S]
accusative	S=[A]	S=[d-S]	(S=[A])
	A=[S]	d-S=[S]	(A=[S])
aberrant	O=[A]	O=[d-S]	d-S=[A]
	A=[O]	d-S=[O]	A=[d-S]

Now, in 3.2 above, we only looked at the transitive case frames (ERG–ABS, NOM–ACC, nom–acc), since our concern regarding topicality was focused on these case frames. However, the following discussions in the present subsection will involve not only transitive clauses but also ANTIs or passives — where they exist — since the aim of this subsection is to ascertain a possible effect that the syntactic pivots might have on this topicality. That is, counting of successive mentions of a given agent will include not only the A, but also the d-S of ANTIs or the agent NP of passives. Similarly, counting of successive mentions of a given patient will embrace not only the O, but also the OBL object of antipassives or the d-S of passives. (Specific details of counting method will be explained below for each language.) See Table 11.

In Warrungu and Dyirbal, the agent can be expressed by the A (ERG for the nouns and NOM for the pronouns) or by the d-S of ANTIs (ABS for the nouns and NOM for the pronouns). The patient can be referred to by the O (ABS for the nouns and ACC for the pronouns) or by the OBL object of ANTIs (DAT or INST).

For example, consider the following hypothetical discourse:

Table 11. Incorporating antipassives or passives

	Warrungu	
	agent A (ERG or NOM) or d-S (ABS or NOM)	patient O (ABS or ACC) or OBL (DAT or INST)
number of examples ...	192	192
largest number of ...	18	17
average number of ...	2.31	1.90

	Dyirbal	
	agent A (ERG or NOM) or d-S (ABS or NOM)	patient O (ABS or ACC) or OBL (DAT or INST)
number of examples ...	17	14
largest number of ...	4	3
average nu mber of ...	1.65	1.36

	Kalkatungu	
	agent A (ERG or nom) or d-S (ABS or nom)	patient O (ABS or acc) or OBL (DAT)
number of examples ...	13	11
largest number of ...	6	4
average number of ...	2.38	1.73

	Djaru	
	agent A (ERG, ABS or nom)	patient O (ABS or acc)
number of examples ...	25	17
largest number of ...	5	4
average number of ...	1.68	1.59

	English	
	agent A (NOM) or agent NP	patient O (ACC) or d-S
number of examples ...	61	20
largest number of ...	4	2
average number of ...	1.43	1.11

	Japanese	
	agent A (NOM) or agent NP	patient O (ACC) or d-S
umber of examples ...	21	35
largest number of ...	3	5
average number of ...	1.48	1.37

(36) (a) man$_i$+ERG(A)   [woman$_j$+ABS(O)]

   (b) man$_i$+ERG(A)   woman$_j$+ABS(O)

   (c) [man$_i$+ERG(A)]   she$_j$+ACC(O)

   (d) he$_i$+NOM (d–S)   she$_j$+DAT(OBL)

   (e) he$_i$+NOM(A)   water$_k$+ABS(O)

   (f) he$_i$+NOM (d–S)   water$_k$+INST(OBL)

The counting method employed in this subsection and that utilized in the preceding subsection are identical in that counting of successive mentions of a given raferent is started after its explicit mention. For example, in (23), counting concerning *man$_i$* cannot be started from (b); it has to be started from (c). Similarly, in (36), counting regarding *woman$_j$* cannot be started in (b). These two methods differ, however, in that:

(i) in the method employed in the preceding subsection, counting was started after a clause in which BOTH the A and the O are non–elliptical, e. g. in (23), counting of either the A or the O was started from (c), not (b), while on the other hand;

(ii) in the method employed in this subsection, counting of the agent or the patient is started after a clause in which AT LEAST EITHER (but not necessarily both) of the agent and the patient is non–elliptical, e. g. in (36), counting of *man$_i$* is started from (b), since one of the agent and the patient (the agent *man$_i$* in this case) is already non–elliptical in (a). (But, the counting of *woman$_j$/she$_j$* still has to be started from (c), not from (b), since its counting can only start after its explicit mention, i. e. after (b).)

According to the method employed in this subsection, the sequence in (36) contains five successive mentions of *man$_i$*, i. e. in (b), (c), (d), (e) and (f); two successive mentions of *woman$_j$*, i. e. in (c) and (d); and one successive mention of *water$_k$*, i. e. in (f).

(This slight change has been inrtoduced in order to see whether or not different counting methods might yield different results. As it has turned out, these two methods lead to the same conclusion, as we shall see shortly.)

Examples from Warrungu texts. First, concerning an agent:

(37) (We cooked a kangaroo.)

   (a) ngali   mutya+kali+n   kipa+ngku
       1DU+NOM(d–S)   eat+ANTI+P/P   liver+INST(OBL)
       'We ate the liver.'

   (b) rulku+ϕ kunytyi+ϕ ngali   muka+n

heart+ABS(O) kidney+ABS(O) 1DU+NOM(A) get+P/P

nguna+ngumay [TT ngali]   mutya+lku

that+after   [1DU+NOM(A)] eat+PURP

'We took out the heart and the kidneys to eat afterwards.'

(c) "yuwu, [TT ngali]   yama+nga+lku"

yes   [1DU+NOM(A)   so+TRANSITIVISER+PURP

"Yes, let's do so."

(d) tyarripara+φ tyami+yi+φ   [TT ngali]   wanta+n

good+ABS(O) fat+HAVING+ABS(O) [1DU+NOM(A)] leave+P/P

karrpala+wu

tomorrow+DAT

'We left the good [meat] with fat for the next day.'

The initial and successive mentions of the agent in (37) are as follows:— NOM(d-S) NOM(A) [NOM(A)] [NOM(A)] [NOM(A)].

Another example from Warrungu texts, this time regarding a patient:

(38) (a) "nguna+φ   [TT yinta]   tyaympaynga+φ"

that+ABS(O) [2SG+NOM(A)   give hither+IMP

"Give that to me."

(b) nyula   [TT nguna+φ]   kuypa+n ngaykun+ku

3SG+NOM(A) [that+ABS(O)] give+P/P 1SG+DAT

'She gave it to me.'

(c) nguna+ngumay ngali   mutya+kali+n [TT nguna+ngku]

that+after   1DU+NOM(d-S) eat+ANTI+P/P [that+INST(OBL)]

'Then we ate it.'

The initial and successive mentions of the patient in (38) are as follows:— ABS(O) [ABS(O)] [INST(OBL)].

Additional examples are (24) and (25) from the preceding subsection:

(24) agent: ERG(A) [ERG(A)].

(25) agent: NOM(A) [NOM(A)] [NOM(A)], and;

patient: ACC(O) [ACC(O)] ACC(O).

Returning to Table 11, in Kalkatungu, the agent can be expressed by the A (ERG for the nouns and free pronouns and nom for the bound pronouns) or by the d-S of antipassives (ABS for the former NPs and nom for the latter NPs). The patient can

be described by the O (ABS for the former NPs and acc for the latter NPs) or by the OBL object of antipassives — DAT only (not INST) for the former NPs. (The latter NPs lack a dative case.)

In Djaru, the agent can be referred to by the A (ERG for the nouns, ERG or ABS for the free pronouns, and nom for the bound pronouns), and the patient by the O (ABS for the nouns and free pronouns, and acc for the bound pronouns).[10]

In English and Japanese, the agent can be manifested by the A (NOM) or by the agent NP of passives; and the patient by the O (ACC) or by the d–S (NOM) of passives.[11]

Now, the figures presented in Table 11 indicate that in each of these languages the agent tends to be mentioned more continuously than the patient, i. e. the agent is more topical than the patient. This holds good irrespective of:

(a)　whether the language in question is a so–called 'ergative language' or 'accusative language';

(b)　whether it lacks a syntactic pivot (cf. Djaru) or has one (or two), and;

(c)　— where a given language has syntactic pivot(s) — whether it has the S/O pivot (cf. Warrungu, Dyirbal), or the S/A pivot (cf. English, Japanese), or both pivots (cf. Kalkatungu).

That is, there is no correlation between the agent–vs.–patient topicality on the one hand and:

(i)　absence/presence of syntactic pivot, and;

(ii)　pattern of syntactic pivot.

It is important to stress here that this is the case even in 'truly deep–ergative languages' such as Warrungu and Dyirbal.

These results invalidate the correlationalist view, and support the non–correlationalist view.

(Regarding Warrungu, Tsunoda (forthcoming), on the basis of a somewhat different quantitative method, concludes that the agent is more topical than the patient, in support of Cooreman, Fox and Givón's (1984) claim.)

3.3.2. More on syntactic pivots

In this subsection, I shall have a close look at the S/O pivot and ANTIs, and also the S/A pivot and passives. By doing this, I shall show why, as just seen above, syntactic pivot has no bearing on the agent–vs.–patient topicality. I shall also provide an answer

to the intriguing fact that crosslinguistically the S/O pivot is rare.

[1] Frequency of ANTIs and passives. See Table 12, which includes, for each language:

(a) both elliptical and non-elliptical clauses, and;

(b) all of independent, main and subordinate clauses.

(Regarding English, the table excludes infinitives, participles and gerunds; they are not nearly 'clause-like' as the 'clauses' in English and those in the other languages. Similarly for Tables 14.)

Table 12. Frequenay of antipassives and passives

	transitive	antipassive	total
Warrungu	1264 (84.6%)	230 (15.4%)	1494 (100%)
Dyirbal	104 (83.2%)	21 (16.8%)	125 (100%)
Kalkatungu	67 (79.8%)	17 (20.2%)	84 (100%)
	transitive	passive	total
English	299 (90.9%)	30 (9.1%)	329 (100%)
Japanese	346 (94.8%)	19 (5.2%)	365 (100%)

There are two things to note about Table 12. Firstly, ANTIs and passives are far less frequent than transitive clauses, the highest figure being merely 20.2% of Kalkatungu ANTIs. (The low frequency of passives has already been well-known. For English, Russian and Japanese, see Shibatani (forthcoming-a) and the relevant works cited therein, and for Tamil, see Asher (1982:152). Secondly, passives (9.1% in English and 5.2% in Japanese) are still less frequent than ANTIs (15.4% in Warrungu, 16.8% in Dyirbal, and 20.2% in Kalkatungu).

[2] Frequency of coreferential deletion patterns. See Tables 13 and 14, which concern all of subordination, coordination, and sentence-sequence. (That is, for Warrungu, Table 13 conflates all the deletions in Tables 1 to 6.) In conformity with the method employed for Warrungu in Section 2 above (cf. 2.1), Tables 13 and 14 only deal with those instances of coreferential deletion which have an explicit antecedent in the immediately preceding clause.

As will be expected from the low frequency of ANTIs and passives, coreferential deletions which involve the d-S — of an ANTI or a passive, depending on the language — constitute only a minority in each language, ranging from 5.4% in English to 25.0% in Kalkatungu. In other words, the majority of coreferential deletions —

Table 13. Coreferential deletions (1)

		Warrungu		Dyirbal		Kalkatungu	
S=[O]		8	28	3	11	1	3
O=[S]		20	(4.4%)	8	(17.7%)	2	(9.4%)
A=[A]		143	394	14	33	6	20
O=[O]		135	(67.5%)	14	(53.2%)	7	(62.5%)
S=[S]		116		5		7	
S=[A]		34	37	3	4	1	1
A=[S]		3	(6.3%)	1	(6.5%)	0	(3.1%)
A=[O]		2	5	0	0	0	0
O=[A]		3	(0.9%)	0	(0%)	0	(0%)
S=[A] →	S=[d-S]	96		12		3	
A=[S] →	d-S=[S]	9	111	0	13	0	7
O=[A] →	O=[d-S]	5	(19.0%)	1	(21.0%)	4	(21.9%)
A=[O] →	d-S=[O]	1		0		0	
A=[A] →	d-S=[d-S]	5	(0.9%)	0	(0%)	1	(3.1%)
A=[A] →	A=[d-S]	2	4	0	1	0	0
A=[A] →	d-S=[A]	2	(0.7%)	1	(1.6%)	0	(0%)
total		584	(100%)	62	(600%)	32	(100%)

Table 14. Coreferential deletions (2)

		English		Japanese		Djaru	
S=[O]		0	0	3	6	0	1
O=[S]		0	(0%)	3	(7.7%)	1	(2.4%)
A=[A]		10	24	10	41	10	35
O=[O]		1	(64.9%)	9	(52.6%)	17	(85.4%)
S=[S]		13		22		9	
S=[A]		7	11	18	27	4	4
A=[S]		4	(29.7%)	9	(34.6%)	0	(9.8%)
A=[O]		0	0	0	0	1	1
O=[A]		0	(0%)	0	(0%)	0	(2.4%)
S=[O] →	S=[d-S]	0		4		...	
O=[S] →	d-S=[S]	0	2	0	5	...	
O=[A] →	d-S=[A]	2	(5.4%)	1	(6.4%)	...	
A=[O] →	A=[d-S]	0		0		...	
total		37	(100%)	78	(100%)	41	(100%)

from 94.6% in English to 75.0% in Kalkatungu — do not involve an ANTI or a passive at all.

Among those deletion patterns which do not involve the d-S (of an ANTI or a passive), the three neutral patterns (A=[A], O=[O], S=[S]) constitute the majority, ranging from 52.6% in Japanese to 67.5% in Warrungu. Note in particular that this is true irrespective of whether a given language requires/prefers the S/O pivot or the S/A pivot.[12]

[3] Comparison of S/O and S/A pivot. Since the three neutral patterns, which take up the bulk of coreferential deletions in each language, are neutral as to the S/O-vs.-S/A dichotomy, the differences between these two pivots are to be observed in the treatment of the other patters: ergative, accusative, and aberrant. Comparing Table 10 with Tables 13 and 14, I shall comment on these 'underlying' patterns.

The 'underlying' ergative patterns (S=[O], O=[S]) remain unchanged in Warrungu, Dyirbal and Kalkatungu, while they undergo no change or show up as S=[d-S] or d-S=[S] in English and Japanese. In each language, those 'surface' patterns corresponding to the 'underlying' ergative patterns yield only a small percentage; the highest figure is 17.7% in Dyirbal, and the lowest figure 0% in English.

The 'underlying' aberrant patterns (O=[A], A=[O]), which appear to be universally disfavoured/prohibited (cf. 2.2.1), stand unaltered in about half of the relevant examples in Warrungu, but in the rest of the relevant Warrungu examples and in other languages they undergo one of the changes shown in Table 10. Again, those 'surface' patterns corresponding to the 'underlying' aberrant patterns constitute only a small portion, ranging from 1.3% (1/78; d-S=[A]) in Japanese to 12.5% (4/32; O= [d-S]) in Kalkatungu.

The 'underlying' accusative patterns (S=[A], A=[S]) remain intact in English and Japanese, and also in some of the relevant examples in Warrungu, Dyirbal and Kalkatungu. But, in most of the relevant examples in the latter three languages, they are changed into S=[d-S] and d-S=[S], respectively. In contrast with the 'underlying' ergative and aberrant patterns, in each language those 'surface' patterns corresponding to the 'underlying' accusative patterns present a much higher percentage, from 12.5% (4/32; S=[A], S=[d-S]) in Kalkatungu to 34.6% (27/78; S=[A], A=[S]) in Japanese. In deed, these patterns show the highest figure next to the three neutral patterns.

[4] Functional load of passivization and antipassivization. What was stated in

the preceding two paragraphs indicates that it is in the treatment of the 'underlying' accusative patterns where the differences between the S/O and S/A pivot are observed most clearly. That is, in Warrungu, Dyirbal and Kalkatungu, these frequently-occurring 'underlying' accusative patterns are antipassivized with the accordant frquency. In sharp contrast, in English and Japanese, these patterns undergo no change, and passivization is rarely used for maintaining the S/A pivot. (The other two 'underlying' patterns — ergative and aberrant — are in each language very uncommon in any case.)[13]

That is, in the relevant languages examined, the functional load of antipassivization for creating the S/O pivot is very high, while on the other hand that of passivization for effecting the S/A pivot is virtually nil. (I have no statistical information on other relevant languages. At least, Russian passives, which appear to be even less frequent than the English counterpart (cf. Comrie 1981a:75), have no example showing this function in Mitsushi Kitajō's (p. c.) 40 minutes' recording.)

The S/A-pivot-creating function of passives was already noted by Jaspersen (1924:67-68)[14]. As is widely known, it has attracted much attention in typological studies recently, e. g. Comrie (1978:349-50), Dixon (1979:121), Van Valin (1980:305-06), and Foley and Van Valin (1984:108-11). However, I feel that this function of passives has been overemphasized. The reasons for this scepticism of mine are as follows. As Heath (1976a:211) points out and also as the preceding discussions have indicated:

(a) This function of passives does not seem common crosslinguistically. (Indeed, all the examples are taken from English only, with the sole exception of Van Valin (1980), who cites examples from German.)

(b) Even in those languages whose passives can have this function in theory, in reality this function is never utilized systemayically.

It is interesting to note that surveys of passives such as Keenan (1985) and Shibatani (1985) do not even mention this function.

Michael Silverstein regards antipassives as the mirror image of passives, and it is in view of this that he termed them as such (Silverstein, p. c.). Subsequently, it has often been suggested that these two types of construction display a parallelism, e. g. Silverstein (1976: 140, 142), Blake (1977:20-21), Tsunoda (1981b: 427-28, 431), Foley and Van Valin (1984:111, 171, 176), and Givón (1984:164). For some of the specific instances

of this alleged parallelism, see Table 10.) On the other hand, Heath (1976a:211, 1980: 888–89) argues that this view is misleading, on the ground that there is only partial functional parallelism between them. Similar critiques are expressed by Comrie (1978: 361) and Van Valin (1980:321). Tsunoda (forthcoming) points out additional instances of parallelism and difference.

The preceding discussions have cogently demonstrated that, despite the perfect symmetry between these two processes in terms of their logically possible role in pivot creation, in reality they are not symmetric or equivalent in terms of their functional load.

(A conclusion to the same effect is stated in Tsunoda (forthcoming), although not so forcefully as expressed above. Statistical data on languages other than Warrungu have since been collected, and have enabled this stronger conclusion.)

[5] S/O pivot as a 'deliberate', 'unnatural' and 'genuine' pivot and S/A pivot as a 'natural' and 'fake' pivot by 'default'. The preceding discussions have demonstrated that the crucial difference between the S/O and S/A pivot is in effect as to whether or not the 'underlying' accusative patterns undergo a voice change. The S/O pivot is an 'unnatural' pivot, 'deliberately' created by changing the frequently–occurring 'underlying' accusative patterns (by means of antipassivization). On the other hand, the S/A pivot merely exists 'by default', i. e. by no application of a voice–changing process. It is a 'natural' pivot, since it leaves intact the frequently–occurring 'underlying' accusative patterns.

Furthermore, I propose to classify pivots as follows:
(a) genuine pivot, which involves a voice–changing process, and;
(b) fake pivot, which involves no such process.

According to this classification, all the known instances of the S/O pivot (including those mentioned in 3.5.1 below) employ a genuine pivot; there is no attested instance of a fake S/O pivot. Indeed, given the high frequency of the 'underlying' accusative patterns, it is difficult to imagine how an S/O pivot can be maintained without utilizing antipassivization (or an analogous process). (Heath (1980:891) remarks aptly that the term 'antipassive syntax' is far more preferable to 'ergative syntax'.)

In contrast, all the reported instances of the S/A pivot appear to make use of a fake pivot in reality. For example, English and Japanese can have a genuine S/A pivot in theory, but in practice their S/A pivot is a fake one.

In addition, since the S/A pivot in practice does not require passivization, it can occur in languages which lack this process. Lezgian of Eastern Caucasus (cf. Mel'čuk 1981:241) and Kâte, a New Guinea language (cf. Anderson 1976:13-14) appear to be such languages. (It is needless to say that their S/A pivot is a fake pivot.)

Furthermore, even in those languages which have the S/O pivot, the S/A pivot occurs in the environments where antipassivization fails to apply. For instance, as mentioned in 3.1 above, Kalkatungu has the S/O pivot in subordination, where ANTIs are frequently used, but it has the S/A pivot in coordination, where ANTIs are not used (cf. Blake 1979:112-13). Further examples are provided in 3.5.1 below. (Again, it is needless to say that in these languages the S/O pivot is a genuine pivot, but the S/A pivot is a fake pivot.)

In terms of the markedness theory, the S/O pivot, which is deliberately created by means of antipassivization, is marked, while the S/A pivot, which simply exists by default, with no voice-changing process, is unmarked — as far as the known instances are concerned.

[6] Rarity of S/O pivot. It appears that crosslinguistically the S/A pivot is very common, while the S/O pivot is rare. Given the logical equivalence of these two pivots (see Table 10), this heavily uneven distribution is indeed intriguing. In theory, the S/O pivot would be just as efficient/functional as the S/A pivot. (This view is paralleled by Martinet's (1979:42), who claims regarding ERG-ABS and NOM-ACC constructions that 'the appearance of one or the other of the two constructions is equally likely and equally justified'.)

There have been attempts to accout for this unbalanced crosslinguistic distribution of these two pivots. For example, Dixon (1979:126), after implying that most (or many ?) of the attested instances of the S/A pivot involve what is termed a fake pivot in the present paper, states that the reason for this fact and also for the wide distribution of the S/A pivot is 'basically... because A and S NP's refer to the participants that 'control' an event, if anyone does'. Comrie (1981a:114) explains as follows:– 'humans have a strong tendency to select more agentive entities as topics of discussion, which means that there is a natural correlation between agent and topic...'.

It is not clear to me how Dixon's and Comrie's explanations account for the question at issue. My own explanation is the folllowing. The S/O pivot is rare because it is an unnatural pivot, deliberately created by changing the frequently-occurring

'underlying' accusative patterns, while the S/A pivot is common because it is a natural pivot, requiring no voice-changing process in reality.[15] That is, these two pivots are logically equivalent, but they are not equivalent functionally.[18]

[7] Irrelevance of pivot to agent-vs.-patient topicality. Since the three neutral patterns (A=[A], O=[O], S=[S]) occupy the majority of coreferential deletions in each language, the following constitute only a small portion, i. e. approximately a third of the deletions in each of the relevant languages — contrary to what correletionalists might have expected:

(a) S/O-pivot-oriented deletions, which show preference for the S/O over the S/A pivot, i. e. S=[O], O=[S], S=[d-S], d-S=[S], O=[d-S], d-S=[O] (23.8% in Warrungu, 37.7% in Dyirbal, 31.3% in Kalkatungu).

(b) S/A-pivot-oriented deletions, which show preference for the S/A over the S/O pivot, i. e. S=[A], A=[S], S=[d-S], d-S=[S], A=[d-S], d-S=[A] (35.4% in English, 41.0% in Japanese).

This already suggests that on a priori ground preference for one type of pivot over the other is unlikely to influence the agent-vs.-patient topicality in a given language as a whole — even if we were to assume for the sake of argument that patterns of syntactic pivot somehow correlated with this relative topicality. Indeed, this is exactly what the data given in 3.3.1 above demonstrated.

(In connection with the irrelevance of syntactic pivot to this relative topicality, Tsunoda (1987b) points out the low frequency of the S/O-pivot-oriented deletions in Warrungu texts, and Cooreman (n. d.:4, 26, 29) notes the low frequency of deletions in S=[O], O=[S], O=[O], and S=[S] in Dyirbal texts.)

As Tsunoda (1987b) points out, there is in fact an even more fundamental reason to confirm this irrelevance. This reason has to with the effect of antipassivization and passivization in pivot creation. Namely, although they change deletion patterns, they do not at all change the referents involved.

Thus, antipassivization turns the A into the d-S, but it leaves the referent (i. e. an agent) unchanged. Where the agent is involved in S=[A] or A=[S] in the S/A pivot, it will appear in S=[d-S] or ·d-S=[S] in the S/O pivot. That is, preference for the S/O over the S/A pivot does not preclude the agent NP from participating in S/O-pivot deletions.

Similarly, passivization changes the O into the d-S, but it keeps the referent

(i.e. a patient) intact. Where the patient is involved in S=[O] or O=[S] in the S/O pivot, it can appear in S=[d-S] or d-S=[S] in the S/A pivot. Again, preference for the S/A over the S/O pivot does not prevent the patient NP from taking part in S/A-pivot deletions.

That is, these two processes leave the referents unaffected, allowing the agent NP and the patient NP to join in the respective coreferential deletions, and preference of one type of pivot over the other has no connection with this relative topicality. These facts seem to have escaped the attention of correlationalists.

Indeed, it is even reasonable to say that both the S/A and S/O pivot — not just the S/O pivot as correlationalists claim — are agent-oriented, at least according to one possible interpretation of the figures provided in Tables 13 and 14. In Warrungu, Dyirbal and Kalkatungu, among the S/O-pivot-oriented deletions (cf. above), those which involve deletion of the agent NP are S=[d-S] and O=[d-S], and those in which the patient NP is deleted are S=[O] and d-S=[O]. In English and Japanese, among the S/A-pivot-oriented deletions, the agent NP is deleted in S=[A] and d-S =[A], and the patient NP is deleted in S=[d-S] and A=[d-S]. The numbers of deletions of these NPs are shown in Table 15.

Table 15. *Deltion of agent and patient*

deletion of:	Warrungu	Dyirbal	Kalkatungu
agent ([d-S])	111	13	7
Patient ([O]	9	3	1

	English	Japanese	
agent ([A])	9	19	
Pateint ([d-S]	0	4	

The figures in Table 15 indicate that not only the S/A pivot but also the S/O pivot are agent-oriented. Note in particular that the S/O pivot is heavily agent-oriented even in a truly 'deep-ergative' language such as Warrungu. (The reason for this is obvious. The 'underlyfng' accusative patterns — in particular, S=[A], with 96 examples (Table 13) — are frequent, and antipassivization does not exclude the agent NP from S/O-pivot-oriented deletions.)[17]

3. 4. Case-marking systems and topicality

The ABS case in the ergative case-marking system and the NOM in the accusative system are often said to be the respective unmarked cases (and the ERG and ACC the

respective marked cases). See, for instance, Silverstein (1976:123), Dixon (1979:71–76), and Tsunoda (1981b:398). Similarly, DeLancey (1981:630) supports:

> the traditional idea that..., as Trubetzkoy 1939 suggests, 'nominative' and 'absolutive' are in some sense the same category.

No doubt, this alleged equivalence/parallelism between the ABS and NOM is the major factor that has motivated the correlationalist view.

Regarding the NOM, Zubin (1979) (cf. 1.2 above) demonstrated conclusively (to my mind) that in German this case — as against the ACC and DAT — indicates 'prominence in discourse', i. e. 'topicality' in my concept (cf. 1.3 above). Thus, consider

Table 16. Individual cases

		German		
		NOM (A, S, d–S)	ACC (O)	DAT
number of exampls ...		259	54	110
largest number of ...		7	3	5
average number of ...		2.60	1.48	1.89

	English		Japanese	
	NOM (A, S, d–S)	ACC (O)	NOM (A, S, d–S)	ACC (O)
number of examples ...	96	19	143	19
largest number of ...	7	3	6	4
average number of ...	1.50	1.11	1.74	1.36

	Warrungu			
	NOM (A. S, d–S)	ACC (O)	ERG (A)	ABS (O, S, d–S)
number of examples ...	464	49	25	167
largest number of ...	18	6	18	17
average number of ...	2.92	2.10	3.00	1.98

	Dyirbal			
	NOM (A, S, d–S)	ACC (O)	ERG (A)	ABS (O, S, d–S)
number of examples ...	7	2	10	38
largest number of ...	8	1	4	3
average number of ...	3.00	1.00	2.00	1.55

	Kalkatungu			
	nom (A, S, d–S)	acc (O)	ERG (A)	ABS (O, S, d–S)
number of examples ...	5	0	11	30
largest number of ...	4	0	7	7
average number of ...	1.80	0.00	2.45	2.10

the portion on German in Table 16, which is based on Table 4 in Zubin (1979:493). The NOM displays a much higher topicality than the other two cases; it tends to be mentioned much more continuously than the other two.

Given this high topicality of the NOM in German, it is now important to enquire whether or not the same is true of:

(a) the NOM in other accusative languages, and;

(b) the ABS in ergative languages.

See again Table 16. The aim of this table differs from that of Tables 9 (in 3.2) and 11 (in 3.3.1) as follows. Both Tables 9 and 11 look at the relative topicality of the agent and the patient, whereas Table 16 does not deal with this relative topicality. Rather, it examines the relative topicality of the two relevant cases in each case-marking system: NOM and ACC, or nom and acc in the accusative system ($A=S\neq O$; $NOM=NOM\neq ACC$ or $nom=nom\neq acc$), and ERG and ABS in the ergative system ($A\neq S=O$; $ERG\neq ABS=ABS$). It considers the degree of topicality of a given case, irrespective of the semantic role and the grammatical function it embodies in specific instances. For example, logically possible sequences involving the NOM and those containing the ABS in Warrungu include the following respectively:

$NOM_i(A)$　　$NOM_i(S)$　　$NOM_i(d-S)$　　$NOM_i(A)$　　..., and;

$ABS_j(S)$　　$ABS_j(d-S)$　　$ABS_j(O)$　　$ABS_j(d-S)$　　...

For each language, the grammatical function(s) a given case can have is/are indicated in the parenthesis. It is needless to say that when I talk about continuous mentions of a given case, I mean a sequence which has the same referent(s) throughout.

Examples from Warrungu texts include the following, in each of which the initial and successive mentions are indicated:

(a) NOM: (25) NOM(A)　　　[NOM(A)] [NOM(A)].

　　　　 (37) NOM(d-S)　　NOM(A)　[NOM(A)] [NOM(A)].

(b) ACC: (25) ACC(O) [ACC(O)] ACC(O).

(c) ERG: (24) ERG(A)　　　[ERG(A)].

(d) ABS: (38) ABS(O)　　　[ABS(O)].

(Djaru has not been included in Table 16. The main interest concerning this ergative language was the topicality pattern of the ergative syesystem (of nouns and free pronouns). But, examples involving the ERG were too few to be relevant to the present discussion.)

Now, we shall first look at the figures regarding the accusative system. As was the case in German, the NOM is more topical than the ACC in English and Japanese; it tends to be mentioned more continuously than the latter. (Note that this is true even in the accusative system of the three ergative languages in Table 16.)

These facts conform with the correlationalists' view regarding the higher topicality of the NOM than the ACC. However, this is not the whole story. Table 16 in its entirety contradicts their view. That is, with respect to the ergative syetm, the ERG is more topical than the ABS in each language; it tends to be mentioned more continuously than the latter. Note that this is true even in 'quintessential deep-ergative' langauges such as Warrungu and Dyirbal and in a morphologically almost 'pure-ergative' language such as Kalkatungu — the kind of languages which correlationalists would expect to support their claim.

This invalidates the correlationlaist view that the NOM and the ABS are more topical than the other case in the respective case-marking system. Rather, it is those cases which typically describe the agent — i. e. NOM and ERG — that display the higher topicality in each system. Conversely, the ACC, which describes the patient only, and the ABS, which generally refers to the patient rather than the agent, manifest the lower topicality. (No doubt, this relative topicality of the relevant cases is due to the agent's higher topicality than the patient, as demonstrated in 3. 2 and 3. 3. 1 above.) The alleged equivalence between the NOM and the ABS has turned out to be a myth, rather than a reality — as far as the degree of topicality they manifest is concerned.[18]

There is another variant of the correlationalist view which claims that the patient is more topical than the agent in the ergative systen, while the reverse is true in the accusative system (cf. (a) in 1. 1). I shall not conduct any more counting here, but in view of the results obtained in 3. 2, 3. 3. 1 and the present subsection it will be obvious that this claim does not hold good.

There is a further variant of this view which argues that the ABS is more topical than the ERG in those languages with the S/O pivot, while the NOM is more topical than the ACC in those with the S/A pivot (cf. (c) in 1. 1). This view, too, has been negated by the figures presented in Table 16. In each of Warrungu, Dyirbal and Kalkatungu, the ERG is more topical than the ABS.

3. 5. Further implications

The results obtained in this paper have important theoretical implications, two of which will be examined in the following: subjecthood (3.5.2) and role and reference grammar (3.5.3). But, before turning to these issues, I shall first provide further relevant facts about the S/O pivot (3.5.1).

3.5.1. Intra-linguistic distribution of the S/O pivot

The existence of syntactic ergativity or syntax with the S/O pivot, coupled with the use of antipassivization, is now well-known, cf. Anderson (1976), Blake (1977), Comrie (1978), and Dixon (1979). But, what is NOT known about this phenomenon is the fact that its distribution within a given language is generally severely restricted in terms of levels of clause-linkage. That is, almost universally, in those languages which have the S/O pivot, antipassivization functions to create a (genuine) S/O pivot in subordination only — and that, only in certain (and not all) type(s) of subordination in languages such as Chukchee of east Siberia — and it rarely retains this function elsewhere. It fails to apply in coordination and also in certain(s) type of subordination in the relevant languages (and presumably in sentence-sequnce as well, although the latter is virtually never mentioned in the literature).

In these languages, the S/O pivot is naturally a genuine pivot. But, in those environments where antipassivization does not apply (see the previous paragraph), either the S/A pivot obtains or else no clearly discernable pivot seems to exist. The S/A pivot in such languages is obviously a fake pivot. (In this connection, Warrungu and Dyirbal show slight complications. See below. See also note 19.)

Consider Figure 1, which lists all the known Australian languages that possess syntactic ergativity. The sources of the information are as follows: Yalarnnga (Blake 1987:149); Bandjalang (Crowley 1978:111-14); Wargamay, including Biyay (Dixon 1981: 70-74); Djaabugay (Hale 1976, Elisabeth Patz, p. c.); Kalkatungu (Blake 1979:62-75, 112-13); Yidiny (Dixon 1977:323-27, 334-37, 345-46, 350-55, 385-86, 388-92); and Dyirbal, including Mamu and Giramay (Dixon 1972:71-74, 79-80, 130-35). The four dots in the table indicate 'non-existent', and the question mark 'not known'.

For some of the examples from outside Australia, see Comrie (1979:226) and Nedjalkov (1979:240-41) on Chukchee; Van Valin's (1981:379-81) interpretation of Craig's (1977) and Datz's (1980) work on Jacaltec, a Mayan language of Guatemala; and Van Valin (1981:389) on Tzutujil, another Mayan language.

Even in Warrungu, accusative-pattern deletions do occur — although very infreq-

Figure 1. Distribution of S/O and S/A pivot

	subordination	coordination	sentence-sequence
	————→		
	S/O pivot		
			←———————
			S/A pivot
Yalarnnga	————→	?	?
	?	?	?
Bandjalang	————→	?	?
	←————	?	?
Wargamay	————→	?	?
	?	?	?
Djaabugay	————→	....	....
	?	←———	?
Kalkatungu	————→	....	?
	?	←———	?
Yidiny	————————————→		?
	?	←———	?
Dyirbal	————————————→		?
	(←————————————————————)		
Warrungu	————————————————→		
	(←————————————————————)		

uently — sneaking in from the sentence-sequence end. Thus, 'surface' accusative-pattern deletions (S=[A], A=[S]) occur at the rate of 5 % (7/128) in sentence-sequence (Table 5), 10% (25/40) in coordination (Table 3), and 5 % (5/96) in subordination (Table 1). These accusative patterns all involve a fake, rather than genuine, S/A pivot. An example is (19) (S=[A]) from coordination. Furthermore, recall that Warrungu antipassivization has the 'accusativizing effect' — albeit very infrequently (2.3.3) : A=[A] → A=[d-S], and A=[A] → d-S=[A]. The percentage of the examples in deletion (excluding retention) is 14% (1/7) in sentence-sequence (Table 6), 3 % (1/35) in coordination (Table 4), and 3 % (2/78) in subordination (Table 2). An example is (17) (A=[d-S]) from subordination. These accusative patterns are in the nature of a genuine, not fake, S/A pivot, for they are created by means of a voice-changing process (namely, antipassivization).

Dyirbal is often cited as the classic example of 'deep-ergative' language. Nevertheless, as Heath (1979:429) points out, accusative-pattern deletions do occur in the Dyirbal texts provided in Dixon (1972). As Table 18 shows, 'surface' accusative-pattern deletions (S=[A], A=[S]) have one example (20%; 1/5) in sentence-sequence, and 3 examples (15%; 3/20) in coordination. No example has been found in subordination. (The classification of the examples in terms of clause-linkage levels is based on the criteria set out in 2.2.1 above.) These examples are:

(a) sentence-sequence: p. 383, lines 3-4: *ngan* ABS(S) [*ngangkun* ERG(A)].

(b) coordination: p. 370, lines 6-7: *pangkul* ERG(A) [*payi* ABS(S)]; p. 376, lines 45-46: *payi* ABS(S) [*panqkul* ERG(A)] (this example was pointed out by Heath); p. 380, lines 71-72: *palakarra* ABS(S) [*palakarra+ku* ERG(A)].

Moreover, even Heath's scrutiny did not seem to notice this, but as Cooreman (n. d.:17) notes what I term genuine S/A-pivot deletions do occur in Dyirbal texts; her example is (11) on Cooreman (n. d.:17), about which she remarks 'According to Dixon, this pattern is imossible' (see also note 19 below):

(c) subordination: *ngali* NOM(A) [*ngali* NOM (d-S)].

Table 17. Coreferential retention and deletion in Dyirbal

	subordination		coordination		sentence-sequence	
	reten.	delet.	reten.	delet.	reten.	delet.
S=O	0	0	0	2	2	1
O=S	0	8	1	1	0	0
A=A	0	4	2	7	2	3
O=O	0	6	3	4	1	0
S=S	0	2	2	3	2	0
S=A	0	0	4	2	0	1
A=S	1	0	2	1	0	0
A=O	0	0	1	0	0	0
O=A	0	0	1	0	0	0
subtotal	1 (5 %)	20(95%)	16(44%)	20(56%)	7 (58%)	5 (42%)
S=d-S	0	9	0	5	0	0
O=d-S	0	1	0	0	0	0
d-S=A	0	0	0	0	0	1
subtotal	0 (0 %)	10(100%)	0 (0 %)	5 (100%)	0 (0 %)	1 (100%)
total	1 (3 %)	30(97%)	16(39%)	25(61%)	7 (54%)	5 (46%)
	100%		100%		100%	

In the portions of the Dyirbal texts under study in this paper, a genuine S/A-pivot deletion occurs at the rate of 100% (1/1) in sentense-sequence (Table 17):

(d) sentence–sequence: p. 386, lines 29–30: *ngatya* NOM (d–S) [*ngatya* NOM(A)].

Inconceivable as they may be to the reader who firmly believes in the legendary 'pure–ergative' nature of Dyirbal syntax, accusative–pattern deletions — both fake and genuine — do occur in its texts, although their existence and the 'accusativizing effect' of Dyirbal antipassivization are not mentioned in Dixon's description of the langauge.

In Warrungu, syntactic ergativity unequivocally reaches sentence–sequence (Tables 5 and 6), in which S/O–pivot–oriented deletions (S=[O], O=[S], d–S=[O], S=[d−S], d–S=[S]) have 15 examples and aprroximately double the number of S/A–pivotorien–ted deletions (A=[S], S=[A], A=[d–S]), which have 8 examples.

In contrast, it is not clear whether syntactic ergativity in Dyirbal is extended to sentence–sequence, which yields one example of S/O–pivot–oriented deletion (S≒[O]) as against two examples of S/A–pivot–oriented deletions (S=[A], d–S=[A]). (Tsunoda (1986a, forthcoming) states that syntactic ergativity in Dyirbal embraces sentence–sequence. But, obviously, that statement is inaccurate; it is impressionistic and not based on actual text counting.)[19), 20)]

Syntactic ergativity appears to be rare crosslinguistically (3.3.2). Many ergative languages do possess antipassivization, but in most of these languages this process has just semantic or pragmatic functions, and does not serve to create the S/O pivot at all. (See Tsunoda, forthcoming.) Warrungu seems to be truly unique typologically in that not only does it possess syntactic ergativity but also this phenomenon unequi–vocally extends to sentence–sequence. In this respect, Warrungu would seem to possess the strongest syntactic ergativity among the world's languages — even stronger than that in Dyirbal.

3.5.2. Subjecthood

The issue of subjecthood, often in conjunction with the ergative/accusative dichotomy of syntactic organization, has been the subject of much debate, and pivot in corefere–tial deletion has been employed as one of the most decisive criteria for identifyingn the subject, e. g. Anderson (1976), Blake (1976), Keenan (1976), Mel'čuk (1981) and Van Valin (1981). However, with the notable exception of Van Valin (1981), these studies paid virtually no attention to different levels in clause–linkage, often indiscriminately citing evidence from infinitive constructions, etc., subordination and

coordination. Note that, if we distinguished these levels, then in Kalkatungu, for instance, the subject would be S/O in subordination, but S/A in coordination — as far as pivot in coreferential deletion is concerned. Similarly for some of the other languages discussed in 3.5.1 and Figure 1. It was already known that different constructions employ different syntactic patterns (Comrie 1978:81, cf. also Dixon 1979: 111–19). However, it was not generally recognized that the same applies to different levels of clause–linkage.

Van Valin (1981:390–91) concluded that there is no single notion of subject which applies to both ergative and accusative languages. We can now add that there is no single concept of subject which is common to all the clause–linkage levels of all languages — as far as pivot in coreferential deletion is concerned. (Naturally, it may be possible to salvage this concept if other criteria are appealed to.)

3.5.3. Role and reference grammar

Van Valin and Foley (VV & F) have proposed a theory of grammar referred to as role and reference grammar, in which the notion of pragmatic peak, or pragmatic pivot (or simply PrP), constitutes an important component. See Van Valin (1980), Van Valin (1981), Van Valin and Foley (1980), and Foley and Van Valin (1984).

Heavily drawing on Zubin's (1979) work on German and Dixon's (1972) work on Dyirbal (cf. 1. 2 above), VV & F characterize the PrP as follows:– 'One nominal constituent in a clause is singled out for special morphosyntactic treatment as the pragmatically most salient NP in the clause' (Van Valin and Foley 1980:338). This NP, which is treated as the PrP, refers to the central/most salient/most prominent participant in a situation. It embodies factors such as discourse prominence, importance, topicality and speaker's focus of interest. It is in turn manifested in morphosyntactic phenomena such as case–marking and coreferential deletion. Thus, according to VV & F, in English and German, which have the S/A syntactic pivot in coreferential deletion, the subject (i. e. S/A — TT) or the NOM indicates the PrP, and under unmarked circumstances the 'actor' (which includes the 'agent' in a narrow sense) is more topical/more salient than the 'undergoer'/patient. In contrast, in Dyirbal, which has the S/O syntactic pivot in coreferential deletion, the ABS indicates the PrP, and under unmarked circumstances the 'undergoer'/patient is more topical/more salient than the 'actor'. The NOM in German and the ABS in Dyirbal tend to refer to the same entity more continuously than other cases in the respective languages. (As is

obvious by now, VV & F's position is a typical example of the correlationalist view.)

'This organization of the clause in terms of the pragmatic salience of NPs may be termed its pragmatic structure' (Van Valin 1980:322). VV & F claim that there are two types of language: reference–dominated and role–dominated. Reference–dominated languages have a pragmatic structure as defined above. In these languages, some (if not all) of grammatical processes are sensitive to the syntactic status of an NP. This is in turn effected by means of 'promotional' (cf. Heath 1976a) constructions, such as passives or ANTIs discussed above in the present paper, which enable a given argument of a transitive verb to appear in different syntactic statuses, with the result that there is no correlation betwen syntactic status and semantic role. On the other hand, role–dominated languages lack a pragmatic structure in the sense defined above. Their grammatical processes are role–sensitive. These languages lack 'promotional' constructions, and consequently semantic role and syntactic status are correlated. (See Van Valin 1980:322–26.)

As has often been pointed out, apparently the majority of ergative languages are ergative in their morphology only, and they are syntactically accusative (cf. 3.5.1 above). Van Valin (1980:426) claim that their accusativity is only superficial, and is not identical with that in English or German; in contrast with the latter, these ergative languages lack 'promotional' passives to enable the patient NP to occur as the subject. (The last two paragraphs have drawn on Van Valin (1980), but I believe that the views cited above are shared by Foley.)

As can be seen from the preceding, according to VV & F, the interaction of pragmatics and morphosyntax 'is not the same in all languages, and this is of great typological significance' (Van Valin and Foley 1980:331, Foley and Van Valin 1984:16), and the 'distinction between role–dominated languages and reference–dominated languages is proposed to capture' 'a fundamental difference' (Van Valin 1980:303, 326).

No doubt, VV & F's observations are insightful. Nonetheless, their methodology and theory are not free from problems. These problems concern (i) the concept of pragmatic peak/pivot, (ii) the distinction between reference–dominated and role–dominated languages, and (iii) the interaction between pragmatics and morphosyntax. In addition, VV & F's account of Dyirbal contains two factual inaccuracies. I shall comment on these points in the following.

[1] Pragmatic peak/pivot (PrP). There are good reasons to cast serious doubt

on the validity of the concept of PrP. Thus:

(a) As alluded to in 2.2.5 above, if patterns in coreferential deletion show any correlation with pragmatic issues, such as pattern of topicality, then they are most likely to to so in those environments where there is an option between retention and deletion of the target, leaving room for the intervention of pragmatic factors. On the other hand, they are less likely to do so in those environments where deletion of the target is obligatory, closing up the possibility of the influence of pragmatic factors.

In Warrungu (2.2.5 and Table 7) as well as Dyirbal (Table 17), coreferential deletion is almost obligatory in subordination (97% in Dyirbal; 89% in Warrungu), fairly frequent in coordination (61% in Dyirbal; 55% in Warrungu), but it is least obligatory/most optional in sentence-sequence (46% in Dyirbal; 30% in Warrungu). Therefore, as pointed out in Tsunoda (1986a:201), sentence-sequence is the most suitable level of clause-linkage for investigating pragmatic issues — as far as coreferential deletion is concerned.

In the light of the above, the evidence VV & F cite in ascertaining the existence of PRAGMATIC peak/pivot in individual languages appears to have little, if any, connection with PRAGMATIC factors. For, their evicence concerns deletion patterns most frequently, and yet they do not cite any evidence from the most crucial clause-linkage level, i. e. sentence-sequence. Instead, they only supply examples from the following areas of grammar (deletion probability in which is indicated in the parenthesis): infinitive constructions, e. g. *want to*, and participle constructions (obligatory); subordination, including purposive subordination (almost obligatory in Dyirbal, etc.); and coordination (fairly frequent in Dyirbal, etc.). (Recall also that the S/O pivot, on which VV & F depend so heavily, is generally limited to subordination in any case.)

(b) VV & F's concept of PrP is essentially a cluster of morphosyntactic properties (as is admitted by Foley and Van Valin 1984:115). But, the present paper has already demonstrated that features such as case-marking system, transitive case frame, and absence/presence and pattern of syntactic pivot — the very kinds of grammatical phenomenon VV & F base their argument on — have no bearing on a pragmatic issue such as the agent-vs.-patient topicality, the agent invariably more topical than the patient — contra VV & F.

Finally, I shall mention the two inaccuracies alluded to above. Firstly, VV & F state that in Dyirbal the ABS tends to refer to the same entity more continuously

than other cases. But, my counting of Dyirbal texts shows that the ERG tends to do so more continuously than the ABS; see Table 16. (VV & F do not provide any statistical data to substantiate their assertion.) Secondly, VV & F's statement that the case of the PrP in Dyirbal is the ABS, is inaccurate. In this language, and also in Warrungu, what VV & F term PrP can involve not only the ABS (O, S, d–S) — for the nouns — but also the ACC (O) and the NOM for the S and for the d–S (though not the NOM for the A) — for the pronouns. Examples from Dyirbal include (425) and (426) in Dixon (1972:131): (425) NOM(A) [ACC(O)], and (426) ACC(O) [NOM(S)]. Examples from Warrungu include (10) and (13) given above: (10) NOM(S) [ACC(O)], and (13) NOM(S) [NOM(d–S)].

[2] Distinction between reference–dominated and role–dominated languages. According to VV & F's characterization of these two types, Warrungu, Kalkatungu and Japanese as well as English and Dyirbal are reference–dominated, while Djaru is role–dominated. (See 3.1 for the outline of the morphosyntax of these languages.) Now, there is evidence to show that the difference between these two types may not be so 'fundamental' as VV & F claim it is — as far as coreferential deletion is concerned.

Firstly, recall that, since ANTIs and passives are not frequent, those deletions which involve the d–S (of an ANTI or a passive, depending on the language) are not frequent (Tables 12, 13, 14). Such deletions range between 20% and 25% in Warrungu, Dyirbal and Kalkatungu, but they display a much lower percentage in English (5.4%) and Japanese (6.4%). Naturally, such deletions are, by definition, non–existent in role–dominated languages, such as Djaru (Table 14).

In other words, the correlation between semantic role and syntactic status is retained in 100% of coreferential deletions in role–dominated languages, about 95% in English and Japanese, and about 75% to 80% in Warrungu, Dyirbal and Kalkatungu.

Looked at in such a way, the difference between role–dominated languages on the one hand and English and Japanese on the other is virtually nil — despite the fact that English is regarded by VV & F as a typical example of reference–dominated language.

Secondly, since the syntactic accusativity in reference–dominated languages such as English is in reality fake (rather than genuine), involving no passives (cf. 3.3.2), it shows practically no difference from the 'fake' syntactic accusativity in role–dominated languages — contrary to VV & F's claim.

Thirdly, as noted in 3.5.1 above, even in those languages which have a genuine S/O pivot, this pivot is generally confined to subordination, and a fake S/A pivot (or no clear pivot) prevails elsewhere. That is, in a sense, these language are reference-dominated in subordination only, and they are role-dominated in coordination and presumably in sentence-sequence as well — the very clause-linkage level that is the most relevant for the investigation of pragmatic issues, which is among the main concerns of VV & F's works. Note that even Dyirbal may be role-dominated at this level. In sum, the difference between these two types of language may not be so great as VV & F claim — when we look at this crucial level of sentence-sequence.

[3] Interaction between pragmatics and morphosyntax. As seen above, as far as deletion patterns are concerned, the difference between reference-dominated and role-dominated languages is small, as is the difference between languages with the S/O pivot and those with the S/A pivot — particularly so in sentence-sequence. This already suggests that the interaction at issue will not display a great variation crosslinguistically as VV & F claim.

Specifically, the present paper has demonstrated that as far as the relationship between the agent-vs.-patient topicality on the one hand and case-marking system, transitive case frame, and absence/presence and pattern of syntactic pivot on the other is concerned, pragmatics and morphosyntax are independent of each other, and their interaction does not vary across languages. This result negates VV & F's assertion, and substantiates Heath's (1980:886) view cited in 1.2 above.

(Note, however, I do not entirely deny the possibility of this correlation. It might obtain in some other area of grammar.)

[4] Concluding remarks. There seem to be at least two reasons for the problems discussed above. Namely, VV & F (i) do not recognize sentenc-esequence, the clause-linkage level that is the most pertinent for investigating pragmatic issues, and (ii) overemphasize the role of 'promotional' constructions, without looking at a general picture of deletions in a given language.

One major goal in VV & F's research is 'to account not only for what constructions languages have but also for why some languages have certain constructions while others do not' (Van Valin 1980:326, Foley and Van Valin 1984:333). The present paper has shown that there is another important aim in linguistic research. Namely, it is vital to investigate not only what linguistic devices are possible in a given language

(as is done in VV & F's works and many others), but also to enquire to what extent they are utilized in actual discourse (as is done in the present paper). That is, it is essential look at not only possibilities, but also their functional load in reality.

This aim is particularly important for a functionally-oriented grammar such as VV & F's role and reference grammar, and also for study of pragmatic issues in general. For this aim, the quantitative method adopted in this paper has proved to be invaluable.

4. Summary and conclusion

The present paper has furnished evidence to negate the correlationalist view that what is the (prime) topic, or is the more topical/more prominent is:

(a) the patient/ABS in the ergative case-marking system, and the agent/NOM in the accusative system;

(b) the patient in ERG-ABS clauses, and the agent in NOM-ACC clauses;

(c) the patient/ABS in languages with the S/O pivot, and the agent/NOM in those with the S/A pivot.

The results obtained in this paper cogently support the non-correlationalist view that the agent is universally more topical than the patient, irrespective of a given language's morphosytactic types. Specifically, this paper has demonstrated that this conclusion holds good regardless of:

(i) whether a given language is ergative or accusative;

(ii) whether a given ergative language is morphologically mixed or almost 'pure-ergative';

(iii) whether a given transitive construction is ERG-ABS or NOM-ACC;

(iv) whether a given language has no syntactic pivot or some pivot(s), and;

(v) whether a given language has the S/O pivot, the S/A pivot or both.

That is, these morphosyntactic features have no bearing on the agent-vs.-patient topicality.

This paper has also demonstrated that, contrary to the correlationalist view, the ERG is more topical than the ABS in the ergative case-marking system and in languages with the S/O pivot. It is consistently those cases which typically describe the agent — i. e. ERG and NOM — that are the more topical.

These two conclusions in turn point to the inadequacy in VV & F's concept of pragmatic peak/pivot.

At least in these two respects (though not necessarily in other respects), pragmatics and morphosyntax are independent of each other, and their interaction does not vary across languages.

Naturally, the validity of these conclusions depends on that of the assumption on which the Zubin–Givón method (1.3) is based: the assumption that the number of successive/continuous mentions of an entity correlates with the degree of its topicality. I do believe that this assumption is valid, as was stressed in 1.3 above. At least, this method is much more constructive and fruitful than the one that deals with sentences in isolation from connected discourse.

Even if we were to assume for the sake of argument that the validity of this method were rejected for some reason or other, this paper still contains materials and observations that have important implications regardless of the validity/invalidity of this method. They include the following.

〔1〕 Syntactic pivots are of two types: genuine pivot and fake pivot.

〔2〕 The S/O and S/A pivot are not functionally equivalent. Nor are antipassivization and passivization. In all the known instances, the S/O pivot is a genuine pivot, whereas the S/A pivot is in reality a fake pivot — even in languages such as English which in theory can have a genuine S/A pivot. The S/A–pivot–creating function of passivization has been overemphasized. In this respect, this process plays virtually no role, while on the other hand antipassivization has a high functional load.

〔3〕 The fact that the S/O pivot is an unnatural pivot, deliberately created by changing the frequently–occurring 'underlying' accusative patterns, whereas the S/A pivot is a natural pivot, in practice merely existing by default, accounts for their heavily skewed crosslinguistic distribution, i. e. the rarity of the S/O pivot.

〔4〕 If patterns of coreferential deletion have any connection with pragmatic factors at all, then they are less likely to do so where deletion is more obligatory, while they are more likely to do so where deletion is more optional, with a correspondingly higher probability of the intervention of pragmatic considerations.

〔5〕 In discussing coreferential deletion, it is important to distinguish levels of clause–linkage. In particular, for investigation of its relevance to pragmatic issues, it is vital to recognize the level of sentence–sequence.

For example, in Warrungu, the frequency of antipassivization, the rate of its ergativizing effect, and the rate of deletion vary across clause-linkage levels, all of

them being highest in subordination and lowest in sentence-sequence.

In Warrungu and Dyirbal, since coreferential deletion is most optional in sentence-sequence, it is the most suitable clause-linkage level for study of pragmatic factors — as far as coreferential deletion is concerned.

Crosslinguistically, the (genuine) S/O pivot tends to be confined to subordination, with a fake S/A pivot (or no clear pivot) prevailing elsewhere. Even in Warrungu and Dyirbal, the two 'quintessential deepergative' languages, accusative-pattern deletions, involving both the fake and genuine S/A pivot, spread from the sentence-sequence end. That is, in sentence-sequence, the difference in deletion patterns between S/O–pivoted languages and S/A-pivoted languages is small.

This fact — combined with the fact that the three neutral pattterns constitute the majority of deletions in each language, irrespective of whether a given language has no pivot, the S/O pivot, the S/A pivot or both the pivots, and whether a given language is 'reference-dominated' or 'role-dominated' (see Tables 13 and 14) — suggests that languages show little, if any, difference regarding pragmatic matters or discourse organization — as far as coreferential deletion is concerned. This supports Heath's (1980:886) suggestion cited in 1.2 above.

[6] There is no single concept of subject which is applicable to all clause-linkage levels of all languages — again, as far as pivot in coreferential deletion is concerned.

[7] Warrungu seems to have the strongest syntactic ergativity among the world's languages — even stronger than the counterpart in Dyirbal — in that this phenomenon unequivocally reaches its sentence-sequence.

[8] For study of pragmatic issues specifically, and for functionally-oriented research ing eneral, it is important to look at not only possible morphosyntactic devices, but also their functional load, i. e. the extent to which they are put to use in actual discourse. A quantitative method has proved of immense value for this purpose.

[9] There are three problems with the correlationalists' position. One is their neglect of discourse data. For example, concentrating on the idealized — and indeed, overemphasized — contrast between the S/O and S/A pivot, they failed to notice that in each language the three neutral patterns constitute the majority of coreferential deletions, the S/O-pivot-oriented and S/A-pivot-oriented deletions each displaying a much lower percentage. Another reason is their unawareness of the fact that, since antipassivization and passivization do not change the referents themselves, even on a

priori ground they are unlikely to influence the agent–vs.–patient topicality. The third reason is their non–differentiation of clause–linkage levels generally and non–recognition of sentence–sequence particularly.

Appendix I. Further comments on the correlationalist view

I have repeatedly indicated the inadequacy of the method adopted by correlation-alists, who base their discussions of pragmatic issues such as topic and topicality on sentences in isolation from connected discourse. Even if we were to admit for the sake of argument that their method were justified for some reason for other, the evidence they cite is still not persuasive. It will be beyond the scope of this paper to illustrate the inconclusiveness of each of their specific arguments. Nonetheless, I have already pointed out a priori reasons to show the inadequacy inherent in their arguments — in relation to the effects of antipassivization and passivization; see [7] in 3.3.2, and note 17. In what follows, I shall present just one frurther kind of evidence which is referred to by virtually all correlationalists, and then demonstrate how this evidence does NOT substantiate their view.

This evidence has to do with the alternation or co–existence of ERG–ABS and other constructions within a given ergative language, with concomitant semantic and/or pragmatic differences. Specifically:

(a) ERG–ABS: perfective ('successfully completed'), perfect, past.

ABS–DAT, etc. (including ANTIs): imperfective ('uncompleted', 'ongoing', incom-pletive, progressive, habitual), potential, future, negative, irrealis.

(Plank 1979a:26, Comrie 1981b:69–71, Wierzbicka 1981:67, fn. 15, 68).

(b) ERG–ABS: patient/object is definite.

ANTI (ABS–DAT, etc.): patient/object is indefinite, non–specific, generic.

(Wierzbicka 1981:69.)

(c) ERG–ABS: used with predicates such as 'kill'.

ABS–DAT, etc.: used with predicates such as 'listen', 'look', 'like', 'fear', 'hate', 'jealous', and 'able'.

(Plank 1979a:27–28)

These facts have been put forward as evidence to show that the patient is more topical than than the agent in ergative LANGUAGES (Plank), the ergative SYSTEM (Plank), and ergative CONSTRUCTIONS (Plank. Comrie, and Wierzbicka). However, it is

difficult to see how these facts support their claim. There are at least two reasons for this scepticism.

Firstly, in many Australian languages, such as Warrungu and Dyirbal, the case-marking system is, roughly speaking, ergative for nouns but accusative for pronouns (cf. 3. 1). In such languages, while the noun display the alternation/co-existence of ERG–ABS and ABS–DAT, etc., the pronouns manifest this phenomenon between NOM–ACC and NOM–DAT, etc. Since this alternation/co-existence involving ERG–ABS is limited to the nouns only, it does not necessarily mean that such an ergative LANGUAGE as a whole is patient–oriented.

Secondly, as is well–known, a parallel phenomenon occurs in accusative languages as well. Examples regarding aspect/tense/mood or semantics of the patient/object include the famous alternation in Finnish (Itkonen 1979:80):

NOM–ACC: affirmative perfective with object of 'a definite quantity'.

NOM–PART: affirmative perfective with object of 'an indefinite quantity'; affirmative imperfective; all negatives.

A similar, or almost identical, alternation, with the GEN in place of the PART, is found in nearby languages: Lithuanian (Lisauskas 1976), Russian (Timberlake 1975), and Polish (Wierzbicka 1981:54). Even English has an analougous phenomenon (Anderson 1976:22–23):

NOM–ACC: object is completely, conconclusively, etc. affected,

NOM–_at, on_, etc.: object is incompletely, inconclusively, etc. affeced.

Similarly, concerning predicate types as well, a phenomenon parallel to the co-existence of ERG–ABS and ABS–DAT, etc. occurs in accusative languages also. Examples from English:

NOM:ACC: _kill_, _hit_, etc.

NOM–_at, to, for, of. on, with_, etc.: _look, listen, search, afraid, keen, angry_, etc.

That is, the presence of the alternation/co-existence of ERG–ABS and ABS-DAT, etc. in ergative languages does not necessarily mean that these LANGUAGES are specifically patient–oriented, since parallel phnomena occur in accudative LANGUAGES as well.

Even if we focus on the ergative SYSTEM and CONSTRCTIONS (rather tha nan ergative LANGUAGE as a whole), the alternation/co–existence in qustion still does not mean that they are specifially patient–oriented, again since parallel phenomena

occur involing the accusative SYSTEM and CONSTRUCTIONS.

If we were to apply the correlationalists' logic to accusative languages, system and constructions, the latter also would be patient–oriented — contra their own claim. (At least regarding the alternation of perfective/imperfective, Wierzbicka (1981:67,fn. 15) suggests that, in view of its occurrence 'in accusative languages as well', it 'should not be taken as evidence of any patient–orientedness' (of ergative constructions?).)

Instead, what these facts show is the well-known fact that languages tend to employ different constructions depending on the (relative degree of) the affectedness of the patient, utilizing a certain case frame (e.g. ERG–ABS, NOM–ACC) when the patient is (relatively more) affected and some other case frame (e.g. ABS–DAT, NOM–DAT, etc). when the patient is not (or, is relatively less) affected. (For a general discussion, see Hopper and Thompson (1980). Regarding predicate types in particular, see Tsunoda (1981b, 1985b).)

Analogous remarks apply to DeLancey's (1981) interpretation of aspectual split, who claims (p.647) that the ABS in the perfective ERG–ABS constructions indicates viewpoint, on the ground that 'perfective aspect requires that viewpoint be with the NP associated with the temporal terminal point, i.e. the patient'. I do not find this argument convincing. Thus, if this ground were to be valid, then in languages which have NOM–ACC for perfective and NOM–PART or NOM–GEN for imperfective, the ACC would have to indicate viewpoint. But, obviously, this conclusion would contradict DeLancey's own view that the NOM/ABS case indicates viewpint (and that the NOM and ABS are in some sense the same category'; see note 17.

Appendix II. Comparison with similar works

As mentioned above (cf. 1.2 in particular), Cooreman, Eox and Givón (1984) and Cooreman (n.d.) employed data from ergative languages — from Chamorro and Tagalog, and from Dyirbal, respectively — and concluded that the agent is universally more topical than the patient. (Both Chamorro and Dyirbal are morphologically mixed–ergative. The former has the S/O pivot, while the latter does not appear to. On Tagalog, see note 3.) The present paper shares with these two works the conclusion and the quantitative method employed. However, it differs from them in several important respects. The differences include the following.

In discussing the agent–vs.–patient topicality, unlike those two works, the present paper has compared:

(a) ergative and accusative languages;

(b) morphologically mixed ergative languages and a morphologically (virtually) 'pure-ergative' language;

(c) ERG-ABS and NOM-ACC constructions;

(d) languages with the S/O pivot, those with the S/A pivot, one with the both pivots, and one with no pivot.

In examining this relative topicality, the present paper has distinguished between transitive case frames (3.2) and the effect of syntactic pivot (3.3.1). In contrast, the other two works in effect only employ the method analogous to that utilized in 3.2 above for transitive constructions, without differentiating different transitive case frames in a given language (contra 3.2 above). Cooreman (n.d.) applies this method to not only transitive constructions but also ANTIs. But, shes does not examine the total effect of these two constructions combined in connected discourse (as is done in 3.3.1 above).

In contrast with those two works, the present paper has also investigated the relative topicality of the two members of each of the two case-marking systems, i.e. ERG and ABS, and NOM and ACC (or, nom and acc).

In addition, this paper has demonstrated the reason for the irrelevance of syntactic pivot to the agent-vs.-patient topicality.

This paper also has also looked at important issues listed in Section 4 and those in Appendix I, among others.

Notes

of Education, University of Nagoya, for examining (and confirming) the validity of the statistical data presented in this paper.

The Warrungu phoneme inventory, written in a practical orthography, is as follows:- /p, t, ty, k, m, n, ny, ng, rr, r, l, y, w, i, a, u/.

The abbreviations used in this paper include the following: A, transitive subject; ABS, absolutive; ACC, accusative; acc, accusative of bound pronoun; ANTI, antipassive; APPR, apprehensional; DAT, dative; d-S, derived intransitive subject; DU, dual; ERG, ergative; GEN, genitive; IMP, imperative; INST, instrumental; LIG, ligature; LOC, locative; NOM, nominative; nom, nominative of bound pronoun; O, transitive object; OBL, oblique object of antipassive; PART, partitive; p. c., personal communication; PL, plural; P/P, past/present; PURP, purposive; REDUP, reduplication; REP, repetitive; S, intransitive subject; SG, singular; TT (this indicates words, etc. I added, or sentence I composed for this paper); and Vtr, transitive verb. The abbreviations used in the references are listed therein.

In some of my recent publications, I wrote my name in the Japanese order, i. e. Tsunoda Tasaku, with the surname (Tsunoda) preceding the given name (Tasaku). However, as 'Tasaku' has often been mistaken for my surname (and 'Tsunoda' for my given name), in this paper I write my name in the English order, which is the reverse of the Japanese order.

1 On literal reading, Mallinson and Blake (1981:103-15) appear to share the correlationalist view as presented in 1. 1 and also in Appendix I.

2 Warrungu (also written Warungu, depending on the orthography employed) is an Australian Aboriginal language that used to be spoken in the upper Herbert River area of North Queensland. Most of the data on it were obtained from the late Mr. Alf Palmer *(tyinpilnghay)*, the last fluent speaker of the language. I dedicate this paper to his memory in my deepest appreciation for the intelligence, patience and humour he displayed while teaching me his language. The field work on this language and the write-up phase of Tsunoda (1974) were financed by the Australian Institute of Aboriginal Studies, whose generous assistance I acknowledge gratefully.

3 Dyirbal and Chamorro are unequivocally 'ergative languages', each displaying the ergative pattern (A≠S=O) in parts of their morphology, at least. With respect to Tagalog, although Cooreman, Fox and Givón regard it as an ergative language, there is in fact disagreement on the typology of this language. See Shibatani

(forthcoming-a). Indeed, Tagalog and other Philippine languages possess so-called topic constructions or focus constructions, and they are often referred to as 'Philippine-type languages'. (See also Schachter (1976) and Schwartz (1976) among others.) Nonetheless, even if we are to decide that Tagalog is not an ergative language, but a Philippine-type language, the data on this language provided by Cooreman, Fox and Givón in fact supply an additional support to their claim, that is, their data will show that the agent is the more topical not only in those ergative languages, but also in a Philippine-type language as well.

4 In this paper, I use the terms 'A' (transitive subject), 'O' (transitive object), 'S' (intransitive subject), 'd-S' (derived intransitive subject) and 'OBL' (oblique object of ANTIs) in terms of grammatical functions (though not so rigidly as in relational grammar), rather than in terms of semantic roles, such as 'agent' and 'patient'. Thus, both the A and the ANTI d-S can refer to agents, and both the O and the OBL to patients.

5 Note that what we might term 'the neutral-pattern-maintaining' effect — neutral → neutral (A=A → d-S=d-S), cf. (15) and (16) — would seem to be redundant, since deletion of A=[A] is common; see Table 1. And that the accusativizing effect (A=A → d-S/A), cf. (17) and (18), is in direct conflict with the overall preference for the ergative patterns in deletion, and consequently it would seem to have been unnecessary. Nonetheless, they do occur in Warrungu texts, albeit very infrequently. The accusativizing and the neutral-pattern-maintaining effect of antipassivization have never been reported for ANTIs of other languages. But, they do occur involving antipassivization in Dyirbal. For its accusativizing effect, see 3.5.1 below. The ex. (9) in Cooreman (n. d.:15) — a deletion of d-S=[d-S] — is in fact an instance of its neutral-pattern-maintaining effect.

6 There is just one — and surely insignificant — deviation from this generalization. Namely, ANTIs are less frequent in coordination (8 %) than in sentence-sequence (9 %).

7 In this paper, I use the terms 'coreferential deletion', 'zero anaphora', and 'ellipsis' interchangeably. Hinds (1982:21), in his discussion of Japanese discourse, distinguishes between deletion as a transformational notion and ellipsis as a surface structure notion. However, as has been demonstrated above, in Warrungu at least, no such clear-cut distinction exists; the deletion probability is merely a matter of degree,

ranging from highest in subordination to lowest in sentence-sequence, with no obvious cut-off point.

These discussions also suggest that recoverbility of the deleted element, on which coreferential deletion crucially hinges, can be of two types: syntactically-governed recoverbility and pragmatically-governed (or discourse-governed) recoverbility — although this classification may be again continuum-like.

8 It might be argued, however, that these figures do not show conclusively the agent's higher topicality, on the ground that the difference between the two figures is very small in certain pairs, e. g. 2. 46 of NOM(A) and 2. 25 of ACC(O) in Warrungu, and 1. 42 of NOM(A) and 1. 12 of ACC(O) in Japanese. However, Takashi Murakami (p. c.), a specialist in statistics, assures me that these figures are indeed significant statistically. According to him, the crucial fact about them is the fact that in every pair examined in Table 9, the agent CONSISTENTLY displays a higher average than the patient. In statistical studies generally, a consistent tendency is more significant than just a large and yet random difference. The same remarks apply to the validity of Tables 11 and 16, and other relevant tables.

9 The largest number of successive mentions is 8 in Table 9 (i. e. ERG(A) in Warrungu), 18 in Table 11 (i. e. agent of Warrungu), and 18 in Table (i. e. NOM of Warrungu). However, this paper only provides examples which contain a much smaller number of successive mentions — at most, four (i. e. agent in (37)). This is in order to save space.

10 Recall that, due to the scarcity of the relevant examples, Djaru was not included in Table 9. However, the loosening of the condition for counting (cf. the paragraph following the ex. (36)) and the non-differentiation of independent NPs and bound pronouns (in contrast with Table 9) have yielded sufficient examples for Djaru to be included in Table 11.

11 However, in the actual texts of English and Japanese, a given agent is never referred to alternately by the A and the passive agent NP. That is, there is no example such as:

(i) Sandra$_i$ (A) kissed Jeremy$_j$ (O) and Cara$_k$ (d-S) was hugged by her$_i$. A＝agent NP
    Instead, we have the pattern shown in (ii), in which the agent is expressed by the A throughout:

(ii) Sandra$_i$ (A) kissed Jeremy$_j$ (O) and she$_i$ (A) (or, [she$_i$ (A)]) hugged Cara$_k$ (O). A＝A

(or, A=[A])

Similarly, in the actual texts, a given patient is never described alternately by the O and the passive d-S, as in:

(iii)　Elisa₁ (A) picked up a bookⱼ (O) and itⱼ (d-S) was read by her₁. O=d-S

Instead, we have the pattern shown in (iv), in which the patient is always marked by the O:

(iv)　Elisa₁ (A) picked up a bookⱼ (O) and she₁ (A) (or, [she₁ (A)]) read itⱼ (O). O=O

(Note that the ex. (iii) would fit in an S/O pivot, rather than an S/A pivot — if the d-S were deleted.)

This situation concerning the S/A pivot plus passives is in strikingcontrast with that regarding the S/O pivot plus ANTIs. In Warrungu, alternate reference to the same agent by the A and the d-S, e. g. (37) (d-S [A] ...), and that to the same patient by the O and the OBL, e. g. (38) (O [O] [OBL]) do occur, though not frequently. 3. 5. 3 below mentions examples from Dyirbal: d-S [A]; and A [d-S]. (Despite this, the labels 'agent NP' and 'd-S' have been included for English and Japanese in Table 11, by way of completion.)

For detailed discussions of the differences between the two pivots, and between ANTIs and passives, see 3. 3. 2.

12 In coreferential deletion in Djaru, indeed, accusative pattern (S=[A]; four examples) does outnumber ergative pattern O=[S]; one example). Despite this, the language appears to lack any clear pivot in coreferential deletion. Since bound pronouns are extremely frequent, occurring in virtually every clause (cf. 3. 1), the question of coreferential beletion does not apply to them. This question is also largely irrelevant to independent NPs, for those expressing the three core syntactic functions (A, O, S) are infrequent in the texts, these functions being often embodied by bound pronouns alone. (Table 14 shows what little can be observed of the extremely infrequent 'coreferential' deletion of independent NPs.)(The higher frequency of accusative pattern than ergative pattern in corefeferential deletin is in fact what will be expected in view of what will be stated in [3], [4] and [5] below.)

Due to its lack of any clear pivot, Djaru will not be considered in the following discussions. Nonethless, the figures on it are presented here for convenience; they will be referred to in 3.5.3　below.

13 In addition to the patterns and pattern changes shown in Table 10, Warrungu

has A＝[d-S], d-S＝[A]and d-S＝[d-S] (all derived from A＝[A]), and Dyirbal has d-S＝[A]; see Table 13. (See also note 5 on d-S＝[d-S] and 3.5.1 on A＝[d-S] in Dyirbal.) However, their existence has no affect on the argument and conclusion put forward in [3] and [4], since they are extremely infrequent (0.7% in Warrungu and 1.6% in Dyirbal).

14 Naturally, Jespersen did not use the term 'pivot'. To my knowledge, this term was first used by Heath (1976b:606), and was subsequently adopted by Dixon (1979: 121).

15 In this sense, grouping of the A and the S seems more natural than that of the O and the S. Other areas of grammar where this tendency is observed include switch-reference, most attested instances of which seem to operate around S/A (cf. Dixon 1979:121, fn.87, and Foley and Van Valin 1984:117), although, logically speaking, switch reference revolving around S/O would be equally feasible.

16 But, this still does not explain why such a highly marked syntactic pivot is attested at all. Here, we are faced with one of the most vexing problems in typological studies. Namely, while it is not difficult — though it is not too easy either — to point our crosslinguistics tendencies, 'watertight explanations are impossible to find' (Mallinson and Blake 1981:444). For instance, Keenan (1978) lists several reasons why subject-final languages are unnatural, but these reasons do not explain why such an unnatural word order occurs at all.

17 In fact, on a priori ground, it is even possible to say that the S/O pivot is AGENT-oriented, and that the S/A pivot is PATIENT-oriented — contrary to the correlationalist view.

In the S/O pivot, antipassivization turns the O into the OBL. The patient, which has now acquired the OBL function, can no longer remain in the S/O pivot. Similarly, in the S/A pivot, passivization changes the A into the passive agent NP, which is now no longer compatible with the S/A pivot (of. ex. (i) in note 11).

These facts could be taken as evidence to show that the S/O pivot were agent-oriented and the S/A pivot patient-oriented — if one were to base his argument on a priori reasoning as correlationalists often do. One of the main points of this paper is that study of issues such as topicality needs to be based on discourse data, and not on a priori argument. It is in view of this that the a priori reason given above is not included in the main text.

Wierzbicka (1981:69) lists 'the absence of a passive and the presence of an antipassive' as one of several pieces of putative evidence to show the patient's higher topicality in the ergative constructions. However, in the light of what has been said this 'evidence' does not supp rt her view.

18 DeLancey (1981:626, 639) asserts that the ABS case indicates viewpoint. (It appears to be this conclusion and Zubin's work, which demonstrated that the NOM in German indicates 'prominence in discourse' and 'speakers' focus of interest' — that have motivated his supp rt of the traditional idea that the NOM and the ABS are in some sense the same category). However, I do not find his argument and conclusion convincing. There are at least three reasons for my scepticism.

Firstly, unlike Zubin, DeLanecy only deals with sentences in isolation from context; he employs no evidence from connected discourse.

Secondly, there is evidence which contradicts DeLancey's conclusion. First, consider the examples he gives (p. 642) from Jyarong, a Tibeto–Burman language of Szechwan. The relevant points of these exampies are as follows. (The numbering of the examples is as in his paper,)

(46) you+ERG(A) I+ABS(O) will+scold. 'You will scold me.'

(47) he+ERG(A) I+ABS(O) will+scold. 'He will scold me.'

(48) I+ABS(A) he+ABS(O) will+scold. 'I will scold him.'

(49) I+ABS(A) you+ABS(O) will+scold. 'I will scold you.'

(50) he+ERG(A) you+ABS(O) will+scold. 'He will scold you.'

DeLancey says that this language has the following empathy/viewpoint hierarchy:

1st > 2nd > 3rd

where 'higher positon on the [hierarchy — TT] counts as higher eligibility for viewpoint placement' (p. 645). As far as these examples are concerned, it might look as if the data supported his conclusion. In each sentence, the NP higher on the hierarchy is in the ABS, i.e. 'I' in (46), (47), (48), (49), and 'you' in (50). However, a careful examination of these examples reveals that they do not really bear out his conclusion. For instance, if the ABS really indicated viewpoint, then we would expect to have an example such as the following, whefe 'you', which outranks 'he' on the hierarchy, were in the ABS:

(i) you+ABS(A) he+ABS(O) will+scold. 'You will scold him.'

However, unfortunately, DeLancey does not give an example of this crucial sentence.

According to Yasuhiko Nagano (p.c.), to whom I am especially grateful, we have (ii),
in which 'you' is in the ERG — contrary to DeLancey's prediction.

(ii)　no+kə　　　mə+φ　　tə+nasngo+n

　　　you+ERG　he+ABS　TENSE+scold+2nd　'You will scold him.'

What DeLancey's and Nagano's examples jointly demonstrate is that for the A
function in this language 'you' and 'he' consistently take the ERG marking, whereas
'I' lacks this marking. That is, in this function, even when 'you' (and presumably 'he'
as well) has the viewpoint assigned to it, as in (ii), it is still in the ERG, and not in
the ABS. The O is invariably in the ABS, irrespective of whether the viewpoint is
placed on it, e.g. (46), (47), (50), or not, e.g. (48), (49), (ii). These facts do not validate DeLancey's
claim that the ABS indicates viewpoint in this language.

For the third reason of my scepticism, see Appendix I.

19 Dixon (1972:80, 130–34) stresses that the acceptable patterns of coreferential
deletion in Dyirbal are S=[O], O=[S], O=[O], and S=[S] (the d–S included in the
S). (And, this statement has been repeated in numerous secondary sources.) However,
this statement is in fact misleading.

Firstly, S/A–pivot–oriented deletions (S=[A], A=[S], A=[d–S], d–S=[A]) do
occur in Dyirbal texts, although they are infrequent.

Secondly, A=[A] deletion, which should be unacceptable according to Dixon's
statement, is in fact common in each of subordination, coordination, and sentence-
sequence (Table 17). Indeed, overall, deletions in this pattern are the most frequent,
along with O=[O] deletions; they each have 14 examples (Table 13).

In fact, Dixon (1972:73) implies that A=[A] deletion is acceptable for pronouns,
though not for nouns or noun markers, and provides two examples: (117) and (118).
However, scrutiny of the texts provided reveals that A=[A] deletion occurs with
nouns and noun markers as well. Examples from coordination include:

　　　pangkul ERG(A)　[*pangkul* ERG(A)]

in p. 376, line 49; p. 378, lines 55, 58; and p. 379, line 62. The ex. (13) in Cooreman
(n. d.:18) is an additional example.

20 As alluded to in 1.2, the use of the terms 'S/O and S/A pivot' adopted in this
paper — which so far has not been characterized explicitly — is slightly different from
Dixon's (1979:121), which is stated as follows:

(a)　S/A pivot: the coreferential NP must be in derived S or A function in one (or

both) clauses.

(b) S/O pivot: the coreferential NP must be in derived S or O function in one (or both) clauses.

According to this definition, the S/A pivot, for instance, allows deletions of S=[O], O=[S], O=[O], and O=[O]. Note, however, that it disallows A=[A] deletion, which is in fact the most frequent in Dyirbal texts, despite Dixon's statement (cf. note 19). The same applies to A=[A] deletions in Warrungu and Kalkatungu (Table 13).

Now, the definition of the S/O pivot adopted in this paper is:

(c) S/O pivot: A≠S=O: the S and the O are grouped together in contradistinction from the A. (The d-S is included in the S.)

(The classification of the four coreference patterns set up in 2.2.1 above — ergative, accusative, neutral, and aberrant — is relevant, and also will be better appreciated, in this connection.)

Note that this definition, unlike Dixon's, does not stipulate whether A=[A] deletion be allowed or disallowed; both alternatives exist as logical possibilities — provided that the A behaves differently from the S and the O.

One possible interpretation of this definition of the S/O pivot — and this is the interpretation adopted — is as follows. The following deletion patterns are permitted:

(i) ergative patterns: S=[O], O=[S], and;

(ii) neutral patterns: A=[A], O=[O], S=[S].

Among them, A=[A] has both its control (A) and target ([A]) on the left of the barrier (≠) in the scheme A≠S=O, while the others each have their control (O or S) and target ([O] or [S]) on the right of the barrier. That is, they all conform with the scheme A≠S=O. In contrast, the following patterns are not allowed:

(iii) accusative patterns: S=[A], A=[S], and;

(iv) aberrant patterns: O=[A], A=[O].

They deviate from the scheme A≠S=O, each transcending the barrier. (Naturally, they can be rendered compatible with the S/O pivot by means of antipassivization.)

Since my definition of the S/O pivot, unlike Dixon's, can accomodate A=[A] deletion, it fairly accurately captures the situation in Dyirbal, and also that in Warrungu and Kalkatungu (Table 13).

In a parallel fashion, the definition of the S/A pivot adopted for this paper is as follows:

(d) S/A pivot: A＝S≠O: the A and the S are grouped together in contradistinction
　　　　　from the O.

According to one possible interpretation, the following deletions will be allowed:

(v) accusative patterns: S＝[A], A＝[S], and;

(vi) neutral patterns:　　A＝[A], O＝[O], S＝[S].

But, the following deletions will be prohibited:

(vii) ergative patterns:　　S＝[O], O＝[S], and;

(viii) aberrant patterns:　　A＝[O], O＝[A].

Again, this definition (and interpretation) represents the situation in English and Japanese fairly closely.

Note that, according to these definitions, deletions in a neutral pattern will be allowed in both the S/O and S/A pivit (hence, this naming). On the other hand, deletions in an aberrant pattern, which appear to be universally prohibited/disfavoured (2.2.1), are disallowed in each of the two pivots.

My definitions of the two pivots have at least two advantages over Dixon's. Firstly, they can accomodate A＝[A] deletion in the S/O pivot (and also in the S/A pivot). Secondly, they entail the prohibition of aberrant-pattern deletions whichever pivot is selected.

(It is needless to say that different definitions of pivot will be required to capture different situations. The ones adopted in this paper are not the only possibilities.)

References

Abbreviations used: AP, Academic Press; AIAS, Australian Institute of Aboriginal Studies; AJL, Australian Journal of Linguistics; ANU, Australian National University; BLSn, Proceedings of the n-th Annual Meeting of the Berkeley Linguistics Society; CUP, Cambridge University Press; Lg, Language; NWPL, Nagoya Working Papers in Linguistics; NY, New York; PL, Pacific Linguistics; S&S, Syntax and Semantics; SinL, Studies in Language; TSinL, Typological Studies in Language; UofN, University of Nagoya; UTP, University of Texas Press.

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