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ERGATIVITY

R. M. W. DIXON

Australian National University

Morphological marking, whether realized by nominal case inflections or cross-referencing on the verb, can be either (i) ergative, marking transitive subject [A] function, vs. absolutive, marking intransitive subject [S] and transitive object [O]; or (ii) nominative, marking A and S, vs. accusative, marking O function. Absolutive is always the unmarked term in an absolutive/ergative opposition. Nominative is most frequently the unmarked term in a nominative/accusative system, but there are some languages in which accusative is unmarked. A language whose morphology mixes accusative and ergative marking has the split determined by (a) the semantic content of verbs, (b) the semantic content of NP's, (c) aspect/tense choice, or (d) a combination of these.

A, S, and O are universal semantic-syntactic primitives. A universal category of 'subject' can be defined as the set {A,S}, and is valid only for the level of deep structure. Language-particular syntactic operations, such as coördination and subordination, work in terms of a (shallow-structure) 'pivot'; this is most often S/A, but can be wholly or partly S/O (languages of the latter type are said to be ergative at the syntactic level). A major function of antipassive or passive derivations is to place A or O NP's (respectively) in derived pivot function, S. Many languages which have some morphological ergativity are entirely accusative (S/A pivot) at the syntactic level. All languages that show syntactic ergativity have some morphological ergativity.*

INTRODUCTION

1. 'Ergativity' is currently an 'in' term in linguistics. It is used by a wide variety of linguists, with a whole range of different meanings. As a result, much confusion exists at present about what an 'ergative' language is, and about the morphological, syntactic, and semantic consequences of such a characterization.

This paper surveys the various properties that have been taken as examples of 'ergativity', and attempts to arrange and explain them. In §§2–4 I deal with types of ergativity at the morphological level. In §2 I discuss the rationale for nominal cases, and survey 'markedness' within both absolutive/ergative and nominative/accusative systems. In §3 I put forward semantic explanations to account for split case-marking; the occurrence of ergative and accusative systems can be motivated by the semantic nature of any of the three types of obligatory sentence component—verb, NP's or aspect/tense specification. In §4 I briefly review the diverse ways in which ergative morphologies can evolve.

In §§5–7 I consider syntactic ergativity, and the difficulty of defining a universal category of 'subject' that holds over ergative as well as accusative languages. It is suggested that 'subject' is not the most fundamental category. The basic thesis of this paper, developed in §5, is that A (roughly: underlying transitive subject), O (underlying transitive object), and S (underlying intransitive subject) are universal syntactic-semantic primitives. 'Subject' as a universal category, which can be valid only at the level of deep structure, involves a grouping of A and S.

In §5.4, I show that certain widespread syntactic phenomena, including impera-tives and jussives, necessarily link together S and A; they are a consequence of the universal category of 'subject', and should not be taken as evidence for the typological classification of any individual language. In §6, I discuss derived structures. In §7, I look at language-particular syntactic phenomena and investigate whether the 'pivot'—for coördination, subordination, and the like—groups together NP's in derived S and A functions ('accusative syntax') or those in derived S and O functions ('ergative syntax'). Antipassive and passive derivations feed these syntactic operations, placing an appropriate NP in a derived function that can be 'pivot' for relativization etc.

The label 'surface subject' has been customarily used for what I term 'pivot'. This does not lead to any difficulties in accusative languages. In languages with ergative syntax, however, considerable confusion can arise if 'pivot' (a language-particular, surface-syntactic category) and 'subject' (defined as a universal deep-syntactic/semantic category) are not clearly distinguished. I discuss the difficulties involved in Keenan's discussion of 'subject' (1976) and in the application of Relational Grammar and the Accessibility Hierarchy to ergative languages; all these result essentially from a failure to distinguish 'subject' from 'pivot'.

In §8 I summarize the varying factors that motivate morphological marking, and attempt to explain why syntactic ergativity is rather rare, although some degree of morphological ergativity is quite commonly encountered.

1.1. INTRODUCTORY EXEMPLIFICATION. A language is said to show ergative characteristics if intransitive subject is treated in the same manner as transitive

object, and differently from transitive subject. There are many ways in which this 'treatment' can be realized:[1] perhaps the clearest is in terms of case inflections.[2]

We can illustrate with the noun paradigm for the Australian language Dyirbal. Here transitive subject is marked by ergative case inflection; this has the form *-ŋgu* on disyllabic stems ending in a vowel. In contrast, intransitive subject and transitive object functions are marked by absolutive case, with zero realization:[3]

(1) *ŋuma banaga+n^{y}u*   'Father returned.'
(2) *yabu banaga+n^{y}u*   'Mother returned.'
(3) *ŋuma yabu+ŋgu buṛa+n*   'Mother saw father.'
(4) *yabu ŋuma+ŋgu buṛa+n*   'Father saw mother.'

The object in 3, *ŋuma* 'father', has the same form as the subject in intransitive sentence 1. Note also that, in the normal word order of Dyirbal (which I follow here), object precedes subject; a more revealing way of putting this is to say that an NP in absolutive case occurs sentence-initially.[4] (The intransitive verb *banaga-y* 'to return' in 1–2 belongs to the *-y* conjugation, and selects the allomorph *-n^{y}u* for the non-future tense. Transitive *buṛa-l* 'to see, look at' in 3–4 belongs to the *-l* conjugation, and takes non-future *-n*.)

We shall need continually to refer to the three core semantico-syntactic relations, and it will be useful to employ abbreviatory letters:

Intransitive subject: S
Transitive subject: A
Transitive object: O

The groupings of these relations for a nominative/accusative case system (e.g. Latin) and for an absolutive/ergative system (e.g. Dyirbal) are:[5]

$$
\begin{array}{l}
(5)\ \text{NOMINATIVE} \left\{ \begin{array}{ll} A & \text{ERGATIVE} \\[4pt] S \end{array} \right\} \\[8pt]
\hspace{3.5em} \text{ACCUSATIVE}\ \ O \end{array} \Bigg\} \text{ABSOLUTIVE}
$$
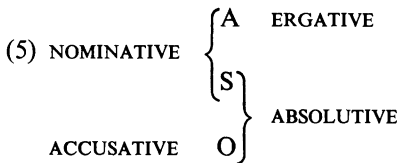
[1] See Fillmore (1968:52) and the discussion in the remainder of this paper.

[2] The term 'ergative' originated as the name for a nominal case, and has been progressively extended to the other uses shown below.

[3] Each NP in Dyirbal also contains a 'noun marker' that agrees with the head noun in case, shows its noun (gender) class, and indicates whether its referent is 'here', 'there', or 'not visible'. To simplify the discussion here, noun markers—which have a slightly irregular paradigm—have been omitted; they do not in any way affect the grammatical points being made. The 'there' forms of the masculine noun marker are ABS *bayi*, ERG *baŋgul*, DAT *bagul*; of the feminine marker, ABS *balan*, ERG *baŋgun*, DAT *bagun*. Full forms of the Dyirbal sentences are thus: (1) *bayi ŋuma banagan^{y}u*; (2) *balan yabu banagan^{y}u*; (3) *bayi ŋuma baŋgun yabuŋgu buṛan*; (4) *balan yabu baŋgul ŋumaŋgu buṛan*; (9) *bayi ŋuma buṛalŋan^{y}u bagun yabugu*; etc.

[4] In fact, word order is very free in Dyirbal, syntactic relations being shown by case inflections. There is, however, a normal order of constituents; it is adhered to in the examples quoted here, simply for pedagogic effect. (See the comments below on position of pronouns.)

[5] 'Nominative' was until recently employed as the complement of ergative (covering S and O functions) as well as the complement of accusative (S and A functions). Because of the confusion that this engendered, 'absolutive' has recently been adopted from Eskimoist terminology.

That case which includes S function is most often the unmarked term in the system. Thus an absolutive NP occurs sentence-initially in Dyirbal, and is the pivot for various syntactic operations. (Transformations may be applied to bring an NP into a surface function where it will take absolutive case, to satisfy coreferentiality conditions etc.) Absolutive has in Dyirbal a very similar syntactic/morphological status to that which nominative has in Latin.

If any case in an 'ergative' language has zero realization, it will be absolutive (as in Dyirbal). Similarly, it is nominative that most frequently has zero realization in an 'accusative' system. (Note, though, that the parallel between absolutive and nominative is not complete here. There are a few well-attested instances where accusative is unmarked, while nominative involves a positive affix; see §2.33).

Languages with ergative case-marking may be in a minority, but they are known from every corner of the globe; to mention only a few of the better-known examples: Eskimo (Thalbitzer 1911, Woodbury 1975, 1977), Georgian (Vogt 1971), Tibetan (Regamey 1954), Basque (N'Diaye 1970), Hindi (Allen 1951), and Tongan (Churchward 1953; see Hohepa 1969).

Moving on to another grammatical level, languages can also be said to have 'ergative syntax'; i.e., some rules of coördination and/or subordination will treat O and S in the same way, and A rather differently. We can again exemplify from Dyirbal.

Two clauses can be coördinated in Dyirbal if they involve a 'common NP' that is in surface S or O function in each clause (i.e. in absolutive case, in terms of the noun paradigm given above). The occurrence of the common NP in the second clause is usually deleted, and the whole biclausal construction can comprise one intonation group. (There is no overt coördinating particle in Dyirbal, similar to Eng. *and*.) Thus, from 1 and 3 we can derive:

(6) *ŋuma banaga+n^{y}u yabu+ŋgu buṛa+n*   'Father returned and was seen by mother.'

Similarly, from 3 and 1:

(7) *ŋuma yabu+ŋgu buṛa+n banaga+n^{y}u*   'Father was seen by mother and returned.'

If we wish to conjoin 1 and 4, we find that the syntactic condition on coördination is not met. The NP *ŋuma* 'father' is common to the two clauses; but although it is in S function in 1, it is in A function in 4. In such cases, an 'antipassive' transformation must be applied, deriving a construction in which an underlying A NP is in derived S function, to satisfy the coreferentiality condition on coördination.

Antipassive can be stated as follows:

(8) NP^1_A NP^2_O V + tense
⇒ NP^1_S NP^2_{DAT} V + *ŋa-y* + tense

This transformation derives an intransitive sentence from an underlying transitive construction. The original A NP becomes S (derived intransitive subject); the original O NP now takes dative case (this has the realization *-gu* with nouns and *-ngu* with pronouns);[6] and the verb is marked by the antipassive derivational suffix

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[6] Instrumental(-ergative) inflection is possible here as an infrequent alternative to dative.

-*ŋa-y*. (Reasons for regarding an antipassive construction in Dyirbal as a derived intransitive are given in Dixon 1972:150–51.)

The antipassive version of 4 is:

    (9) *ŋuma buṛal + ŋa + n^yu yabu + gu*   'Father saw mother.'

Note that 4 and 9 have the same cognitive meaning, in the same way as an active sentence and its passive transform in English.

Now 1 and 9 can be coördinated, in either order:

    (10) *ŋuma banaga + n^yu buṛal + ŋa + n^yu yabu + gu*   'Father returned and saw mother.'

    (11) *ŋuma buṛal + ŋa + n^yu yabu + gu banaga + n^yu*   'Father saw mother and returned.'

Many languages which have an ergative morphology do not have ergative syntax; instead, syntactic rules seem to operate on an 'accusative' principle, treating S and A in the same way (see §§5–7, below, and Anderson 1976). Dyirbal is unusual in that all major syntactic operations—those of relativization and complementation, as well as of coördination—treat S and O in the same way.

It appears that there are no languages that are FULLY ergative, at either the syntactic or the morphological level. I discuss in §5.4 certain constructions that must have accusative syntax (in Dyirbal, as in all other languages) as a consequence of the universal category of 'subject'. At the morphological level, no language consistently uses one case-marking for S and O functions, but a different marking for A, across every possible constituent of an NP and in every construction type—and also has S and O cross-referenced in identical manner on verbs.[7] This provides another point of difference between the absolutive/ergative and nominative/accusative alternatives: there ARE languages that consistently treat S and A in the same way, in both nominal case-marking and verbal agreement (e.g. Lithuanian,[8] Quechua, and Telugu).

At the morphological level, Dyirbal is by no means a fully ergative language; it is rather of the type that has been called 'split ergative'. Although nouns and adjectives (and 3rd person pronouns) inflect on an absolutive/ergative pattern, 1st and 2nd person pronouns show a straightforward nominative/accusative paradigm, as in Table 1.

ROOT	*yabu* 'mother'	*ŋuma* 'father'	*ŋana* 'we all'	*n^yura* 'you all'
A function	*yabu + ŋgu*	*ŋuma + ŋgu*	*ŋana*	*n^yura*
S function	*yabu*	*ŋuma*	*ŋana*	*n^yura*
O function	*yabu*	*ŋuma*	*ŋana + na*	*n^yura + na*

TABLE 1

[7] Both Basque and (Paleo-Siberian) Chukchee have absolutive/ergative case marking on all nominal constituents. But both languages also show verb agreement with core NP's; and this appears to operate on a partly accusative, partly ergative basis.

[8] Standard Lithuanian has lost the neuter gender and dual number, in which S, A, and O fell together in Proto-Indo-European. There are only a few isolated survivals of the neuter, e.g. *tai* 'that', used for S, A, and O functions.

Whereas nouns use the simple root for absolute (S and O functions), and show ergative case (A function) by *-ŋgu*, pronouns have only the root for nominative case (S and A functions) and an affix *-na* for accusative (O). Sentences involving pronouns are:

(12) *ŋana banaga+nʸu*   'We returned.'
(13) *nʸura banaga+nʸu*   'You returned.'
(14) *nʸura ŋana+na buṛa+n*   'You saw us.'
(15) *ŋana nʸura+na buṛa+n*   'We saw you.'

Note that a nominative pronoun will, in normal word order, occur sentence-initially. Sentences, and even individual NP's, can involve any mixture of pronouns, nouns, and adjectives without possibility of confusion. The skeptical reader is invited to construct a few examples for himself.

An exhaustive examination of the literature suggests that all languages which have been described as ergative, at the morphological level, are in fact 'split ergative'. Splits can be of a number of different kinds; these are described and explained in §§3.1–3.6.

I have distinguished 'morphological ergativity', where one case marks both S and O functions, from 'syntactic ergativity', where certain types of syntactic rule identify S and O. These are, potentially, independent parameters (possibilities of connection are summarized in §8). In some languages that have a partially ergative morphology, all syntactic rules operate on an accusative basis, treating S and A in the same way. And although pronouns in Dyirbal show nominative/accusative inflection, the rule for pronoun coördination is identical to that for noun coördination: there must be an NP common to the two clauses, and it must be in S and O function in each clause. Thus we can coördinate 12 and 14 in either order (just like 1 and 3), giving:

(16) *ŋana banaga+nʸu nʸura buṛa+n*   'We returned and were seen by you.'
(17) *nʸura ŋana+na buṛa+n banaga+nʸu*   'We were seen by you and returned.'

The occurrence of the common NP in the second clause can be omitted, as in 6–7.

If we try to conjoin 12 and 15, we find that, although there is a common NP, *ŋana* 'we', with identical FORM in the two sentences, it is in S function in 12, but in A function in 15.[9] Transitive sentence 15 must be antipassivized, giving:

(18) *ŋana buṛal+ŋa+nʸu nʸura+ŋgu*   'We saw you.'

Now 12 and 18 can be conjoined, in either order:

(19) *ŋana banaga+nʸu buṛal+ŋa+nʸu nʸura+ŋgu*   'We returned and saw you.'
(20) *ŋana buṛal+ŋa+nʸu nʸura+ŋgu banaga+nʸu*   'We saw you and returned.'

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[9] *ŋana banaga+nʸu/nʸura+na buṛa+n* can only mean 'We returned and you were seen (by someone other than us).' That is, it would have to be said with sentence-final intonation on *banaga+nʸu*; the second sentence would then be taken to have an unspecified A NP. These four words could NOT be understood as 'We returned and we saw you.'

The rule for coördination in Dyirbal refers to the syntactic function of NP's, not their forms: it demands that the common NP be in (surface) S or O function in each clause. This coincides with absolutive case for nouns, but cuts across the morphological paradigm of 1st and 2nd person pronouns. Thus ŋana in 12 and ŋana in 15 have identical forms but different functions; they do not satisfy this syntactic condition.

Rules for the formation of relative clauses and complements in Dyirbal also show an entirely 'ergative syntax', identifying S and O functions (see §7.2). Dyirbal is undoubtedly MORE ergative at the syntactic than at the morphological level. (But it does have SOME accusative syntactic characteristics. I return to this in §5.4.)

1.2. TYPES OF ERGATIVITY. It will be seen that the term 'ergativity' can be used to describe phenomena at a number of distinct grammatical levels. We must distinguish at least the following:[10]

(I) DEEP STRUCTURE refers to underlying semantic structures, and their universal properties.

(I → II) S̄INGULARY TRANSFORMATIONS operate on deep structures (passive, antipassive, reflexive etc.) These yield

(II) SHALLOW STRUCTURE. NP's which have a certain deep function may have a different 'derived' function at this level, on the basis of which

(II → III) GENERALIZED transformations may operate. These derive various types of coördinate and subordinate constructions, and yield

(III) SURFACE STRUCTURE. It is at this level that morphological marking takes place—adding case affixes or pre-/post-positions to NP's, cross-referencing person (and/or number etc.) of certain core syntactic constituents onto the verb, and so on.

In the remainder of this paper, I consider the applicability and nature of 'ergativity' at each of these levels.

Ergative phenomena are encountered most frequently (and are best documented) at the surface-structure level. In §2–4, I survey types of morphological ergativity, and put forward semantic explanations for the kinds of split system that occur. In §§5–7, I discuss deep and then shallow structures, separating universal syntactic-semantic phenomena from language-specific constraints that are true criteria for syntactic ergativity. Finally, in §8, I return to morphological marking, relating it to syntactic and semantic needs.

MORPHOLOGICAL ERGATIVITY

2.1. TYPES OF MORPHOLOGICAL MARKING. There are three main ways in which the function of an NP in a sentence can be shown.

2.11. CASE INFLECTIONS can be used, as in such well-known languages as Latin and Greek, and as illustrated above for Dyirbal. The ways in which case is marked on an NP can vary: the inflection can occur just on the head word, or just on the last

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[10] I owe a considerable debt to Michael Silverstein for pointing out to me that any discussion of ergativity must distinguish at least these levels. He may not, of course, approve of the way I have set them out here.

word, or on every word (or sometimes, on every word ONLY IF they are non-contiguous, being distributed through the sentence). These details are essentially irrelevant to the present discussion. What is significant is whether case is obligatorily marked on an NP (as in Latin and Dyirbal); or whether it is optional, being included only when ambiguity would otherwise result (see §2.3).

2.12. SEPARATE PARTICLES, i.e. prepositions or postpositions, can mark syntactic function. Particles show essentially the same possibilities as cases. Since a particle usually has the phonological status accorded to a 'separate word', there will normally be only one occurrence of the particle in an NP, whereas a case inflection may be added to each word; but this is not significant for the present discussion. What can complicate the syntactic picture is the tendency of particles to combine information about syntactic function and 'topic', as in Japanese.

2.13. THE VERB OR A VERBAL AUXILIARY may include some indication of the person, number, gender etc. of NP's in certain syntactic functions. There is tremendous variation as to how much information is 'cross-referenced' in the verb, and how it is realized. English shows minimal cross-referencing: most verbs have two 'present tense' forms, indicating whether or not the surface subject is 3rd person singular (e.g. *walks* vs. *walk*). A more complex pattern occurs in Swahili, where the verb contains separate affixes referring to subject and object. These specify the person, number, and noun (i.e. gender) class (if 3rd person non-human) of each NP cross-referenced; some affixes also have different forms depending on whether the sentence is affirmative or negative.

The form of bound pronominal affixes in the verbal word can be taken as evidence of morphological 'accusativity' or 'ergativity', just like the form of case inflections. If a certain affix cross-references an NP that is in S or O function (with a different affix referring to an NP that is in A function), then the language could be characterized as 'ergative' at this level; Abaza (Caucasus) is such a language.[11]

Consider these sample sentences in Swahili:

(21) *Sisi tulianguka*   'We fell down.'
(22) *Ninyi mlianguka*   'You all fell down.'
(23) *Ninyi mlituona sisi*   'You all saw us.'
(24) *Sisi tuliwaona ninyi*   'We saw you all.'

These reveal a pronominal affix paradigm:

	SUBJECT (S/A)	OBJECT (O)
(25) we	*tu-*	*-tu-*
you all	*m-*	*-wa-*

Note that the same form, *-tu-*, is employed to cross-reference S, A, and O in the 1st person plural. The existence of one form for S/A, but another for O, in the 2nd person plural (as well as 2nd person singular and 3rd person singular) establishes a 'nominative/accusative' pattern. Perhaps the most important detail here is the

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[11] In Abaza, S and O share an identical system of markers, occurring in initial position; the A system occurs in non-initial position, but differs from the S/O system only in the 3rd person and the relative pronoun. Note also that as many as four Abaza NP's may be marked in the verb—e.g. causative agent, subject, object, and indirect object, as in 'The old man couldn't make the boys give the girl her dog back' (Allen 1956:139 and p.c.)

POSITION of the pronominal affix within the verb word: bound forms which cross-reference S or A occur word-initially, whereas the affix which refers to the O NP comes between tense (here, 'past' *-li-*) and the root (in these examples, intransitive *-anguka* 'fall' or transitive *-ona* 'see').

The free-form pronouns *sisi* 'we' and *ninyi* 'you (pl.)' would normally be omitted from 21–24; they are used mainly for emphasis. But where A and O NP's are identical as to information that is cross-referenced, as in 'The man saw the boy', full NP's would of course be required.

Bound forms which cross-reference the core NP's are usually, but not invariably, attached to the verb; when they are attached to the verb, they can either be affixes fully integrated into word structure (as in Swahili, where the object affix intrudes between tense and root), or they can be more loosely connected, as clitics. The alternative is for the bound forms to make up a separate constituent (cf. the 'auxiliary' in Walbiri of Australia; Hale 1973)—or, say, to be attached to the first word of the sentence; in the latter case, the affixes usually have the status of clitics.

2.14. Although case inflection (or particles) and bound pronominal cross-referencing affixes are both morphological indicators, and can both be said to pattern either 'ergatively' or 'accusatively', it is by no means obvious (on a-priori grounds) that they are equivalent. When surveying kinds of 'split ergative' systems in §§3.1–3.6, we must be careful to note the type of morphological marking involved, and to see whether a particular sort of conditioning for the split system can apply equally to both types (see also §2.3).

2.15. There are, of course, languages which do not use morphological means to mark syntactic function, but instead utilize contrastive word order. Although this falls within the traditional division of syntax, contrastive word order plays the same role as case inflection or bound pronominal affixes, and should show the same typological possibilities.

We could suggest that a language which employed the order AVO for transitive, and VS for intransitive sentences, is working on an 'ergative' principle: both S and O follow the verb, and A precedes it. Similarly, AVO/SV or OVA/VS would be 'accusative' (and OVA/SV another 'ergative' variety). Note that this sort of categorization may be possible only for verb-medial languages: thus, with orders VAO and VS, one could argue either that S and A are treated in the same way (since they both immediately follow the verb), or that S and O are equivalent (since they both occur finally).

With case or cross-referencing systems, we basically have three possibilities: (a) S and O are treated the same; (b) S and A are treated the same; or (c) S, O, and A are all treated differently. With 'contrastive word-order' languages, if we LOOKED for some patterning (in verb-medial languages, where this question can be asked), we would be confined to (a) or (b). The criteria are much slighter than for cases or for cross-referencing affixes, and there is a risk of forcing a characterization of a language as 'accusative' or 'ergative' where none is really justified. (Cf. Swahili, where the morphological positioning information—S/A prefix before tense affix, O prefix between tense and root—is reinforced by the FORMAL identity of S and A cross-referencing forms, and the partial dissimilarity of O forms.)

For these reasons, 'accusative/ergative' characterization based on word order should be viewed with caution, unless corroborated by evidence of some quite different sort (or unless there are something like conditioned rules for ordering that yield an unequivocal pattern).[12] Note that word order, in ALL languages, is exploited to convey information about 'topic' or 'theme'; it can be hard to separate these various roles.

2.2. SEMANTIC BASES. It is a simple matter to provide a-priori semantic justification either for absolutive/ergative or for nominative/accusative morphological marking. For the first alternative, we could suggest that an intransitive sentence essentially describes 'something happening to something/someone' (e.g. *The bough broke*), whereas a transitive sentence describes 'someone making something happen to someone/something' (e.g. *The man broke the bough.*) By this argument, S is semantically identified with O, and it is natural for them to be marked by the same case inflection. Alternatively, we could suggest that an intransitive sentence involves 'someone doing something' (e.g. *I'll fight tomorrow*), and a transitive sentence 'someone doing something to someone/something' (e.g. *I'll fight John tomorrow.*) With this semantic characterization, it is surely natural to use a single case to mark S and A functions.

The explanations given in the last two paragraphs are mutually inconsistent; and each is oversimplistic. They imply that it is sufficient to talk in terms of 'transitive verbs', 'intransitive verbs', and 'noun phrases' (filling S, O, and A functional slots). But there is a wide range of semantic variation within the verb class and among NP's; and note that the semantic type of a verb shows a strong correlation with the nouns/pronouns that would be expected to co-occur with it. Words from certain lexical domains behave like those used in the first paragraph above: *break, open, wake* can function transitively or intransitively in English, with correspondence between the NP's that fill O and S slots. Words in other lexical domains behave as shown in the second paragraph: *fight, eat, follow, answer* can also occur with either transitivity value, but here it is A that corresponds to S. (It is certainly the case that EVERY language mingles 'ergativity' and 'accusativity' in the structure of its lexicon. In this paper, I am concerned with the ways in which S/O and S/A equivalences are established at the morphological and syntactic levels; but, as I shall show in §3.1, it can sometimes be difficult to draw the line between lexical and morphological characteristics.)

The question posed here is WHY there should sometimes (in some languages, or in some places in some languages) be nominative/accusative case-marking, and at other times absolutive/ergative marking. And a prior question is: WHY SHOULD THERE BE CASE-MARKING AT ALL?

We can first note an empirical universal. All languages appear to distinguish activities that necessarily involve two participants from those that only necessarily involve one (I use 'participant' to describe a person, an animal, or a thing—in fact,

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[12] In fact, among languages that are, on other grounds, 'ergative', very few show a preferred verb-medial word order. Tsimshian (see §3.5) appears to show basic orders AVO and VS (Boas 1911:298). However, Rigsby (1975:353) suggests that in Nass-Gitksan, a Tsimshian language, the order AVO, which applies only in embedded clauses, can be derived from the basic main-clause ordering VAO.

any referent of an NP). Then all languages have classes of transitive and intransitive verbs, to describe these two classes of activity. In some languages, there is a very clear division of verbs into transitive and intransitive types, and some derivational affix is required to 'mark' a basically intransitive verb used in a transitive construction, or vice versa. In other languages, the extremes will be clear enough, but there may be some middle ground where it is difficult to decide whether a given verb is basically transitive or basically intransitive (or both, or neither); English falls into this category with respect to verbs like *break* and *fight* (see §5.2 and §6.3, fn. 94).

Now the core constituents of a transitive sentence are a verb and two NP's. The critical point—and the ultimate basis for any system of case assignment etc.—is the need to distinguish which NP is which: i.e., which has A and which O function. If case inflection is adopted (rather than, say, contrastive word ordering), then one of the core transitive NP's must receive a non-zero desinence. The other NP can also receive a positive inflection, or it can be left unmarked. (The contrast between marking and lack of marking means that there is a system of TWO cases, one having zero realization.)

Since an intransitive sentence contains only one core NP, in S function, there is no need for any positive marking on it (as there IS need for positive marking on ONE of the core NP's in a transitive sentence). Certainly, there is no need for an S NP to receive a case-marking that differs from both A and O possibilities: an S item occurs in a different sentence-type from A and O phrases, and can most economically receive the same marking as EITHER A OR O. If either A or O is shown by a case that has zero realization, then we might expect S also to be phonologically unmarked; this is the most frequent situation (although there is a set of languages in which both A and S receive positive marking, and O is unmarked; see §2.33). If both A and O involve a non-zero inflection to the nominal root, then S could conceivably fall together with either of them.

In fact scarcely any language is known that consistently, across all nominal constituents, marks S, A, and O differently (although a fair number of languages have three distinct inflections for a SMALL SUBCLASS of NP constituents; see §3.23).[13]

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[13] Motu has been taken to have different marking for A, S, and O, entirely on the basis of the slender data given by Capell (1969:36) As Lister-Turner & Clark (1930:34 ff.) point out, the syntactic function of an NP in a Motu sentence is 'indicated by the demonstrative adjectives or articles *ese, se, be,* and *na*; by suffixes; by prepositions; and sometimes by the position of the word in the sentence'. The ergative particle *ese* is used when it is not clear on semantic or other grounds which NP is A, and which is O (see §2.31). The particle *na*, said by Capell to mark S function, has complex behavior which is far from being fully understood—it can be used as the copula in verbless sentences; it may occur after an S NP; and it is occasionally found after an O NP, most commonly when the word order is OAV rather than the more usual AOV. In addition, *na* is sometimes encountered after an A NP, with the sequence *ese na* being attested. The use of *na* characterizes the western dialect; it is used much less in eastern Motu. (I am grateful to Andrew Taylor for all this information.)

The only languages that do appear to have different marking for S, A, and O, across NP constituents, are the 'Ngura group' of the Australian family. Breen 1976 reports that, in Wangkumara, suffixes marking A, S, and O are bound forms of 3sg. pronouns; in an earlier stage of the language there may have been a split case system, of the type described for Cashinawa (§3.23), with distinct A, S, and O forms only for the free-form 3rd person pronouns. Data on

Similar remarks apply for cross-referencing pronominal affixes: either the A or the O form is also used to refer to S NP's, in almost every instance.[14]

We have established that, for a case-marking language, there should be distinct inflections for NP's in A and O functions; these can be referred to as C_a and C_o respectively. And we have noted that one of these cases will normally mark an NP in S function in an intransitive sentence. If S is marked by C_a, we have a nominative/ accusative system; but if C_o is used, the paradigm is of the absolutive/ergative variety.

There must be a reason for the use of ONE of the transitive cases for the intransitive core NP. Why is C_a used in some circumstances, and C_o in others? The answer to this question lies in the range of semantic types among intransitive verbs.

That NP whose referent can initiate and control the activity (if anything can) is recognized as being in A function in a transitive sentence. The core NP whose referent cannot be controller is taken to be in O function. (Fuller discussion of these points is given when I deal with the notion of 'subject', in §5.2.) For some intransitive verbs, the S NP CAN be controller of the action (e.g. *jump, speak*); this could be described as S_a. It is then semantically plausible for C_a to be used for S_a, as for A (cf. *John spoke* and *John told Mary*). For other intransitive verbs, the S NP can not control the action (e.g. *break, die, yawn*), and has the same semantic status as an O NP ('that which something happens to'); we can refer to this as subtype S_o of S. It is now natural to use C_o for both O and S_o functions.

A nominative/accusative case system always uses one case (C_a) for A and S functions, making no distinction at all between S_a and S_o. The semantic relation that holds for verbs like *jump* and *speak* is generalized to hold, as a GRAMMATICAL relation, for all intransitive verbs. Similarly, an absolutive/ergative system generalizes from the semantic relation that holds for verbs like *break* and *die*, and provides GRAMMATICAL IDENTIFICATION of O and S (through a common case inflection, C_o) over all intransitive verbs; it too ignores the putative distinction between S_a and S_o.

It is convenient to have a grammatical generalization here, of either sort. Our examples have been of clearly 'controlled' or definitely 'non-controlled' verbs. But these lie at the extremes of a continuum, with most intransitive verbs somewhere in between. With *laugh*, the activity is sometimes involuntary, but at other times contrived and controlled; *cry* is similar, although most often it may be involuntary, and more difficult to contrive (there will be differences from culture

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the related language Galali suggest a similar state of affairs, except that there the accusative (O) and nominative (S) suffixes seem to be used predominantly to mark definite NP's (see McDonald & Wurm, MS). Note, though, that the data on both these languages are slim, comprising isolated sentences elicited from the last speakers (whose fluency was not perfect), and that it was not possible to carry out exhaustive checking.

[14] Exceptions are found where a single 'portmanteau' affix refers to person/number/gender of both A and O; these cannot be analysed into separate A and O forms, and cannot be related to the S affixes. But in most such cases it is possible to reconstruct distinct A and O forms, at least one of which is related to original S forms. Thus Hinton & Langdon 1976 explain the development of portmanteau prefixes in modern Yuman languages from series of free pronouns in the proto-language.

to culture and from person to person). Whether or not a verb is controlled often depends on the semantic nature of the referent of the S NP. As Lyons points out (1968:350–65), in his exemplary discussion of this topic (on which the present section is closely based), *It moved* would be taken as non-agentive, while *He moved* could be either agentive or non-agentive (Lyons suggests 'ideal' representations *He moved* for the agentive and *Him moved* for the non-agentive sense). Thus, for many intransitive verbs, it is difficult to decide whether they basically belong to the 'controlled' or the 'non-controlled' class; i.e., it is difficult to determine whether the S NP is of subtype S_a or S_o. Most languages avoid decisions in this area of semantic fuzziness by simply generalizing either C_a or C_o to mark S, for all intransitive verbs.

I have already noted that, although there are some 'pure' nominative/accusative languages (which is certainly related to the universality of 'subject', and the crucial role this category plays in the grammar of every language; see §5), there is no language with 100% ergative morphology. Every so-called ergative language has a split case system (or whatever), mixing ergative with accusative, and/or with a three-way case assignment (having separate indications for each of S, A, and O). These 'splits' can be conditioned by a variety of factors.

First, and most obvious, there can be a split according to the semantic content of verbs; some languages avoid marking every S NP by C_a or C_o, and use one or the other transitive desinence according to the semantic type of the intransitive verb— roughly, employing C_a for S_a, and C_o for S_o.

A second type of split is conditioned by the semantic content of the NP's (remember that it is NP's which bear case inflections). Something that can function as controller of an action (a human, or perhaps a higher animal) is unmarked in its normal S or A function, but the NP receives a non-zero case inflection in O function; similarly, something inanimate, which would not normally initiate or control any activity, may be unmarked in S or O function, but receive a positive desinence if it does happen to occur in A function.

A third type of split can be conditioned by a further semantic component of an sentence—the tense/aspect choice. Something that is complete can be viewed either from the point of view of the patient ('Something happened to X') or of the agent ('Y did something'); but a prospective activity is best viewed in terms of a proclivity of an agent. In the latter case, there is pressure for S and A to be dealt with in the same way.

In §§3.1–3.5, I discuss each of these types of conditioning factor for 'split ergative' morphologies.

2.3. MARKEDNESS. We have seen that case inflections exist primarily to distinguish between the two core NP's in a transitive sentence. The simplest way to do this is just to mark ONE of the semantic-syntactic functions A and O, leaving the other unmarked. One alternative is to use ergative case to mark A function—that NP which is or can be the agent; then the O NP is left unmarked, as is the S NP (and these are referred to as being in 'absolutive' case). The other alternative is to use a positive accusative inflection to mark O function—that NP which can NOT initiate or control the action; under this scheme, the A NP is left unmarked, like S (and

these are said to be in 'nominative' case). Note that here the 'identification' of O with S, or of A with S, is quite negative in character; S is always left unmarked, and so will fall together with whichever transitive NP is not marked. Such a residue-type identification surely has little grammatical significance; this gives some explanation of why morphological ergativity/accusativity does not always correlate with syntactic ergativity/accusativity (the latter can only be recognized in terms of positive behavior; see §7). Discussion of this topic will be continued in §8.

I am suggesting that 'absolutive' is always the unmarked term in an absolutive/ ergative system, and that 'nominative' is always unmarked within a 'nominative/ accusative' system (it will be necessary later to modify the last 'always' to 'usually'). Generally, the case that is functionally (i.e. morphologically) unmarked is also formally (i.e. phonologically) unmarked—i.e., it has zero realization; this is so for absolutive in Dyirbal and nominative in Telugu, among many examples. BOTH cases—ergative and absolutive, or accusative and nominative—may involve some non-zero desinence added to the basic nominal stem; i.e., both may be phonologically marked. In such languages, it is still usually true that the absolutive or nominative (that case whose scope includes the S function) will be MORPHOLOGICALLY unmarked. Thus, in Latin, a nominative form (e.g. *servus*) is grammatically unmarked with respect to accusative (e.g. *servum*); it is the nominative that is used in syntactically unmarked circumstances such as citation.[15]

My thesis is that ergative is always the marked term in an absolutive/ergative system, and that accusative is usually the marked member in a nominative/ accusative opposition. There is a further possibility, less common but quite adequately attested, whereby nominative can be morphologically marked with respect to accusative. We can now exemplify these three possibilities, one at a time.

2.31. ERGATIVE AS THE MARKED CASE. It is not uncommon to find an ergative case inflection described as 'optional'. For Motu, an Austronesian language of coastal New Guinea, '*ese* is the transitive subject particle ... it need not appear when there is no possibility of the object NP being taken as the subject' (Taylor 1970:30). In 'The boy saw the girl', *ese* will be included after 'the boy'; but this particle is not required, and is unlikely to be included, in 'The snake bit the boy.' Another

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[15] That case form which includes S within its list of functions will be the unmarked term, in most instances. It is always this case form that is used for the 'topic' of equational sentences—which show only a copula, or (in many languages) no verb at all: e.g. Dyirbal *ŋinda bulgan* 'You are big', *(bayi) ŋuma bulgan* 'Father is big.'

It is the unmarked case form that is employed in citation (indeed, this is one criterion for markedness). But one or two languages customarily mark A, S, and O by non-zero inflections, and employ the bare stem in citation. In Creek, e.g., nominative (S/A) is -*t* and accusative (O) is -*n*; the bare stem is used in citation and for a title, spoken at the beginning of a story. But a bare stem is sometimes found at an A, S, or O slot within a sentence, if the function of the NP is clear from the context etc. (data on Creek from Mary Haas). It seems that the Creek inflections -*t* and -*n* are USUALLY included on core NP's, but they are NEVER used in citation. All known languages which have OBLIGATORY inflections for A, S, and O must use one inflectional form (never the bare stem) in citation.

The use of case in Kemant, a Cushitic language, shows some similarities to the Creek situation (see Hetzron 1976:16 ff.); but insufficient detail is available to check whether the bare citation form can be used in core function, in place of a normal inflected form.

example is Murinypata, from the Port Keats area of North Australia. Here there are pronominal prefixes to the verb, cross-referencing S/A and O NP's by (roughly) person, number and gender. There is also an ergative inflection on nouns, *-te* ~ *-ɹe*; but this is normally used only when information about which NP is in A, and which in O function, is not inferrable from either (i) the semantic nature of the NP's and of the verb, or (ii) the cross-referencing prefixes. That is, *-te* ~ *-ɹe* is likely to be used when A and O NP's are both 3rd person and both make the same choice from masculine/feminine; it is unlikely to be included in most other circumstances (although it CAN always be present).[16] Note that, although Murinypata has an ergative nominal inflection, verbal prefixes work on a 'nominative/accusative' paradigm, with one series for S or A, and another for O reference. (Data on Murinypata are from Walsh 1976a,b, and p.c.)

My assertion that ergative is used to 'mark' an A NP (with O and S NP's being simply left without any marking) is supported by examples such as these. The ergative particle (in Motu) or inflection (in Murinypata) is normally used only when the identity of the A NP can NOT be inferred from any other grammatical or semantic information in the sentence.

In most languages in which the ergative occurs, it is obligatory; an NP of a certain semantic type (see §3.2) MUST take ergative inflection when it is in A function. But there can still be evidence that it is grammatically the 'marked' case, as in Yidin^y, from North Queensland. Yidin^y appears to work on these principles: (a) that NP which is marked by ergative case is the 'controlling agent' of a transitive action; and (b) that NP which is the controlling agent of a transitive action is (if non-pronominal) marked by ergative case. Any deviation from this is shown by a derivational affix -:d^yi-n on the verb (coming between the verb root and the final tense-type inflection).

Consider a regular transitive sentence in Yidin^y:

(26) *wagud^ya*+*ŋgu*   *d^yugi*+*∅*   *gunda*+*l*   (*galba:n*+*da*)
     man+ERG   tree+ABS   cut+PRES   axe+INST
       'The man is cutting a tree (with an axe).'

Absolutive case (covering S and O functions) has zero realization; ergative is here *-ŋgu*, and instrumental *-da*. (In fact, instrumental has the same realization as locative, but there are important syntactic criteria for distinguishing the two cases.) Present tense is *-l* with verbs from the predominantly transitive *-l* conjugation, here *gunda-l* 'cut'. (The occurrence of vowel length in these examples is inserted or deleted by regular phonological rules; see Dixon 1977a,b.)

For 26, both (a) and (b) are satisfied: *wagud^ya* 'man' IS the controlling agent of the activity, and IS marked by ergative case. But consider 27, the antipassivized counterpart. Here the deep A NP is brought into surface S function (normally, to meet syntactic conditions on subordination and coördination), and the deep O NP receives locative inflection; a number of grammatical tests show that an antipassive construction must be considered intransitive.

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[16] Other examples of 'optional ergative' include the Australian language Dalabon (Capell 1962:111), and Hua of the New Guinea highlands (Haiman, MS).

(27) $wagu\text{-}d^ya+\emptyset$ $gunda+\!:\!d^yi+\eta$ $d^yugi+\!:\!l$ $(galba\!:\!n+da)$
     man + ABS   cut + $:d^yi$ + PRES   tree + LOC   axe + INST
   'The man is cutting a tree (with an axe).'

Here condition (b) is broken: $wagud^ya$ is still the controlling agent of the verb; but in this derived intransitive construction, it does not receive ergative marking. The infringement of this condition is shown by $-\!:\!d^yi\text{-}n$ on the verb. (Note that $-\eta$ is present-tense inflection on the predominantly intransitive $-n$ conjugation; $-\!:\!l$ is the locative inflection on d^yugi 'tree'.)

Similarly, a reflexive sentence—with the agent intentionally doing something to himself—is also a derived intransitive:

(28) $wagu\!:\!d^ya+\emptyset$ $gunda+\!:\!d^yi+\eta$ $(galba\!:\!n+da)$
     man + ABS   cut + $:d^yi$ + PRES   axe + INST
   'The man is cutting himself (with an axe) [on purpose].'

Here $wagud^ya$ is in derived S function and absolutive case; but it is the 'deep A' NP of an underlying transitive verb; $-\!:\!d^yi\text{-}n$ is again included, to indicate that the controlling agent is not in ergative inflection.

It is important to note that a construction like 28 indicates a purposeful reflexive activity. Eng. *The man cut himself* could also be used of an accidental injury; this must be rendered in Yidin^y by the following, which differs from 28 primarily in that *galban* 'axe' takes ergative *-du*, rather than the instrumental inflection *-da* (the allomorphs that occur after a stem ending in *n*):

(29) $galba\!:\!n+du$ $wagu\!:\!d^ya+\emptyset$ $gunda+\!:\!d^yi+\eta$
     axe + ERG   man + ABS   cut + $:d^yi$ + PRES
       'An axe cut the man (= The man cut himself on an axe, accidentally.)'

Here the man could have injured himself by accidentally standing on the axe, or letting it drop on his foot, or nicking himself in the neck while swinging it back.

Now 29 is, by an array of syntactic tests, a transitive sentence. Indeed, it contains an ergative (A) and an absolutive (O) NP. But the ergative inflection is not here marking a 'controlling agent' (there is NO controller, for an accident of this sort), and condition (b) is broken; thus the verb is marked by $-\!:\!d^yi\text{-}$.[17]

As a final example we can contrast the following:

(30) $wagud^ya+\eta gu$ $bana+\emptyset$ $wawa+l$
     man + ERG   water + ABS   see + PRES
(31) $wagud^ya+\eta gu$ $bana+\emptyset$ $wawa+\!:\!d^yi+\eta$

Sentence 30 is, like 26, a normal transitive construction,[18] 'The man sees the

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[17] In fact, $-\!:\!d^yi\text{-}n$ is used to mark an inanimate agent only with transitive verbs from the 'affect' semantic class ('hit', 'cut', 'split', 'spear', 'burn' etc.; full details are in Dixon 1977a: 287).

[18] Like Dyirbal, Yidin^y has absolutive/ergative case-marking for nominals, but a nominative/ accusative paradigm for 1st and 2nd person pronouns. Thus the S/A of the 1sg. pronoun is ηayu; the O form is ηan^yan^y. The transitive/intransitive status of the sentences given here can be seen from examination of the pronominal equivalents:

   (26') $\eta ayu\ d^yugi\ gundal\,(galba\!:\!nda)$ 'I am cutting a tree (with an axe).'
   (27') $\eta ayu\ gunda\!:\!d^yi\eta\ d^yugi\!:\!l\ (galba\!:\!nda)$ 'I am cutting a tree (with an axe).'
   (28') $\eta ayu\ gunda\!:\!d^yi\eta\ (galba\!:\!nda)$ 'I am cutting myself on purpose (with an axe).'

water', with the presumption that he was looking for some water, and found it. Sentence 31 is also transitive; unlike 29, it has an ergative NP with human reference that COULD be the controlling agent. But the insertion of :-$d^y i$- into the verb of 31 indicates that in this instance 'the man' did not simply do what he had set out to do. In contrast to 30, it means 'The man sees the water accidentally': he may have been, say, chasing a dog or looking for a place to defecate, when he came across a stream of fresh water. In 29, the NP COULD NOT have controlled the activity; in 30–31, he COULD—but, just in case he achieves some result by pure chance, -:$d^y i$-n is inserted in 31, to mark the non-satisfaction of condition (a).

It will be seen that -:$d^y i$-n has a wide range of uses.[19] In 27–28, it marks a derived intransitive construction (antipassive in 27, reflexive in 28); in 29 and 31, it indicates that, in a transitive construction, the referent of the ergative NP does not control the activity. These apparently diverse syntactic and semantic effects can be related as involving non-satisfaction of conditions (a) and (b). It appears that the Yidin^y ergative definitely MARKS one NP in a transitive construction as 'controlling agent' for the activity described by the verb. Here the ergative contrasts with the unmarked absolutive case, which appears on S and O NP's.

In many ergative languages, the absolutive NP must obligatorily be included in each sentence, but an ergative NP may be deleted (this holds for Dyirbal and for Eskimo; Woodbury 1975:113); this provides further support for absolutive as the 'unmarked' and ergative as the 'marked' case. In every ergative language known to me, the absolutive is the sole citation form.

2.32. ACCUSATIVE AS THE MARKED CASE. In most languages that have a nominative/accusative case system, it is the nominative that is morphologically unmarked; if any NP is obligatory in a sentence, it will be the one in the nominative case. Nominative forms are used in citation.

Accusative is then the 'marked' case. Paralleling the ergative examples above, there are instances where an O NP need not (and does not) receive accusative marking when other factors show which NP is in A and which in O function. Thus in Finnish the O NP usually receives the accusative inflection -n; but in a 1st or 2nd person imperative construction, there is no overt expression of the subject, and here the O NP does not take accusative ending. However, in a 3rd person imperative (e.g. 'Let him eat the fish!'), there can be overt expression of the subject, and here the direct object IS in the accusative case (Comrie 1975:115–16, Moreau 1972).[20]

(29') *galba:ndu ŋan^y an^y gunda:d^y iŋ*   'An axe cut me (= I cut myself on an axe, accidentally).'

(30') *ŋayu bana wawal*   'I see the water (that I was looking for).'

(31') *ŋayu bana wawa:d^y iŋ*   'I see the water (by chance).'

[19] An additional, minor use of -:$d^y i$- is to mark some activity as 'continuous'; in this sense, it can be added to a transitive or an intransitive stem, and preserves the transitivity. There appears to be no connection between this sense and those given above (a full discussion is in Dixon 1977a:273–93).

[20] The Finnish accusative has (to my mind, rather misleadingly) been termed 'anti-ergative' by Comrie 1975. Comrie uses 'anti-ergative' for an object inflection that applies only when a subject is present; this is seen as the mirror-image of ergative, which is a 'subject' inflection applying only when an object is present (i.e. only in transitive sentences). This ignores the

A similar situation prevails in other Balto-Fennic languages (Collinder 1965: 54–5), in Australian 'nominative/accusative' languages like Ngarluma (O'Grady, Voegelin & Voegelin 1966:102) and Lardil (Klokeid 1976:197),[21] and in Southern Paiute (Sapir 1930:179–81, 235) and other Uto-Aztecan languages.[22] In each of these languages, the nominative is morphologically and phonologically unmarked, whereas the accusative involves a positive affix. Thus the accusative can be thought of in terms of a special marking of the object that can be omitted whenever its identity can be inferred in certain other ways; if the subject of an imperative must be 2nd person, then (whether or not this subject is expressed) any non-2nd person core NP must be in O function.

2.33. 'NOMINATIVE' AS THE MARKED CASE. We began with the thesis that morphological marking can be used for either A or O function. S is normally unmarked, since there is no other core NP in an intransitive sentence from which it must be distinguished; it then falls together with the unmarked transitive function. But there is a special semantic connection between A and S: these are the NP's whose referents can control and/or initiate an event, if anything can. A and S are joined together, at the deep syntactic level, in the universal category of 'subject' (discussed in some detail in §5).

It is thus quite natural that the positive marking on A in transitive sentences should be extended to cover S function. This type of system differs from those of §§2.31–2.32 in that it is the marked transitive case, not the unmarked case, which is used for S in an intransitive sentence. One case does cover A and S functions, and another case O function; so this kind of system could be termed 'nominative/ accusative'. It is, however, radically different from the kind of 'nominative/ accusative' system discussed under §2.32; there the O function was marked by a positive accusative case, but here it is the A function in a transitive sentence that is marked. As far as transitive sentences go, the present type is—on semantic grounds —most similar to the ergative case system, dealt with under §2.31. But since the 'special A-marking' is extended—so that it is in fact a 'special subject marking'— there are distributional (although scarcely semantic) similarities to the 'unmarked nominative/marked accusative' type of morphology.

Midway between the type of §2.31, marked case for A function, and the present type, marked case for A and S functions, there are some languages where a marked case is used for all A NP's in transitive sentences and for SOME S NP's—just those where the S NP does have agentive force, e.g. Bats (Comrie 1973:241, Catford 1975:20–21); see the discussion in §3.1, below. In the latter circumstance it is usually said that the 'ergative case' CAN also be used to mark intransitive subject.

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crucial difference between transitive and intransitive sentence-types, and conflates A and S functions. I attempt to demonstrate throughout this paper, however, that A and S must be clearly distinguished if any progress is to be made in an investigation of ergativity and in a general theory of case-marking.

[21] The situation in Lardil is slightly more complex, in a rather interesting way; details are in §3.23.

[22] For discussion of the syntactic circumstances in which an object NP can be marked with 'nominative' in North Russian dialects, see Timberlake 1974.

ERGATIVITY This terminology could appropriately be taken further; the name 'extended ergative' (rather than 'marked nominative') could be used when we encounter a marked case employed for A and for ALL instances of S function. Using labels of this type would ensure that 'ergative' and 'accusative' are always used to name marked case choices, and 'absolutive' and 'nominative' unmarked choices.

Languages showing the 'marked nominative' (= 'extended ergative') include some members of the Cushitic family. Here it is the unmarked 'accusative' case that is used in citation forms—and, interestingly, as the complement of the verb 'to be'.[23] A similar situation is found in the Yuman family of California. Proto-Yuman used the stem form for 'object', but added a suffix -č for (transitive and intransitive) subject; this system is followed in most modern Yuman languages. Thus in Mojave 'nouns are usually cited in their unmarked form, often with a -ə vowel added, but sometimes they are cited with -č (N + č may constitute an elliptical "It's a ... " sentence, which could explain this)' (Pamela Munro, p.c.) Wappo appears to be another language of this type; Li, Thompson & Sawyer 1977 suggest that an original A marker has been extended to cover S function in main clauses, but not yet in relative clauses or equational sentences. If this diachronic hypothesis is correct, 'extended ergative' would be a most appropriate label for the marked 'subject' inflection.

Having the unmarked nominal case only for O function (and as the normal citation form) appears to be a well-established grammatical characteristic of the Yuman and Cushitic families. In other languages, phonological changes may lead to an accusative form being phonologically unmarked with respect to nominative; but this may never correlate with morphological marking, and is then likely to be a transient stage of development. An example of this is found in some of the older Germanic languages—where, e.g., the IE masc. nom. sg. *-os still appears as -s or -r, but acc. *-an has completely disappeared (the -n was lost first, and then the -a; -a is still found in Runic Norse). There is no evidence that accusative ever functioned as the unmarked case (that it was ever, say, employed in citation). Further changes have led to nominative and accusative falling together (Meillet [1917] 1970:91 ff.)

It is interesting to compare the 'marked nominative' systems of Yuman and Cushitic, and the regular 'unmarked nominative' system of Germanic (with unusual phonological realization), with case-marking in Maidu, a Californian Penutian language. Here 'subject case' involves the addition of -m to the 'object' form. Shipley (1964:29–30) reports that older speakers employ the 'subject' form for naming (i.e. citation), but that younger speakers use the 'object' form; each speaker is quite consistent in his citation forms. An immediate suggestion here is that Maidu was originally of the Germanic type, with nominative as the functionally unmarked case (we would then wonder whether, in an earlier stage of the language, accusative would have had some non-zero realization), but that the youngest

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[23] E.g. Oromo, Dasenech, and Kambata (Bender 1976:182, 205, 253). Other Cushitic languages have a marked nominative only in SOME noun classes, or use the zero accusative only for INDEFINITE objects. A further group appear to have non-zero inflection for both nominative and accusative, with accusative being used in citation (information from Robert Hetzron and Dick Hudson).

generation of speakers has extended formal markedness to apply also at the functional level, making Maidu more like Cushitic and Yuman in this respect. (We would of course need to know a good deal more about the use of cases in Maidu to be sure of this shift in markedness. Note also that the 'younger speakers' referred to by Shipley were the remnant last generation, speaking a language on the point of extinction. We cannot say that this provides a natural example of language change, under normal conditions of use.)

In summary, we have distinguished three kinds of 'markedness' among case inflections covering the three core syntactic functions A, O and S. Basically, either of the transitive functions can be marked. If O is marked (by 'accusative case'), then the unmarked 'nominative case' is used for S and A functions, and is used in citation etc. If A is marked (by 'ergative case'), then both O and S may be shown by the unmarked 'absolutive case', which will again be used for citation. But the marking on A can also be extended to cover S, with the unmarked case being confined to O function and most instances of citation. Strictly speaking, none of the terms 'nominative', 'accusative', 'absolutive', or 'ergative' are really appropriate for this third possibility; the alternatives seem to be to speak of 'extended ergative' and 'restricted absolutive' (maintaining the convention that ergative is always marked with respect to absolutive), or of 'marked nominative' and 'unmarked accusative' (this respects the convention that nominative always covers S and A functions, while accusative is confined to O function).

The extension of 'marked A case' to S can be explained in terms of the universal syntactic-semantic identification of A and S as 'subject' (see §5). There is a more slender semantic link between O and S, so that the fourth logical possibility— 'marked O case' being extended also to cover S—appears not to occur.[24]

2.34. In §2.1 I noted that languages can be characterized as 'ergative' or 'accusative' at the morphological level, in terms of case inflection on NP's, or in terms of bound pronominal-type affixes (usually attached to the verb) which cross-reference certain features of core NP's. The discussion in §2.2, on the semantic basis of morphological marking, applied equally to the two possibilities. However, the present discussion of 'markedness' applies only to case inflections.

Some form of a noun—either just the root, or else a particular non-zero inflectional form—must be used in citation. In many languages, one NP (in a particular case) must be present in each sentence. There is usually a restriction (in terms of surface syntactic function and/or case inflection) on the NP's that can act as 'pivots' in subordination or coördination. All these considerations, and others besides, will provide criteria for recognizing markedness in case systems. In addition, one case often has zero realization: in most instances, this correlates

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[24] Australia offers examples where the accusative case is extended to cover S as well as O function for SOME TYPES of nominal constituent only. Thus in both Warluwara and the Western Desert language, the pan-Australian accusative suffix -$n^y a$ marks O and S functions on proper names (Dixon 1970:95; further examples in Dixon, MS b, ch. 11.) Note that in Proto-Australian an accusative inflection occurred only with pronouns, demonstratives, and proper nouns (as in most modern Australian languages); common nouns used the bare stem—absolutive case, with zero inflection—for S and O functions.

with morphological markedness (the Germanic example quoted in §2.33 is one of the few exceptions).

The only way in which we might talk about 'markedness' with respect to pronominal affixes is in terms of WHICH among A, S, and O is cross-referenced in this way, in a language with only partial cross-referencing of core NP's. If only A and S are cross-referenced, this could be taken as evidence for an (unmarked) nominative / (marked) accusative system.[25] Note here that the unmarked term is the one that has some positive realization; this is the inverse of the situation with cases, where an unmarked case is the most likely candidate for zero realization.

There may be one or more forms in a cross-referencing paradigm that have zero realization (usually including 3sg.), though this is evidence about a quite different type of markedness, viz. markedness within person/number systems. But if there are more zero forms in the A than in the O prefix paradigm (as Alan Rumsey, p.c., reports for the Australian language Ungarinjin), this could conceivably be taken as evidence for A being relatively 'unmarked' with respect to O.

Many languages have non-zero affixes cross-referencing S, A, and O; even for those that do not, the criteria for 'markedness' outlined in the last two paragraphs are slim, and need corroboration from other types of grammatical criteria. This contrasts with the several strong criteria available for deciding on markedness within a system of case inflections. This discrepancy in the recognition of 'markedness' constitutes an important difference between cases and cross-referencing affixes.

A further difference between the two sorts of morphological systems is the fact that case inflections can ALWAYS mark which NP is A, and which O, without reference to any other grammatical information. But verbal affixes provide only limited semantic information about core NP's—usually person and number, and sometimes gender or noun class. If both A and O make the same choices from these cross-referencing systems—say, if they are both 3sg. masculine—then some other way must be found to distinguish A NP from O NP. (Word order is the usual fall-back, although nominal case inflections can be used, as with the 'only-if-needed' ergative in Murinypata, mentioned in §2.31.)

These are fundamental differences. If we describe a language as 'ergative' in terms of case inflection, or in terms of the paradigm of cross-referencing affixes, we are describing distinct types of grammatical phenomena. We cannot expect that the types of conditioning for 'split ergative systems' will necessarily apply equally to the two phenomena.

TYPES OF SPLIT CASE SYSTEMS

3. We can now return to the discussion begun in §2.2, concerning the kinds of factor that condition split case systems—namely, if some part of the morphology of a language shows absolutive/ergative patterning, and some other part a nominative/accusative paradigm, what is it that determines this split? There appear to be three basic types of factor: the semantic nature of the main verb, the semantic

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[25] Latin and English are essentially of this type. The Caucasian language Avar represents the other type of system—where, roughly, S and O are cross-referenced in the verb, but not A (Anderson 1976:4, Černý 1971).

nature of the core NP's, and the tense or aspect of the clause. I consider these in turn.

3.1. SPLIT CONDITIONED BY SEMANTIC NATURE OF VERB. For nearly every transitive verb, the state of affairs to which it refers CAN be controlled by an agent; that core NP which refers to the controlling participant (if there is a controller) is said to be in A function, and the other core NP is in O function. (Note that the referent of an A NP does not ALWAYS control a potentially controllable activity. People can look for something, and as a result see it; but they can see something accidentally, without meaning to. A non-controlled token of a transitive verb can be indicated in some special way; in §2.31 we saw how Yidin^y employs an affix -:d^yi- to mark this phenomenon.)

Intransitive verbs, referring to events that involve a single core participant, span a wide semantic range; we will say that the single core NP of an intransitive construction is in S function, regardless of the semantic type of the verb. With some verbs, the referent of the S NP will almost always be controlling 'agent' (e.g. 'run', 'jump'); with others, it will normally not be (e.g. 'yawn', 'be hungry'); with a further set of intransitive verbs, the referent of the S NP may sometimes have a measure of control over the activity and sometimes not (e.g. 'sleep', 'cough'). The semantic nature of the S NP is relevant here: something inanimate could never be 'controller'. Thus *It fell* must be non-agentive; but with *He fell*, it is conceivable that the participant fell on purpose!

Languages show a tendency to ignore these semantic niceties and to generalize ONE grammatical form to mark S NP's with all types of intransitive verbs. This can be the same form used to mark O function in a transitive sentence ('absolute' case), or the same form as for A ('nominative' case).

To avoid ambiguity in a transitive sentence, there must usually be a strict grammatical convention that A NP's be marked in one way and O NP's in some other way. Once these two types of morphological marking are established, the semantic nature of an intransitive sentence can perspicuously be shown by marking S according to the A convention whenever, for that referential token of the verb, it ACTUALLY IS the controller, and marking S in the same way as O when it exercises NO control over the activity—i.e. by using one case inflection for A and S_a, and another for O and S_o (cf. §2.2).

This scheme, which we can call 'fluid S-marking', is found in just a few languages. It is said that in Bats, a Northeast Caucasian language, some intransitive verbs (e.g. 'go', 'play', 'look', 'speak') MUST have a 1st or 2nd person pronominal S NP in ergative case, while others can mark S function by EITHER absolutive case (implying that the action was involuntary) OR by ergative case (implying that the referent of the S NP controlled the activity, or that it was his fault). Verbs in the latter set include 'fall', 'get drunk', 'fear', and 'lie down'.[26] The use of ergative or absolutive

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[26] Nineteenth-century Bats behaved in the way described here (Comrie 1973:241, Catford 1975:20–21). In the modern language, some intransitive verbs demand ergative inflection on their S NP's, but others take absolutive: in effect, a 'fluid S-marking' system has evolved into a 'split S-marking' language. The meaning distinctions that could previously be shown by alternation of ergative and absolutive inflections are now dealt with by lexical resources. (I am grateful to C. E. Bazell for pointing this out; see Desheriev 1953.)

on an S NP appears to be semantically determined: instead of having to recognize classes among intransitive verbs, we can simply say that ergative case is used for a controlling S, while absolutive case is used for S NP's in other instances. The semantic nature of intransitive verbs dictates that for some the S NP is ALWAYS agentive, for some it CAN BE, and for others it NEVER is. (The ergative case in Bats is seen to be clearly 'marked'; cf. §2.31.)

Another example of this type is Eastern Pomo, a Hokan language of Northern California. There are some intransitive verbs (e.g. 'fall', 'sneeze') whose S NP always receives case inflection typical of an O NP in a transitive sentence: these describe an event that CANNOT be controlled. At the opposite end is a group of intransitive verbs (e.g. 'sit', 'go') where the patient ALWAYS exercises control; the S NP receives marking that applies to the A NP in a transitive sentence (at least for pronouns, kin terms, and proper nouns). Between these two extremes is a further group of intransitive verbs whose S NP's can be inflected like an A or an O NP, depending on whether the participant referred to does or does not exercise control, e.g. 'slide/slip' (McLendon 1978).

In Bats and Eastern Pomo, fluid S-marking is expressed by case inflections. It appears that the Siouan language Crow (Kaschube 1967; Avery Andrews, p.c.) has the same sort of phenomenon realized in terms of bound pronominal affixes. An intransitive verb in Crow bears a prefix, cross-referencing S NP, that corresponds either to A or to O transitive prefixes, according to whether or not the 'subject' has volitional control over the activity. By their semantic nature, some intransitive verbs occur only with A prefixes ('run' is always voluntary) and others only with O prefixes ('fall over' is never voluntary)—whereas a middle group (e.g. 'go') can take either type of prefix, depending on whether volition is involved in a particular token of use.[27] A similar situation appears to prevail in Choctaw (although there may be less fluidity here): most verbs are restricted either to A or O prefixes, but there are a few that may take either type of affix (Byington 1870 gives 'sleep' as an example).[28]

[27] There are some complications in Crow. There is a class of verbs (e.g. 'to not know') that are semantically non-agentive but take agentive prefixes, except for 1st person plural (this pattern of prefixation is also shown by a class of prepositions, with respect to their objects). The verbs 'to tattle' and 'to tell lies' take non-agentive (O) prefixes although they behave syntactically like agentive verbs (intransitive verbs taking A prefixes).

[28] Jeffrey Heath reports that, in his recent field research on Choctaw, he 'encountered no systematic use of variation in case-marking with individual roots for marking nuances, as Byington suggested'. This COULD be taken to indicate that Choctaw has changed toward a 'more grammatical' system (as described in the next paragraph) during the last century; but there are too many other variables involved to make this more than a speculation. The grammatical system of Choctaw is in fact slightly more complex than suggested here, with a few intransitive verbs taking neither A nor O but 'dative' prefixes, to cross-reference the S NP (cf. Byington 1870 and Heath 1977).

It is interesting to compare Bats and Crow with Cupeño (as described in Hill 1969). In all three languages, a single lexical item can be used to refer to an involuntary or voluntary instance of some activity, through appropriate grammatical marking. But whereas Bats uses different case inflections and Crow different pronominal prefixes, in Cupeño and related languages each verbal word must be specified as to whether it is describing a 'natural event', (zero marking on verb), something volitional (suffix -ine), or something involuntary (suffix -yaxe). The Cupeño

I have followed other writers in using 'ergative' and 'absolutive' case labels in the last few paragraphs. But on distributional grounds, these are by no means the uniquely appropriate designations. For some verbs, S is marked in the same way as A (a 'nominative/accusative' system); for others, S is marked in the same way as O (an 'absolutive/ergative' distribution); and for a few verbs, both alternatives are possible. The use of 'ergative' would have to be justified in terms of markedness (cf. §2.3); it may well be that this can be done for Bats, or for any other case-marking language of this type. But for morphological systems which work in terms of cross-referencing verbal affixes, this solution is not available. It will be simplest to specify—for Crow, Choctaw, Bats, or Eastern Pomo—whether an S NP receives 'A-marking' (i.e. that morphological marking which applies for A NP's in transitive sentences) or 'O-marking'.

Grammatical untidiness of the Bats/Crow sort—semantically revealing though it is—is, in fact, not tolerated in more than a handful of languages. What is more common is for intransitive verbs to be strictly classified into two sets: one, whose actions are always (or almost always) 'controlled', marks an S NP like an A NP; the other, whose actions are seldom or never controlled, marks it like an O NP. In languages of this 'split S-marking' type, there are no intransitive verbs that can take EITHER A OR O marking.

The Siouan language Mandan is a clear example of this. Kennard 1936 distinguishes verbs which indicate an activity from those which indicate a state or condition. The first class (of 'active verbs') can be transitive, occurring with subjective and objective pronominal suffixes (e.g. 'ignore', 'tell', 'give', 'see', 'name'), or intransitive, occurring just with subjective suffixes (e.g. 'break camp', 'enter', 'arrive', 'think it over', 'go'). The second class (of 'neutral verbs') takes only the objective pronominal suffixes; they include 'fall', 'be lost', 'lose balance', and verbs covering concepts that would be included in an adjectival class for other languages, such as 'be alive', 'be brave', 'be strong'.

Guaraní, from Paraguay, provides a further example of the split S-marking type.[29] Gregores & Suárez 1967 distinguish three classes of verb. 'Transitive verbs'

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distinctions cross transitivity boundaries (cf. volitional -wecáxnen 'throw down' with voluntary -wacáxneyex 'drop accidentally') in a way that the Bats and Crow distinctions cannot, by the nature of their grammatical marking.

[29] A more complex (and also more interesting) example of split S-marking occurs in Tunica. Haas 1940 first distinguishes 'active' from 'static' verbs. Active verbs all take a prefix indicating person/number of the subject (A or S), and also the mood of the clause; they can be subdivided into transitive verbs, which also take an object prefix, and intransitive verbs, with no object affix. Static verbs (a small class—only some thirty members are known) take a different prefix, cross-referencing the S NP.

Now the static prefix is identical to the prefix on nouns that marks inalienable possession (e.g. 'my father'). The object prefix on a transitive verb is identical to the alienable possessive prefix on nouns (e.g. 'my hog'). Furthermore, alienable prefixes appear to be derived from inalienable prefixes by the addition of -(h)k. Thus the static S prefix does not coincide with the O prefix; but it has the same formal relation to it as inalienable nominal prefixes have to alienable ones. This suggests tempting lines of philosophical speculation, e.g. that an S NP is more closely attached to ('inalienably possessed by') an intransitive verb than an O NP is to a transitive verb. It would be inappropriate to pursue this further in the present context.

(e.g. 'give', 'steal', 'know', 'order', 'suspect', 'like') take prefixes from both subject and object paradigms. 'Intransitive verbs' ('go', 'remain', 'continue', 'follow', 'fall') take subject prefixes. Both classes can occur in imperative inflection —unlike the third class, which Gregores & Suárez call 'quality verbs'; these take prefixes that are almost identical to object prefixes on transitive verbs. Most quality verbs would correspond to adjectives in other languages, although the class does contain 'remember', 'forget', 'tell a lie', and 'weep'.

There are languages of the split S-marking variety where the two intransitive subclasses do not have as good a semantic basis as Mandan and Guaraní. Thus in Hidatsa, another Siouan language (Robinett 1955), the intransitive verbs with A-marking include volitional items like 'talk', 'follow', 'run', 'bathe', and 'sing'— but also 'die', 'forget', 'have hiccups', that are surely not subject to control. And the set with O-marking includes 'stand up', 'roll over', and 'dress up', in addition to such non-volitional verbs as 'yawn', 'err', 'cry', 'fall down', and 'menstruate'. It may be that what began as a semantic distinction has, since it was grammatical-ized into two non-overlapping classes, come under other pressures, and has gradually moved away from its original semantic basis.

The most frequently quoted example of a split S-marking language is undoubtedly Dakota, another member of the Siouan family (Boas & Deloria 1939, Van Valin 1977; see also Sapir 1917, Fillmore 1968:54). There are many other languages of this type among the Caddoan, Siouan, and Iroquoian families, e.g. Ioway-Oto (Whitman 1947) and Onondaga (Chafe 1970).

The size of the class of intransitive verbs that must take 'O affixes' (so-called 'stative verbs') varies a good deal. In Guaraní it appears to be an open class (some hundreds of members are listed by Gregores & Suárez), including all concepts that would be rendered through a class 'adjective' in other languages. But the class of stative verb roots in Seneca (an Iroquoian language) has only three dozen or so members; for Arikara, a Caddoan language, barely two dozen stative verb roots are reported—here most adjectival concepts are dealt with by a quite different grammatical class.[30]

Just because a language has split S-marking in some part of its morphology does not, of course, imply that it cannot identify a macro-class of intransitive verbs with respect to which the unique intransitive core function S is recognized. My basic thesis is that all languages work in terms of universal syntactic-semantic functions A, O and S. Although surface realizations may group A with S, or O with S, or split S into two sub-types (S_a identified with A, and S_o with O), the underlying pattern of A, O, and S still exists; and this is always needed to explain and relate the morphological, syntactic and semantic possibilities for a language.

Wichita, a Caddoan language, is a classic example that shows some 'ergative' and some 'accusative' characteristics in surface structure, in addition to split S-marking. Rood 1971 describes how transitive verbs take 'subjective' and 'objective'

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[30] Details of sizes of stative verb classes in Iroquoian and Caddoan languages were supplied by Francesca Merlan. It seems that languages with a closed class of stative verbs generally have an open class of active intransitive verbs. The reverse, however, may not hold; David Rood reports that Lakhota (closely related to Dakota) has hundreds of members in both its active intransitive and stative intransitive verb classes.

prefixes, cross-referencing A and O NP's respectively (but note that there are non-zero prefixes only for 1st and 2nd persons). One set of intransitive verbs (e.g. 'go') must take subjective prefixes; another set must take objective prefixes (examples are 'be cold' and 'be hungry'). We could say that S is subcategorized as S_a or S_o, depending on the subclass of intransitive verb with which it occurs. But Rood quotes two grammatical processes that group together O and S (and take no account at all of the distinction between S_a and S_o): any O or S NP (but not A NP) can optionally be incorporated into a verb word, and a single set of verbal affixes indicates plural O or S (another set is used for plural A). Finally, S and A behave the same way in word ordering: an O NP (if there is one) must precede the verb, then the subject (A or S NP) can either precede or follow this complex.[31]

Choctaw (Heath 1977) provides another example of a language that has different kinds of identification in different parts of the grammar. I have already mentioned that an S NP can be cross-referenced onto the verb by A, or by O, or in one or two cases by dative prefixes (and a few verbs may take either an A or O prefix depending on whether they are understood as volitional in that instance). In contrast, the core NP's themselves show straight nominative/accusative case-marking, *-n* being used for O and *-t* ~ *-š* for A and for S (regardless of how S is cross-referenced in the verb). And rules of coördination and subordination refer directly to 'subject' NP's (i.e. A and S) regardless of the prefix system used to cross-reference S.

This paper began by pointing out that characterizations of 'ergativity' could apply at the morphological or at various syntactic levels, and that a language which took one value at a certain level could show a quite different value at some other level. It was then indicated that no 'pure ergative' language is known (at any level). In morphology, ergative characteristics occur within a 'split case system', and there can be a number of diverse semantic factors conditioning a split. Wichita and Choctaw show that things are not even THAT tidy: different parts of the morphology may require quite different characterizations. Basically, there are a number of different ways in which S can be related to A, or to O—or partly to each, according to syntactic and semantic factors; each language can exploit ONE or MORE THAN ONE of these ways.

This section has discussed (i) fluid S-marking, where the S NP of any intransitive verb can potentially be marked either on the A or on the O pattern, and (ii) 'split S-marking', where intransitive verbs fall into two mutually exclusive subclasses, one using A-marking and the other O-marking for its S NP.[32] For (i), the marking

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[31] Rood points out (p.c.) that there are distinct S_a and S_o prefixes only for 1st and 2nd persons, but the processes of incorporation and pluralization which group together S and O apply only to 3rd person forms. He suggests that this could be evidence for a Silverstein-type split (cf. §3.2) —with, roughly, S_a being grouped with A for 1st and 2nd persons, but included with S_o and O in an 'absolutive' grouping for other nominal constituents.

Rood also points out (modifying his statement in Rood 1971:101) that word order in Wichita shows considerable fluidity: although AOV and OVA are the most frequent, and represent 'the first interpretation of sentences with two NP's, neither incorporated', OAV and AVO have been encountered.

[32] Americanists typically characterize languages with split S-marking as showing a distinction between 'active' and 'stative' verbs. Klimov 1973 (see Comrie 1976b) simply calls these 'active' languages.

is entirely conditioned by the referential token of that instance of the intransitive verb; for (ii), the grammatical subclassification is based, to a greater or lesser extent, on the semantic type of the verbs.

In verb-conditioned splits of these types, there is consistent treatment of A and O NP's within a transitive sentence. The split focuses on how the S NP is treated, in terms of the transitive marking possibilities.

3.2. SPLIT CONDITIONED BY SEMANTIC NATURE OF NP'S. We can enquire why any language should invest in the complications of a split case-marking system, rather than just employing a straightforward nominative/accusative or absolutive/ergative marking. The answer lies in the fact that a split case system enables the language to reflect the semantic nuances of different types of event—and, in some instances, to reflect both the universal category of subject {S,A} and a language-particular pivot that equates S with O (see §§5–8). In the last sub-section, I showed how a split conditioned by the semantic nature of (intransitive) verbs can perspicuously indicate which members of this class can be 'controlled' (like transitive verbs).

We now consider the semantic nature of NP's, continuing to use the label 'participant' for the referent of any NP. Some kinds of participant will typically function as controller or agent of an action referred to by a transitive verb; others are seldom likely to function as agent; and a further set are never likely to function in this way.

3.21. Most discourse, in any language, is oriented to the people involved in the speech act, and pre-eminently to the speaker. Every human language has a class of pronouns, with 'shifting reference'. ('Shifters' are referentially so different from other parts of speech that it is rather striking that ALL languages should show this class.) In the speaker's view of the world, as it impinges on him and as he describes it in his language, he will be the quintessential agent. Radiating out from this egocentric focus, the next most likely agent will surely be the addressee; then specific '3rd person' humans referred to by demonstratives; then known humans referred to by proper names; then other humans (described just through common nouns); then higher animals such as dogs, and on down the scale of animacy until inanimate participants are reached. The last type could never be expected to function as controlling 'agents' (even though they could, on occasion, realize A function in a transitive sentence).

We can represent the 'potentiality of agency' scale diagrammatically as in Figure 1.[33]

Demonstratives

1st person pronoun	2nd person pronoun	3rd person pronouns	Proper nouns	Human	Animate	Inanimate ...

Common nouns

← likelihood of functioning as transitive agent

FIGURE 1

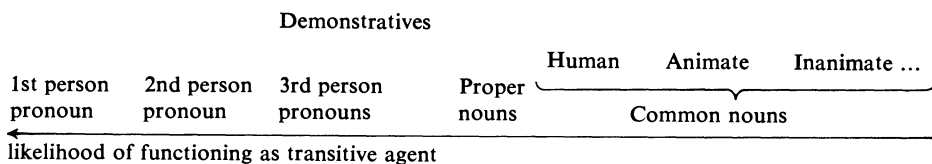[33] Whether 1st person should precede 2nd person on the hierarchy, or vice versa, is a controversial question; there is evidence for either ordering. Perhaps we should just recognize three types of NP constituent in terms of which case splits are to be explained: pronominal shifters (1st and 2nd person forms), other pronominal-type forms (3rd person pronouns, deictics, proper nouns), and common nouns.

There are, of course, different semantic types within the class of transitive verbs; and the 'agent propensity' of different kinds of NP does vary a little with the verbal type. Verbs like 'eat' or 'bite' can have virtually any human or animate agent; 'notice' and 'hear' are limited to higher animals and humans; 'speak', 'calculate', or 'lend' are surely restricted to human agents. But the hierarchy given here roughly indicates the over-all 'agency potential' of any given NP.

Which type of participant is most likely to function as patient (realizing the O slot in a transitive sentence) varies much more with the semantic nature of the verb. One can 'see' the speaker or any other human just as well as anything inanimate; and human participants are MORE LIKELY to be patients of 'hear' than most items to their right in the hierarchy. The O NP of 'pick up' is LIKELY to be something from the far right of the hierarchy, but the patient for 'spear' or 'shoot' will be centered on the animate set of participants. When the 'potentiality of being patient' is averaged out, as it were, over the whole class of transitive verbs, the same hierarchy will apply—although not so homogeneously as for the 'agent' slot. The further to the left a participant is, the more likely it is to function as agent; the further to the right, the more likely it is to be the patient.

3.22. We have been viewing the hierarchy as an explanation of what is likely to function as an A or O NP (essentially treating these as two distinct phenomena). It is perhaps more revealing to look at things the other way around—to take each class of participants on the hierarchy, and to ask whether it is MORE LIKELY to occur in A than in O function. When we do this, the variations according to semantic type of verb are reduced: it is certainly the case that, as one moves along the hierarchy from the left, the expectation of occurring in an A slot more often than in O function decreases. What I am saying is that the speaker will think in terms of his doing things to other people to a much greater extent than of having things done to him;[34] he will think of people doing something to animals or things much more often than the reverse; and so on.

It is plainly most natural and economical to 'mark' a participant when it is in an unaccustomed role. That is, we could expect that a case-marking language might provide morphological marking of an NP from the right-hand side of the hierarchy when it is in A function, and of an NP from the leftmost end when in O function (as an alternative to providing ergative marking for ALL A NP's, of whatever semantic type, or accusative marking for ALL O NP's).

A number of languages have split case-marking systems exactly on this principle: an 'ergative' case is used with NP's from the right-hand end, up to some point in the middle of the hierarchy, and an 'accusative' case from that point on, over to

[34] Discussion of this point should really deal in turn with each semantic type among transitive verbs; different considerations apply for each type. Thus most people would like to think of themselves as hitting more often than being hit. With a verb like 'see', quite different arguments are applicable. The speaker will be seen as often as he sees another person, but the fact of his seeing someone is more likely to be significant to him than the fact of his being seen. (Of course instances of trying to avoid being seen do occur; but they are normally a minority among every-day occurrences of 'seeing'.) It is what is important and significant to the speaker (rather than 'what happens') that largely determines the shape of the hierarchy.

the extreme left of the hierarchy. The case-marking of Dyirbal, mentioned in §1.1, provides a straightforward example, as shown in Table 2.

A	-∅	-ŋgu	-ŋgu	-ŋgu
S	-∅	-∅	-∅	-∅
O	-na	-∅	-∅	-∅
	1st & 2nd person pronouns	3rd person pronouns	proper names	common nouns

TABLE 2

Here we have accusative -na vs. the unmarked nominative -∅ for 1st and 2nd person pronouns, but ergative -ŋgu opposed to the unmarked absolutive -∅ for the rightmost three columns.[35]

3.23. We can think of O-marking, extending in from the left, and A-marking, coming in from the right, as essentially independent parameters. They can overlap, so that something in the middle portion of the hierarchy will have different forms for all three of the core functions S, A, and O.[36] Consider the Cashinawa language of Peru, shown in Table 3.[37]

A	-∅	habũ	nasalization
S	-∅	habu	-∅
O	-a	haa	-∅
	1st and 2nd person pronouns	3rd person pronoun	proper names and common nouns

TABLE 3

An NP with a noun as head receives the ergative case-marking, realized as nasalization of the last vowel in the final word of the NP. The 1st and 2nd person pronouns show an accusative suffix -a. But the 3rd person pronoun has both types of marking, and shows three different case forms (note that the root is habu for S function, with nasalization added in A function as it is for nouns; the pronominal accusative -a is added to a shorter root ha-).

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[35] The situation is in fact slightly more complex than this. The interrogative/indefinite form wanʸa 'who, someone' has distinct forms for S, A, and O functions; and proper names, as well as some nouns with human reference, can optionally take -nʸa (cognate with pronominal accusative -na) in O function only. (This suggests that they should be placed to the left of '3rd person pronouns', as least as far as Dyirbal is concerned.)

A language that does have mutually exclusive 'ergative' and 'accusative' marking, with no overlap of any sort in the middle of the hierarchy, is Gugu-Yalanji; see R. Hershberger 1964, H. Hershberger 1964.

[36] There are examples of ergative case covering the whole length of the hierarchy, with accusative being more limited in application. In Waga-Waga, from south Queensland, all NP constituents take the ergative inflection; accusative marking applies to pronouns, proper nouns, all common nouns with human reference, and just a few common nouns with non-human reference (Wurm 1976). Here there are separate forms for S, A, and O at the left of the hierarchy, but an absolutive/ergative system at the right (and no simple nominative/accusative case-marking in any part of the hierarchy).

[37] Analysis of Cashinawa is inferred from data provided in Merrifield et al. (1965:140–43); I am grateful to Robert E. Cromack for supplying additional data.

There are many other languages where A and O markings overlap for some part of the middle of the hierarchy, rather than ergative marking stopping at the place where accusative begins. (Note, though, that the A and O markings, extending in from opposite ends of the hierarchy, should at least meet; if they do not, other means would have to be employed to distinguish A and O for the class of NP's that show neither accusative nor ergative affixes.) In Yidin^y (cf. §2.31), e.g., pronouns have a nominative (-$\emptyset$)/accusative (-n^y ~ -:n^y) paradigm, while at the other end of the scale, all nouns show absolutive ergative marking (-$\emptyset$ vs. -$ŋgu$ ~ -du etc.) But in the middle region, there are separate forms for A, S, and O functions, for deictics that have human reference, and for the human interrogative/indefinite form 'who, someone'. Deictics with inanimate reference can use the unmarked S form for O function, OR they can use a special O form (in accusative -:n^y); and the inanimate interrogative/indefinite 'what, something' has one form for S and O functions, exactly like nouns. Note that the ergative case in Yidin^y marks any common or proper noun, or deictic or interrogative/indefinite, when it is in A function (that transitive function whose referent COULD be controller/initiator of the action). But in addition, as described in §2.31, the verbal affix -:d^yi- is brought in when the A NP is inanimate (and thus IS INCAPABLE OF BEING the controller) or when the A NP is human but IS NOT IN THIS INSTANCE controlling the activity.

This hierarchical explanation for split determined by semantic content of NP's originated entirely with Michael Silverstein; this whole section is firmly based on Silverstein's research and observations. Many further examples of split systems of this type are given in Silverstein 1976, together with detailed discussion of the principles of 'markedness' underlying the hierarchy. Note also that Silverstein's hierarchy explains case splits outside the field of 'ergative languages'. Thus, in most IE languages, pronouns and nouns from masculine and feminine declensions have distinct nominative and accusative forms; but neuter nouns have a single form for S, A, and O functions. We can say that accusative marking extends only so far in from the left of the hierarchy, but there is no ergative marking on the right. (One presumes that a transitive sentence whose A and O NP's both involved neuter nouns would have to resort to something like word order to decide which was A and which O; such sentences are, of course, quite uncommon.) See also Lyons' insightful discussion of this point (350–71).

A further instance of the nominal hierarchy explaining an oddity in the case system of a basically accusative language concerns Lardil, spoken on Mornington Island in the Gulf of Carpentaria, Australia. We saw in §2.32 that for Lardil the accusative case is marked on O NP's except in imperative constructions. There is in fact an exception to the exception: accusative MUST be marked on a 1st person pronoun, even in imperative sentences. Since 1st person is on the extreme left of the hierarchy, it is the strongest candidate for accusative marking: it receives this marking even when accusative case is suspended for all other pronouns and nouns, in imperative constructions. (Data on Lardil are from Klokeid 1976:197 and Nash, MS.)

3.24. There is one further complication in systems split according to the semantic content of NP's: non-singular pronouns sometimes appear to be further to the left

in the hierarchy than singular pronouns. This can be illustrated from Arabana, spoken in South Australia,[38] as shown in Table 4.

A	-∅	adu	-ru ~ -ri	-ru ~ -ri
S	-∅	anda	-∅	-∅
O	-na	ana	-na	-∅
	non-sg. pronouns	sg. pronouns (exemplified here by 1sg.)	proper nouns	common nouns

TABLE 4

There is absolutive/ergative inflection of common nouns, and a nominative/accusative paradigm for non-singular pronouns (of all three persons), but three distinct forms for proper nouns and for singular pronouns. (Singular pronouns are not readily analysable; the actual 1sg. forms are cited in the table.)

Silverstein mentions other examples of number-conditioned split, and attempts an explanation in terms of markedness of features. From a semantic angle, it surely cannot be argued that non-singular pronouns are more likely to be in A function (and less likely to be in O function) than singular pronouns. But we can note that 'singular' is the universal unmarked term in number systems—and that, typically, several cases that are distinguished in the singular will fall together in the plural (with still more neutralization in the dual, for languages with a three-term number system). If all pronouns are not to show the same case distinctions, then it is the non-singulars that are likely to be deficient; for ergative case to extend in from the right-hand side of the hierarchy as far as singular pronouns, but not to include non-singulars, is thus perfectly natural. But strictly speaking, number distinctions should not be included in the semantic hierarchy; this is a different kind of phenomenon, involving a different type of 'marking', and providing a different sort of explanation.[39]

3.25. In §2.1, I described the two major mechanisms of morphological marking: case inflections (or particles) on NP's, and cross-referencing pronouns (typically attached to the verb). Attention was drawn in §2.3 to some important differences between these two sorts of mechanism; on a-priori grounds, we should not necessarily expect every type of split to be distributed evenly over them.

In fact, in most examples of split conditioned by the semantic nature of verbs, bound affixes are involved; whereas, in most examples of split conditioned by the semantic nature of NP's, case-marking is involved. This is surely what could have been predicted: that kind of morphological marking split which is CONDITIONED BY

[38] There are slight complications beyond the diagrammatic array here. The accusative suffix -na MUST be used on proper nouns in O function, and on common nouns which bear a non-singular number suffix; it CAN be used on some common nouns but is not frequent here (data from Luise Hercus).

[39] Silverstein's hierarchy, along with the number system, provides explanations for the great majority of split case systems; but there are a few oddities that cannot be accounted for. Thus, in the Australian language Gumbaynggir, 1du. and 2sg. pronouns have one form for S and A functions and another form for O function; but 1sg., 1pl., 2du., and 2pl. have three distinct forms for S, A, and O (see Eades 1979). There may well be diachronic explanations for some exceptions of this type: e.g., phonological constraints may have blocked a certain change in a particular environment.

the semantic nature of the verb is most often REALIZED BY an affix to the verb; that variety of split which is CONDITIONED BY the semantic nature of NP's is usually REALIZED BY affixes or particles attached to NP's. (In Choctaw, it will be recalled, case inflections show a straight nominative/oblique pattern; but verbal prefixes are split according to the semantic content of the verb.)

There is, then, an ASSOCIATION between types of conditioning and types of morphological marking; but a few examples go against the majority pattern. Bats and Eastern Pomo have been mentioned as examples of fluid S-marking languages, which work in terms of case inflections (but no example is known of a case-marking language with strict split S-marking). A language with split conditioned by the semantic nature of NP's, but realized by cross-referencing affixes, is more unlikely. Indeed, a combination of this sort can be seen, on a-priori grounds, to be rather implausible. An A NP would really need to be cross-referenced in the verb ONLY if it were of a certain semantic type; and similarly for an O NP. Thus, whether the verb showed concord with NP's in the sentence with it would depend on the particular nature of the NP: for the application of a grammatical process to one part of speech to depend on semantic information elsewhere in the sentence would be an unusual state of affairs, something seldom encountered in natural language. The normal situation is for a verb always to contain an affix cross-referencing certain features on A and/or O NP's. (But note that '3rd person' or '3rd person neuter' may often have zero realization; this could perhaps be taken as 'null marking' in terms of the hierarchy for O cross-reference, though not for A. Decisions between 'zero term from a system' or 'the system not applying' would have to depend on detailed analysis of the language concerned.)

There is at least one example of a cross-referencing language with a split of this kind. Silverstein describes how in Chinook the S, A, and O NP's are always cross-referenced by verbal prefixes. The various prefixes go into different positional slots. There are identities and similarities between the forms filling different slots (for a given person/number combination), and these are suggestive of a Dyirbal-type split; in particular, reference to the A NP involves the addition of -k- to the regular S/O prefix form for certain persons/numbers. Here we do NOT have zero cross-reference corresponding to the left of the hierarchy—but we DO have the addition of -k- to the regular prefix, just for certain possibilities that Silverstein shows to be hierarchically determined.

A more common phenomenon is for bound prefixes to indicate the RELATIVE positions of A and O on the hierarchy. We should expect A to be further to the left than O; choice of verbal affixes may depend on whether or not this does hold. In Algonquian, e.g., each transitive verb selects one of four suffixes: (i) *-a·- denotes 'action by 1st or 2nd person on 3rd, and by 3rd person proximate on 3rd person obviative'; (ii) *-ekw-, the inverse of (i), denotes 'action by 3rd person on 1st or 2nd person, and by obviative on proximate'; (iii) *-eθe(ne)-, denotes 'action by 1st person on 2nd person'; (iv) *-i- denotes 'action by 2nd person on 1st person' (Goddard 1967:67).

The Algonquian type of marking is not normally regarded as an example of 'ergativity'. Yet it is plainly a phenomenon of the same sort as the NP-conditioned split case systems we have been dealing with. This suggests that 'ergativity' is a

misleading label, which can only indicate a part of the wider, integrated field of 'surface marking of syntactic-semantic functions'; I attempt, in this paper, to cast my discussion in terms of this inclusive field.

3.26. I know no examples of languages that combine a split conditioned by semantic content of verb (described in §3.1) with a split conditioned by semantic content of NP's, where both splits are realized in terms of morphological marking of the same kind. Splits of the first type involve consistent marking of syntactic-semantic functions for transitive clauses—but more fluid marking of S function, depending on the semantic nature of the intransitive verb involved. Splits of the second type provide consistent treatment of S NP's—but more fluid marking of A and O functions in transitive sentences, depending on the semantic nature of the NP's involved. In the one instance, semantic nuances in intransitive sentences are, as it were, calibrated against a constant transitive schema; in the other, the semantic orientation within transitive sentences is brought out against an invariable intransitive matrix. If both were allowed to vary simultaneously—useful as this would be, to bring out all the relevant semantic niceties—there would be no constant element, and surely a likelihood of confusion and ambiguity. Grammatical structures and rules, as abstractions from and idealizations of semantic relations, must organize the material of a language in order to facilitate effective communication. Dual conditioning of case-marking 'splits', of the type just suggested, might lead to irresoluble anarchy, i.e. to semantically-sponsored variation that could go beyond the limits allowable by a grammar.

However, a language could well have verb-conditioned and NP-conditioned splits if these were realized by different morphological devices—one by case inflections, and the other by cross-referencing affixes. I return to this topic at the end of the next section.

3.3. 'BOUND' VS. 'FREE' SPLIT. A further kind of split mentioned in the literature on ergativity consists in different kinds of marking on FREE-form nominals (i.e. case- or particle-marking on NP's) and in cross-referencing BOUND affixes. This is best regarded not as a distinct kind of conditioning, but as a secondary phenomenon, explainable in the same terms as NP-conditioned split.

In §2.1, I discussed the two major kinds of morphological marking: some languages use cases exclusively, while others only employ cross-referencing verbal affixes (and some use both mechanisms). I mentioned that a language can be characterized as 'ergative' in terms of either type of marking.

These two morphological mechanisms may yield the same ergativity value. Thus, in Latin, one case marks S and A NP's (and a different case marks O NP's); the verb cross-references just S and A. In Avar, a northeast Caucasian language, nouns take ergative/absolutive (*-as:* ~ *-c:a* vs. $\emptyset$) case inflections, and verbs cross-reference gender and number only for S and O NP's (Anderson 1976:4). But they may also be in conflict. We saw in §2.31 that in Murinypata, one verbal prefix is used to cross-reference S and A NP's, and another for O NP's (a 'nominative/accusative' pattern), while NP's in A function can take ergative inflection (but there is no inflection for S or O functions).

Plainly, this is a 'split' of a different kind from those discussed above. It might

seem at first glance that the split is not conditioned by the semantic nature of any sentential constituent, but is instead a 'meta-split'—depending entirely on the different GRAMMATICAL ways of realizing S/A/O identification. However, a close examination of the phenomenon yields a semantic explanation.

Cross-referencing affixes index a limited amount of information. They can make choices from a number of grammatical systems: basically, person, number, and gender. These systems provide a full characterization of pronouns, but supply only quite limited data on nouns. Verbal cross-reference makes free-form pronouns virtually redundant (they tend to be used rather infrequently, mainly for special emphasis); but at best it can only indicate the gender of a noun in a core syntactic function.

Cross-referencing systems are thus basically pronominal (with the affixes having developed from free-form pronouns, in some earlier stage of the language). We expect them to be on a nominative/accusative pattern, since this characterizes pronouns, at the extreme left of the hierarchy. Case-marking on NP's is under no such constraint, and can be either nominative/accusative or absolutive/ergative. What we can predict is that, if there is a 'split' of this kind, then bound prefixes will be accusative, and case-marking on free forms will be ergative. This is exactly what is found. Both case-marking and cross-referencing affixes can be accusative, or both can be ergative; but if there is a split, then bound forms will be accusative and free forms ergative (as in Murinypata)—never the other way around. We can thus regard this type of 'meta-split' as a corollary of the type discussed in §3.2; it can be given a semantic explanation in terms of Silverstein's hierarchy.[40]

Sometimes free-form pronouns can be straight ergative in their inflection, while bound pronominal markers are pure accusative; this is so for Walbiri, among other languages. The following fairly certain chain of historical development (cf. Hale 1973) provides an explanation:

(a) Originally there was a simple split case-marking system, conditioned by the semantic content of NP's. Pronouns (for all persons) followed a nominative/ accusative paradigm, and nouns an absolutive/ergative pattern. At this time there were no bound pronominal affixes.

(b) A system of cross-referencing suffixes developed, on the verbal auxiliary, as reductions of free-form pronouns; these followed the free pronouns in having a nominative/accusative paradigm. Since full pronominal information was now obligatorily included in the auxiliary, the use of free-form pronouns diminished (and was only necessary for emphasis etc.)

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[40] Rumsey, MS, argues that if a language has bound pronominal prefixes on verbs, in addition to case-marking on nominals, then the latter suffice to mark the syntactic function of a core NP in a sentence, while the primary functions of the former will be coreference and anaphora. The prefixes will be basically oriented to the syntactic pivot (cf. §6.2, below); it is because S/A is the most common pivot that bound pronouns tend to have a nominative/accusative paradigm, Rumsey suggests. He predicts that if Dyirbal were to develop bound pronominal affixes on the verb, these would follow an ergative/absolutive pattern—following the S/O pivot in Dyirbal (§7.2, below)—although free-form pronouns are nominative/accusative. There is undoubtedly some value in Rumsey's suggestion, although it identifies at best only one of many factors involved.

(c) Walbiri morphology was simplified, in that the absolutive/ergative case system on nouns was generalized to apply to free pronouns. The original 'nominative' pronominal forms now receive ergative inflection in A function.[41]

I suggested in §3.25 that a split conditioned by the semantic content of verbs could not be combined with a split conditioned by the semantic content of NP's, because of the confusion this would engender. My arguments were valid for a language which employs just one method of morphological marking. But for a language that uses both cases and cross-referencing affixes (something that might seem to imply a measure of grammatical redundancy), the possibility is open. No example is currently known, but it is rather likely that a thorough search might uncover one. (Choctaw points in the right direction. Here bound affixes on the verb show a split of the verb-conditioned type; Choctaw also has case-marking on NP's, but this seems not to involve any split.) We have noted that most examples of verb-conditioned split use cross-referencing, while most instances of NP-conditioned split employ case inflections; a combination of the two could prove both semantically revealing and grammatically workable.

3.4. SPLIT CONDITIONED BY ASPECT/TENSE OF SENTENCE. Each natural language has two varieties of 'shifters'. The pronominal system was mentioned in §3.21; this involves orientation to the speaker 'I'. The other area in which shifters are always encountered is time reference. The focus here is primarily 'now', the moment of speaking; there is also always a secondary focus 'today'. Relative to these shifting origins, languages show either a grammatical system of tense inflection, or a lexical class of time qualifiers, or both.[42]

Just as one type of ergativity split can be explained in terms of a semantic hierarchy extending from 'I', through 'you' and other shifters, to nominal referents that are increasingly different from the speaker (§3.2), so a further type of ergativity split can be explained with reference to the different ways of regarding events that are established facts (roughly, completed before 'now') vs. those that are merely prospective possibilities.

There are basically two ways of viewing time: first, as a gradually unfolding scale, with 'now' as a point which moves along it at a steady rate, as in Figure 2.
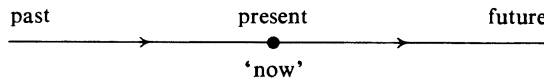
FIGURE 2

Alternatively, time can be viewed by looking in both directions from the constant origin 'now', as in Figure 3.
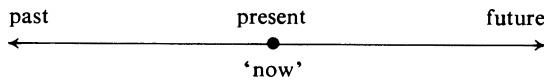
FIGURE 3

[41] It is possible to reconstruct stages earlier than (a); see Hale 1973, Dixon 1977c. Discussion of these would add nothing to the example here.

[42] Tense systems are always relative to 'now', but can sometimes also involve 'today'; see Hymes 1975. Time qualifiers appear always to refer to 'today'—including items like 'yesterday',

In this perspective, there is continual movement of time from the right-hand side, past the origin 'now', to the left, as the guessable but essentially unknowable future becomes the documented past. Tense systems in a few languages appear to operate according to Fig. 2, according equal grammatical status to 'past', 'present', and 'future' (Ancient Greek appears essentially to be of this type). But most languages treat 'future' in a quite different way from 'past'; cf. English, which has an inflection for past tense but employs an array of modals for future reference—one must indicate whether something should or might or could happen, or is predicted to happen, etc. (see Lyons, 304–17).

Every language has some syntactic means for linking descriptions of a series of connected actions. There are basically two ways in which such a series can be viewed:

(a) It may simply be seen as a series of actions that all happened to involve a certain participant. Here no causal connection between the events need be stated (or implied): it is simply that the events ARE documented, and linked through a common participant. This viewpoint is most compatible with a retrospective time perspective—looking backward from 'now', in Fig. 3, to a series of known and documented events.

(b) It may be seen in terms of an agent initiating and controlling a series of interconnected actions: he undertakes X so that he can then engage in Y, as a result of which Z will follow, etc. The common participant to the events must, in this view, be the referent of S and A NP's in the sequential clauses. Here the events follow a causal sequence, moving forward through time; this viewpoint is compatible either with Fig. 2 or with the future perspective in Fig. 3.

I have suggested that (b), which demands syntactic identification of S and A as controlling 'agent', is the expected alternative for future-time discussion, and can also be employed for past time, as in Fig 2. But with (a) we could equally well get either S/A or S/O as syntactic pivot; this viewpoint is most plausible in past time.

An analogy may help here. The classic crime thriller begins with a series of events that have all befallen some participant—a victim, a sum of money, or whatever. The detective notes the events and the connection between them. He then tries to establish the agent and the chain of causality. Effectively, he begins with viewpoint (a), and then re-interprets the events from viewpoint (b). Once this is successfully done, he can project the modus operandi of the criminal into the future, predict his likely actions, and perhaps trap him.

These different syntactic orientations for known events, on the one hand, and for potential happenings, on the other, can aid in predicting the form of a morphological split conditioned by tense or aspect. If absolutive/ergative marking is found in one part of the system, we would expect it to be in past tense or in perfect aspect, where a series of completed events could be related to O and S as pivots. In non-past tense or in imperfect aspect, nominative/accusative marking would be expected. Something that has not yet happened is best thought of as a propensity of the

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'tomorrow'—but sometimes also involve 'now' (in the latter case, the class contains items 'earlier today' and 'later today'). (Further discussion and exemplification from the Australian language family are given in Dixon 1977a:498–500.)

potential agent ('That man might hit someone', rather than 'That person might get hit by someone'); this must involve A and S NP's as pivot. (There is useful discussion of this point in Regamey.)

This is exactly what is encountered. Many languages can, of course, have nominative/accusative marking in all aspects and tenses, and others have absolutive/ergative marking unimpeded by aspect or tense (it may be conditioned by one of the factors mentioned in §§3.1–3.3). But if a split is conditioned by tense or aspect, the ergative marking is ALWAYS found either in past tense or in perfect aspect.

Burushaski, a language isolate spoken in inaccessible mountain valleys of the Karakoram Range, on the border between Kashmir and Tibet, shows this type of split. Here an A NP is obligatorily marked for ergative case (with the suffix -ɛ), only if the transitive verb is in a past-based tense (i.e. preterit, perfect, pluperfect past participle, or static participle active); if the verb is in any other tense, ergative will not be used (Lorimer 1935:64).[43] In non-past tenses, there are no inflections for A, S, or O (as there are none for S or O in past tenses): Burushaski shows a split of ergative in past tenses vs. no case-marking in non-past. (It appears that, in non-past tenses, A and O are distinguished partly through word order and partly through pronominal prefixes; the latter cross-reference S NP's for intransitive verbs; indirect objects for ditransitive verbs like 'give', 'tell', or 'say to'; and direct objects for transitive verbs like 'strike', 'see', and 'kill'; Lorimer, 192 ff.)[44]

Many other examples in the literature show this type of split; generally (by contrast with Burushaski), explicit nominative/accusative marking occurs in non-past/perfect sentences. Ergative/absolutive marking occurs only in past tense for Tibetan (Regamey 1954) and only in perfective aspect for Hindi (Allen 1951, Kachru 1965), Rajasthani (Allen 1960), Georgian (Vogt 1971), and Samoan (Milner 1973) and only in perfective aspect in Yucatec Mayan (Bricker, MS). In some instances, the marking involves case inflections (Burushaski, Georgian) or particles (Samoan). There is generally positive marking for A function in past/perfect, and for O function in non-past/imperfect—creating a genuine 'accusative' vs. 'ergative' split (e.g., Samoan has ergative *e* and accusative *i* ~ *'i*); absolutive/nominative then has zero realization. In other languages, the marking is shown by verbal affixes: in Yucatec, A is cross-referenced by a prefix and O by a suffix, while S is marked by the prefix system in incomplete aspect and by the suffix in completive aspect.

Some verbs in Abkhaz-Adyghe (West Circassian) can occur in two constructions,

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[43] Lorimer mentions two further peculiarities: ergative MUST be used on the A NP of *hɛnʌs* 'to know' in non-past tenses, and it CAN be used on the A NP of *sɛnʌs* 'to say' in non-past tenses. He mentions that ergative is permissible with other transitive verbs in non-past tenses, but is seldom used there; it is obligatory with all transitive verbs in past-based tenses.

[44] Alan Rumsey has pointed out a universal tendency: those NP's which are likely to be highest on the 'human/animate/inanimate' hierarchy will be cross-referenced in the verb. Many languages have just two NP's cross-referenced: one is the NP in S or A function, while the other is the indirect object (if there is one) or direct object (in the absence of an indirect object). In most sentences, the referent of the indirect object will be higher than that of the direct object. Languages behaving in this way include the Australian Walmatjari (see §7.1), Rembarnga (McKay 1975), Ungarinjin and Nunggubuyu; the Siouan Lakhota (Van Valin 1977:7); and Chukchee (Comrie, MS b), among many others.

with a semantic difference reminiscent of the splits just described. Briefly, with an ergative A and absolute O, the implication is that something WAS DONE; but with absolutive A and oblique O, the sense is that the agent was TRYING to accomplish something. Thus a single verb can mean 'strike, stab, beat' in absolutive/oblique constructions, but 'kill' with ergative/absolutive marking; and another verb is translated as 'look at' and 'see' respectively (Catford 1975:32–3; cf. Anderson 1976:20–22).

I made the point in §3.26 that languages do not (and would not be expected to) mingle verb-conditioning and NP-conditioning of splits within the same system of morphological marking. We do, however, encounter a mixture of one of these types of split with a split conditioned by aspect/tense. Thus Burushaski has distinct ergative forms for all nouns and for singular pronouns, but non-singular pronouns have a single form for A, S, and O functions in all tenses.

Perhaps the most interesting example is Yukulta, from the Gulf Country of Queensland. This shows a split case system, conditioned partly by tense/aspect-type considerations and partly by the semantic nature of NP's; but the conditioning is more complex than in Burushaski. Keen 1972 recognizes two kinds of transitive construction, with the following inflections:

	A	O	VERB MARKED BY
(32) (a)	ergative	absolutive	transitive suffixes
(b)	absolutive	dative	intransitive suffixes

Ergative is basically $-ya$; dative is $-n^yd^ya \sim -d^yi$; and absolutive has a number of allomorphs, one of which is zero (with a vowel-final stem of more than two syllables).

Construction 32a is used with statements of past fact and of future intention; but 32b is required in all other cases, i.e. for negative sentences in past tense ('He didn't do it') and for future irrealis (e.g. wishing). We see that this split is not simply in terms of past/future tense, but in terms of things that have happened (or are promised to happen) vs. those that have not happened or might conceivably happen. Construction 32b must also be used, whatever the tense/polarity choice of the sentence, if (i) A is 3rd person and O is 1st or 2nd person, or if (ii) A is 2nd person and O is non-singular 1st person.[45] This second conditioning factor appears to deal with the relative positioning of A and O NP's on the hierarchy of §3.25, somewhat as in Algonquian; it is explainable in terms of the discussion there, except for the odd specification of NON-SINGULAR 1st person under (ii).

3.5. 'MAIN' VS. 'SUBORDINATE' CLAUSE SPLIT. The literature on 'ergativity' contains some mention of a split conditioned in another way: morphological marking may differ between 'main' and 'subordinate' clauses. At first this appears to be a grammatically conditioned split, of a quite different type from the semantically motivated splits dealt with above. However, deeper consideration shows that this type of division can be related to tense/aspect-type splits, and that it does have a semantic basis.

The term 'subordinate clause' covers a variety of phenomena with different kinds of semantic implication. Thus 'purposive (= infinitival) complements'

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[45] Blake 1976 mentions similar phenomena in two other Queensland languages, Kalkatungu and Pitta-Pitta.

normally refer to some attempt at controlled action; clauses of this kind generally have an A or S 'agent' NP that is coreferential with some NP in the main clause ('We went to pick fruit', 'We went to play', 'I told you to pick fruit' etc.) For this type of subordinate construction, we would surely expect S and A to be treated in the same way within the complement clause.

Then there are relative clauses, most commonly detailing some action that takes place at the same time as (or previous to) the event referred to by the main clause: 'I kissed the child who had fallen over', 'I heard the man cutting wood', 'I saw the child being spanked by its mother.' Here the relative clause simply describes some event (usually an actual or completed event) that related to an NP in the main clause: any syntactic orientation is possible.

Now if there were a split in morphological marking between main clause and purposive complement clause, we should expect the subordinate clause to show 'accusative patterning'—while the main clause would, if it differed from the subordinate clause, require an 'ergative pattern'. But if it were relative clauses that entered into a split, we might expect the subordinate clause to show 'ergative' characteristics—and the main clause would, if it differed from subordinate clauses, be of the 'accusative' type. (In the great majority of languages, of course, the same marking conventions apply to all clauses, whatever their grammatical status.)

The point at issue here is that purposive complement clauses are like main clauses in future tense (or imperfective aspect): they express some potential event as a propensity of the (A or S) agent, and thus demand nominative/accusative marking. However, relative clauses resemble past tense (or perfective) main clauses in simply describing something that has happened or is happening; they can appropriately be treated in an absolutive/ergative manner. (See also Dixon 1977c for related discussion.) Main clauses, for which either accusative or ergative marking is appropriate, must show the type of marking OPPOSITE to that of the subordinate clause, IF there is a split.

Very few examples are known of main/subordinate clause splits; those that have been mentioned are not clearly enough described for us to be quite certain of all the relevant details. One of the clearest examples comes from Tsimshian (Boas; I am grateful to Michael Silverstein for drawing this to my attention). Here subordinate ('subjunctive') clauses—e.g. 'Then he heard HIM COME AGAIN', 'His mother was glad WHEN SHE SAW HIM'—consistently show an ergative pattern of cross-referencing; a 'subjective' verbal prefix refers to A, and an 'objective' prefix to S or O. But in main ('indicative') clauses, 'objective' is used for A cross-reference, as for O, when 1st or 2nd person is acting on 3rd person; subjective prefixes are used for the A NP in a main clause only when 3rd person is acting on 1st or 2nd person (thus going against the hierarchy of §3.2). Tsimshian subordinate clauses clearly show 'ergative' marking, while main clauses demonstrate a split between 'ergative' marking and no marking at all, the split being conditioned by the nominal hierarchy.

Further examples, which appear on the information available to support the hypothesis suggested above, are the Australian Ngarluma (Hale 1967; but see Nash, MS) and Lardil (McConvell 1977, following Klokeid 1976).[46]

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[46] Craig 1975, 1976 reports a split according to clause type in Jacaltec, a Mayan language of Guatemala. In main clauses, Set 1 of pronominal affixes cross-references A, while Set 2 refers

It is clear that to talk simply of 'main clause' vs. 'subordinate clause' split is misleading. Any analysis of this phenomenon will have to take account of the types of subordinate clause involved and their semantic function. At present the need is for detailed and reliable data on this type of split, in a number of languages, to see how well it fits with the a-priori explanation presented above.

3.6. SUMMARY. In §3, each type of split of morphological marking (whether realized by case inflections or particles or cross-referencing affixes) has been explained in semantic terms. Some splits are motivated by the semantic content of intransitive verbs, others by the semantic contents of A and O NP's within a transitive sentence, and others by the aspect or tense choice of the sentence. Differences of marking between main and subordinate clauses have been related to tense/aspect-type distinctions, while differences between case-marking and bound affixes have been related to the hierarchy that underlies NP conditioning. Case-marking is also, of course, syntactically motivated. In §8 I will summarize the varying pressures on morphological marking—universal and language-particular syntactic requirements (discussed in §§5–7), as well as the semantic preferences described above.

The logical possibilities for each type of conditioning are given in the Appendix. Note that the largest number of possibilities belongs to NP-conditioned splits; these are typically realized by case inflections (and most commonly encountered in Australian languages, although examples are found in other continents). Verb-conditioned splits are typically realized by bound affixes (here the largest concentration of examples is in language families from the central USA). Tense/aspect conditioning can be associated with cases or with bound affixes, and is sporadically attested from several parts of the world.

We could, in conclusion, enquire which type of split is most superficially ergative —and, at the other extreme, which type is most likely to correlate with ergativity at the syntactic level. Any answer to this question must at present be quite tentative: detailed investigation of the morphology and syntax of a large number of 'ergative' languages (in terms of the distinctions stressed in this paper) would be required before we could put forward any firm hypothesis. It is, however, tempting to indulge in a-priori speculation. Syntactic processes typically operate with NP's as pivots, and a particular case-marking is perhaps more likely to correlate with some syntactic property than is a corresponding pattern among bound affixes. Since case-marking is most strongly associated with splits conditioned by the semantic nature of the core NP's, it may be among languages of this type (e.g. Dyirbal, §1.1) that we will get the strongest examples of 'ergativity' at the syntactic level.

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to S or O. But in subordinate 'aspectless' clauses, Set 1 refers to A or S, and Set 2 to O. On the data available, it looks as if Set 2 could be considered 'unmarked' with respect to Set 1 (3rd person singular has zero realization in Set 2, but there are no zero forms in Set 1). In view of this, we should be cautious about describing aspectless clauses in terms of a nominative/accusative pattern; it may be more appropriate to refer to an 'extended ergative—restricted absolutive' arrangement, as in §2.33. The way in which this type of split fits (or does not fit) into the hypothesis presented in this section awaits further study.

EVOLUTION OF ERGATIVE MORPHOLOGIES

4. A fair amount has been written about the diachronic development of ergative morphologies. I attempt here only to summarize some of the suggestions that have been made, as they touch on the theme of the present paper.

Bound affixes (to the verb or some other sentential constituent), cross-referencing semantic features on core NP's, are in almost every instance derived from free-form pronouns and demonstratives. Splits of the 'bound' vs. 'free' variety can usually be explained in diachronic terms. Thus, in §3.3, I mentioned the strong evidence (from comparison with other Australian languages) that Walbiri pronouns once had a nominative/accusative pattern. They gave rise to accusative-type bound suffixes on a verbal auxiliary; then the absolutive/ergative system of nominal inflection was extended to apply to free-form pronouns.

Splits between 'main' and 'subordinate' clauses may have come about through syntactic reinterpretation in just one of these grammatical areas. Thus there is clear evidence that, in the not too distant past, Ngarluma had an entirely absolutive/ergative paradigm; by recent reanalysis, the stem form of a noun is now used for S and A functions (previously S and O), while O function is marked by -gu ~ -ŋu ~ -yi (the erstwhile dative inflection). It appears that ergative-type marking may have simply been retained in certain types of subordinate clause. In Jacaltec it seems that many subordinate clauses derive from nominalizations; this leads to an explanation of why subordinate complements show a type of accusative patterning, while main clauses are absolutive/ergative in marking (Comrie, MS a; Craig 1976).

Ergativity can be an uncomfortable phenomenon for anyone who speaks a fully accusative language, or who tries to fit all languages into a linguistic theory induced from the structures of accusative languages. Some 19th-century comparativists and some recent transformational grammarians have sought to 'explain' away ergative constructions as being basically passives. Little can be said in support of this as a synchronic explanation; the difficulty of explaining the facts catalogued here in terms of 'passive' should be sufficient to demonstrate this (cf. Kuryłowicz 1960). But it does appear that some (though by no means all) instances of ergative constructions have developed from an original passive; e.g., one group of scholars has argued for a passive-to-ergative shift in Polynesian languages (see Chung 1976, 1977, Hale 1968b, and Hohepa 1969).[47]

A passive origin is especially common for ergativity within a tense/aspect split. Anderson 1977 suggests that one major way in which ergative developed for the

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[47] It must be remarked that an equally vigorous case has been put forward for the opposite hypothesis—that Proto-Polynesian was essentially ergative, and that some of the modern languages have developed an accusative pattern by historical change from this (see Clark 1973, 1976, Foley 1976). It seems to me that neither side in this argument has proved its case, and that the matter requires further consideration. (See §5.43 for comment on Chung's evidence.)

Hale 1970 suggested an accusative basis for Proto-Australian, although most modern languages have a good deal of ergativity. This hypothesis was at one time supported by a number of scholars, but the emerging factual evidence is increasingly against it. McConvell 1977 shows that Lardil, a critical accusative language, has developed from an ergative ancestor. It is likely that Proto-Australian had a split-ergative morphology, and was typologically similar to Arabana (§3.24); see Dixon 1977c. Nothing can be said with certainty about the syntactic type of Proto-Australian.

originally accusative Indic family, in perfect aspect, was through the loss of the inflectional perfect, and replacement by a periphrastic construction based on a participle that was passive in form. He makes the important observation that 'passive constructions are semantically close to perfect in that they generally present a state resulting from a completed action' (cf. the semantic discussion in §3.4, above, and Comrie 1976a: 85–6).

Benveniste 1952 and Allen 1964 have drawn attention to the widespread tendency to construct perfect-tense forms for transitive verbs by employing the verb 'to have' as a verbal auxiliary. Some periphrastic perfects that involve 'to have' and a participial form of the verb are found to show ergative marking (Anderson 1977). After considering a number of instances where ergativity has developed through restructuring of the perfect, Anderson notes that the ergative case tends to coincide with instrumental when it has a passive origin, and to coincide with genitive or dative when it evolves through a possessive route.

It is far from being the case that all instances of ergative morphology are caused by recent developments within an accusative ancestor. First, some semi-ergative morphologies may be quite ancient, going back to a distant proto-language (as in Australia; Dixon 1977c). Second, the change ergative-to-accusative is just as plausible as accusative-to-ergative; i.e., there is certainly no unilinear development. Just as passives can give rise to ergative structures, so antipassives can be the basis for accusative reinterpretation. (A specific example is described in some detail in Dixon, MS a.)

Less can be said about the development of splits conditioned by the semantic content of NP's or of verbs. Pronouns typically show a slightly different pattern of inflection from nominals, often involving irregularities and archaic features; this could well interrelate with semantic explanations for some NP-conditioned splits. For verb-conditioned splits, we might speculatively posit an original ergative system, and then suggest that some transitive verbs underwent a semantic shift that led to the elimination of previously obligatory object NP's: they would be reanalysed as intransitive verbs with the S NP marked by ergative case.

Note that the facts available do not support any suggestion that one type of split might be the origin for all modern varieties of ergativity. Consider the hypothesis that a Dakota-type system, split according to the semantic content of verbs, was the genesis for all ergativity. But if this were so, we should surely expect some trace of a verb-conditioned split among the 200-odd languages of Australia, almost all of which show some degree of ergativity; but all ergativity splits in Australia are conditioned by NP-content or by aspect/tense. There seems no doubt that the morphological phenomena grouped together under 'ergativity' have evolved in a variety of ways from diverse beginnings.[48]

[48] Many other factors, beyond those mentioned here, play a role in developments to or from ergative patterning (e.g. causatives and other transitivizing processes; cf. §5.4). And sometimes changes that are motivated by a phonological restructuring may lead to realignment of case-marking. Dixon 1977c mentions that Proto-Australian had ŋay, nʸun ~ ŋin for 1st and 2nd person singular pronouns in S function, with ergative forms ŋadʸu and nʸundu ~ ŋindu in A function. Then a restriction that each word must consist of at least two syllables was introduced, and in many languages the A form was generalized to cover S; this produced a nominative/accusative paradigm for singular pronouns, at the left of the hierarchy in §3.2.

There is no reason to suppose that an out-and-out ergative case system could not be as stable as a fully accusative arrangement, from a syntactic-semantic viewpoint. But there IS always a tendency for analogy to extend generalizations, effectively eliminating 'splits' in morphological marking. I have cited ergative inflection in Walbiri being generalized to free-form pronouns. Data on Zan, a Kartvelian language, suggest that ergative case was originally used to mark the A NP just in the aorist (as in the related Georgian). In Mingrelian, one dialect of Zan, the original ergative marker is now used to mark A and S in the aorist; there is now plainly a nominative/accusative system, in aorist as in non-aorist.[49] But in Chan, another dialect of Zan, ergative marks A (but never S) in ALL TENSES; Chan has an absolutive/ergative syntax, in aorist as in non-aorist (Comrie 1973:252). Both dialects have eliminated the original aspect-conditioned split; one has a fully nominative/accusative case system, while the other shows consistent absolutive/ergative marking, through different directions of generalization.

THE CATEGORY OF 'SUBJECT'

5.1. PRELIMINARY REMARKS. Turning now to syntax (and beginning at the deepest level) we can first of all note the confusion concerning the identity of the 'subject' in ergative languages. The confusion results simply from the fact that linguistic theory evolved in the context of the better known languages of Europe, which have a predominantly accusative character at every level. For languages of this type, certain semantic and grammatical properties coincide to give a two-sided definition of subject. The 'subject' of a sentence is that NP whose referent COULD BE the 'agent' that initiates and controls an activity; the subject NP is normally obligatory in a sentence, receives the unmarked case, may be cross-referenced in the verb, and is the pivot for operations of coördination and subordination.

For ergative languages, these semantic and grammatical criteria for 'subject' do not coincide;[50] to employ the notion of subject in such languages, one must decide, in effect, which of these two kinds of criteria should take precedence. Some

[49] The marking on A NP's not infrequently is generalized to apply to S NP's; here the syntactic-semantic notion of 'subject' is being marked at the morphological level (as happens in languages from the Cushitic and Yuman families; see §2.33). But as Anderson 1977 remarks, there are no attested instances of an accusative marker (for O function) being generalized to apply to S over all types of NP constituent; see fn. 24. Thus, while an ergative system may develop into an accusative one (but an accusative pattern with 'marked nominative'; see §2.33) simply through generalization of the A case-marker also to cover S function, an accusative system will seldom (or never?) develop into an ergative one through the O-marker's being generalized to cover S. Rather, deep A may become surface S in some (antipassive-like) derivation; and this may then become, through re-analysis, the regular transitive construction.

[50] There is an indirect analogy to the unit 'word'. Every language has a unit '(grammatical) word', with considerable psychological reality for the speaker (cf. Sapir 1921:33–5); and grammatical criteria can always be given to define this unit, although the nature of the criteria differ from language to language. It appears also to be the case that every language has a phonological unit larger than the syllable, which can be called '(phonological) word'; and phonological criteria, usually involving considerations of stress etc., can always be given to define this unit. Now in most languages, 'grammatical word' and 'phonological word' coincide; but this is not so in EVERY language. To mention one exception, in Yidin[y] a grammatical word consists of ONE OR MORE phonological words (see Dixon 1977a,b).

linguists emphasize semantic criteria, but encounter severe difficulties in explaining all types of grammatical processes in terms of semantically defined 'subject' for ergative languages. (In §6.3, I describe the difficulties which Relational Grammar has in accounting for antipassive derivations.) Other linguists take syntactic/ morphological criteria as basic; this facilitates statements of grammatical derivation, but is bound to complicate any attempt to provide semantic interpretation for the grammar. (In the case of Dyirbal, Keenan takes 'absolutive NP' as subject: it bears unmarked case, is obligatory, is the pivot for most syntactic operations, etc. But this 'subject' relates to S and O, not S and A functions!)

Although all languages have reasonably complex grammars, with comparable sets of parts of speech etc., the details of syntactic and morphological patterning do show wide variation. Classes of 'noun' and 'verb' can, it seems, be recognized for every language, on internal grammatical criteria. But these grammatical criteria differ from language to language; recognition of 'noun' and 'verb' between languages must invoke semantic criteria (that class which includes words referring to concrete objects is called 'noun', etc.; see Dixon 1977d). In fact, any attempt to establish true universals must be semantically based. 'Subject' is surely more likely to be definable as a universal category, playing a productive role in the grammar of each language, if viewed from a semantic angle.

I will show that 'subject' is a universal category, having a vital role in the grammar of every natural language, be it 'accusative', 'ergative', or any mixture. But—and this is a vital point—it is not the MOST fundamental category. 'Subject' links functions from intransitive and transitive sentence types; it effectively involves a grouping of S and A, out of the basic semantic-syntactic relations, S, A, and O—a grouping that is made entirely on semantic grounds.

The basic thesis of this paper is that A, S, and O are the universal core categories, and that syntactic rules in every grammar are framed in terms of them. There is, as a further stage, a universal grouping of A and S as 'subject'—a category that plays an important role in every grammar. Some types of syntactic processes will always be statable in terms of 'subject', in every language. Other types of process may relate to 'subject' in some languages, but in other languages they may involve some other combination of the core functions.

5.2. UNIVERSAL DEFINITION OF 'SUBJECT'. People observe events, of many different sorts, happening in the world; the participant roles show a great deal of diversity, and the effects of the activities on the participants vary a great deal. Yet all human languages classify actions into two basic types: those involving one obligatory participant, which are described by intransitive sentences, and those involving two obligatory participants, which are dealt with by transitive sentences.[51] In some languages, verbs are strictly classified into transitive and intransitive subsets, and these are mutually exclusive (derivations from one type to another are possible, but in this kind of language are usually marked morphologically). Other

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[51] Activities involving three obligatory participants are also dealt with by a type of transitive sentence; i.e., the 'subject' of a verb like 'give' or 'show' or 'tell' is always dealt with in the same way as the 'subject' of 'hit' or 'see' (whereas the subject of 'run' or 'fall' may be treated quite differently). We should, more accurately, talk of events with one vs. more than one obligatory participant. (See also fn. 52.)

languages may have SOME verbs that can function either transitively or intransitively; even here, though, MOST verbs belong unambiguously to the transitive or to the intransitive set. In each language, there is explicit grammatical marking of each transitivity type—in terms of case-marking on nouns and pronouns, occurrence of particles, pronominal affixes on verbs, inflectional allomorphs on verbs, and so on. The details of grammatical marking vary from language to language, but the SAME TYPES of criteria recur.

Thus all languages treat 'cut' and 'give', 'rub' and 'carry', 'take' and 'cook' as transitive verbs. In addition, very nearly every language classifies 'see' and 'hear' in the same way. This is really a surprising fact—these verbs refer to totally different kinds of events; but they all involve two basic participants, and are dealt with by verbs belonging to the semantic-syntactic class 'transitive' in all types of language. What is even more surprising is that all languages consistently identify participants between these different verbs. By this I mean that the participant who makes the incision (for 'cut') is equated with the person who transfers possession of something he has had (for 'give'), with the participant who receives the sense impression (for 'see'), and so on. I denote this participant by the functional label 'A': the A NP's for 'cut', 'give', 'see' etc. are consistently treated in exactly the same way, in all aspects of morphology and syntax, across every type of human language. The other participant in these transitive activities—that which is incised (for 'cut'), whose sense impression is noticed (for 'see'), etc. is also treated in the same way;[52] here I use the functional label 'O'. It is these facts which lead me to suggest that the syntactic-semantic functions A and O are universal linguistic primitives.

On a-priori grounds, the various participants that occur with different transitive verbs would be classified in quite diverse ways. Fillmore's original suggestion (1968) that 'cut' involves NP's in Agentive and Dative cases, whereas 'see' requires Dative and Objective (and Dative is used to describe 'what is cut', but 'who sees') has strong appeal, as a semantically-based description. Why is it that no language (or, at least, none of the many tongues investigated by me, or by colleagues I have asked about this) treats the NP's associated with 'cut' and 'see' in this manner? The only language that does not treat 'see' and 'hear' in exactly the same way as 'cut', 'give' etc. is the northeast Caucasian Avar (Černý). But here both 'that which is seen' and 'that which is cut' are in absolutive case, the 'cutter' is marked by ergative/instrumental inflection, and the 'see-er' is in locative case. With this one exception, A and O NP's are consistently identified between 'cut', 'see', 'give', 'carry' etc., over languages of every typological sort.

It seems that the basic reason for this identification lies in the idea of 'agency' or

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[52] I mentioned (in fn. 51) that verbs like 'give' involve three obligatory participants. Here the 'giver' is always equated with the 'cutter', 'see-er' etc. (as the A NP); but the O NP (which is given the same grammatical treatment as 'that which is cut', 'that which is seen' etc.) is in some languages the recipient, in others the gift. (In still others, there are two construction types involving 'give': in one, the recipient is O NP; in the other, the gift is. This applies in English and in Dyirbal; Dixon 1972:300.) Positive criteria are employed to pick out the A NP. The 'other' obligatory participant is then identified as being in O function; if there is more than one additional participant, then either could conceivably be taken as the O NP (see Kuipers 1968:614).

'control'. For most multi-participant events, there is just one participant who potentially initiates or controls the activity. It is the NP referring to this participant that is identified as being in A function (on negative grounds, the other obligatory participant is then taken to be in O function in each instance). In *Mary cut John*, it is Mary (if anyone) who controls what is happening. It may be that Mary cut John accidentally, so that no one can be identified as the controller, for some particular token of this sentence; but it is clear that John can never be taken as 'agent'.

Some activities require the coöperation of two participants: both are, in a sense 'agents'. It is generally possible to focus on either participant (as the A NP), either through employing two different but semantically-related verbs (e.g. *Mary sold it to John, John bought it from Mary*) or through a single verb that effectively allows interchange of A and O NP's (*Mary shook hands with John, John shook hands with Mary*).[53] In such an event, it is often the case that one participant does play a leading role in initiating the transaction/salutation; this can be indicated by assigning him to A function. But where double agency is required by the nature of the event, either participant could conceivably be shown in A function; which is chosen will depend upon who the speaker wishes to focus on as being, in terms of his total discourse, 'the protagonist ... at the center of events' (Schachter 1977: 283).

'See' and 'hear' do not describe actions; indeed, these verbs cannot—except in quite marked circumstances—be used in imperative form in English or in most other languages. They contrast with 'look at' and 'listen to', which more clearly involve the idea of volition and effort on the part of the observer, and which can appear in imperative constructions (like almost every other transitive verb). But all verbs that involve some further specification—hyponyms of 'see', such as 'watch', 'observe', 'scan', 'ogle'—plainly involve the referents of the A NP's initiating or controlling the event (they also occur as imperatives). 'See' and 'hear' themselves, as the most neutral verbs describing visual and aural reception, scarcely accord with our criterion for why one particular participant is, in almost every language, marked as A, on a par grammatically with the A NP's for 'cut', 'give' etc. But with all other more specific verbs of seeing and hearing, the referent of one NP does initiate or control the event, satisfying the criterion for recognition of this NP as being in A function; 'see' and 'hear' as treated in the same way as their hyponyms, 'the one who sees' being assigned the same grammatical marking as 'the one who (purposefully) watches'.[54] *Mary saw John* can describe an event where John just

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[53] Verbs of this kind can be symmetrical—like 'marry', 'meet', 'shake hands', and 'kiss'—or directional; compare *Mary rented the house to John, John rented the house from Mary* with the *sell/buy* examples (see Dixon 1973). The matter of whether symmetric verbs should be regarded as underlying intransitives with plural subject (*John and Mary married*), from which the transitives are derived by syntactic operations, is too complex a question to go into here. But note that such a 'solution' is not available for *buy/sell, rent to/rent from* etc. (I am grateful to Paul Schachter and Rodney Huddleston for discussion of 'double agent' verbs.)

[54] Support for this line of argument comes from Australian languages, which have a single verb covering both 'see' and 'look at', and another for 'hear' and 'listen to'. That is, a single lexical root is employed to describe chance or involuntary perception, and also for purposeful

came into Mary's field of view, and no agency was involved; but there is the potentiality that Mary looked for and sought out John—then *Mary*, but not *John*, could be something like an 'agent'. (If John TRIED to be seen, then some other verb like 'show', would be appropriate).

We begin with our perception of the world: we see many activities, of many different kinds. Then a grammatical classification is imposed on these events: they are divided into those described by intransitive and those described by transitive sentences. The grammatical requirement is that an intransitive sentence has a verb and one core NP, whereas a transitive sentence has a verb and two obligatory NP's.[55] There is then a semantic identification of one transitive NP as being in A function—this is consistent across languages, for transitive verbs of all semantic types—and complementary identification of the other transitive core NP as in O function (but see fn. 52). This A NP refers to the actual or potential 'agent', who could (if anything could) initiate and control the activity. Note that, in some languages, the A NP must be animate (e.g. Jacaltec; Craig 1976:108–9);[56] it is then likely that, for every transitive sentence, the A NP could be agent. Most languages have some transitive verbs whose major occurrence is with an animate agent, but which can also be used in an extended sense with an inanimate noun in the agent slot—e.g., *The wind closed the door*; *Sorrow is eating at my heart.*[57] The central

directing of attention; in the latter sense, these verbs can of course be used in imperative form. Almost all Australian languages show this pattern (cf. Dixon 1972:41). In the Dyirbal 'mother-in-law' style, a single verb root covers 'watch', 'stare at', 'look sneakily', 'look up at' etc., in addition to 'see' and 'look at' (Dixon 1972:294–6).

Černý implies that in Avar all verbs of perception take absolutive O and locative A. In the related Lesghian, there is a more subtle and interesting pattern of case assignment; here the main class of transitive verbs ('cut' etc.) has the A NP in ergative and the O NP in absolutive case. There is a root *akun* that can occur in this regular transitive framework, and then means 'look at'; OR the O NP can still be in the absolutive case, but the A NP in a dative inflection, being now translatable as 'see'. Similarly, the form *van akun* can occur in either framework, meaning 'listen to' and 'hear' respectively. (The Lesghian data were supplied by David Kilby, from Mejlanova 1960.) This system of case assignment shows quite precisely the semantic difference involved, in the same sort of spirit that a few languages employ fluid S-marking to show whether or not agency is involved with some token of an intransitive verb (§3.1). But just as MOST languages have one marking for the S NP in all types of intransitive sentence, so ALMOST every language treats 'see' in the same way as 'watch' and 'observe'—as a regular transitive verb.

[55] Certain NP's are termed 'obligatory' not because they must necessarily occur in the surface structure of every sentence involving a certain verb, but because the speaker and hearer must have some understanding of them if the sentence is to form a conceptual whole—with potentiality of referring to some actual, possible, or habitual event.

I refer to 'intransitive verb and S NP' or 'transitive verb plus A and O NP's' as the 'core' of a sentence. Any core may of course be augmented by peripheral components: locational or temporal qualifiers, adverbial specifications, NP's in dative case, etc. Peripheral components can, as a rule, occur with a core of either transitivity. (Fuller discussion of these points is in Dixon 1977a:401 ff.)

[56] Craig notes that, corresponding to 'He closed the door', we cannot have 'The wind closed the door', involving the same transitive verb *speba* 'close'; instead, a sentence translatable as 'The door closed by the wind' must be used, involving *xpehi* 'closed' and with 'wind' expressed through an agentive prepositional phrase.

[57] Note here the inclusion of *at* (cf. *He is eating the meat* and *He is eating at the meat.*) We

meanings of *close* and *eat* require animate agency; but the physical action of the wind can create the same impression as an animate agent, so that *the wind* is clearly regarded as an A NP in *The wind closed the door*. And a language-particular metaphorical extension views the effects of sorrow as akin to 'eating' with respect to the institutionalized symbol 'heart'. (Note that this is a fairly general metaphorical extension, applying over a wide semantic field in English: e.g., *I am consumed by sorrow/with envy*; *She was devoured by anxiety*, etc.)

Certain transitive verbs occur in all languages: 'cut', 'throw', 'give', 'see', 'eat', and a few score more. All these describe actions controllable by a human or animate agent. But individual languages allow different types of semantic extensions from the recurring 'central meaning'. Some extensions may retain the idea of animate agency, but enlarge the class of actions the verb can refer to (e.g., *We cut our losses*); other extensions may apply the verb to events that do not have a controlling agent, when there is some culturally-perceived similarity to the central reference of the verb (e.g. *That interruption threw me off track*; *Rock music gives me a headache*.) Metaphorical uses of these verbs are always outnumbered by occurrences in the 'central meaning', where there is a human or other animate agent who could (and most often does) control the activity.

Beyond this universal set of transitive verbs (and their more precise articulations and hyponyms),[58] individual languages include further verbs in the transitive class which have more-or-less idiosyncratic and language-particular meanings. Most of these will again demand an animate 'agent' in their central use. But for some, no core NP need be animate (e.g. *attract* in *A magnet will attract iron*, *Wealth attracts robbers*; Lyons, 359); here one NP is recognized to be in A function, through a perceived similarity of this event to activities that are controllable (e.g. *pull*).

I am suggesting that all languages have a class of 'transitive verbs' whose semantic effect is defined in terms of the universally occurring 'controllable' verbs like 'cut' and 'give'. But verbs describing other activities may then also be included in this class, with a participant recognized as being in A function because of culturally-perceived similarities to some variety of controllable event. Extensions of the transitive class to essentially non-controllable events differ from language to language (and could perhaps be taken as evidence for difference in Whorfian world view). Some languages have 'like' as a transitive verb (as in 'I like tea'); others must use an intransitive or adjectival construction (something like 'Tea is likeable

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could alternatively have *Sorrow is eating my heart out*, but scarcely **Sorrow is eating my heart*. This illustrates typical grammatical restrictions on metaphorical extensions of common verbs.

I am grateful to W. S. Allen for drawing my attention to Homer's description (*Iliad* 6:202) of Bellerophon 'eating his heart' (*hòn thumòn katédōn*) with sorrow; it may be significant that he here uses the verb (with *kata* 'down') which is elsewhere generally translatable as 'devour, eat up' rather than just 'eat'.

[58] Of course some languages lack a single verb 'cut' or 'carry'. In Dyirbal one must choose between *nudi-l* 'cut right through, sever' and *gunba-l* 'cut partway through, cut a piece out'; and in Indonesian it is usually necessary to specify *pikul* 'carry on the shoulder', *jinjing* 'carry by the tips of the fingers', *kepit* 'carry under one's arms', *galas* 'carry with a carrying pole', *genggam* 'carry in fist or claws', or *junjung* 'carry on the head', etc. This in no way affects my argumentation. The point is that each language has one OR MORE verbs 'cut', 'carry' etc.; the Dyirbal and Indonesian examples could be taken to indicate a gap where a general verb would

to me.') English has *annoy* and *endure* as transitive verbs.[59] These can take an animate A NP, but the referent could not be said to control the activity in the way that a 'cutter' or a 'carry-er' does. Note, though, that someone CAN purposely annoy, and that endurance implies a measure of will-power; the A NP's for these verbs do NOT initiate or control the activity, but the role they play can be LIKENED to that of an agent. Verbs of this nature tend to be language-specific,[60] and should be regarded as idiosyncratic extensions to the universally occurring set of controllable verbs that make up the core of the class of transitive verbs in every language.[61]

Intransitive verbs take a single obligatory NP which is in S function. With some verbs (e.g. 'run', 'jump'), the referent of the S NP will be unequivocal agent, controlling or initiating the activity (this was referred to as subtype S_a in §2.2). For other verbs (e.g. 'yawn', 'break'), the S NP is unlikely to be able to exercise any measure of control (it can be termed S_o). In §3.1 I described fluid S-marking and split S-marking languages, which sometimes treat an S NP like a transitive A constituent and sometimes like O. It seems, though, that no language carries this distinction between S_a and S_o into its shallow syntax. All types of language treat S NP's of all kinds in the same way for operations of coördination, subordination and the like.

In fact, most languages that distinguish between 'active' and 'stative' intransitive

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be expected, cultural reasons dictating more detailed specification by use of a hyponym. (Note that the Dyirbal 'mother-in-law' speech style does just have one verb $d^yal\eta ga$-l, whose central meaning exactly corresponds to that of Eng. *cut*; cf. Dixon 1971).

[59] Schachter 1976, 1977 mentions the Tagalog verb *-tiis* 'endure' as evidence that an actor nominal (the A NP for *-tiis*) is not necessarily the 'perceived instigator of the action' (this is Fillmore's criterion for 'agent', p. 24). It appears, however, that the arguments from this section do apply to Tagalog: MOST members of the class of transitive verbs will have an animate actor that satisfies Fillmore's criterion for 'agent' (which is a part of my criterion for A function). Thus *-tiis* is just an extensional member of the transitive class in Tagalog, as *endure* is in English (and as the examples of fn. 60 are for Yidin^y).

Note that the definition of an A NP in terms of a participant who 'initiates and/or controls the activity' is not vitiated by odd verbs like *endure*; the test of any such generalization is whether it describes the majority pattern of a language. Idiosyncratic verbs in any language can be dealt with as institutionalized extensions to the universal definition, or they can be dealt with simply as 'exceptions' that have to be learnt by heart. (Exceptions are recognized as a valid category in phonology and morphology; the idea is also applicable within syntax and even within semantics.)

[60] I have gathered around 300 verbs for Yidin^y, about 200 of them transitive. All but three occur predominantly with animate A NP's (although many have metaphorical extensions, e.g. 'The fever is eating my body.') The three exceptions—which are the only transitive verbs that do not occur in imperative form—are *guba-n* 'burn', whose A NP must be 'fire', 'sun', or something burning (there is another verb *wad^yu-l* 'burn, cook' which must have a human A NP); d^yad^ya-l '(sacred water) rises against (someone who has broken a taboo)'; and *wigi-l* '(too rich food) makes (a person) feel sick' (cf. Dixon 1977a:257–8).

[61] Some putative counter-examples to the definition of the A function in terms of potential agency demand a different explanation. Consider *John underwent torture/an operation/an examination* (cf. Lakoff & Ross 1976:161). Here the underlying semantic representation could be taken as (*Someone*) *tortured/operated on/examined John*, from which the sentence with *underwent* can be derived by a passive-like operation (but note that, unlike passive, this DOES change meaning). It appears that, in most instances of use, the 'object' of *undergo* is a deverbal nominal, as in the examples here.

verbs do not follow a strict semantic principle. There are generally some volitional verbs in the stative class (whose S takes O-type marking), and a few non-volitional items in the active class (S taking A-type marking): see, e.g., the sketch of Hidatsa in §3.1 (and Van Valin on Lakhota). We cannot precisely identify S_a and S_o—defined on semantic grounds as agentive and non-agentive S—with the two morphological subclasses of intransitive verbs in split S-marking languages. And even in fluid S-marking languages, the distinction between S_a and S_o does not continue into the syntax (or, often, into other parts of the morphology). Thus Choctaw cross-references the S NP by prefixes typical of an A NP, O NP, or dative NP, depending on the verb involved; but it does treat all S NP's in the same manner for nominal case-marking and for purposes of syntactic rules (see §3.1, above, and Heath 1977).

We may recognize S as the third basic function, defined simply as the only obligatory NP in an intransitive sentence. S can, as a later step, be subclassified into agentive S_a and non-agentive S_o; S_a and S_o help explain some morphological splits, but this distinction plays virtually no role in syntax.[62]

It will be seen that the universal syntactic-semantic functions A, S, and O are defined on rather different principles: the ONLY OBLIGATORY NP in an INTRANSITIVE clause, for S; the NP in a TRANSITIVE clause which CAN BE AGENT, for A; and the OTHER OBLIGATORY NP in a TRANSITIVE clause, for O. These functions appear to be valid for all natural languages and to be the basis for all grammatical operations. We surveyed in §3 the possible splits and variations in morphological marking; these can all be explained in terms of A, S, and O, sometimes referring also to the semantic content of an NP or of a verb, or to the aspect or tense of a sentence.

We can now define a further universal category: 'subject'. A and S functions are grouped together as 'subject'.[63] These are the NP's which refer to participants that can be the initiating/controlling agents. There is a difference: an A NP almost always has the potentiality of being agent for any transitive verb (the 'almost' may be omittable for languages like Jacaltec which limit A NP's to animates); and an S NP could conceivably be agent only for certain verbs. Ideally, we should define 'subject' as {A,S_a}, linking A with the subtype of S which can be agent. But we have noted that no language consistently distinguishes S_a from S_o in all aspects of its grammar. It is the category S that functions as a syntactic prime, in the syntax of

[62] Although the extremes of S_a verbs and S_o verbs are clear enough, there is a large fuzzy area in between, where SOME MEASURE of agency is possible (see §2.2). This must be one factor in the failure of most 'split S' languages to maintain an exact semantic basis, and in the treatment of all S NP's in the same way in syntactic rules.

[63] The status of A, S, and O as universal primitives, having priority over the recognition of 'subject', is vital to the thesis of this paper. Some linguists use symbols like S_t, S_i, and O (or P 'patient'). But this suggests that 'subject' is the FIRST category to be recognized—and that it can then be subclassified into transitive and intransitive varieties, according to the sentence type it occurs in. The use of such symbolisms (see Anderson 1977, Heath 1976a, and Woodbury 1975, 1977) has misleading implications. The symbols A, S, and O used here (the choice of letters is immaterial—the main point is to choose different symbols for different primitive functions) emphasizes the syntactic and semantic DIFFERENCES among these three functions; once these are established, A and S can as a next step be grouped into the category 'subject' on the basis of PARTIAL SIMILARITIES.

every language. The semantic link between A and the subtype S_a of S is generalized, as it were, so that A and S are grouped together to make up the universal syntactic-semantic category 'subject'. No matter that not every intransitive verb can plausibly appear in the (positive) imperative; every S NP counts as a 'subject'.[64]

Although I have used the semantic criterion of 'potential agency' to define 'subject', this is a category that plays an important role in the grammar of every language. Certain universal syntactic phenomena follow from the properties of 'subject'. We will survey some of these in §5.4, after first reviewing other attempts to clarify the notion of 'subject'.

Throughout this section, I have been talking in terms of the 'deep structures' of sentences,[65] and I have defined 'subject' as a universal deep-structure category. Some linguists have also used the notion 'surface subject'; e.g., they may say that the passive transformation places 'deep object' in 'surface subject' function. I shall show in §6.2 that, while 'surface subject' may be definable for some languages, it is by no means a workable universal category. It is useful and valid to speak of 'derived A/S/O' functional slots, but not in the same way of 'derived subject'. As a universal semantic-syntactic category, 'subject' must be defined at the deep-structure level, and always related to that level.

Every language could be said to have a measure of 'accusativity' at the level of deep structure, in that the universal category of 'subject'—a grouping together of A and S—plays some role in its syntax. In the same way, every language mingles accusativity with ergativity in the structure of its lexicon (compare *He ate it/He ate* with *He broke it/It broke*; §2.2). But it really makes little sense to attempt to characterize an individual language as 'accusative' or 'ergative' at this level. Deep structure deals with the way in which syntax codes the semantic description of events. There are three basic syntactic-semantic categories—A, S, and O; these are true universals, being applicable to every type of sentence in every language. Then A and S are grouped together as 'subject', a deep-structure category by virtue of which certain universal syntactic phenomena follow. It is only at the level of 'shallow structure', after operations like passive and antipassive have applied, that languages differ in the way they group syntactic functions; it is at this level that typological characterizations of languages as being syntactically 'ergative' or 'accusative' have significance. We return to this topic in §§6–7.

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[64] Our discussion thus far has focused on sentences containing a lexical verb. Of course, there are also sentences involving 'have' and 'be' (for languages that have a copula)—and, in many languages, minor sentences that involve no verb at all but just, say, a noun as topic and an adjective as comment. Now it is a fact that a concept which is dealt with through a verb in one language may be rendered by an adjective in another (Dixon 1977d); this suggests that, in any universal categorization, the function S should be extended to apply to the topic of adjectival comment sentences and to the 'subjects' of 'to be' and 'to have'. I mentioned in fn. 15 that it is always the S form of a nominal or pronominal which is used in minor sentence types like these.

[65] 'Deep structure' is used in a fairly informal way throughout this paper. It is not necessarily intended in the sense of Chomsky 1965, which defines a grammatical level largely in terms of its syntactic usefulness; it is perhaps closer to the 'semantic representation' of Generative Semantics. The notion is purposely left vague here; detailed research into the syntax and semantics of a wide sample of languages, within the terms suggested in this paper, is a prerequisite to a full characterization of this (surely universal) level.

5.3. KEENAN'S DISCUSSION OF 'SUBJECT'. In an important paper, Keenan seeks 'to provide a definition of the notion "subject of" which will enable us to identify the subject phrase(s), if any, of any sentence in any language' (1976:305). The motivation for this attempt is the reliance on 'subject' in a number of current theoretical enquiries (e.g. the Accessibility Hierarchy of Keenan & Comrie, and the Relational Grammar of Perlmutter & Postal).

Keenan's procedure seems to be to survey the properties of what have been recognized as 'subjects' in a wide selection of languages. If the linguists working on a language have not used the term 'subject', then Keenan brings to bear his own criteria, which tend to emphasize surface grammatical factors (cf. §5.1, above). He presents a list of 30-odd properties characteristically possessed by subjects. Almost all the properties are qualified by 'usually', 'normally', or 'in general'; there is no attempt at a universal 'definition' (in the logical sense of 'Every A which shows X is a subject'); rather, 'what is subject' is based on a statistical assessment of which NP satisfies the largest number of the 30-odd properties.

Keenan gives a miscellany of syntactic and semantic 'properties' with no priority among them (so that the whole argument runs the risk of being circular). Some are characteristics of shallow structures; some involve morphological marking conventions; and some follow from universal semantic arrangements. As an example of the last point, Keenan mentions that the entity to which a subject refers 'exists independently of the action or property expressed by the predicate. This is less true for non-subjects.' (He cites as example *A student wrote a poem.*) But this is surely a consequence of the fact that the A NP tends to come further to the left than the O NP in Silverstein's hierarchy (see §3.2, above); abstract NP's like *a poem* belong at the right of the hierarchy.[66]

Keenan does include, among his 30-odd properties, that 'Subjects normally express the agent of the action, if there is one'; this is the universal defining criterion which I adopted for 'subject' above (but note Keenan's use of 'normally'). In Keenan's presentation, this semantic criterion follows a number of surface grammatical properties with which it appears to be accorded equal weighting: the subject is usually indispensable (i.e. non-deletable); the subject is usually the leftmost NP; if anything has zero marking, it will be the subject of an intransitive verb—and so on.

In §2.3, I showed the variety of types of case-marking that occur. That NP which is in the unmarked syntactic case is the most likely candidate to be 'indispensable'—but the unmarked case can be (a) absolutive, covering S and O functions; or (b) nominative, covering S and A functions; or (c) accusative, with just O function. The property that 'Subject is usually indispensable' follows from the facts that the majority of languages are of type (b), and that the NP in unmarked nominative case is not normally deletable. The property that 'If anything has zero case-marking, it will be intransitive subject' follows from the facts that the great majority of languages are of types (a) or (b), and that the unmarked case is likely to have zero

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[66] Keenan intends this not as an absolute rule, but as a tendency—i.e. 'subject is more likely to have independent existence than object.' It is of course not hard to find odd examples where the A NP does not have independent existence: e.g., *His wife married him on the rebound*; *My new book pretty well wrote itself*.

realization, if anything does. (Note that this last property says nothing about the category of 'subject', but just about S—one of the two basic functions grouped together to form 'subject' under my definition).

I have already mentioned that 'subject' has been used by linguists in a variety of ways. It is illegitimate to compare the properties of 'subjects' without first considering the criteria used for recognizing 'subject' in each grammar. Plainly, there is no uniquely correct notion of 'subject'; the category has to be carefully defined in any universal or language-particular enquiry. In §5.2, I took A, S, and O as universal functions, in terms of which all grammatical phenomena may be described; I then DEFINED subject as the class {A,S}: thus every sentence will have a subject. For transitive sentences, A is distinguished from O in terms of potential agency, the criterion that is later taken to underlie 'subject'. Intransitive sentences have only one obligatory NP (which I label as in S function), and so this is linked with A as 'subject', whether or not it could be 'agent' for any particular verb.

Certain of Keenan's properties automatically follow from my definition of subject. He notes that 'Subjects normally express the addressee phrase of imperatives'; if subject is defined as (potential) agent, the addressee phrase of an imperative MUST always be subject.[67] The 'normally' in 'subject = agent' and the 'normally' in 'subject = addressee of imperative' are linked (although this is not noted by Keenan) in that we must have 'addressee of imperative = agent'.

Most of Keenan's criteria effectively define the shallow-structure category 'pivot' which I discuss in §6.2. 'Pivot' is a language-particular category: in some languages it links (derived) S and A, in others S and O—and there are languages which employ both types. But Keenan also includes some criteria that relate to 'deep subject', the universal category {S,A}. There can be serious conflict between 'subject' and 'pivot' in the most ergative languages. For Dyirbal, the S and O NP's (marked by absolutive case, on nominals) show more of the 30-odd properties —e.g. indispensable, leftmost, zero marking, syntactic pivot—than do S and A; thus Keenan takes {S,O} to be 'subject',[68] letting grammatical criteria override semantic considerations. He has effectively recognized that S/O is the shallow-structure pivot in Dyirbal syntax. But with this definition of 'subject', Dyirbal must be noted as an exception to 'subject = agent', and it is also an exception to 'subject = addressee of imperative'.

As Blake has shown, there can be even more serious difficulties attached to defining 'subject' on purely grammatical criteria. Pronouns in Dyirbal show a nominative/accusative paradigm, and it is the 'nominative' which is leftmost, unmarked, and non-deletable (though it is not the syntactic pivot; see §1.1). So

[67] Keenan's reference to Maori and Malagasy as counter-examples indicates confusion between 'deep subject' and 'surface subject'; see §5.41, below.

[68] Postal (1977:278) mentions 'an analysis of ergativity phenomena which takes "patient" nominals to be initial subjects of transitive clauses ... the analysis of Dyirbal in Dixon (1972: 128–30) is of this type ... ' In fact, 'subject' is used in a semantic sense throughout the grammar of Dyirbal, never in the 'grammatical' sense suggested by Postal. Tree structures of an 'ergative type' are used, but they do not imply that the notion of 'subject' is different in Dyirbal from any other language. The tree structures make syntactic, not semantic, claims. The notion of 'subject' is effectively defined through the feature [+actor] (Dixon 1972:199–205); this is needed to deal with the 'accusative' syntactic properties of Dyirbal (see §5.4, below).

the label 'subject' should, on this type of criteria, be applied to a pronoun in S or A function, and also to a noun in S or O function. A sentence with pronominal A and nominal O, like 33 (cf. §1.1) would have two subjects, whereas a sentence with nominal A and pronominal O, like 34, would have none!

(33) ŋana   ŋuma   buṛa+n   'We saw father.'
     we-NOM   father-ABS   see+PAST
(34) ŋana+na   ŋuma+ŋgu   buṛa+n   'Father saw us.'
     we+ACC   father+ERG   see+PAST

Further difficulties with this type of approach are discussed by Blake.

5.4. UNIVERSAL SYNTACTIC PHENOMENA DEPENDENT ON 'SUBJECT'. Classifying a language as 'ergative' in terms of morphological marking is a relatively straightforward matter when compared with making a decision between 'ergativity' (S treated in the same way as O) and 'accusativity' (S treated like A) at the syntactic level. Different kinds of syntactic evidence can be brought to bear, and these by no means all give the same result. It is, in fact, necessary to distinguish among (a) universal syntactic behavior, that recurs in all languages—or which has the same form in every language in which it does occur; (b) transformations needed to place an NP in 'pivotal function'—usually corresponding to unmarked case—for a variety of syntactic and discourse purposes; and (c) language-particular operations that provide genuine evidence for syntactic 'ergativity'. Possibilities (b) and (c) are interrelated, and are discussed in §§6–7.

The syntactic operations that involve the SAME identifications, among A, S, and O—in EVERY language in which they occur—as in (a) above, are all corollaries of the universal category of subject. I will now give three critical examples of such operations, and then discuss 'causatives' which have a universal basis that is dependent upon A, not on {A,S}

5.41. IMPERATIVES. In an imperative sentence, the speaker requests the addressee to do something—to act as agent in initiating/controlling some activity. Imperatives in every language have a 2nd person pronoun as (stated or understood) S or A NP.[69] This is a universal property; thus the fact that S and A have the same possibilities of reference for the imperative constructions of some particular language (and the fact that, say, either can be deleted from surface structure) is no evidence at all for the placement of that language on a continuum of syntactic 'ergativity' vs. 'accusativity'. Even the most ergative language will treat S and A NP's of imperatives the same. This follows from the meaning of imperatives (addressee is told to be agent) and the definition of 'subject' (the NP whose referent can be agent, if anything can).[70]

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[69] Most languages restrict the subjects of imperatives to 2nd person pronouns. In a few languages, there is extension to 1st or even to 3rd person subjects (although these are always greatly outnumbered by 2nd person subjects). The discussion here can naturally be extended to these additional cases (e.g., 1st/3rd person possibilities always apply equally to A and to S structural slots).

[70] Generally, an imperative will have a 2nd person pronoun as the S or A NP in both deep and surface structure; this condition is ideally satisfied in reflexives. Passives cannot normally occur in imperative form. It is possible to devise examples of the type (i) *Come to Palm Court and be entertained by Joe Loss and his Orchestra!* and (ii) *Be impressed by his stamp collection*

Whether any particular verb can occur in imperative form (marked by special inflection in many languages, and almost always characterized by distinctive intonation) depends upon its semantic type—whether it describes a state or activity that is controllable. Most (though not all) transitive verbs are controllable, but only that subset of intransitives which take an S_a NP fall into this category. Indeed, some languages that show split S-marking permit imperatives only of S_a verbs, not of the S_o set. Such a restriction is explicitly stated by Gregores & Suárez for Guaraní (see §3.1, above); it is an isolated instance where the S_a/S_o distinction has some syntactic relevance.

S_a and S_o are not distinguished for later syntactic rules such as coördination and subordination, in any language; 'S' is treated as a single homogeneous category. Similarly, all types of S are linked with A as being POTENTIALLY the addressee of an imperative, in almost every language (Guaraní being a fairly rare exception). Imperatives usually involve verbs that demand a fair level of control; but the grammatical construction can be extended to verbs where the level of control is minimal or non-existent. We can conceive of *Endure it for a few weeks longer (and I'll arrange a transfer)!* or a whispered wish *Slip down there and break your leg!* Negative imperatives are more plausible with barely controllable verbs—*Don't yawn!*—though even here the limits of possibility can be crossed, e.g. *Don't die!* Since some A and S NP's function naturally as addressees of imperatives, this property is potentially extendable to all members of the grammatical classes covered by A and S.[71]

It is of course possible that, IN ADDITION TO this universal S/A linkage, imperatives in particular languages may also in some way treat S and O alike. In Nass-Gitksan

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if you want him to like you! But note that, for these to be acceptable, the passive must be linked to another clause with which it shares a subject NP. The acceptability of these sentences appears to stem from formal analogy to imperative copular sentences (e.g. *Be satisfied with it!*; *Be happy to go!*—see fn. 71), and from the demands of discourse structure. It is noteworthy that ex. (i) is recognizable as a compelling advertising slogan; most speakers would prefer to use *Come to Palm Court and let Joe Loss entertain you!* (the addressee has no control over whether he is entertained or not, only in whether he allows Joe Loss to try to entertain him). Ex (ii) is felt to be an elliptical version of *Try to be impressed ... !* or *Appear to be impressed ... !*

For those linguists who accept that the deep structure of *Appear to be asleep!* has [*You be asleep*] as subject, and that the deep structure of *Be easy to please!* has [PRO *to please you*] as subject, there are compelling reasons to specify shallow structure as the level of application of the requirement that the (here, derived) S or A NP of an imperative should be 2nd person. I would not accept these analyses, for reasons which it would be inappropriate to explore here. (Rodney Huddleston and Geoff Pullum provided these examples and useful discussion of this topic; they do not agree with the position adopted here.)

[71] The principle that a grammatical property which is semantically plausible for some members of a grammatically defined class CAN be extended to all members of the class, essentially going beyond the limits of semantic plausibility (and then producing sentences which may be semantically bizarre but grammatically acceptable), can be illustrated from the difference between languages that include a copula in adjectival predications and those that do not. Languages like English, of the former type, can use imperatives like *Be happy!*, *Be thin!*, *Be hungry!*—which, although not 'normal', can be contextualized, e.g. *Be thin!* 'Pull your stomach in!', *Be hungry!* 'Act hungry!' Adjectival sentences in Dyirbal involve no verbal form, and so CANNOT be marked as grammatical imperatives (which in this language are indicated by distinct verbal inflections). Note the gradual restriction on imperatives from English through Dyirbal to Guaraní, where only S_a verbs can form imperatives.

(Rigsby), one pronominal suffix cross-references S or O, and another suffix cross-references A—basically an absolutive/ergative pattern. But in an imperative construction, just the A suffix, not S or O forms, must be deleted. Thus, for Nass-Gitksan imperatives, both S and A must be the 2nd person (the universal rule); but A has to be deleted and S retained (this is a fact about the structure of verbs in Nass-Gitksan).

Sometimes an obligatory transformation must apply to an imperative. Keenan (321) gives, as an exception to his property that 'Subjects normally express the addressee phrase of imperatives', the fact that 'in many Malayo-Polynesian languages, e.g. Maori and Malagasy, imperatives are frequently in non-active forms, and the addressee phrase, if present, appears as a passive (or other type of non-active) agent phrase'. Keenan is here noting the non-application of a semantic criterion, which is valid for deep subjects, to derived 'surface subjects' (on this, see §6.2, below). Maori and Malagasy conform perfectly to the universal pattern; it is just that the passive transformation, which is optional for other construction types, is obligatory or nearly so for imperatives,[72] so that the (deep) subject of an imperative is always realized with oblique marking.[73]

5.42. JUSSIVE COMPLEMENTS. A number of construction types, occurring in all or almost all languages, are semantically close to imperatives. In many languages, jussive complement constructions—with a main-clause verb like 'tell' or 'order'—could be regarded as indirect imperatives; examples from English would be *I ordered him to go*; *I told him to bring the water*. Here the object of the main-clause verb must be, at the level of deep structure, coreferential with the S or A NP of the verb in the subordinate clause. The subordinate clause describes an instruction that has been given to someone to do something: plainly this participant must be agent, and thus subject, for the subordinate clause.[74]

Since this requirement on identification of S and A NP's in jussive complement constructions is a universal consequence of the definition of subject in terms of agency, and of the meanings of jussives, it cannot be taken as evidence for the syntactic type of any individual language. In an early unpublished paper showing that Walbiri, despite some morphological ergativity, is basically 'accusative' at

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[72] For cultural reasons of 'politeness' etc. (see Keenan & Keenan, MS).

[73] Malagasy, Maori, and English all satisfy the universal requirement that 'deep subject' of an imperative be 2nd person. They differ in that English also requires this NP to come through into surface structure in S or A function (**Mary be watched by you* is unacceptable), whereas Malagasy and Maori do not impose this extra condition. In an ergative language like Dyirbal, the same universal requirement holds. But here an imperative can, optionally, be antipassivized (cf. §1.1):

    (*nʸura*) *yabu buṛa*   'You look at mother!'
    (*nʸura*) *buṛal+ŋa yabu+gu*   'You look at mother!'

It is impossible to decide whether Dyirbal should be classified with Malagasy and Maori or with English. Whereas a passive transformation places a deep O NP in surface S function, the antipassive places a deep A in surface S function. Since A and S are subject functions, an antipassive imperative will, on almost any definition of 'subject', NECESSARILY still have the addressee phrase in subject function.

[74] For a useful discussion of jussives in Rembarnga (an Australian language) and their universal syntactic form, see McKay.

the syntactic level, Hale (1968a:36–7) mentions that 'the well-formedness of the jussive complements also requires that the subject of the embedding be identical to the object of the matrix'. But this is so for all languages; it certainly holds, at the level of deep structure, for jussives in Dyirbal. (But the 'ergative syntax' of Dyirbal does demand a different arrangement in surface structure; see §7.2.)

5.43. 'CAN' AND SIMILAR VERBS. In certain languages, some or all of the group 'begin', 'finish', 'can', 'must', and 'try' are inflected like lexical verbs; in other languages, they are verbal auxiliaries—separate words that must occur in conjunction with a lexical verb; and in still another group of languages, they are realized as derivational affixes on verbs. Whatever their surface grammatical status, these items are essentially modifiers of a lexical verb; when they have some of the surface characteristics of main verbs, they must share the subject of a lexical verb (and sometimes object as well). Thus, in sentences like *I began to paint the wall* and *I began to laugh*, the subject of *begin* is identical to the A or S NP of the complement clause; but this does not constitute evidence for English having an accusative-type syntax. This property follows from the semantics of *begin*, and is shown by every language that has a distinct verb 'begin'.

Great care must be taken to ensure that constructions of this type—in which A and S are treated alike, as a natural corollary of the universal definition of subject (the auxiliary element commenting on the subject's 'control' of an event)—are not taken as evidence about the syntactic accusativity of a language. Thus Woodbury (1975:66–70) mentions, among other pieces of evidence, that Eskimo has constructions of the form $NP_1 V_1 [\Sigma_2]$, where V_1 is one of a restricted class of verbs that includes 'can', 'must', 'begin', and 'want'. Sentences of this form have a syntactic constraint that NP_1 must be coreferential with the A or S NP of the embedded clause Σ_2; Equi-NP Deletion then takes place. But 'can', 'must' and 'begin' always behave in this way, and 'want' almost always does.[75] This syntactic constraint is a natural consequence of the meanings of V_1 and the universal definition of subject; it cannot be taken as any indication of the syntactic type of Eskimo.[76]

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[75] 'Want' varies in its behavior from language to language, in a way that 'can', 'begin', and 'must' do not; and its behavior in Eskimo and Khinalug could be taken as very weak evidence for syntactic accusativity. There are languages where 'want' appears to behave as a straightforward modifier to a lexical verb, on a par with 'can'. But in other languages there need be no NP in common to the main and complement clauses; Comrie points out that there is a literal translation of 'I want John to hit Bill' in Khinalug (see also Anderson 1976:8).

[76] Woodbury (1975:118–19, 131) recognizes that 'the accusativity of EQUI can be best explained in terms of the semantic class of EQUI type verbs, a subclass of which requires the "like-subject" constraint discussed in Perlmutter 1971, which limits certain verbs and their complement clauses to coreferential subjects, e.g. Eng. *begin, try, can* etc.' Recognizing that coreferentiality and deletion in Dyirbal depend on the S/O pivot, Woodbury then mentions that 'it would be interesting to see whether there are verbs in Dyirbal to which the like-subject constraint applies.'

If there were any verbs 'must', 'can', 'try' in Dyirbal, then—as a consequence of their semantic import and the universal category of subject—they would have to involve 'deep S/A' identification. It would not be impossible to accommodate this within Dyirbal, or for it to be consistent with the 'S/O pivot' shallow structure of Dyirbal (see the discussion of jussives in

There are other examples of this nature in the literature on 'ergativity'. Comrie (MS a) mentions that many languages which are ergative at the morphological level are accusative in their syntax. Exemplifying for Khinalug, a northeast Caucasian language, he simply quotes constructions with 'want to V' and 'can V'; but these constructions would be EXPECTED to equate A and S, as a corollary of the universal definition of subject.

Chung 1976 argues for an 'accusative' syntax in modern Polynesian languages, entirely on the basis of a handful of verbs—'can', 'begin', 'must'—whose subject must coincide with the subject of the complement clause, triggering a 'raising rule' which applies only for these verbs (see also Anderson 1976:13). This is insufficient basis for typological classification of the syntax of Polynesian languages, let alone as a major step in the argument that Proto-Polynesian had accusative morphology and syntax.

I shall show in §7 that there are syntactic operations whose identifications within the set A, S, O do vary from language to language; these operations enable us to place languages along a typological continuum ranging from 'syntactically ergative' to 'syntactically accusative'. But we must be careful to distinguish them from universal syntactic phenomena of the type described here—which always equate S and A—as a consequence of the universal category of 'subject' and its semantic implications.

5.44. CAUSATIVES. One of Keenan's properties (321) is that 'Subjects normally exhibit the same position, case-marking, and verb agreements as does the causer NP in the most basic type of causative sentence.' Now a construction type is recognized as 'causative' partly on the semantic grounds that the referent of the 'causer NP' MAKES THE EVENT HAPPEN. We saw in §5.2 how all languages assign one syntactic-semantic function (that we are calling A) to that NP in a transitive sentence which could be 'agent'. The causer must plainly be the A NP (one of the two basic functions covered by 'subject').

Many languages have a productive mechanism for deriving a transitive causative verb from an intransitive verb (*The door opened* → *The man opened the door*) or from an adjective (*The wall is black* → *I blackened the wall*). In addition, a number of pairs of lexical roots usually show the same relation (e.g. in English, *fell = make fall, kill = make dead*).[77] Here the S NP of the intransitive sentence (e.g. *The tree*

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§7.2). But in fact Dyirbal does not have lexical verbs of this type: 'try' is rendered by a non-inflecting particle, while 'must' and 'can' are expressed by the use of purposive inflection on a main-clause verb. There is an adverbial 'begin'—an item that takes the same inflection as a verb, and occurs with a lexical verb in a 'verb complex' (just as an adjective occurs with noun in an NP); thus, 'begin' naturally has the same A and O (or S) as the main verb it modifies (Dixon 1972:67–9, 119, 301–2).

[77] Sapir (1917:84) suggested that *kill* be related to *cause to die*, and this has been repeated many times since. In fact *cause* is a quite uncommon verb in English, with fairly restricted meaning; causatives are more revealingly dealt with in terms of the very common verb *make*. *Make* takes an adjectival or participial complement, not a *to*-clause, and analyses such as *blacken = make black, kill = make dead* are a considerable improvement on *cause to become black* and *cause to die* (or *cause to become dead*). For instance, none of Fodor's arguments (1970) against a derivation of *kill* from *cause to die* apply against *make dead*.

is falling) corresponds to the O NP of the corresponding causative (*The woodman is felling the tree*); this has been taken as evidence for 'ergative syntax'.

Keenan's comment relates not to 'subject' but to A function: the causer NP in a causative construction is in A function. For lexical verb pairs (*fall/fell*), there is an underlying semantic relation between intransitive and transitive construction. Various proposals have been put forward for derived causatives, e.g. that *I blackened the wall* is derived from *I* CAUS + PAST *the wall* and *The wall (be) black*; the underlying A NP can, of course, be the addressee of an imperative. But the identification of 'S = O' and 'causer = A' is a universal feature of causative constructions; it does not provide evidence as to the syntactic 'ergativity' or 'accusativity' of any language, and it does not relate directly to the universal category of 'subject' (defined as a class consisting of the primitives A and S).

Note, though, that some languages have more complex and more interesting syntactic phenomena connected with 'causatives'. First we can remind ourselves (cf. §2.2) that, although transitive/intransitive pairs in some areas of the lexicon show S = O identification ('lexical ergativity'), those in other parts have S = A identification—e.g. *He is talking, He is telling me* ('lexical accusativity').[78]

Now the productive process of forming transitive stems from intransitive roots (with some explicit morphological marking) is syntactically homogeneous in many languages, corresponding to the 'causative' S = O type I have been discussing—e.g. Swahili (Loogman 1965:104 ff.) and Turkish (Lewis 1953:106 ff.) But in other languages the transitivizing process may be of type S = O for some intransitive verbs, but S = A for others: in Yidinʸ, *wanda-n* is 'fall down' and *wanda-ŋa-l* is 'make fall over (e.g. by pushing)', whereas *badi-n* is 'cry' and *badi-ŋa-l* is 'cry over (e.g. a lost child)'.[79] The derivational suffix -*ŋa-l* always signals a transitive verb; but in some cases it is genuinely causative (S = O), and in other cases it signals that the intransitive S NP has become A, and that an originally oblique NP (in, say, dative case) from the intransitive sentence has moved into O function in the derived transitive clause (Dixon 1977a:302–22).

There is in fact some semantic explanation for which verb behaves in which way. Lexical pairs of type S = O are mostly found among verbs of rest or motion ('stand' vs. 'make stand', 'come out' vs. 'take out'; Dixon 1972:297), with S = A pairs being predominantly found in other semantic areas—'eat (transitive)' vs. 'eat intransitive)' etc. If a derivational affix has varying effect, it will most frequently be of type S = O for verbs of rest or motion, and of type S = A for other semantic classes of verb.[80] Rembarnga, of Arnhem Land, shows an interesting rationalization of this tendency: here the derivational suffix -*wa*- derives S = A transitives from intransitive roots of conjugations 1–2 (*kaḷuk* 'play', *kaḷuk-wa* 'play with'; *wak* 'laugh', *wak-wa* 'laugh at' etc.), but causative S = O forms from roots of

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[78] Examples from Dyirbal, where the intransitive and transitive members of each S = O and S = A pair are totally different in form, are given in Dixon 1972:297 and 1977c.

[79] 'Make cry' can only be rendered by a two-clause sentence, normally specifying what was done to bring on the tears—e.g., 'The man teased me and I cried' (Dixon 1977a:313–14).

[80] This is basically the situation in Yidinʸ, but here there is no strict categorization: transitive forms of SOME intransitive verb roots can be understood in either S = O or S = A sense, depending on context. (A full account is in Dixon 1977a:302–22.)

conjugations 4–6 (*pariŋanə* 'be hanging up', *pariŋanə-ʔ-wa* 'hang-up' etc.)[81] The important point is that most (but not quite all) of the intransitive verbs in conjugations 4–6 are concerned with motion or rest; but in fact -*wa*- has causative sense even with those verbs from these conjugations that belong to another semantic domain (e.g. 'yawn' → 'make yawn'). Which kind of syntactic effect the derivational affix -*wa*- has with any verb may have originally been semantically conditioned in Rembarnga, as in Yidinʸ; but this process has been grammaticalized in terms of the predominant semantic field associated with each conjugation, so that it is now conjugationally determined. (Rembarnga data are from McKay 1975 and p.c.)

The point of these examples is to stress that 'causative' can be one sense of a more general transitivizing process, and that whether it is S = A or S = O can be semantically conditioned; this is surely reminiscent of the semantic conditioning of morphological splits, exemplified at length in §2. Languages with a transitivizing process that is always causative in nature could be said to have generalized from one semantic type to all intransitive verbs (as Rembarnga appears to have generalized in a more restrictive way, to all intransitive verbs in conjugations 4–6).[82]

Data of this sort are surely not indicative of whether a language is 'ergative' or 'accusative' at the syntactic level.

5.45. We have seen that certain constructions—imperatives, jussives, verbs like 'can'—must involve identification of S and A at the deep syntactic level, purely because of their semantic content and the semantic natures of S and A functions (it is these semantic factors that lead to the grouping of S and A as the universal deep-structure category 'subject'). There do not appear, in the same way, to be any universal phenomena that must link S and O.[83] All languages work in terms of 'subject'. For some languages, almost every syntactic operation appears to be based on this category. But there are languages which require 'subject' only for the type of syntactic operation exemplified here. In other areas, they may work in terms of S and O, rather than S and A. This will be taken up again in §7.

<div align="center">DERIVED STRUCTURES</div>

6.1. PASSIVE AND ANTIPASSIVE—FORM AND FUNCTION. Like 'ergativity' and 'subject', the terms 'passive' and 'antipassive' have been employed with a range of

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[81] There are no intransitive roots in conjugations 3 and 7.

[82] Dyirbal has a derivational affix -*ma-l* ~ -*mba-l* that derives a transitive verbal stem from an intransitive root; it is uniformly S = A in effect, e.g. *dʸana-y* 'stand' → *dʸanayma-l* 'stand with/on'. But there is also a derivational affix -*ma-l* ~ -*m(b)a-l* that derives a transitive verbal stem from an adjective; this DOES have causative meaning, e.g. *guyi* 'dead' → *guyima-l* 'kill'. These facts are particularly interesting in view of the 'ergative' syntax of Dyirbal (§7.2).

[83] Heath 1976a, McKay 1975, and Dixon 1977c have suggested that some syntactic phenomena would involve the same identification from S, A, and O for all languages in which they occurred, implying S = A sometimes and S = O other times. It has proved difficult, however, to find examples of universal S = O phenomena. The best that can be cited is noun incorporation, which involves S or O more often than it does A NP's. But this is a matter of word formation—surely a phenomenon of a quite different type from those discussed here. And it is not so cut-and-dried: Comrie (MS a) mentions that O NP's are easiest to incorporate, followed by S, with A most resistant to incorporation.

meanings. It is thus necessary to explain the sense in which I employ these labels in the present discussion. Both passive and antipassive are taken to be syntactic derivations (transformations) that derive an intransitive sentence,[84] at what we can call 'shallow structure' level, from an underlying transitive sentence:

(a) PASSIVE places the deep O NP in surface S function, and marks the deep A NP with an oblique case/preposition/etc. (this NP can then be deleted).

(b) ANTIPASSIVE places the deep A NP in surface S function, and marks the deep O NP with an oblique case/preposition/etc. (this NP can then be deleted).

It will be seen that passive and antipassive are not mutually exclusive; both could occur in a single language (thus Woodbury 1975:26–7, 88, 1977:322–5 reports both for Eskimo). But passive is normally encountered in languages with nominative/accusative marking; one major use is to bring an O NP (which would otherwise be in marked accusative case) into a surface function where it bears the unmarked nominative inflection. Similarly, antipassive occurs in languages with a predominantly ergative morphology, and brings an A NP (that would otherwise bear the marked ergative inflection) into surface S function, where it is in unmarked absolute case.[85]

It is, of course, putting the cart before the horse to explain that, e.g., anti-passivization is needed to put an A NP in the unmarked case. Case-marking is plainly a late rule of the grammar, applying to surface structures after all syntactic operations (including passive/antipassive) have applied. Passivization (/anti-passivization) is largely motivated by a need to place a deep O(/A) NP in derived S function, in order to meet certain syntactic requirements (and/or preferences of discourse structuring; cf. Kalmár 1976). Now if O(/A) does not satisfy some syntactic constraint, then in most cases A(/O) does, and in addition S will do so. It is the class of NP's that can be 'syntactic pivot', in this way, which generally takes the unmarked case inflection. It is thus generally true (but as a conclusion, not as a premiss) that passive operates in languages that are morphologically and syntactically nominative/accusative, and that antipassive will be found predominantly in languages that have some measure of ergativity at the syntactic and morphological levels.

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[84] For all languages that have strict marking of transitivity (with which I am acquainted), passives and antipassives are clearly intransitive; cf. Langacker & Munro 1975. For languages with more fluid transitivity (e.g. English), it has not been the custom to comment on the transitivity of passives. However, I do not believe that the treatment here is inconsistent with any properties of English passives (or with other treatments of them).

[85] 'Passive' is of course a well-established grammatical term, and its application is fairly consistent. The label 'antipassive' was coined about 1968 by Michael Silverstein to refer to such phenomena as the -ŋay transformation in Dyirbal (see §1.1, above, and Dixon 1972:65–7). The term has recently been extended to phenomena of a widely different nature; thus Heath (1976b:203) mentions, among other examples, that 'indefinite object deletion in the type *He drinks* can be considered an antipassive rule'. By the criteria I am employing, *He drinks* is not an antipassive; the original O NP (referring to that which is consumed) cannot occur in oblique form. Many of Heath's examples, and some of those in Postal 1977, fall outside the scope of 'antipassive' as the term is employed here.

Comrie (1973:244 ff., MS b) describes what appears to be an antipassive transformation for Chukchee. See also Woodbury (1975:26–7) on the antipassive in Eskimo.

I shall not here attempt a full account of the reasons for the existence and the uses of antipassives and passives. A basic reason is, as just indicated, to bring A into S function when coördination or subordination operations take O or S as pivot, or to bring O into S function when A or S is taken as pivot (see §6.2, §7).

That type of NP which functions as the syntactic pivot is usually obligatory in a sentence. Woodbury 1975 reports that, in Eskimo, each sentence must involve an absolutive NP. If the O NP is not to be stated, for some reason, antipassive must be applied; the deep A NP is now in absolutive case, and the deep O NP—taking instrumental inflection—can be freely deleted. Identical remarks apply to Dyirbal. Similarly for passives: Kuryłowicz notes that there is no language with a passive transformation which does not then permit agent deletion.

Most conditions on the use of passive also apply to antipassive. Comrie (MS c) has shown that, in many languages, 'subjects' (i.e. S and A NP's) are typically 'definite' and 'animate'. In these cases, passive may be used to bring a definite/animate O NP into surface S function. Dyirbal shows a similar phenomenon from the ergative angle: demonstratives exist only in absolutive case, for S and O functions. Thus, if a demonstrative is to be used to mark a deep A NP, it must be brought into surface S function through antipassivization (e.g. line 9 of text XXV in Dixon 1972:388).

6.2. SYNTACTIC 'PIVOTS'. We recognize a level of 'shallow structure', derived from deep structure by the application of singulary transformations such as passive, antipassive, reflexive, and reciprocal. For the majority of sentences, shallow structure will be identical to deep structure: i.e. passive, antipassive etc. apply only in a minority of instances. (A passive construction is, in a number of ways, 'marked' with respect to its active counterpart, and so on.) I am saying, then, that a considerable number of the sentences of a language are 'kernel sentences', in the sense of Chomsky 1957.

Each language has a morphological (or word-order) marking convention that enables one immediately to recognize which of the core functions an NP (S, A, or O) is in within a kernel sentence. Thus, in Dyirbal, an S NP will have absolutive case on nouns and nominative on pronouns (and it cannot involve a noun in ergative or a pronoun in accusative inflection); in English, an S NP occurs before the verb (and triggers verb concord), and there is no prepositionless NP after the verb.

Passive, antipassive, reflexive etc. derive a shallow structure that differs from the underlying deep configuration. There will be some marking, usually on the verb, indicating the construction type, and the NP's will be in DERIVED FUNCTION. Thus, in a passive, the deep O NP receives morphological marking that characterizes an S NP in a kernel sentence; we say that it is in derived S function. Similarly, in an antipassive construction, it is the deep A NP that is, on morphological/surface-syntactic grounds, said to be in derived S function. We can thus speak of that NP which is in 'deep A/S/O function' and that NP which is in 'derived A/S/O function' in a given sentence. (For a kernel sentence, these will coincide; if passive, reflexive etc. has applied, then they will differ.)

It is at the level of shallow structure that operations of coördination and subordination apply ('generalized transformations' in the sense of Chomsky 1957).

Typically, each operation of this type may impose a syntactic condition on the coreferential NP's in the clauses of the construction. We can describe these possibilities in terms of a 'syntactic pivot'. There are basically two varieties of pivot (some languages show just one type, others have a mixture of the two):[86]

(i) S/A PIVOT: the coreferential NP must be in DERIVED S or A function in one (or both) clauses.

(ii) S/O PIVOT: the coreferential NP must be in DERIVED S or O function in one (or both) clauses.

Consider two clauses that are related in a coördinate or subordinate construction, and have an NP in common. In some languages, for the construction to be well-formed, the coreferential NP can be in virtually any syntactic function in either clause; but there may be syntactic conditions on deletability of one occurrence of this NP. Other languages have definite conditions on the function of the common NP in each clause, if the construction is to be well-formed. In §7 I give examples of S/A and S/O pivots in coördinate and subordinate constructions for two Australian languages; Keenan & Comrie 1977 discuss conditions on relative clause formation in a number of languages.

There are several quite different ways of marking coreferentiality and meeting coreferentiality conditions; each language tends to specialize in just one method. We can distinguish the following:

(a) Some languages allow a basically transitive verb to occur in an intransitive construction in order to meet syntactic conditions on coördination and sub-ordination (an example is given in Dixon, MS a).

(b) Some languages employ a system of switch-reference markers. Thus, in the South Australian language Diyari, there are two forms of verbal inflection for each type of subordinate clause—one indicating that the coreferential NP's are both in (derived) S/A function, and the other indicating that this is not the case.[87] The second occurrence of the coreferential NP can be freely deleted without any possibility of ambiguity or confusion (Austin 1978). Languages with switch-reference systems typically lack passive and antipassive transformations (or if they do have them, they are used rather sparingly); it can be argued that these are not needed, since it is not necessary to bring a deep O or A NP into surface S function, to facilitate NP deletion or the like.

(c) The third and commonest type of language uses passive or antipassive to feed 'pivot conditions' on the formation of subordinate/coördinate constructions and/or deletability conditions; these operations involve putting a critical NP into derived S function.

It is vitally important to distinguish between 'subject' and 'pivot'. 'Subject' is a

[86] 'Pivot' is here used in very much the sense attached to 'topic' in Dixon 1972. 'Topic' has recently been accepted with a different sense (e.g. Li & Thompson 1976), and it now seems advisable to employ a different term.

[87] Switch-reference systems have been recognized and investigated only quite recently (e.g. Jacobsen 1967, Keenan 1976:315–16). All those so far described equate S and A. There is no reason to suppose that a switch-reference system could not work in terms of an S/O pivot; it would certainly be worthwhile instituting a thorough search (e.g. among North Caucasian languages) to see whether such a system could be uncovered.

universal category, defined on semantic-syntactic criteria. 'Pivot' is a language-particular category that is entirely syntactic in nature and application. Whereas 'subject' is applicable only at the level of deep structure, 'pivot' refers to derived functions. Thus in a kernel sentence, for a language with S/O pivot, an A NP will be 'subject' but not 'pivot'; in the antipassive version of this sentence, the same NP will be 'subject' (at deep-structure level) and also 'pivot' (in shallow structure).

We can identify (underlying) S, A, and O functions at the deep level, and (derived) S, A, and O functions in shallow structure. The categories 'subject' and 'pivot' cannot be related to two distinct levels: the criteria for defining 'subject' and 'pivot' are different, and the types of grammatical behavior determined by these categories are quite dissimilar.

However, when the syntactic pivot is exclusively (or almost exclusively) S/A, there is a temptation to use just one term. Linguists typically speak of 'deep subject' (corresponding to our universally defined category of 'subject') and 'surface subject' (meaning 'pivot'). If it is realized that 'deep subject' is essentially a semantic notion (determining universal conditions on imperatives, jussive constructions and the like), whereas 'surface subject' is a syntactic category (in terms of which the rules for coördination and subordination in any particular language may be described), then this terminology need not be too confusing.

But for a language that has a significant S/O pivot, the two terms must be kept apart. S and A will be related at the deep-structure level, but have quite different relevance in shallow structure: it would be pointless to group together 'derived S' and 'derived A' functions as 'surface subject' (and to take 'derived S' and 'derived O' as 'surface subject' would be totally confusing). That is, for a language that is syntactically ergative, it is meaningless to talk of 'surface subject', although the usual category of 'subject' is quite applicable at the deep-structure level.

Within a universal enquiry, it is best always to distinguish between (deep) subject and (surface) pivot, even when discussing a language where both involve the same functional groupings from A, S, and O. We can talk about 'deep' and 'derived' types of the three primitive functions; 'subject' involves a grouping at the deep level, and 'pivot' a grouping of derived functions, after any singulary transformations have applied.

6.3. RECENT PROPOSALS CONCERNING ANTIPASSIVES ETC. Postal and Perlmutter have recently put forward a functionally-based universal theory called 'Relational Grammar' (RG).[88] This recognizes a hierarchy of 'grammatical relations':

    (35) a. Subject (i.e. S, A)
        b. Object (i.e. O)
        c. Indirect object ...

There are a number of 'laws'. The Relational Annihilation Law states that if NP_1

[88] The discussion here is based on the statement of rules by Postal 1974 and by Woodbury (1977:335). Further information concerning RG has been gathered from Bell 1976, Postal 1977, and Perlmutter & Postal 1977; from papers in Cole & Sadock 1977; and from discussion with Ken Hale, Geoff Pullum, and David Nash. It is not easy to comment on RG, inasmuch as it has not yet been described in any systematic way; but from the lack of any correction from Postal or Perlmutter on a draft of this paper, I infer that the account here does not involve any basic misunderstanding.

assumes the grammatical relation borne by NP_j, then NP_j ceases to bear any grammatical relation at all (it is said to be a chômeur or en chômage). The Motivated Chômage Law states that chômeurs can arise only as a result of the Relational Annihilation Law. The Reranking Law states that an NP can only be moved up the hierarchy.

This scheme works perfectly for most phenomena in accusative languages (where the sole syntactic pivot is S/A). Thus the passive rule raises an 'object' (O) NP from 2 to 1, the original 1 (A NP) goes into chômage, and the original O becomes new 1 (with S function, since there is now no O and the sentence is intransitive).[89]

However, substantial difficulties arise with 'ergative' languages and antipassives. The antipassive transformation involves deep A becoming surface S, and O going into chômage. RG cannot handle this in terms of the hierarchy given above. O cannot go into chômage unless something replaces it, and only something from below can replace it. Obviously, some law must be dropped. The simplest change would be to relax the 'motivated chômage' requirement; if O is allowed to go spontaneously into limbo, as it were, the absence of a term 2 would lead automatically to the deep A NP being interpreted as surface S (still remaining 1) in what is now a derived intransitive antipassive construction.[90]

The difficulty with the RG hierarchy is that it conflates semantic 'subject' with syntactic 'pivot'. Although it is set up to explain syntactic relations (which relate to pivot, not subject), Perlmutter and Postal require term 1 always to be subject (i.e. {S,A})—thus imposing a valid universal category of the DEEP-structure level onto EVERY level of syntactic derivation. A more appropriate course would be to explain syntactic phenomena in syntactic terms, and to recognize two distinct types of hierarchy:

(36)   HIERARCHY A   HIERARCHY B
       1. Pivot (S, A)   1. Pivot (S, O)
       2. Non-pivot core NP (O) ...   2. Non-pivot core NP (A) ...

Now antipassive works in terms of B as neatly as passive does in terms of A, and does conform to Postal and Perlmutter's three laws.[91]

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[89] Comments in parentheses are supplied by myself. There is apparently no mention of transitivity nor any distinction between S and A in Postal and Perlmutter's work.

[90] There appears to be no a-priori semantic or syntactic motivation for any of the three laws. They have been put forward as putative components of a hypothetical 'grammatical theory' (in much the same way that mathematicians define a new system in terms of a set of axioms), and appear to work well for some languages. Attempts have then been made to fit the facts of other languages into this (in essence, arbitrary and unmotivated) framework.

Postal 1977 has recently suggested a different derivation for 'antipassive'. Preferring apparently to relax the Reranking Law and retain the Motivated Chômage Law (although no reason is given as to why Motivated Chômage should be considered more important than Reranking), he suggests that the A NP replace O, pushing it en chômage; since term 1 is then vacant, the term 2 NP (deep A) ascends to it. But this implies a derivation A→O→S; there is no justification of any sort for the intermediate step.

[91] The two-hierarchy approach was suggested by Johnson 1974, but appears to have been abandoned by him in 1976. Woodbury 1977 shows the most sophisticated approach to dealing with ergative phenomena in RG terms; his detailed discussion, with particular reference to Eskimo, has considerable similarities to the approach suggested here.

An approach which has some similarities to this has been followed by Keenan and by Keenan & Comrie. In order to explain antipassivization and various wide-ranging syntactic operations in Dyirbal (see §§1.1, 7.2), they take 'S and O' as the critical pairing.[92] But, like Postal and Perlmutter, they also favor a universal hierarchy which involves 'subject' and 'object', and which conflates semantic and syntactic information. Keenan takes 'subject' in Dyirbal as the class {S,O}—see the discussion in §5.3 above.[93]

The basic fault with both these schemes is the attempt universally to relate S to A (in RG) or to relate S to EITHER A OR O for each particular language (in Keenan & Comrie's treatment); in each case a single grouping is taken to cover (deep-structure) 'subject' and (shallow-structure) 'pivot'. There are in fact three primitives —S, A, and O—not just two. (In order to deal with a language that has both passive and antipassive, it is necessary clearly to distinguish S from A and O, at every syntactic stage. There are three core terms in the hierarchy, not two, even though no more than two can occur in any one sentence.)[94]

SYNTACTIC ERGATIVITY

7. We have already seen that a miscellany of syntactic features have typically been quoted as evidence for or against syntactic 'ergativity'. In §5.4 I discussed phenomena that have the same deep-syntactic orientation in every language where

[92] Dixon 1972 groups S and O together as 'pivot' (there called 'topic'), and adopts a tree-structure convention which mirrors this. However, no claim is made that this 'pivot' in any way corresponds to subject (see fn. 68, above). Note that, in Dixon 1972, the term 'deep structure' is used for an entirely syntactic level, nearer the surface than the level referred to by 'deep structure' in the present paper.

[93] The only workable universal hierarchy would be to recognize each primitive as a distinct term. One ordering would be:

$$1, \quad S;$$
$$2, \quad A;$$
$$3, \quad O.$$

Then passive would involve 3→1; 2 en chômage. Antipassive would be 2→1; 3 en chômage. Subject would comprise terms 1 and 2 at the deep level (before any derivations have occurred). A hierarchy of this type would provide a less concise model for accusative languages, but also a less inappropriate and tortuous one for languages with ergative syntax.

It is not in fact necessary to set up any sort of hierarchy. Passive, antipassive, and all sorts of generalized transformations can be handled perfectly well in terms of a model that recognizes basic configurations [AOV] and [SV] for transitive and intransitive sentences respectively; transformational operations now move terms into and out of the [...] core, and so on. For discussion and exemplification of this model, see Dixon 1977a.

[94] Postal and Perlmutter, as well as Keenan & Comrie, fail to recognize a basic distinction between transitive and intransitive sentence types. MOST languages have clear morphological marking of these two sentence types; English (and other modern European languages) are at one typological extreme in that they do not. Some English sentences are clearly transitive (e.g. *John hit Bill*) and some intransitive (*John laughed*), but there is a large fuzzy area in between where decisions are not easy: what is the transitivity value of *John shot the pigeon, John shot at the pigeon; John banged the door, John banged on the door*? RG, in particular, enables one to avoid making decisions about transitivity. But this simply obscures important and clear distinctions in other languages, and evades the important question (virtually avoided by modern linguists) of investigating transitivity in English.

they occur, following from the universal category of 'subject'. The way is now clear
for us to examine language-particular syntactic operations: coördination, sub-
ordination, and related phenomena. These normally apply at the level of 'shallow
structure', and are fed by passive, antipassive, reflexive, and other singulary
transformations.

It is undoubtedly the case that MOST syntactic operations of this type, across the
4,000 or so currently spoken languages, equate S and A functions. That is, (derived)
S and A are grouped together as the syntactic pivot—just as, in all languages,
(deep) S and A functions constitute the category of subject. But it is incontrovertibly
the case that NOT ALL syntactic operations, in all languages, work in terms of an
S/A pivot. Some languages employ an S/O pivot; others use S/A for certain types of
operation, and S/O for other types.

All languages which use an S/O pivot, to any degree, show some 'ergativity' in
morphological marking. The reverse does not hold: perhaps the majority of
languages which mark S and O in the same way in some part of the morphology
(while marking S and A in the same way in some other part, according to one of the
'splits' documented in §3) rely exclusively on S/A as syntactic pivot.

In this section we examine two languages, both from Australia, that show some
ergativity at the morphological level; and we investigate the type of syntactic pivot
they use.

7.1. WALMATJARI is spoken in Western Australia (and is a close genetic relative
of Walbiri). Data come from Joyce Hudson (1976a,b, 1978, and p.c.) As in Walbiri,
nouns and free-form pronouns show an absolutive/ergative paradigm:

(37) absolutive (S and O functions): ∅
  ergative (A function): *-ŋu* ∼ *-ḷu* etc.

Each sentence involves an 'auxiliary' (usually as second word). The auxiliary begins
with a modal root (the three possibilities are indicative *pa-*, interrogative *ŋa-*, or
imperative/hortative ∅) and then four orders of person/number markers.[95] The
first and fourth order suffixes refer to (derived) S or A NP's. Second and third order
suffixes refer to an 'accessory NP' if there is one (e.g. 'you' in 'The boys were
talking with you', or 'The boys sat with you', or 'I blew the grass out of your eye');
otherwise they refer to 'dative NP' if there is one (e.g. 'them' in 'I told them about
my dream', 'I work for them'). If the sentence involves neither accessory nor dative
NP's, then a surface O NP will be cross-referenced by second and third order
suffixes (cf. fn. 44).[96] First and second order suffixes essentially indicate person of
subject and accessory/dative/object, while third and fourth order suffixes show
their number.

Thus, at the morphological level, case-marking on NP's is ergative, but cross-
referencing suffixes in the auxiliary are quite accusative. It is noteworthy that,

[95] Some details have been omitted here; they do not affect the point under discussion.
Complete information is in Hudson 1978.

[96] Accessory and dative NP's can occur in transitive and in intransitive clauses. Note that
the auxiliary will always cross-reference two NP's for a transitive sentence (there will always be
an O NP, which gets cross-referenced if accessory and dative are lacking). A single NP is cross-
referenced only in an intransitive sentence that involves no accessory or dative NP.
  The case marking on dative NP's is *-ku* ∼ *-wu*; on accessory NP's, it is *-ḷa* ∼ *-ŋa* etc.

despite the ergative case-marking conventions, Walmatjari does not have any transformation of the antipassive variety.

As in all languages, imperatives operate on an S/A principle at the deep-structure level. S or A must be 2nd person. The auxiliary root is ∅, and the first order suffix (marking person of S or A) is absent; note, though, that the fourth order suffix (showing number of S or A) is retained. Suffixes of orders two through four are removed from the domination of AUX and attached to the verb.

Hudson (1976a:9–12) describes three transformations, each of which links two clauses to form a complex sentence. First, *-ula* is added as a suffix to the verb of the subordinate clause:

(38) *ṭikiřyan+uḻa   ma+ṇa+∅+nja+lu   mana+waṇṭi+∅ patjani*
     return+*uḻa*   INDIC+1(EXCL)+3+PL+PL   tree+PL+ABS   chopped
        'Having returned, we chopped trees.'

An *-uḻa* construction describes the activity of the subordinate clause as completed before that referred to by the main clause is begun.

Second, the addition of *-u* to the subordinate verb indicates that the action of the main clause was performed so that the subordinate clause activity would be possible (e.g. 'We will go to search for pigs', where *mu:puŋ* 'search for' bears the suffix *-u*). Third, simple coördination is shown by the addition of *-tja:* to the last word of the first of two coördinate clauses (the clauses must have the same mood and tense).

There is a syntactic condition common to *-uḻa*, *-u*, and *-tja:* constructions: there must be an NP common to the clauses, and it must be in surface S or A function in each clause. That is, S/A is the syntactic pivot for Walmatjari. On the data presented by Hudson, the language has an entirely accusative syntax, despite the split ergative/accusative morphology.

This is in fact what we could expect from the absence of an antipassive transformation. I noted in §6.1 that the antipassive derivation is essentially needed to put an A NP into S function to satisfy constraints that operate in terms of an S/O pivot. The only constraints encountered in the grammar of Walmatjari are of type S/A; there is thus no strong motivation for antipassive.

Since Walmatjari has an S/A pivot, we might expect a passive transformation. Note, though, that only SOME languages of this type show a passive. The reason for this interrelates with the reason why S/A is by far the most commonly encountered type of pivot: basically, it is because A and S NP's refer to the participant that 'controls' an event, if anyone does. This property determines the universal category of 'subject', at the level of deep structure, and the properties of imperatives, jussives etc. that depend upon it.

A multi-clause sentence links descriptions of events which, in the great majority of instances, have some common participant. The most common linkage involves a chain of control,[97] e.g. *John went home because he wanted to rest*; *Mary left the office early and bought a chicken to cook for supper*. It is because S and A may be controllers that they are the NP's which speakers tend to focus on, as protagonists;

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[97] Of course, some types of clause linkage typically involve O NP's, e.g. complement clauses to verbs of attention, such as *John heard Mary laugh*. These are outnumbered (in terms of text occurrences) by coördinations, purposive complements etc.

and it is because they may be controllers, who will often be doing something just so that they may then be able to do something else, that they tend to be the shared NP's that link a sequence of clauses. All of this tends to favor S/A pivots as the basis for generalized transformations and general constraints on discourse structure. A passive transformation can be useful for bringing a deep O NP into surface S function, and for linking it with another S or A NP; but it may not be essential. In Walmatjari, a number of other clause-linking operations appear to work in terms of a common NP that can have ANY function in each of the two clauses involved; the S/A pivot applies only over part of Walmatjari syntax, a part that is highly controller-oriented.

The arguments just presented suggest that a language with S/O pivot would REQUIRE an antipassive transformation. An NP in deep A function is a likely controller, and some means would be needed to link it with other NP's across a clause boundary. If there is a strong S/O pivot, then an antipassive transformation —putting a deep A NP into surface S function—would be needed, and would surely be much used. It seems in fact that ALL languages which make any use of an S/O pivot DO have an antipassive transformation.[98]

7.2. DYIRBAL. In §1.1 we saw how Dyirbal has absolutive/ergative inflection on nouns and 3rd person pronouns, but nominative/accusative inflection on 1st and 2nd person pronouns; unlike Walmatjari, there are no cross-referencing bound affixes. Imperatives treat S and A in the same way, both in selectional restrictions and deletability.

An antipassive transformation is used quite frequently, largely to meet syntactic constraints of the S/O type. We saw in §1.1 that any two clauses can be coördinated if they have a common NP that is in surface S or O function in each clause. If the common NP is in S or O function in the first clause, but in A function in the second, then the antipassive transformation must be applied to bring it into derived S function in the second clause.[99] An antipassive construction will not normally be used in the initial clause of a coördination; but it may be needed to bring a deep A NP into pivotal S function to continue a coördination.

The S/O pivot is pervasive in Dyirbal syntax. A relative clause must have an NP in common with the main clause, and it must be in S or O function in the relative clause. The verb in the relative clause bears a suffix -ŋu, followed by a case inflection agreeing with the case of the common NP in the main clause. Compare the following examples with 1–20 in §1.1:

(39) ŋuma+ŋgu   yabu+∅   [duŋgara+ŋu+∅]   buṛa+n
    father+ERG   mother+ABS   cry+REL+ABS   see+PAST
      'Father saw mother, who was crying.'

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[98] Comrie (MS b) mentions that the negative participial construction in Chukchee involves relativization on S or O, not directly on A. But there is an antipassive transformation, marked by verbal suffix -tku, that can put an underlying A NP into derived S function just to satisfy this syntactic condition. Comrie describes this operation as serving 'to reduce the degree of ergativity of a construction', i.e. to overcome the constraint imposed by an S/O pivot in this part of the grammar. For a further example of an antipassive operation used to meet a syntactic condition on subordinate clauses, see Dixon (1977a:277–80, 323–7 etc.) on Yidinʸ.

[99] If the common NP is in A function in the first clause, and in S or O in the second, then a different construction, involving verbal affix -ŋura, can be used (see Dixon 1972:77–9).

(40) *ŋuma + ŋgu*   [*duŋgara + ŋu + ru*]   *yabu + ∅*   *buṛa + n*
     father + ERG   cry + REL + ERG   mother + ABS   see + PAST
     'Father, who was crying, saw mother.'

(41) *ŋuma + ∅*   [*yabu + ŋgu   buṛa + ŋu + ∅*]   *duŋgara + nʸu*
     father + ABS   mother + ERG see + REL + ∅   cry + PAST
     'Father, who was seen by mother, was crying.'

Where the common NP is in deep A function in the relative clause, it must be anti-passivized:

(42) *ŋuma + ∅*   [*buṛal + ŋa + ŋu + ∅*   *yabu + gu*]   *duŋgara + nʸu*
     father + ABS   see + ANTIPASS + REL + ABS   mother + DAT   cry + PAST
     'Father, who saw mother, was crying.'

Purposive complement constructions show even stronger S/O characteristics. (This is somewhat surprising: I remarked in §3.5 that, on semantic grounds, these are strong candidates for 'accusative identification', at both morphological and syntactic levels.) Here the common NP must be in S or O function in both main and subordinate clauses:

(43) *ŋuma + ∅*   *banaga + nʸu*   [*yabu + gu*   *buṛal + ŋay + gu*]
     father + ABS   return + PAST   mother + DAT   see + ANTIPASS + PURP
     'Father returned to watch mother.'

In 43 the complement clause must be antipassivized to put the deep A NP, *ŋuma* 'father', into surface S function.

I have mentioned that the universal category of 'subject' plays an important role in the grammar of any language. 'Subject' is a deep-structure category, and syntactic constraints that depend on it are exclusively at the level of deep structure. The language-particular category of 'pivot' is, however, applicable at the level I am calling 'shallow structure'. Study of jussive constructions—a class of purposive complement constructions—in Dyirbal shows how a sentence will simultaneously (a) meet a deep-structure constraint which links S and A, a corollary of the universal category of 'subject'; and (b) meet a shallow-structure constraint which involves S and O—i.e., which works in terms of the language-specific syntactic pivot S/O.

The transitive verb *giga-l* 'tell to do' can be followed by either (i) a clause directly quoting the order that was given, whose verb must be in imperative inflection; or (ii) a purposive complement clause. In the latter instance, the O NP of *giga-l* must be coreferential with the DEEP S or A NP of the complement clause. Note, though, the general condition on complement constructions in Dyirbal: that the (derived) S or O NP of the complement clause must be coreferential with the (derived) S or O NP of the main clause. To achieve this, the complement clause must be antipassivized. Thus, from underlying 44, shallow-structure 45 is derived:

(44) *ŋana*   *yabu*   *giga + n*   [*yabu*   *ŋuma*   *buṛa + li*][100]
     we-A   mother-O   tell to do + PAST   mother-A   father O   see + PURP

(45) *ŋana*   *yabu*   *giga + n*   [*yabu*   *ŋuma*   *buṛal + ŋay + gu*]
     we-A   mother-O   tell to do + PAST   mother-S   father-DAT   see + ANTIPASS +
                                                                            PURP

[100] Case endings are not specified in these deep and shallow structure representations. Verbal

Here 44 satisfies deep-structure constraint (a), and 45 satisfies shallow-structure constraint (b). An Equi rule deletes the occurrence of the common NP in the subordinate clause, yielding the surface form:

(46) ŋana   yabu   giga+n   ŋuma+gu   buṛal+ŋay+gu
     we-NOM mother-O tell to do+PAST father+DAT see+ANTIPASS+PURP
     'We told mother to watch father.'

In an intransitive jussive complement clause, of course, there is no difficulty. The S NP will be coreferential with the O NP of the main clause, thus satisfying the 'subject' constraint (main clause O = complement S or A) and also the 'pivot condition' (main S/O = complement S/O):

(47) ŋana yabu gigan banagaygu   'We told mother to return.'

7.3. It is thus clear that S/A is the pivot for Walmatjari, and S/O the pivot for Dyirbal. At the syntactic level, Walmatjari can be described as a mildly 'accusative language', Dyirbal is highly 'ergative'; this is in contrast to their morphological marking, where both languages show a split ergative/accusative system. Dyirbal appears to be more ergative at the syntactic than at the morphological level, whereas ergativity in Walmatjari is exclusively morphological.[101]

Some languages mix S/A and S/O as syntactic pivots: Yidin[y] falls into this category (Dixon 1977a,c), and so probably do Eskimo (Woodbury 1975, 1977), Chukchee (Comrie, MS b), and Tongan (my own field work).

It may be that some languages cannot clearly be characterized, at the syntactic level, in terms of the ergative/accusative continuum. That is, processes such as coördination may not operate in terms of well-defined constraints like those applicable to Walmatjari and Dyirbal. It is difficult to be sure on this point: although many languages have been adequately dealt with at the level of morphology, few have been properly described at the syntactic level (it is sometimes hard to know whether this indicates something about the language or something about the linguist!) Certainly, some languages have a considerable set of well-defined syntactic constraints, which facilitate a clear judgment of their position on the ergative/accusative syntactic scale; but others have more fluid conditions that provide slimmer evidence for judgment. For instance, coördination may largely follow semantic, stylistic, or discourse-organization preferences, rather than conforming to any strict syntactic matrix.

Generally, languages which have strong syntactic conditions at the shallow-structure level, in terms of either type of pivot, will have a number of singulary transformations (such as passive, antipassive, or reflexive) which feed these conditions (as in Dyirbal). Languages which have more fluid syntax may have

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inflection is shown at each level. Note that the purposive form of the transitive root *buṛa-l* (belonging to the predominantly transitive *-l* conjugation) is *buṛali*, whereas the purposive form of the derived intransitive stem *buṛal+ŋa-y* (belonging to the *-y* conjugation) is *buṛalŋaygu*.

[101] Some measure of syntactic ergativity is certainly rarer than morphological ergativity. Anderson (1976:11–13) shows that, although Basque has a predominantly ergative morphology, its syntax works at least in part in terms of an S/A pivot. (But note the invalidity of Anderson's argument, on the next page, that Tongan has accusative syntax, despite ergative morphology, since it deals only with the universal 'subject' syntax of *lava* 'be possible, can'; see §5.43, above).

fewer operations which put an NP of a certain underlying functional status into a different derived status. (Walmatjari is of this type; its S/A pivot is less pervasive than the S/O pivot in Dyirbal, and in almost all cases NP's have the same function in deep and in shallow structure.) Further discussion on this topic can be found in Van Valin (ch. 4).

<div align="center">MORPHOLOGICAL MARKING</div>

8. In progressing from the speaker's ideas to their expression and communication to some addressee, we begin with 'deep structures'; we optionally apply operations like passive, antipassive, or reflexive to yield 'shallow structures'; and then we coördinate and subordinate clauses to yield 'surface structures'. It is at the last level that morphological marking operates. The sentences that result from the various syntactic operations will have their NP's marked for case, and/or placed in certain ordering relations, and/or cross-referenced on the verb or some other constituent, and so on. All these marking operations depend on the derived function of each NP: an NP that is deep transitive subject (A function) may be placed in S function by an antipassive transformation, and then perhaps in O function within a causative clause. It will be marked in surface structure as an O NP.[102]

What motivates morphological marking? In particular, what motivates split marking, as surveyed in §2? There are, it seems, at least five possible factors.

8.1. REFLECTING THE SYNTACTIC 'PIVOT'. Every language with an S/O pivot has some morphological ergativity (e.g. nominal inflection in Dyirbal); and languages with S/A pivots are partially (and most of them wholly) accusative in morphology.

In §2.3, I mentioned that ergative is always the marked member of a case system in which it occurs. The O NP is then morphologically unmarked, as is S NP (both can be said to be in absolutive case). I stressed that such a residual identification of O with S is quite negative in character; it could not, on its own, be invested with much grammatical significance. When there is an S/O pivot, however, the syntactic identification indicates that the language does establish a positive connection between S and O functions; the morphological marking (assigning both S and O to the unmarked 'absolutive' case) is in such a language one realization of this positive connection.

There is, then, a considerable difference in the grammatical status of absolutive case for the following.

(a) Languages with some S/O pivot: here absolutive realizes the pivot category. It is reasonable that the morphologically unmarked case should relate to syntactic functions which are unmarked for critical syntactic operations.

(b) Languages with some ergative morphology, but an entirely S/A pivot: here ergative involves positive SEMANTIC MARKING of A function; O function is left unmarked (and of course no marking is needed for S function). Absolutive case, in this circumstance, merely indicates lack of semantic marking.

8.2. REFLECTING THE UNIVERSAL CATEGORY 'SUBJECT'. I have been careful to

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[102] For a specific example of this derivation and surface marking, see *buṛi* in ex. 614 of Dixon (1977a:317).

insist that 'subject' is applicable only at the level of deep structure (indeed, it seems impossible to establish 'subject' as a universal category if this restriction is not made). Morphological marking, however, applies to surface structures (for which 'pivot' and not 'subject' is most relevant). Note, however, that many deep structures (the kernel sentences) reach the surface without undergoing any syntactic transformation; they are plainly the 'unmarked sentences' of the language, since they bear no suffixes or particles indicating passivization, relativization or the like. It is quite reasonable that even a syntactically ergative language like Dyirbal should have an accusative paradigm for some part of its morphology, reflecting the deep identification of S and A.

8.3. REFLECTING UNDERLYING SEMANTIC TENDENCIES. My original explanation of split case systems etc. was that NP's of a certain semantic type are more appropriate in A than in O function; that activities described by certain verbs are less likely to be controlled than those described by other verbs; and that prospective events are most normally viewed in terms of a propensity of some 'agent'. These types of semantic information may be incorporated into morphological marking, so long as they do not obscure the recognition of the surface function of an NP. Thus Walmatjari uses ergative to mark a noun used in A function (whereas pronominal cross-referencing in the auxiliary is entirely nominative/accusative in nature).

Languages that employ nominal case inflections in addition to cross-referencing verbal affixes have the most opportunity to reflect more than one of the three factors listed so far. Thus Choctaw case inflections are entirely nominative/oblique —indicating the syntactic pivot S/A, and universal subject category {S, A}—while bound prefixes are oriented to the semantic content of the verb.

8.4. DIACHRONIC REASONS. Surface syntax may be more easily affected by contact with some other language than is morphology. A coördination rule might shift from S/O to S/A pivot (or vice versa), leaving a morphology that still reflected the old pivot. (However, these remarks are quite speculative, in the absence of any detailed studies of syntactic diffusion of this type.) In §4, I outlined the diachronic reasons for ergativity in perfect aspect within the Indic family.

8.5. INTERNAL GRAMMATICAL REASONS. Walmatjari, like Walbiri, has extended absolutive/ergative marking from nominals to free pronouns—just, it seems, to simplify this aspect of the grammar. The S/A pivot is reflected in bound pronouns; free pronouns are used sparingly (mainly for emphasis), and can most economically be inflected like nouns. Ergative marking on nominals is present in Walmatjari for semantic or perhaps diachronic reasons; it has been extended to pronouns— apparently going against the S/A pivot and the universal {S, A} subject—in order to rationalize the grammar.

Morphological marking is likely often to be caused by a combination of all these five factors. It is often difficult to separate out a single 'reason' for some type of marking. Indeed, these five parameters are not independent of each other. For instance, the accusative paradigm of pronouns in Dyirbal could be described in terms of the semantic hierarchy (§3.2), where pronouns are prototypical agents—or in terms of the universal category of 'subject' which underlies imperatives, jussives

etc. There is a connection between these: imperatives, and to a lesser extent jussives, typically involve pronouns.

8.6. Synchronically, morphological marking must be viewed as interpretive, serving to indicate underlying semantic and surface-syntactic relations. We cannot say that a certain syntactic operation is needed to put the NP in a certain case; rather, the operation is needed to put the NP in a certain derived function, and this function is marked by a certain case (as part of the overall case-marking system of the language, motivated as in §§8.1–8.5). However, in DIACHRONIC development, a certain morphological system may well motivate a particular syntactic pattern.[103]

SUMMARY

9. At the level of deep structure, we recognize three universal syntactic-semantic primitives: A and O, occurring in transitive sentences, and S in intransitive sentences. 'Subject' is defined as a universal deep-structure category, involving functions A and S. Languages cannot be characterized as either 'accusative' or 'ergative' in deep structure.

The operation of optional singulary transformations on deep structures yields shallow structures. It is at this level that generalized transformations operate, forming coördinate and subordinate constructions. These rules may treat (derived) S and A in the same way, or they may treat (derived) S and O in the same way; we refer to S/A and S/O pivots respectively. If a language has an S/O pivot, it can be said to have 'ergative' syntax.

Passives and antipassives derive shallow structures (effectively putting underlying O or A, respectively, into S function). The existence of an antipassive transformation (in the strict sense, defined in §6.1) is not, per se, evidence for ergative syntax. An antipassive 'feeds' shallow-structure constraints, and is normally needed only when there is an S/O pivot.

Morphological marking—whether involving case inflections/particles or cross-referencing bound affixes—can reflect subject, and/or pivot, and/or the semantic nature of NP's, verbs and aspect/tense (in terms of expectations of syntactic-semantic correspondence). Many languages have some degree of ergativity at this

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[103] It is interesting to contrast Dyirbal, where coördination depends on a common NP in S/O function in each clause (whatever the case-marking within the NP: §1.1) with Yidinʸ, where the common NP must be in S/A function in each clause if it is a pronoun, but in S/O form if non-pronominal (Dixon 1977a:388–92). Both Dyirbal and Yidinʸ have accusative case-marking for pronouns, and ergative marking on nouns. Whereas coördination in Dyirbal is S/O, regardless of the morphological marking on the common NP, the coördination constraint in Yidinʸ exactly reflects morphological marking.

The morphologies can be traced back to a split case system in a common ancestor language, whereas patterns of coördination (and of subordination) in Dyirbal and Yidinʸ are plainly recent innovations. It seems that we would originally have had morphological marking determined largely by factors of §§8.2–8.3; at this stage the languages would perhaps have had a fairly fluid syntax, without the coreferentiality constraints that characterize modern Dyirbal and Yidinʸ. The syntactic systems of the two modern languages have been partly motivated by the already existing morphological paradigms. (See Dixon 1977c for further discussion of these examples, and for putative reasons for the different developments of coördination and subordination restrictions in the two languages.)

level; but some accusativity always exists (the split being conditioned as described in §3).

A language can be characterized as 'ergative' at two distinct grammatical levels: shallow structure, and surface morphology. Once universal 'accusative' phenomena are discounted, some languages are almost entirely ergative in their syntax, working exclusively in terms of an S/O pivot. Others may show partial ergativity at this level, using an S/O and also an S/A pivot. These types are greatly outnumbered by languages that have a fully accusative syntax. But although languages with ergative syntax are in a minority, they do exist, and they cannot be glibly explained away in terms of an entirely 'accusative' universal theory (which at the least assigns impossibly complex grammars to ergative languages).

Every language that is syntactically ergative shows a degree of morphological ergativity. But many languages relate S and O in some way at the morphological level, without showing ergative syntax. For some, there are strict syntactic constraints, and they work entirely through an S/A pivot. In others, the rules of coördination and subordination may be quite fluid, without any strict syntactic constraints (so that there is no clearly recognizable pivot of EITHER type).

Much more work is required on the description of ergative languages before all the suggestions made here can be validated. This paper has attempted to put forward a framework for such investigations, attempting to distinguish what is universally valid from what is language-particular; what is semantically motivated from what is syntactically determined; and so on. It has been purposefully wide-ranging and programmatic, glossing over important theoretical issues for the sake of achieving a broad perspective. I hope it will elicit detailed information on crucial languages, which may confirm or disconfirm the present conclusions, and which will lead the way to a fuller understanding of ergativity.

APPENDIX: INVENTORY OF TYPES OF SPLIT

I give here the logical possibilities for types of split, according to the parameters discussed in §3. Examples are quoted where known. Some of these possibilities may not occur in any language; a full search has not yet been carried out. (See also Silverstein, 124.)

The following notation is used: if two function-letters X and Y are juxtaposed with no intervening symbol, this indicates that they are marked in the same way; a hyphen separates cases. Thus XY-Z will show that one case marks X and Y functions while a second case is used for Z function. A slash separates two kinds of morphological marking; i.e., it indicates the split.

(1) SPLIT CONDITIONED BY SEMANTIC NATURE OF NP'S.

(a) Partly accusative: AS-O/ASO. E.g. Latin, where there is nominative/accusative inflection for masculine and feminine declensions, but one inflection covering A, S, and O, for neuter nouns.

(b) Partly ergative: ASO/A-SO. E.g. Burushaski.

(c) Partly accusative, the remainder ergative (complementary distribution of accusative and ergative case-marking): AS-O/A-SO. E.g. Gugu-Yalanji.

(d) Partly accusative, partly ergative (overlapping distribution of accusative and ergative case-marking): AS-O/A-S-O/A-SO. E.g. Cashinawa, Yidinʸ, Arabana.

(e) All accusative, partly ergative (distribution of ergative included entirely within distributional scope of accusative): AS-O/A-S-O. No example to hand.

(f) All ergative, partly accusative (distribution of accusative included entirely within distributional scope of ergative): A-S-O/A-SO. E.g. Waga-Waga.

(g) Partly accusative, partly ergative, partly neither (middle area where neither accusative nor ergative applies): AS-O/ASO/A-SO. E.g. Gurindji, an Australian language (data from Patrick McConvell).

(2) SPLIT CONDITIONED BY SEMANTIC NATURE OF VERB.

(a) Fluid S-marking (S NP can be marked by either A or O case, depending on semantic effect of verb in this instance of use): AS-SO. E.g. Bats, Crow.

(b) Split S-marking (S NP is marked like A for certain verbs and like O for other verbs, with the conditioning largely semantic): AS-O/A-SO. E.g. Dakota etc.

No example is known of a marking used only for S in this type of split (an exception is where there is unanalyzable 'portmanteau' representation of A and O). Choctaw is unusual in having a third type of S-marking, identical to the normal marking for dative NP's: see §3.1 and fn. 28.

(3) SPLIT CONDITIONED BY TENSE/ASPECT. There appear never to be more than two systems of marking with this type of split; this contrasts with the above sections, where there can be three kinds (i.e. AS-O/A-S-O/A-SO).

(a) Partly accusative: AS-O/ASO. No example to hand (Lardil shows an AS-O/ASO split conditioned by mood, basically imperative vs. non-imperative).

(b) Partly ergative: ASO/A-SO. E.g. Burushaski.

(c) All accusative, partly ergative: AS-O/A-S-O. E.g. Pitta-Pitta (Blake 1979).

(d) All ergative, partly accusative: A-S-O/A-SO. No example known.

(e) Partly accusative, remainder ergative: AS-O/A-SO. No example known.

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