On Mechanisms by Which Languages Become Ergative

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Many of the traditional problems in the study of syntax can be traced to the original status of this field as a sort of "applied morphology": the conception of syntax as "the study of the meaning and function of the various inflections (cases of nouns, moods of verbs, etc.) and of the different parts of speech (especially prepositions and subordinating conjunctions)." (Householder 1972:10) A classic example of this sort is the problem of ergativity. Ever since it was first noted that in some languages, the subject of an intransitive clause (referred to below as $S_t$) shares morphological properties with the NP in a transitive clause which corresponds to the object (Q) in familiar languages, rather than with the NP corresponding to the transitive subject ($S_t$), linguists have regarded this fact as a major puzzle for grammatical analysis. It is easy to see why, in terms of the traditional conception of syntax: a morphological category which includes the functions $S_t$ and Q, but excludes the function of $S_t$, is extremely difficult to reconcile with the equally ancient tradition of subject-predicate sentence analysis. A substantial literature has grown up, therefore, around the question of whether ergative languages have a fundamentally different syntactic organization from other (especially "accusative") languages.
On this, as on so many other questions of linguistic theory, it ought to be possible to shed some light by examining the facts of historical change. In several families (e.g., Indo-European, Polynesian, Kartvelian) only some of the languages which can be presumed to have a common ancestor display ergative patterns, while others display accusative patterns. From this it would appear to follow that languages can change so as to become (or cease to be) ergative. We could then propose to study instances of such change, to see what sorts of factors in language structure it may be related to, and whether any other changes in basic syntactic organization follow from it.

It is the intention of this paper to discuss some cases in which a change in the ergative vs. accusative orientation of a particular language can be presumed with some assurance to have taken place. Such changes seem in general to be the consequence of relatively superficial phenomena, and do not in general (though they may: cf. the discussion of Australian languages below) have deeper consequences for the syntactic organization of the language. In some cases, in fact, it is possible to derive support from such changes for the view that ergativity is generally a rather superficial fact itself, relating only to a low-level option in the morphological pattern of the language rather than to more fundamental aspects of sentence structure. Before moving on to such cases, however, it is necessary to delimit at least sketchily the area under discussion.

As noted above, ergativity is classically viewed as a pattern of morphological categories, manifested either in case marking or in verbal agreement pattern. An example in

which both are found is provided by the Northeast Caucasian language Avar:

(1) a. ehen roq'ove v-us:ana
    father home-m m-returned
    'Father returned home'

b. ebel roq'oje j-us:ana
    mother home-f f-returned
    'Mother returned home'

c. vas-as: ehen v-ecula
    boy-erg father m-praises
    'The boy praises (his) father'

d. ins:u-c:a vas v-ecula
    father-erg boy m-praises
    'The father praises the boy'

e. vas-as: ebel j-ecula
    boy-erg mother f-praises
    'The boy praises (his) mother'

In these sentences, an absolutive case (e.g. ehen 'father') serves as $S_i$ or $Q$, while a distinct ergative case form (e.g. ins:u-c:a 'father (erg.)') serves as $S_t$. Furthermore, the verbal agreement pattern is the same: verbs (and some adverbs as well: cf. roq'ove vs. roq'oje in 1a,b) agree in gender and number with $S_i$ or with $Q$, but not at all with $S_t$. This is the canonical form of an ergative morphological system: compare it, for example, with the Latin opposition of nominative (for $S_i$ or $S_t$) vs. accusative (for $Q$), and verb agreement with $S_i$ or with $S_t$, but not with $Q$.

It is this sort of ergativity, a morphological fact, with which we will be concerned, but we should note that the question of whether ergative languages are fundamentally different from others involves claims about clause structure and the operation of syntactic rules, not simply about word
forms. Those who would claim that ergativity is a fundamental syntactic characteristic, that is, would argue that in a language like Avar not only do $S_1$ and $O$ have the same form, distinct from $S_e$, but they also represent the same grammatical relation (perhaps "structural subject"), which $S_e$ does not share in. The consequence of this difference ought to be observable: just as familiar languages of the accusative type have syntactic rules (e.g. raising, Equi-NP deletion, reflexive, conjunction reduction in some instances, and others) which treat subject (i.e. $S_1$ and $S_e$) as a unitary category, such a language ought to have some rules which treat absolutes (or "structural subjects") in the same way. We stress here that the rules which could be relevant are only those basic rules for which a transformational analysis seems clearly indicated and which seem to be sensitive to grammatical relations: perhaps the class of cyclic structure preserving rules, formable in relational terms, or the like\(^1\). Certain other types of rules are irrelevant to this issue: postcyclic, non-structure-preserving rules (root and local transformations, in Emonds' terms), because they are not in general sensitive to grammatical relations at all; lexical redundancy relations, and rules of semantic interpretation, because these are in general more sensitive to thematic relations of a semantic nature such as "theme", "agent", "source", "experiencer", etc. than to structural relations of a syntactic nature such as "subject" and "object". Of course, in order to make the the claims about linguistic structure involved here precise, it is necessary to delimit and properly constrain the classes of rules involved here; but work such as Emonds (1976) on the one hand, Jackendoff (1975), Wasow (1977) and Anderson (1977) on the other, and the relational properties of rules uncovered by Perlmutter and Postal (forthcoming) make clear in at least a programmatic sense what is being sought.

Given the notion of ergativity in a morphological sense, then, and the scope of syntactic processes that might be expected to display a sort of "syntactic" ergativity, it is reasonably clear how to go about testing the claim that the latter is a viable notion. In fact, as discussed in Anderson (1972, 1976), investigation of morphologically ergative languages generally leads to the result that their syntax (and thus, presumably, their basic principles of clause structure) is fundamentally the same as that of non-ergative languages, and thus does not reflect their morphology. In some cases, however, including the Australian languages discussed by Dixon (1976)\(^2\) and perhaps the ancient Near Eastern language Hurrian, the appropriate aspects of the syntax do seem to be organized on an ergative pattern. From this, we can conclude that "syntactically ergative" languages do exist, but that this class is not to be identified as coextensive with the class of "morphologically ergative" languages. Since we will be concerned below primarily with changes that lead to morphological ergativity, one might question why this paper is appropriate for a symposium on mechanisms of syntactic change: beside the historical justification that ergativity is generally thought of as a fact about syntax, the fact is that a consideration of the mechanisms of such morphological changes can cast light on the relationship (or lack of it) between syntax and morphology.

When we consider the areas of the grammar which impinge on the morphological system, it is clear that there are many conceivable sorts of change that might lead to a language's
becoming ergative. Even the operation of phonological rules could conceivably have this effect. Dixon (1976) suggests such a sequence of events: suppose a language has basic VSO order, and marks nominatives with /-s/ and accusatives with /-t/. Then suppose it acquires a phonological rule deleting final consonants before end-of-clause boundaries. The result of this would be that most /i/’s and most /s/’s would lose their case marking, creating a situation in which /t/ is marked by /-s/ while a new absolutive case for /s/ and /i/ has arisen, marked by /-t/). Thus, a purely phonological change could (assuming its effects were suitably generalized and incorporated into the morphology) have the effect of changing a nominative/accusative case marking system into an ergative/absolutive one.

While such a possibility certainly exists, we do not know of any instances (among the small number of cases where a case system change can be shown to have occurred) in which such a purely phonological account is available. The closest to this ideal case is the example of the development of Chinook, as treated by Sapir (1926). In Chinook there is no case marking on Noun Phrases, and consequently the internal structure of the verbal agreement system is responsible for indicating grammatical relations. The verb is preceded by a series of prefixes marking person, number, and gender of the subject and object(s), as well as various oblique or locational, benefactive, etc. relations. In most cases, the markers for these last are directly followed by a sort of postpositional element. In general, the pronominal agreement markers are quite similar to the determiners which appear with the corresponding noun phrases, and the result is that the verb appears to be preceded by a sequence of clitic pronouns and pronoun+postposition sequences. Independent pronouns for first and second persons are generally omitted, although they can be included if emphatic. Some representative examples from Silverstein (1972) are given below:

\[2.3\]

\[
\begin{align*}
\text{(2) a. } & \text{ wixt } \text{i-}\text{-u-u-} & \text{1-qis} & \text{is} \\
\text{again pst-he-went-on det-bluejay} \\
\text{Bluejay went on again} \\
\text{b. } & \text{n} \hat{\text{a}} \text{i} & \text{k-a-} & \text{i} & \text{t-i-k} & \text{s} & \text{t-q} \hat{\text{a}} \text{u} \text{n} & \text{i} & \text{k} & \text{s} \\
& \text{l(omp) I-them-carry-fut these det-children} \\
& \text{I will carry these children} \\
\text{c. } & \text{tako} & \text{a-} & \text{t} \hat{\text{e}} & \text{a-} & \text{i} & \text{u-} & \text{k} & \text{a} & \text{k} & \text{u} & \text{h} & \text{i} & \text{t} & \text{q} & \text{o} & \text{q} & \text{u} & \text{a} \\
& \text{then pst-he-it-it-to-carry to det-water that} \\
& \text{1-k-asks det-child} \\
& \text{Then he carried that child to the water} \\
\text{d. } & \text{1-kamin} & \text{a} & \text{m} & \text{i} & \text{n} & \text{u-} & \text{x} & \text{det-canoe pst-you-it-me-for-make} \\
& \text{You made the canoe for me} \\
\text{e. } & \text{a-} & \text{t} \hat{\text{e}} & \text{i} & \text{u-} & \text{t} \hat{\text{e}} & \text{mt} & \text{i} & \text{q} & \text{q} & \text{is} & \text{q} & \text{i} & \text{x} & \text{i} & \text{k} & \text{a} & \text{k} & \text{s} \\
& \text{pst-he-him-push det-bluejay that det-boy} \\
& \text{Bluejay pushed that boy} \\
\end{align*}
\]

As noted, the pronominal prefixes are in general the same as determiner elements in the corresponding NP; as a result, they have the same form regardless of their function in the clause. There are three major exceptions to this, all involving special forms for the transitive subject pronouns: a) the 3 sg. masculine form is /-c/- instead of expected /-i/-; b) the 3 sg. feminine form is /-k/- instead of expected /-a/-; c) other /s/ forms except for 1 sg. and 2 sg. consist of the expected form followed by an intrusive /-k/-. Consider the following partial paradigm:
(3)  

a. i-m-i-uwaq
   'You (sg.) killed him'

b. i-mt-k-i-uwaq
   'you (dual) killed him'

c. i-č-i-uwaq
   'He killed him'

d. i-č-m-uwoq
   'He killed you'

Ergativity in Chinook, then, consists in just these special forms for $s_t$, distinct from the "absolutive" forms (which are the same as NP determiners) used for $s_a$ and 0.

At a later point, we will return to the problem of the origin of the element /-k-/ which follows $s_t$ pronominal forms. The most pronounced assymetry between the ergative and the absolutive forms, however, is the pair /-č-/ and /-k-/ for 3 sg. masculine and feminine respectively, in place of absolutive /-i-/ and /-a-/ with the exception of these two forms, there is no reason to set up distinct ergative and absolutive pronoun sets, and the problem reduces to that of accounting for the element /-k-/ which follows $s_t$.

Sapir (1926) makes it clear, however, that the forms /-č-/ and /-k-/ for 3sg $s_t$ are the result of phonologically motivated changes. He argues that originally Chinook had the expected forms /-i-k-/ for 3sg masculine and /-a-k-/ for 3sg feminine (i.e., exactly the appropriate determiner element followed by the /-k-/ which appears with other $s_t$'s). The sequence /-ik-/ underwent palatalization at an early point in the history of the language, becoming /-ič-/ Subsequently, unaccented vowels were lost in pronominal prefixes. The prefixes */-a-k-/ and */-i-č-/ however, were the only ones subject to this loss, since the other prefixes consist of consonants only and most instances of /-i-/ and /-a-/ representing a 3sg. masc. or fem. $s_a$ or 0 would have been accented. The result was the reduction of */-i-č-/ and */-a-k-/ representing $s_t$ to /-č-/ and /-k-/ respectively. Thus, the most distinctive and apparently idiosyncratic difference between the ergative and absolutive pronoun sets in Chinook can be seen to be the consequences of phonological change, unmotivated by morphological (or syntactic) considerations.

It would be of some interest if a case could be documented in which all aspects of an ergative morphological pattern could be shown to have arisen by phonological change alone. In the case of Chinook, we are left with the element /-k/ which follows $s_t$ pronouns yet to account for, and we are not aware of any attested case which comes closer than this to our aim. In fact most instances in which languages become ergative are the consequence of a rather different sort of change: what might be regarded as the morphological equivalent of the lexicalization of opaque alternations in phonology. That is, some morphological material which was originally associated with a syntactic process of essentially complete generality comes to be assigned independently of the operation of such a process as a result of a change in the status of the syntactic rule itself, when the derivational relation between its inputs and its outputs become obscured.

A case of this sort is argued in considerable detail by Chung (1976a, 1976b). She is concerned with the rise of ergative morphology in the Polynesian family, also discussed by Hohepa (1969) as the result of an unexplained "drift". In the Polynesian ergative languages, such as Tongan, Niuean, Samoan,
etc., the $S_e$ is generally marked with the particle $e$; the absolute $S_i$ or $Q$ is unmarked (or, in Tongan, marked with a ́a of undetermined origin in conservative speech); and the suffix -Cia (where C represents one of a set of consonants) appears on many transitive verbs. In the accusative Polynesian languages, on the other hand, $S_i$ and $S_e$ are unmarked, $Q$ is marked by i, and there generally exists a passive rule which adds Cia to the verb, marks the $S_e$ with e and leaves the original Q unmarked. Chung argues convincingly that in the original Polynesian situation, a) i was an object marker; b) e marked an oblique NP, whose status was similar to that of by phrases in English and other languages with a clear passive rule; and c) that Cia originally marked the verbs of sentences that had undergone passive. Thus, in proto-Polynesian, case-marking was of the accusative type and a productive passive rule derived sentences with oblique e-phrases for the original agent. The situation was essentially the same as that in modern Maori, in other words.

In the modern ergative Polynesian languages, however, the passive has essentially disappeared as a productive rule, sentences have the same morphology as that of passive sentences in e.g. Maori, but syntactic rules applying to the category of 'subject' apply to $S_e$ (marked with ergative e) and $S_i$ (unmarked or marked with absolute ́a) and not to Q. What has happened, then, is that active sentence structures have the morphology originally assigned by the passive rule, but the passive rule is no longer involved in their derivation. An original optional, general passive rule has been replaced by an obligatory ergative case marking rule which no longer marks a transformational aspect of a derivation.

It is fairly plausible to suggest that this syntactic re-analysis results from the fact that the Polynesian passive has rather wider scope than the passive in many other languages. In Maori, we can see that there are a number of environments in which passivization is obligatory and others in which it is by far the predominant structure (cf. Chung, 1976a and references given there). It seems likely that as a result of this, the passive is in some languages of the family the predominant sentence structure. As this sort of structure is generalized to new environments, however, it ceases to be the case that the distinctive semantic and functional properties of passive constructions are directly associated with exactly those structures that have undergone passivization. In the limiting case, passivization becomes essentially obligatory; at which point there ceases to be a relation between two types of surface structure, active and passive, which is captured by the structural change of the passive rule. The motivation for a difference between underlying and surface structures in the 'derived' (passive) cases is thus weakened. The result of this is that the passive rule becomes opaque in a sense quite close to the use of this term in phonology. At that point, it seems, the opaque passive rule is lost, and the facts of surface structure are represented rather in terms of an ergative case marking rule. Surface structures do not change in form as a result: $S_e$ continues to be marked with e as if it were a passive agent, Q (and $S_i$) are unmarked, and transitive verbs have the suffix Cia. What has changed is that these structures are now syntactically basic and active, rather than derived and passive.

Such a re-analysis seems to be the primary attested mech-
anism by which a language can become ergative. It has long been noted that the morphology of an ergative language is highly similar to that of passive sentences in an accusative language; on the other hand, the syntactic properties of these languages are generally (as argued in Anderson, 1976) those of active sentences in nominative/-accusative languages. A natural account of this would be found if ergative morphology arose by generalizing the morphology of an original passive construction as the consequence of the loss of a passive rule, once the basis of a productive transformational relationship but subsequently rendered opaque through the overgeneralized use of passive sentence types. A rather similar analysis is proposed for Australian languages like Walbiri by Hale (1970), though in different terms. Hale suggests that Australian languages were originally nominative-accusative, but that the passive rule came to be obligatory. Upon examination, however, it is clear that there is in fact no motivation for saying that the passive rule as a transformational relationship exists any longer in modern Walbiri: since it applies (on Hale's account) after all other rules, there can be no rule which depends on the structural change made by it, and it has no consequence other than to produce the case-marking pattern. This analysis, then, is equivalent to saying that the passive rule was effectively lost, and replaced by an obligatory ergative case marking rule applying to active structures.

Unfortunately, it is difficult to determine the details of the original Australian situation. Hale's claims about original accusativity for proto-Australian are based primarily on syntactic behavior, rather than on a detailed reconstruction of the morphological situation; Dixon's (1976) opposite claim that proto-Australian nouns were marked ergatively suffers from a related sort of problem. It is clear that we can reconstruct an agent or ergative marker for proto-Australian, but equally clear that we can reconstruct an object (accusative) marker, at least for some classes of NP. No one has yet provided compelling arguments on the basis of which we could determine for certain that one of these was originally secondary or oblique, on the order of Chung's demonstration for Polynesian ɛ, while the other was a direct-case marker (as Polynesian i). Thus, the original situation remains obscure, though if Hale's claim that an original passive rule was generalized in an accusative language is correct, a plausible account can be given of the syntactic development of Australian languages as parallel to that of Polynesian. It seems at least possible that the history of Australian languages presents us with another example of the generalization of an originally derived morphological pattern as the result of the realanalysis and loss of a syntactic rule.

A particularly interesting example of this sort of change can be found within Indo-European, especially in the Indic and Iranian subgroups. As is well known, many of these languages provide examples of mixed ergative and accusative systems, of a type also attested elsewhere. There are a number of interesting asymmetries in systems of this type, most of which we cannot go further into, but which should be provided with explanations: a) languages can apparently display ergative case marking patterns and either ergative or nominative/accusative verbal agreement, but there are apparently no languages in which an ergative verb-agreement rule is combined
with a nominative-accusative case marking system; b) languages with ergative marking for full noun phrases may have accusative marking for (some or all) pronouns, but not vice versa; c) languages may have ergative marking in main clauses and accusative marking in subordinate clauses, but apparently not vice versa; and d) languages may have ergative marking in perfect (or past) tenses and accusative marking in imperfective (or non-past) tenses, but not vice versa. In Indic and Iranian (as well as in Armenian, Georgian, Burushaski, and elsewhere) this last situation commonly obtains, and in this instance a sort of explanation does seem available. The source of the explanation is to be found in the principles by which perfect tenses are created.

We can exemplify this situation from Hindi, as discussed by Allen (1951). A more general treatment of the phenomenon is given by Mathews (1953), though he is apparently misled by the morphological facts into drawing a faulty syntactic conclusion. In any event, in modern Hindi the pattern is as follows: in imperfective tenses, the subject is unmarked and the object (if definite and animate) is marked with the particle -ko. The verb agrees in gender and number with the subject:

(4) a. laṛkā kuttā dekhtā hai 'The boy sees a dog'
b. laṛkī kuttē-ko dekhtē hai 'The boy sees the dog'
c. laṛkī kuttā dekhtī hai 'The girl sees a dog'
d. laṛkā kutte dekhtā hai 'The boy sees some dogs'
e. laṛke kutta dekhte hai 'The boys sees a dog'

Sentences whose verbs are in perfective tenses, however, have a different morphological pattern. Intransitive sentences are treated the same way in either type of tense, but in transitive perfective clauses, $S_1$ is marked with the particle -ne and the verb agrees with the object rather than with the subject:

(5) a. laṛkē-ne kuttā dekha hai 'The boy has seen a dog'
b. laṛkī-ne kuttā dekha hai 'The girl has seen a dog'
c. laṛkō-ne kuttā dekha hai 'The boys have seen a dog'
d. laṛkē-ne billī dekha hai 'The boy has seen a cat' (fem.)
e. laṛkē-ne kuttē dekhe hai 'The boy has seen some dogs'

Thus, in perfect tenses, both case marking and agreement are ergative in nature, while these rules are nominative-accusative in imperfect tenses.

When we ask where these constructions came from, we are fortunate in that the course of evolution from early Indic through modern Hindi is well documented. A detailed discussion of this history can be found in Bloch (1965), where further morphological details will be found. In outline, the facts are these: Sanskrit had an extensive series of inflected verbal forms, with inherited Indo-European endings marking person and number of the subject through several tenses, aspects, moods, and voices. In Middle Indic, however, virtually all of these fell out of use. We can speculate on the possible socio-linguistic motivations for this loss of personal verb forms, but the net result was that a variety of periphrastic constructions came to fill the function of the original in-
flected verbal forms. In the case of the perfect, the periphrastic form which was employed was that based on the verbal adjective or participle in -ta. The adjectival sense of this form is quite close to the sense of a perfective; thus, it was quite natural for a sentence such as agnir upasmanahito bhavati, originally "the fire is alight", to come to mean "the fire has been lighted." Now in the case of the intransitive verb, the corresponding adjectival form in -ta has simply this perfective sense: thus, myta- "dead" from mar- "die". In the case of a transitive verb, the adjectival form is passive: thus, yukta- "yoked", not "having yoked", from yuj- "yoke". Such a passive participial could be accompanied by a complement in the instrumental (e.g. yamena dattah "given by Yama") representing the agent, from the earliest attested period of the language. Such a form was thus the basis of a periphrastic passive construction in Sanskrit which served as an alternative to the primary inflectional passive forms (forms in -ya and passive uses of middle forms), with a clear perfective sense. More to the point is the morphology of this construction: S₁ or Q appear in a case (nominative or accusative; usage here is complex) which will subsequently in later stages of the language appear uniformly as the 'direct' or 'subject' case, while S₄ appears in a case (the instrumental) which will subsequently merge with other uses of a general 'oblique' case (often, as in Hindi, reinforced by the addition of a postposition). The verb appears in a participial form which agrees in nominal categories (gender and number) with S₄ or Q, if anything, but not with S₄. Whether or not the copula appears in such constructions is variable at first: it is not obligatory, and is generally absent in third person singu-

In the construction with verbal adjectives in -ta, then, we have just the right morphological characteristics for an ergative pattern, but of course in Sanskrit the construction is a derived passive one, rather than an active ergative one. However, with the disappearance (or rather atrophy) of the active personal forms, the derivational relationship became opaque. Given a productive parallelism between the type "the man beat the horse" and "the horse was beaten by the man", the arguments for deriving the second transformationally from the first are well-known. With the disappearance of the active forms, however, this motivation disappears; and there ceases to be any reason not simply to treat the (original) passive directly as an active form, albeit with complex morphology. In the case we are considering, this tendency appears quite early: according to Bloch (1965:253) Patañjali already suggests the possibility of employing the participial forms directly as active perfects. In later Indic, as illustrated in the modern languages, this re-analysis is unmistakable.

The fact that such a re-analysis of the originally passive forms as active has taken place is shown directly in the morphology, to some extent. Thus, as we noted above, Hindi has a rule marking definite animate Q with the particle -ko in imperfective forms like (4b). But this rule is not limited to the imperfective forms, where S₁ and S₄ appear alike in the direct case. In perfect tense forms also, the -ko-marking rule applies: thus, we have sentences like (6) to add to the paradigm in (5):

(6) laṛke-ne kutte-ko dekhā hai
    boy-erg dog-acc seen aux
    'The boy has seen the dog'
This tendency is carried further in a language like Nepali (cf. Clark, 1963; Southworth, 1967). In this language, a set of tenses morphologically descended from earlier participial forms have $S_t$ marked with the postposition -le; $S_i$ unmarked; inanimate $S_i$ unmarked; and animate $S_i$ marked with the accusative postposition -lai (just as in other tenses where $S_t$ is unmarked). In addition, the verb agrees with $S_i$ or $S_t$, regardless of tense, and not with $0$:

(7)  
   a. sita bholi aune cha  
       Sita tomorrow will-come  
       'Sita will come tomorrow'

   b. sitale alama nun haleko cha  
       Sita-erg potatoes-in salt put has  
       'Sita has put salt in the potatoes'

   c. sitale ramlai cineko cha  
       Sita-erg Ram-acc recognized has  
       'Sita knows (=has recognized) Ram'

   d. mayle ramlai cineko chu  
       I-erg Ram-acc recognized have  
       'I know Ram'

The morphology here is almost entirely 'active'; the marker -le functions simply as part of the material marking the different tense forms.

Morphology, however, is a poor guide to the syntactic structure of clauses, precisely because a morphological pattern reflecting (apparently) one construction may in fact simply be the fossilized relics of that structure, applied to a totally different one. We cannot, therefore, rely on morphological evidence to confirm the interpretation of modern Hindi or Nepali sentence types like (6,7) as structurally active. When we consider the operation of those syntactic processes that are usually found to be sensitive to grammatical relations, however, we find ready support for this position. Reflexivization, for example, is known to operate in many languages under the restriction that only subjects (either $S_i$ or $S_t$) can serve as antecedents for reflexive pronouns. When we look at Hindi, we find that such a condition obtains; and that the relevant notion of 'subject' is again $S_i$ or $S_t$, despite the fact that these two are morphologically different:

(8)  
   a. mē apne-ko dekhā hu  
       I self-acc seeing I-am  
       'I see myself'

   b. mē-ne apne-ko dekhā  
       I-erg self-acc saw  
       'I saw myself'

   c. *apne-ne majhe dekhā  
       self-erg me-acc saw  
       '(myself saw me)'

   d. John-ko Bill-se apne bāre me bāt kī  
       John-erg Bill-dat self about spoke  
       'John spoke to Bill about himself (=John)  
       (*=Bill)'

   e. John apne bāre me bolā  
       John self about talked  
       'John talked about himself'

Further investigation of rules such as Equi-NP deletion, raising, and conjunction reduction, which can be shown to be sensitive to conditions on grammatical relations, confirm the same proposal. In languages such as modern Hindi or Nepali, then, we can conclude that although the ergative morphology suggests otherwise in some tense forms, $S_i$ and $S_t$ (but not $0$) are terms of the same grammatical relation subject, and the
constructions of all of (4-8) should be treated as active.

We can now return to the point of this example. We observed above that in several languages, ergative case marking is found in sentences containing verbs in perfect tenses (or tenses derived from former perfects: in some languages, e.g., perfects generalize to become simply past). We can now account for this situation, at least in part. Passive constructions are semantically close to perfects, in that they generally present a state resulting from a completed action. When a language loses (as a consequence of other changes, either phonological or of usage) an inflected perfect, it is plausible to suggest that the scope of the original passive may expand to fill the gap. Where this becomes the main function of the (original) passive, furthermore, the fact of the loss of the simple active perfect will lead to a kind of opacity which has as its consequence the reanalysis of the construction. The result of this is that the morphology which originally marked the operation of a passive transformation comes to be the marker rather of perfective aspect. We normally think of verbal categories such as tense and aspect as marked on the verb, and not (partly) in the NP, but this is by no means necessary: the Lardil language of Australia, for example, inflects certain NP (those filling the relation in fact) for the distinction future/non-future, where the difference relates to the time of the action and not to the identity of the NP on which it is marked. The explanation for why it should be perfects that have ergative morphology, then, is clear (at least in part): exactly perfects have a plausible historical source with just the necessary morphological properties.

Interestingly enough, there is one further construction which has been shown to be a possible source for newly-created perfects, and this alternative to the derivation from passives has essentially the same properties as far as the case marking which might be expected to lead to. While the derivation of modern perfect forms in Indic from older passive participial constructions seems valid, the Iranian languages (or at least some of them: e.g., Pashto) also show ergative case marking in perfect tenses, but here an original passive construction is apparently not the source. In early Iranian, the same problem arose as in early Indic: inherited perfect forms (among others) fell out of use, and a substitute was required to mark this distinction. Here, however, the solution was somewhat different.

As discussed by Vendryes (1937) and Benveniste (1952), a remarkable number of languages have independently constructed perfect tense forms for transitive verbs by employing a possessive verbal form ("to have") as an auxiliary. English "I have read the book" is an obvious example; Latin habeo factum is another, completely independent of the Germanic development; in Celtic we find for example Breton gwelet am eus "I have seen", where the auxiliary am eus is a completely idiosyncratic combination of an 'inflected preposition' and an old verbal form, used to express possession; Portuguese tenho falado "I have spoken" is an innovation, unrelated to French j'ai parlé; and so on. In a remarkable range of Indo-European languages from Hittite through the modern dialects, constructions expressing possession have been repeatedly employed as auxiliaries when a perfect is required. The development is by no means confined to Indo-
European, either: cf. Benveniste's (1970) discussion of parallel phenomena in Chuckchee. The development is in essence one from a construction such as "I have ((the book)read)" to "I have read the book." Semantically, it is not immediately obvious why this should be so natural; but there is abundant evidence that it is, for whatever reason. We can thus add to the passive as a possible source for perfects the use of "to have" as an auxiliary, at least for transitive verbs, together again with a participial form of the verb.

But now let us consider the range of constructions employed by the languages of the world to express possession. Many languages, of course, have a simple verb, such as English "to have". Many others, however (cf. Benveniste, 1960), employ a periphrastic form such as Russian у меня книга "I have a book; lit. at me there is a book." Such a construction, with a dative, locational expression, or genitive of the possessor (together with the copula if the language has an overt copula) is found for the expression of possession in a wide variety of languages. But now let us consider the combination of this construction with the fact noted above, the possibility of employing a possessive expression as a perfect auxiliary. In that case, we would expect to find something like "to me the book read is" as an expression of "I have read the book"; and Benveniste (1952) has argued that this is exactly what we find in some languages. In Old Persian ima tyā maṇā kṛtam "That is what I have done", maṇā is a genitive-dative form, just as in maṇā pusaṣa astiy "I have a son", literally 'of-me son is.' The same construction can also be found in Classical Armenian, as well as in Egyptian among others. For our purposes, the interest of this fact is that it ultimately leads to the same consequences as the derivation of perfects from original passives. The construction of the perfect with a possessive auxiliary is only applicable to transitive verbs, for obvious reasons: 'I have ((the book)read)' requires a 'possessed' NP (the object) as well as a 'possessor'. For intransitive verbs, a simple equational construction with a participle and the copula fills the same role: 'I am gone' (compare, for example, French je suis allé with j'ai lu le livre). As a result, both transitive and intransitive verbs will be found in superficially comparable participial constructions; Sₘ and Q will appear in (a reflex of) the nominative, since both are structurally 'subjects' of equational constructions originally; while Sₘ will appear in (a reflex of) the genitive, dative, etc. as a reflection of its original status in the possessive construction. Just as in the case of the history of original passives, the disappearance of basic, active, personally inflected perfect forms will increase the opacity of this construction, and decrease the motivation for deriving it from a complex, non-active form; and we can predict that it will subsequently be restructured so as to reflect this. As a result, the morphology of this construction comes to be interpreted simply as the mark of the perfect, applied to a normal transitive active structure, and Sₘ (while remaining in an oblique form) ceases to be oblique structurally; Q ceases to be structurally a 'subject' and becomes an object instead. Hence, while the new perfect tense form is syntactically a straightforward active, it is marked with an ergative morphology.

That the expected re-analysis does indeed take place can be readily confirmed. Just as we found in Indic that accusa-
tive marking may subsequently come to apply (as in Hindi or Nepali) to $\emptyset$ NP's despite their 'nominative' case form, the same thing can happen to the descendents of original possessive constructions. In the classical Armenian perfect, we find the verb in the form of a participle in -eal, together with a copula; $S_t$ appears in the nominative, and $S_t$ appears in the genitive. This latter fact shows the origin of the transitive perfect in Armenian as a possessive construction, since possession in Armenian is expressed by a structure of the 'of-me a book is' type. The important point is that the object (O) appears in the accusative case, as would be expected for an active transitive structure: zayn n$\ddot{a}$am ararereal er nora "He had performed that miracle" has subject $S_t$ (nora) in the genitive and object $O$ (z-ayn n$\ddot{a}$m) in the accusative, marked by the prefix z- at the beginning of the NP. The morphological criterion is confirmed by an investigation of the syntax of Armenian or of modern Pashto (whose past tense forms are descended from the Old Persian perfect derived from a possessive), which reveals that $S_t$ and $S_t$ function here (as well as in the tense forms to which nominative/accusative case marking applies) as syntactically the same grammatical relation, subject.

We discover, then, that there is good reason to expect just the asymmetry we found with respect to the correlation between case marking and perfect/imperfect aspect. The reason for this is that there are two quite distinct periphrastic constructions, the passive and the possessive, which are abundantly documented as potential sources for newly-created perfects; and both of these constructions have the property that the NP filling the relation $S_t$ will appear in an oblique case as opposed to the direct or nominative form in which $S_t$ or $O$ will appear. It must be emphasized that these two are quite separate potential sources for perfects, although they ultimately lead to very similar morphological consequences after their re-analysis as simple, basic active structures.

Within the Indo-Iranian branch of Indo-European, we find both of these sources employed as perfects: the passive in Indic, and the possessive in Iranian. In individual cases, it is often quite difficult to be sure which of the two possibilities is at the root of a given language's perfect forms, on internal evidence alone. This is because the only ultimate difference between them is that $S_t$ will appear in (the reflex of) the instrumental if the construction was originally passive, but in (the reflex of) the dative or genitive if it was originally possessive. In the course of the development of the Indic and Iranian languages, however, the distinctions among the original oblique cases are generally lost, and they merge as a single 'oblique' case. In some instances this may be re-inforced secondarily by post-positional elements: such is the case with Hindi -ne or Nepali -le, though these do not really give us a direct indicator of the original form of the construction.

Within Indo-Iranian, we generally find (as just discussed) ergative case marking confined to perfect forms, or more generally to those tense forms derived from original constructions based on the participles such as that in -ta. In just one language, however, we find ergative case marking which extends to all tense forms. This language is Shina, which is in fact the only 'fully' ergative language in the entire Indo-European family, apparently. Shina is a member
of the 'Dardic' group, whose best-known representative is Kashmiri; the exact place of these languages within Indo-Iranian was for some time a subject of dispute, and they were sometimes claimed to form a third co-ordinate sub-group with Indic and Iranian. It is now generally accepted that the Dardic languages are Indic, though somewhat peculiar and subject to considerable Iranian influence. They are spoken generally in rather inaccessible parts of the Himalayas, and apparently their speakers have been located in this region for some time. As a result, the languages are not directly descended from any of the well-known prakrits, and our knowledge of their history is much more meager than in the case of other Indo-Iranian languages.

The basic case-marking situation in Shina can be illustrated in (9) below:

(9) a. aš ma bodi düre zo peādal vatus
    today I very far from walking came
    'Today I came walking from far away'

b. mas ēsai puče bodu şidegas
    I-erg that-of son much I-beat
    'I beat his son a lot'

c. kēsai puče tu phatu viṇ
    who-of son you after is-coming
    'whose son is coming after you?'

d. mālūs puče pasīgu
    father-erg son he-saw
    'The father saw the son'

In (9a,c) the clauses are intransitive, and their subjects (ma, puče) accordingly appear in the 'direct' or 'nominative' case. The S₄ NP in (9b,d) appear in the 'agent' or ergative case, marked by the addition of -se or -sa after consonants, -s after vowels, to the nominative. In (9b), the verb 'strike' is one of a small class whose Q appears not in the 'nominative', but in an oblique form; more typical is the appearance of the Q in (9d). "Ergative" morphological features include the appearance of S₄ in a special 'agent' case; nominative/accusative features include the appearance of some objects in oblique cases and the agreement of the verb with S₄ or S₅, but not with Q, in person and number. These features are constant through all tenses.

This pattern does not differ significantly from that of, say, Nepali, except that the ergative morphology is not confined to a few tenses. There is one unusual feature, however: this is the shape of the agent case form, which is made by attaching -s(e) to the nominative singular or plural. Significantly, this form is not built on an oblique stem (which is quite distinct in Shina; furthermore, there is no obvious Indo-Iranian etymology for the ending itself. There is no original postposition, that is, which could be expected to become -s(e) in Shina and to appear with the nominative (rather than with an oblique case). In the literature on Shina, there has performed some speculation as to the origin of this form.

Observing that -s(e) has no clear native source, Sir George Grierson is said to have been the first to suggest that the suffix might be a borrowing from Tibetan. Shina is spoken in the vicinity of Gilgit, in Baltistan, where a number of language families meet. Besides Indic and Iranian, the Tibetan language Balti is spoken in this general area, as is the language isolate Burushaski. Balti, like other Tibetan languages, is morphologically ergative in all tenses (Burush-
aski is ergative only in past forms, similar to the Indic and Iranian situations); and more to the point, the ergative case in Balti consists exactly of the nominative followed by the ending -si. This would be a completely plausible source, therefore, for Shina -s(e) except for the general oddity of a language's borrowing a morphological category in this way. If -s(e) is Balti in origin, this would imply that the entire ergative construction with its associated morphology is borrowed; and while it is easy to suggest this possibility, documented instances of this sort are virtually impossible to find. As Lorimer (1925) notes, the "borrowing of so important and radical a construction with the particle accompanying it would be a very serious affair, quite different from the purloining of a mere word." We should therefore hope to find some further explanation for the provenance of Shina -s(e).

In fact, when we consider further data from the language, we can find the outlines of a somewhat more satisfactory account than simply the outright borrowing of the ergative construction from Balti. The agent form -s(e) in Shina appears in all tenses in the 'standard' language, that spoken in and around Gilgit, but Bailey (1924) also provides us with data on some other dialects. In the Guresi and Drasi dialects, spoken some little ways from Gilgit, we find a more complex situation. In this area the agent forms in -s(e) exist, but they are confined to the non-past tenses. In past tense forms, we find a separate form of the ergative or agent case: this is formed by adding an ending -oi or -uei to the oblique stem of the noun. In Guresi and Drasi, then, we have two distinct ergatives, neither of which is used for any other purpose. Furthermore, the situation in the Kohistani dialect, spoken between the Gilgit and Guresi regions, provides a key to the relation between these two situations. In Kohistani, the -s(e) forms are always used in non-past tenses, while in past tenses the forms in oblique +oi are regular, but the forms in -s(e) can be used optionally. It is clear, then, that the -s(e) forms are (or were, in the 1920's) in the process of spreading from the non-past forms to replace the -oi forms in the past.

On the basis of these observations, we can construct a history for the Shina ergative forms which is somewhat more satisfying than simply borrowing. We can note first that the non-Gilgit past tense agent forms, in oblique +oi look more like what we might expect to find in an Indo-Iranian language than do the -s(e) forms. We have already seen above that in both Indic and Iranian, normal developments have led to a situation in which perfect (or past) tense forms are accompanied by ergative case marking, in which S₂ appears in the reflex of either an instrumental or a dative/genitive, perhaps reinforced by a postposition. We can suggest that the same happened in Shina, and that the oblique-case based agent forms in -oi from the non-Gilgit dialects reflect this situation. We cannot be certain whether the construction originated as a passive (as in Indic generally) or as a possessive (as in Iranian), given our lack of knowledge of the intermediate stages in the development of the Dardic languages, but we can suggest the latter, since Shina preserves a distinct form for the genitive, which is quite close (in Guresi and Drasi) or identical (in Kohistani) to the past tense agent form.

Thus, at an earlier stage we can suggest that Shina was
like other Indic or Iranian languages in having a set of perfect (or past) tenses in which ergative case marking (by means of the genitive, or perhaps another oblique case, for *śṛ ṭ*) appeared. At this point, however, we can suggest that the discrepancy between ergative marking for some tenses but accusative marking for others would facilitate a change by which case marking could come to be uniformly of one or the other type. Against this, however, was the fact that precisely the unusual ergative case marking accompanying the perfect tenses was functional: it served as (part of) the morphological indication of the perfect. Thus, while it would perhaps be nice to eliminate the discrepancy between ergative and non-ergative case marking systems within the same language, this would entail the loss of some morphological material, if it were done by simply extending one or the other system into all tenses. Here we suggest Shinā found a clever solution: by borrowing the Balti form of the agent case precisely for the non-past tenses, they were not obliged to introduce ergative case marking as part of the borrowing; rather, this borrowing allowed the language to extend an existing ergative pattern so as to make it completely general. At the same time, the use of distinct forms for non-past and for past tense forms allowed the language to preserve the overt morphological marking of the past/non-past distinction through the *NP*.

We can see therefore, that the original ergative system limited to perfect forms, usual for an Indo-Iranian language, provides a sort of entering wedge which makes the borrowing of the Balti agent form more plausible. We can see, furthermore, that once such a dual, but uniformly ergative, system as that of the Gurēsi and Drōsi dialects is established, there is a tendency for the morphology of the less marked system (the present and other non-past tenses) to be generalized, to replace the system in the more marked (past) tenses. Such a generalization can apparently be observed in progress in Kohistanī, and we can suggest that its natural outcome is the system in Gilgit. The -ś(e) agent forms in Gilgit, then, are indeed borrowed from Tibetan (possibly from Balti), but the ergative construction is not: this is developed in the same way, through the formation of a new perfect, as in other Indic and Iranian languages where it is found.

Our discussion thus far has concerned only cases in which languages which originally had nominative/accusative morphology have acquired ergative patterns. One might well ask whether changes in the opposite direction are ever attested: do ergative languages ever come to be nominative/accusative? There are only two examples of this sort known to us, and both are in the Kartvelian (South Caucasian) family. If we accept the arguments of Chikobava (1948), the Kartvelian languages were all originally ergative in morphology. Insofar as we find instances of nominative/accusative morphology in these languages, then, we can assume that they are the result of linguistic change from ergative to accusative morphology.

One such instance is discussed at some length by Braithwaite (1973). As is well-known, modern Georgian is similar to the Indo-Iranian languages in that ergative case marking is confined to a series of tenses which can be described as perfective (although the traditional name for this series is 'aorist'), while nominative/accusative case marking is found with tenses from another series (traditionally called the 'present' series). Braithwaite argues that the appropriate
characterization of the difference between the two series is (at least originally; some individual tenses have shifted their semantic domain somewhat) that the present series is a set of progressive, or continuous tenses, while the ‗aorist' series is a set of punctual tenses. We could perhaps subsume the latter group under ‗perfect' tenses, and thus group the Georgian phenomena together with the Indo-Iranian and related facts. In that case, we might look for an account of Georgian that would involve an original nominative/accusative system, and an innovation consisting of the development of a set of perfective tenses along one of the lines sketched for Indo-Iranian. This would apparently, however, be contrary to what is known about the history of Georgian: if common Kartvelian had an ergative morphological pattern, it is the nominative/accusative tenses of the present series that are in need of an explanation, rather than the ergative tenses of the aorist series.

Braithwaite suggests, as an answer to this problem, that the progressive tenses of the present series are (at least in origin) structurally similar to the English progressive: 'I am reading the book', with a non-finite participial form of the verb itself, and a copula element. On this view, the element VP in such tenses would always consist of a participle, together perhaps with a dative element representing the Q NP; the subject (S₁ or S₄) would always be structurally subject of a fundamentally intransitive predication. "I am reading the book", that is, would be structurally 'I am at-reading (with respect to the book)'. Given an ergative morphological pattern, it would follow that all subjects in such structures would appear in the nominative (or 'absolutive') case, since all would be structurally S₁. The apparently 'accusative' form of Q NP would also follow from the fact that these would always be structurally oblique, similar in Braithwaite's terms to benefactives and other indirect object NP types.

There is a certain amount of morphological support for Braithwaite's proposal. As he notes, the tenses of the present series, as distinct from those of the aorist series, involve a stem-formative element, following the verb stem itself. This stem formative is also present in the existing non-finite forms of the verb (such as the 'mazdar', filling a variety of participial and infinitival functions). Further, the pattern of verb agreement with objects in tenses of the present series shows certain similarities with the treatment of indirect objects, rather than direct object NP in tenses of the aorist series. There is no overt trace of a copula, despite the fact that Georgian has a verb 'to be', but this need not be a serious objection against Braithwaite's analysis; many languages in fact omit copula elements in some environments, and it is certainly possible that the Georgian tenses of the present series were originally of a structurally equational type. In fact, in modern Georgian there is such a structure, as Braithwaite points out: 'he is painting the wall' has an optional periphrastic form, literally 'he is at-painting (with respect to the wall')

Braithwaite's suggestion about the structural origins of the present tense series has definite merit, but there is an alternative to it which, while quite close in spirit, should also be considered. A great many languages exemplify a sort of indirect transitive construction, in which the object is treated as indirect rather than direct, with semantic
properties which are quite appropriate for the Georgian present series. In English, for example, we find relationships such as those in (10) between ordinary transitive sentences and corresponding sentence types in which the Q NP appears as object of a preposition:

(10) a. i. John shot Bill.
    ii. John shot at Bill.

b. i. John read his speech.
    ii. John read from his speech.

c. i. John chewed his steak.
    ii. John chewed on his steak.

The (i) sentences differ from the (ii) sentences in (10) in that the (ii) sentences imply that the action described was incompletely carried out, unsuccessful, still in progress, etc. A wide variety of other languages also make use of a similar distinction in syntactic terms for related semantic purposes: Maori, Walbiri, Finnish, Navajo, etc. have rules by which the Q NP of a transitive construction can be 'demoted' to oblique status to indicate such incomplete, unsuccessful, etc. action. The properties of this construction in English were discussed by Anderson (1971); since then it has become clear that many other languages also make use of it (see for example Timberlake, 1976, where closely similar facts in Finnish and in Russian are discussed). Among the purposes to which such a construction can be put is precisely the one which is relevant in the Georgian context: the creation of a progressive tense series. 'Progressive' is semantically quite close to 'incomplete', 'partitive', etc., and could be expected to be expressed by the same means. In fact, in at least one other language, (Mam, a

Mayan language also of the ergative type; cf. Robertson, 1976) precisely this device is employed for precisely this purpose: when the Q NP appears in an oblique phrase, rather than in the direct case, the consequence is that the action is interpreted as progressive, rather than simple or completed. Within the languages of the other Caucasian families, this construction is also not unknown. Some examples are given in Anderson (1976) from Bzdegh, a Circassian (Northwest Caucasian) language, in which the same completed vs. incompletely/progressive distinction is marked in the same way: by treating a structurally transitive clause as if it were intransitive plus an oblique phrase, in which the Q NP is expressed. Similarly, Avar of the Northeast Caucasian family (cf. Bokarev, 1949) displays a systematic relation between ordinary transitive verbs, with ergative case marking, and a set of related verbs which behave structurally as intransitives followed by an optional oblique complement (for the Q NP), and which are interpreted as incompletives or progressives. The same relation can be attested from a variety of languages: the point is that it is clearly in some sense a universal that partitive, incomplete, progressive, etc. forms can be derived from ordinary direct transitive forms by 'demoting' the object to an oblique case.

Given the facts just discussed, it is clear that an explanation for the Georgian tenses of series I (the 'present' series) is available. As Braithwaite noted, these tenses have the property that the object is treated as oblique and the subject (whether $\Sigma_x$ or $\Sigma_y$) as an intransitive subject. It is certainly possible that Braithwaite's 'progressive' analysis, consisting of a structure similar to that of the
English copula + present participle, can provide an account of this; it is also possible that the correct explanation involves relating these forms to 'demoted object' partitives in other languages. The two are clearly quite close. In any event, we can arrive at a coherent account of the Georgian system by starting from an ergative morphological pattern, as Chikobava suggests: the nominative/accusative pattern in the 'present' series of tenses need not be treated as a relic of an earlier (unattested) exclusively nominative/accusative stage, nor need it be treated simply as unexplained 'borrowing' from an Indo-European language, as some would have it. It can be accounted for quite naturally as an innovation, starting from ergative marking in direct transitive structures, and proceeding to create progressive forms by structurally demoting the objects. As a subsequent stage, we can suppose that the case marking originally associated with such 'demotion' of the Ā came to be generalized as a marker of the new progressive aspect forms. Further research into Georgian syntax is of course necessary (cf. Harris, 1976) to determine the appropriate syntactic analysis of all of the Georgian tense forms, as well as the correct historical account, but it is reasonably clear that this instance of a correlation between case and tense/aspect marking, like those found in Indo-Iranian, is susceptible of a straightforward explanation.

There is one further example of a shift from ergative to nominative/accusative morphology which has apparently taken place within the Kartvelian family. While Georgian has a system in which case marking is now associated with tense/aspect, as we have just discussed, and Laz has a system in which all tenses are marked in an ergative fashion, the related language Mingrelian has yet another system: in Mingrelian, the ergative marker has been generalized so that not only Ā but also the I appears in the ergative. This is no longer, of course, an ergative system; by the generalization of the ergative case, Mingrelian has become a nominative/accusative language morphologically. There is little to be said about this change, which apparently consisted exactly of the extension of the ergative to cover intransitive as well as transitive subjects. It is interesting to note, however, that the analysis of Kartvelian languages (and of most other ergative languages, as well) which is supported by syntactic considerations makes this extension perfectly plausible. On syntactic grounds, it appears that Ā and I are to be identified as filling the same grammatical relation (subject), just as in an accusative language. Hence, the spread of the ergative marker from Ā to I is perfectly plausible: both Ā and I are subjects. We can compare this fact with the observation that (except in some Australian languages, and in Hurrian), I and Ā do not form a unitary category syntactically, though they are often (in ergative languages) morphologically identified. On this basis, it is noteworthy that there are apparently no attested instances of the converse of the change that gave rise to the Mingrelian system: no cases, that is, where the accusative marker of Ā spreads to encompass I as well (but not Ā), thus creating an ergative system out of a nominative/accusative one. If the grammatical relations suggested by an ergative morphological pattern were really significant, we could surely expect this change also to have taken place somewhere in some language. The absence of such a change, then, confirms the view taken throughout this paper that ergative morphology is (generally) a superficial phe-
nomenon, unrelated to the basic aspects of clause structure and grammatical relations.

We have discussed above several examples in which a change to (or from) an ergative morphological pattern can be accounted for in terms of the generalization of another well-motivated construction, and the subsequent re-analysis of that construction's morphology as basic, not derived. All of this discussion, insofar as it has been based on the assumption that ergative and accusative morphologies correspond to the same basic set of structures, provides implicit confirmation for the view that ergativity is not really very relevant to syntax. There is at least one instance, however, which seems to challenge that assumption. This is the case discussed above of Dyirbal and other similar Australian languages. If in fact Hale is correct, and the proto-Australian language was accusative, how are we to account for the unusual syntactic properties of Dyirbal? Apparently, in this case at least, the change that has occurred has been not simply morphological but syntactic in character.

This is not as difficult for our position as might at first seem, however, although in our present state of knowledge of the morphology of proto-Australian, we can only speculate. We might assume with Hale that proto-Australian was an accusative language. Let us assume further that it then underwent a change by which it became a (morphologically) ergative language. Now linguists have long had the feeling that morphological categories are indicative of grammatical relations: in fact, the whole problem of the analysis of ergative languages comes from the fact that the morphological categories 'absolutive' and 'ergative' do not square with the syntactic categories 'subject' and 'object' in a straightforward way. Let us take this as indicative of a more general tension, therefore, between ergative and accusative systems in a single language. As Dixon (1976) suggests, we might expect that where such a tension exists, there is a tendency to resolve it by reconciling the two systems. In general, the accusative orientation of the syntactic structures is resistant to such change, and if it occurs it consists of a reorganization of the morphology, as in Mingrelian, along accusative lines. It seems however that the peculiarity of Dyirbal and similar languages is that they have resolved this problem in the opposite direction: having ergative morphology and (originally) accusative syntax, like other Australian languages such as Walbiri, they have undergone a fundamental re-organization of their basic syntactic structures along the lines inherent in the traditional claim that underlying structures in ergative languages are 'passive'.

The dimensions of such a change are beyond the scope of this paper to sketch, but its effect is to create a language which is truly of 'syntactic ergative' type. While this result is certainly a radical one in syntactic terms, it is to some extent "therapeutic" for the morphology which is thereby rendered less opaque.

One further change remains to be discussed, though we have little enough to say about it. We noted above that in Chinook (after we have dealt with the 3 sg. masculine and feminine prefixes), the sole remaining trace of ergativity consists in an element /-k/ which appears after /s/ pronominal forms, except after 1sg. and 2sg. forms. This would appear to be a genuine ergative case marker, of sorts; but Sapir
suggests (cf. Sapir, 1926) that this marker, as well, has a historical source outside of the ergative morphological pattern. He argues that this /-k-/ is actually a demonstrative marker of some sort; and that in consequence, the ergative morphological pattern is actually to be related to some sort of earlier topicalization marker. In intransitive sentences, that is, there is only one direct case NP, and hence no particular function for emphasis to fill. In a transitive structure, however, there are two; and we could imagine that it was in an original emphatic demonstrative marker attached to the first pronominal marker in a clause that the ergative marker /-k-/ in Chinook is to be sought. This would be consistent with the facts of other ergative languages, such as the New Guinea language Kâte (cf. Pilhofer, 1933), where the ergative marker basically appears with any $S_4$, but where its function as a topicalizing or emphasizing demonstrative is shown by the fact that under special emphasis, it can extend to other functions such as $S_1$. We have nothing in particular to say about this circumstance; it would seem, however, that topicalization provides another potential source for ergative morphological patterns.

In conclusion, then, we hope to have shown that most instances of change to (and from) ergative morphology are perfectly consistent with our view that ergativity is a superficial aspect of morphology only, rather than a deep syntactic property (with the exception of the few really ergative languages, such as Dyirbal, whose existence demonstrates the significance of the question, "What NPs have the properties of the subject in a language with ergative morphology?") Such change generally takes place when a verbal form with particular semantic value becomes derivationally opaque: either by the loss of an opposed underived form, or through the generalization of the form in question to new cases for which the underived forms do not exist. The change itself consists in the re-analysis of some morphology, formerly connected with the operation of a transformational process, as the basic marker of the semantic distinction itself. Such changes are of general interest for the study of linguistic change, but they do not in general suggest that ergative morphology is in any interesting way connected with more fundamental typological properties and distinctions.
Notes

1. It is well beyond the scope of this paper to defend the particular mixture of notions from Emonds (1976) and from relational grameer that is implied here. Details will not be important below, however, and the rules listed can be taken as examples.

2. I should like to record here my complete agreement with Dixon's (1976) opinion of attempts such as that of George (1975) to reduce Dyirbal to a nominative-accusative syntax. That paper, in fact, seems an excellent reductio ad absurdum of the proposition that all languages have such a syntactic organization. See Dixon's paper for a summary of some of his earlier arguments for ergative syntax in Dyirbal.

3. For typographical convenience, I have used [1] for a voiceless lateral and C° for rounded consonants instead of the transcriptions in my sources.

4. In line with his analysis just described, Hale (1970) considers this element (-gku-lu) to have been the marker for agents in a passive construction. Dixon (1976) on the other hand calls it simply "ergative" inflection.

5. Silverstein (1976) has attempted to explain this asymmetry in terms of animacy and the notion of 'preferred actor', but it is not clear to me how his account applies to the actors of transitive sentences but not to those of intransitive sentences.

6. Hale (1970:772) suggests that Ngarluma-Yintjipanţi in Australia may be a counterexample to this claim.

7. Cardona (1970) argues that Benveniste's interpreta-

8. Data on Shiga are from Bailey (1924) and Lorimer (1925).

9. We disregard here the third series of tenses in Georgian, called 'perfects', but in fact a set of reportive tenses. These are clearly derived from passive forms from other tense series; cf. Vogt (1971) for some discussion.
References


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