THE PASSIVE AND ERGATIVE IN LANGUAGE CHANGE: THE AUSTRALIAN CASE

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0. INTRODUCTION

With great courage and insightfulness, Dr. Capell has, on a number of occasions, discussed the 'structural development of Australian languages' (e.g., Capell, 1956, pp.8-66; 1962, pp.4-10). In the course of these discussions, he has presented several interesting hypotheses concerning grammatical change in Australian languages in an attempt to relate systems of considerable typological diversity. Of particular interest to him has been the typological distinction between 'prefixing' and 'suffixing' languages in Australia, and an important part of his theoretical work in Australian linguistics has been devoted to an investigation of the ways in which this distinction could have developed among languages which are fairly obviously descended from a common ancestor.

The study of grammatical change in Australia is, of course, considerably handicapped by the circumstance that we do not have detailed records of earlier stages of given languages. Discussions of change are necessarily speculative. Nevertheless, I feel that this area of inquiry is important, and I applaud Dr. Capell's decision to include it within the broad spectrum of his concerns in Australian linguistics. In this spirit, I would like to examine one of several conceivable explanations for the diversity which is observed among the systems of case-marking in Aboriginal languages of Australia. In particular, I will attempt to explain a typological correlation which exists in Australia between languages which have a case system of the

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so-called ergative type and languages which have a case system of the nominative-accusative type.[1] In the discussion that follows, I will refer to the former as **ergative** or type-B languages and to the latter as **accusative** or type-A languages. It will appear, initially, that I am concerned with only two types of case systems, A or **accusative**, and B or **ergative**. But as the discussion proceeds, it will become obvious that this is only a superficial classification; specifically, it will become evident that three distinct, though related, ergative types can be distinguished.

Australian ergative languages have the surface structure property that the subject (or agent) in a transitive sentence is specially marked for ergative case (normally by a suffix reflecting ancestral *-ŋku ∿ -lu; see, e.g., Capell, 1956, p.53), while the subject of an intransitive sentence and the object of a transitive sentence appear in the nominative case (normally phonologically null). Accusative languages, on the other hand, have the property that the subject of a sentence, whether transitive or intransitive, is in the nominative case, while the object of a transitive sentence is specially marked for objective case (often by a suffix which continues ancestral *-ku; *cf.*, the 'dative' of Capell, 1956, p.53). For both language types, it is necessary to recognize, in addition to transitive and intransitive, a class of 'middle' sentences. Like transitive sentences, middle sentences have objects. In the ergative languages, the subject of a middle sentence is in the nominative case, and the object is inflected for objective case; exactly the same is true of the accusative languages, so that, in the latter, the case-marking is identical in transitive and middle sentences.

The typological correlation to which I alluded above is the following: ergative languages in Australia typically lack the active-passive relation, while all accusative languages of which I am aware possess it. Thus, superficially, at least, the two types of languages differ in two ways, rather than in a single way - they differ in case system *and* in voice system. In the argument to follow, I will construct a set of hypotheses which will relate these two systems, i.e., case and voice, and I will attempt to show that the difference between the two types is basically a single one after all.

It is appropriate in the initial stages of the discussion to mention two assumptions upon which the hypotheses will be constructed. The first is that the conception of grammar appropriate to either Australian type is essentially that of Chomsky (1965). The second assumption is that all of the languages discussed here have a common ancestor and, more important, the common ancestor was an accusative, or type-A, language. The hypotheses that will be advanced here are

specific accounts of the ways in which particular types of ergative languages develop from their accusative ancestors. That is, the hypotheses are about language change.

I will attempt now to characterize the grammars of Australian accusative and ergative languages.

1. THE ACCUSATIVE-ERGATIVE DISTINCTION

Relatively many Australian languages exhibit a case system which is of the ergative type as described in superficial terms above (e.g., Walbiri of Central Australia, Nyangumata of the Northwest, Pitjantjatjara of the Western Desert, Tjirpal-Mamu-Kiramay of North Qld.). However, so far as I am aware, relatively few Australian languages are accusative - the accusative languages are found in two widely separated areas: the Wellesley Islands and adjacent mainland in North Qld. (e.g., Lardil, of Mornington Island; Kayardilt, of Bentink Island; and Yanggal of Forsythe Island); and the northwest coast of Western Australia (e.g., Ngaḷuma of the Roebourne area, and Yintjipaṇṭi of the Fortescue River area). The Wellesley Island languages are rather distantly related to other Australian languages, but the northwestern accusative languages are quite closely related to their ergative neighbours. Furthermore, it is possible to show that the northwestern languages are only superficially accusative, that they have developed an accusative system of case-marking and an active-passive relation in quite recent times. Therefore, if any Australian languages continue the supposedly ancestral accusative system, they are the Wellesley Island languages.

In order not to introduce irrelevant (e.g., morphophonemic) detail into the discussion, artificial examples, using reconstructible morphemes, will be used in exemplifying type-A and type-B languages. The artificial examples are constructed to represent faithfully the essential facts of the Australian systems and to highlight the features which are relevant to the argument which will be developed here.[2]

The sentences in (1) illustrate the typical accusative type: the subjects of intransitive (i), middle (ii), and transitive (iii) sentences are in the nominative case (phonologically unmarked in the majority of Australian languages); the objects of middle and transitive sentences are marked by suffix for a generalized objective case.

(1) *Language A*

(i) wati nʸina-ŋu
(man sit-past)
'The man was sitting.'

(ii) wati yipi-ku waŋka-ŋu
(man woman-obj speak-past)
'The man spoke to the woman.'

(iii) wati yipi-ku paka-ŋu
(man woman-obj hit-past)
'The man hit the woman.'

By contrast, the sentences in (2) illustrate the typical ergative situation, i.e., in which the subjects of nontransitive (i.e., intransitive and middle) sentences and the objects of transitive sentences are in the nominative, while the subjects (or agents) of transitive sentences are in a separate case, called the ergative, according to tradition.

(2) *Language B*

(i) wati n^{y}inaØ-ŋu
(man sit-past)
'The man was sitting.'

(ii) wati yipi-ku waŋkaØ-ŋu
(man woman-obj speak-past)
'The man spoke to the woman.'

(iii) wati-ŋku ylpi pakaL-ŋu
(man-erg woman hit-past)
'The man hit the woman.'

The sentences of (2) are constructed to reflect an additional characteristic which is typical in Australian ergative languages - namely, the fact that regular verbs appear to belong to two conjugations. With some exceptions, the conjugation system in actual ergative languages correlates with the distinction between transitive and nontransitive verbs. This feature will play a role in the argument of this paper, as will the fact that, by and large, the conjugation which is phonologically the more complex (i.e., the liquid- or L-conjugation) is associated with the transitive, while the phonologically simpler conjugation (i.e., the zero-conjugation) is associated with nontransitive.

Transitive and middle sentences in type-A languages are identical with respect to case marking. Nonetheless, the two sentence types are distinct syntactically - transitive active sentences have passive counterparts, while middle sentences do not. Sentence (3) is the passive corresponding to the active sentence (1iii). In (3), the surface subject is in the nominative, and the deep subject, i.e., surface agent, is in the agentive case. The verb is inflected by suffix for passive voice.

(3) yipi wati-ŋku paka-Li-ŋu
(woman man-agt *hit*-passive-past*)*
'The woman was hit by the man.'

There is an obvious similarity between the passive surface structure (3) and the ergative construction (2iii); and, in general, passives and ergatives are similar in surface form. The logical object in (3) is in the nominative case, as is the logical object in (2iii). And the logical subject in (3) is marked by a suffix which I have glossed **agentive**, corresponding to the special ergative suffix on the subject of (2iii). The major difference in surface form between (2iii) and (3) is in the word order - but this is a trivial difference indeed when one considers the fact that most of the languages relevant to this discussion have extremely free word order. The striking similarity between passive and ergative surface structures is, of course, exaggerated in the artificial examples because I have used phonologically identical suffixes to represent the ergative ending in B and the agentive ending in A. However, this is not totally devoid of historical reality - in some Australian accusative languages, e.g., Kurama-Yintjipaṇṭi of the Northwest, the agentive ending in passives is clearly descended from *-ŋku ∿-lu, which is the predominant source for the ergative inflection.

I will turn now to a consideration of certain aspects of a generative grammar of A and the accusative languages it represents. I will assume that the grammar of a type-A language has at least the rules (4), and that it assigns the deep structures (5i-iii) to the sentences in (1). Furthermore, the grammar assigns a deep structure of the form represented by (6i) to passive sentences; the Passive transformation (4ii) converts (6i) into the form (6ii), which directly underlies the passive sentence (3).

(4) *A grammar of Language A*

(i) The Base:

1) S --→ NP ⌢ VP

2) VP --→ (NP (AGT)) V ⌢ Tense

3) AGT --→ Passive

4) NP --→ N

5) V --→ CS

6) Lexicon:

[+V, +___Tense]-n^{y}ina *'to sit'*

[+V, +NP___Tense]-waŋka *'to speak to'*

[+V, +NP$\widehat{\ }$AGT___Tense]-paka *'to hit'*

7) Lexical redundancy rule:

[+V, +NP$\widehat{\ }$AGT___Tense] --→ [+NP___Tense]

(ii) The Passive Rule:

NP	$_{VP}$(NP	$_{AGT}$(Passive)	$_{AGT}$ V	Tense)$_{VP}$	
1	2	3	4	5	===→
2	0	1	4#3	5	

(iii) The Case Marking Convention:

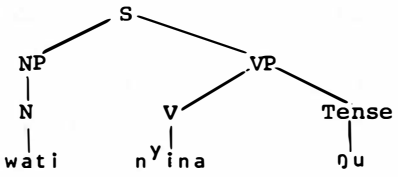
NP --→ [+$_{X}$(___)$_{X}$], where X is the node-label immediately dominating NP.

(iv) Scrambling:

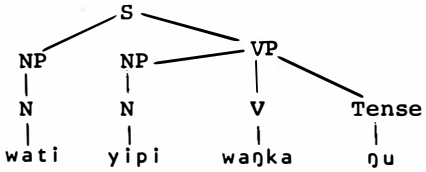
'Words' are reordered optionally; the sequences N, V$\widehat{\ }$Passive$\widehat{\ }$Tense, and V$\widehat{\ }$Tense are 'words.'

(5) *The Deep structures of* (1i-iii) *(abbreviated)*:

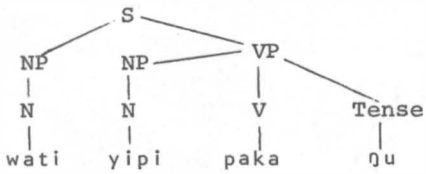
(i)



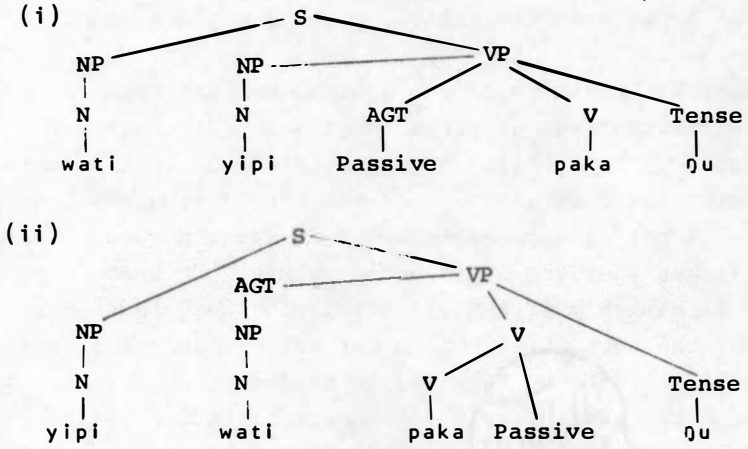
(ii)



(iii)



(6) *The Deep and Surface Structures of the Passive (3):*



I propose that case in the Australian accusative languages is strictly a function of the domination of noun phrases. Thus, a noun phrase immediately dominated by the sentence node (S) is assigned nominative case; a noun phrase immediately dominated by the verb phrase node (VP) is assigned objective case, and a noun phrase immediately dominated by the agent phrase node (AGT) is assigned agentive case. The case features (7) are assigned by means of the case marking convention (4iii) - they are later interpreted by rules of the phonological component.

(7) nominative case = $[+_S(\_\_\_)_S]$

objective case = $[+_{VP}(\_\_\_)_{VP}]$

agentive case = $[+_{AGT}(\_\_\_)_{AGT}]$

Given the structures (5i-iii) and (6ii), this accounts correctly for the case marking in (1i-iii) and (3) and in the corresponding sentences in actual accusative languages.

2. HYPOTHESES OF CHANGE

I would like now to consider an initial hypothesis in relation to the grammars of type-B languages.

Recall that the accusative languages in Australia possess the active-passive relation - i.e., they have pairs of sentences like (1iii) and (3), as provided by the grammar (4). Ergative, or type-B languages, on the other hand, lack the active-passive relation - i.e., active transitive sentences have only one form, namely, the ergative constuction. Now notice that if language A lacked surface structures of the form

(1iii) but had surface structures of the form (3), on the basis of the case marking in existing sentences, we would be forced to conclude that language A was ergative - i.e., A and B would be identical in all essential respects.

Two important features of the grammar (4) are the strict subcategorial classification of verbs in (i6) in the lexicon and the lexical redundancy rule (i7). The first provides that transitive verbs may appear with an agent phrase, and the second provides that a transitive verb may also appear without an agent phrase. Suppose language A lacked the lexical redundancy rule. In that case, transitive verbs could appear only if AGT also did, with the result that deep structures of the form (5iii) would not exist; nor would sentences of the form (1iii). Instead, there would be deep structures of the form (6i), to which the passive rule must apply, deriving (6ii). And all transitive sentences would have the passive form, i.e., the form represented by (3). In effect, it would be indistinguishable from an ergative language.

I would like to consider the possibility that some type-B languages in Australia are to be explained in exactly this way. Accordingly, I will propose the following hypothesis:

(8) *Hypothesis I, the* **Ergative-Equals-Passive** *Hypothesis*:

> Ergative, or type-B languages are identical to type-A language except that they lack the Lexical Redundancy Rule (4i7). Assuming that the ancestors of type-B languages were of type-A, then the change from the latter to the former involved loss of the Lexical Redundancy Rule. (This hypothesis entails that the so-called ergative case is simply that of the agent of a passive. And it explicitly denies that the ergatively inflected NP in (2iii) is the surface subject in that sentence - it is, rather, the deep subject and surface agent. The nominative NP is the deep object and surface subject. The word-order in (2iii) is not in conflict with this hypothesis, since it could have been derived by scrambling, as is evidenced by the fact that the alternative to (2iii)
>
> yipi wati-ŋku pakaL-ŋu,
>
> i.e., the order predicted by the passive rule, is equally possible in most type-B languages in Australia. Furthermore, according to this hypothesis, there are no conjugations in type-B languages. Rather, the L-conjugation is merely the passive inflection introduced by rule (4ii).

According to this view, full transitive verbs in ergative languages *require* an agent phrase, while in accusative languages, transitive verbs *accept* an agent phrase but do not require one. The two types do not differ at all in their case systems, since rules for case assignment can

be defined over structural configurations in exactly the same way in both - the case-marking convention defined for language A above achieves precisely the desired result in language B under the hypothesis that the ergative construction is a passive - in fact, the effect of the convention is identical in the two types. Nor do the two types differ with respect to the existence of the passive rule. Both have the passive; it is simply the case that in the ergative languages, the passive is obligatory for transitive verbs.

(9) The Grammar of B under Hypothesis I. Identical to (4), but without the Lexical Redundancy Rule (4i7). Languages which have this grammar will be called type-B_1, or pseudo-ergative languages.

The ergative-equals-passive hypothesis has a number of desirable consequences: 1) It explains an otherwise unexplained typological correlation by relating two grammatical differences which, on the surface, appear to belong to entirely distinct spheres, i.e., case and voice. 2) It explains the correlation between the verbal conjugations and transitivity; more accurately, according to the ergative-equals-passive hypothesis, there are no conjugations at all, but rather, the L-conjugation is merely the passive inflection introduced by rule (4ii). 3) It preserves the generalization that case corresponds to grammatical function. 4) It is consistent with, and in a sense explains, the observation that the object-taking verbs which in the accusative languages cannot be passivized are the semantic counterparts of the object-taking verbs which in the ergative languages take nominative, rather than ergative subjects.

It is appropriate to pause for a moment to consider whether or not a proposal of this nature is at all reasonable. It does seem reasonable in two respects: The grammatical change posited under the ergative-equals-passive hypothesis seems to be an entirely natural one - i.e., it is merely the loss of a rule. Furthermore, the transformational capability required to develop the surface structures of language B is no greater than that needed for language A; in fact, it is identical to it. And the transformational rule which is central in both grammars, namely, the passive, is well established and amply justified in the grammars of many of the world's languages.

On the other hand, it is quite in order, I feel, to ask the following question:

> Should a deep structural configuration be posited which never appears in the surface representation of some grammatical sentence?

This question requires more detailed formulation, but it is an appropriate one in connection with the proposal under consideration here. Kiparsky has recently argued in favour of the position that the phonological description of a language should be constrained to disallow 'absolute neutralization.' I.e., that there can be no lexically distinct phonological segments A and B such that they merge to C in all environments.[3]

There is a strained, but I think appropriate, analogy in the area of syntax under discussion here. Let us call the portion of a P-marker which expresses the grammatical relations 'subject-of' and 'object-of' the *radical* structure of a sentence. In an active radical structure, the agent is immediately dominated by the S-node, and the patient is under the VP-node (as in (5iii) and (6i)); and in a passive radical structure, the patient is dominated by S and the agent by AGT (as in (6ii)). The passive and active can be said, therefore, to be *radically* different, but they are radically identical in deep structure. Now, under hypothesis I, i.e., the ergative-equals-passive hypothesis, the grammar of language B provides two distinct radical structures for each transitive sentence, the deep or active radical structure, and the derived or passive radical structure. The two radical structures are, in a real sense, neutralized in surface structure, since active radicals must undergo the passive rule. Only passive radicals appear in surface structure.

Let us consider the possibility that neutralization of the type just described should be disallowed - i.e., that hypothesis I is correct for a given type-B language only if active transitive radical structures actually appear in surface structures under some conditions; it is incorrect for those type-B languages whose transitive sentences are always of the passive radical form. This restriction would entail that no radical structure could be posited which must always undergo the radical-changing portion of the passive rule (10).

(10) *The Parts of the Passive Rule.*

The Portion of a P-marker which expresses the grammatical relations subject-of-S and object-of-VP will be called the *radical* structure. In an active radical structure, the agent is immediately dominated by the S-node and the patient by the VP-node; in a passive radical, the patient is dominated by S and the agent by AGT. The passive rule has two distinct effects - one which changes the radical structure (i.e., the interchange of NP's) and one which does not (i.e., insertion of the passive ending into the verb word).

The constraint against neutralization might be formulated in terms of Lakoff's concept of *absolute exceptions* (Lakoff, 1965) to grammatical rules, as in (11):

(11) *No verb can be a positive absolute exception to a radical-changing rule.*

If it is correct, this constraint provides a natural test for the ergative-equals-passive hypothesis in individual cases. The hypothesis can be maintained for a particular language if it can be shown that transitive verbs in that language are not absolute exceptions to the radical-changing portion of the passive rule. The ergative-equals-passive hypothesis asserts that all transitive verbs must appear in structures which satisfy the structural description of the passive rule, since they are subcategorized to appear only in VP's which contain the AGT constituent. This is not sufficient, however, to identify transitive verbs as positive absolute exceptions to the passive. To do that, it is necessary to show that sentences which contain transitive verbs must *always* undergo the passive if the sentence is to be grammatical.

Consider a rule, like subject raising, which, if it applies before the passive, prevents the latter from applying. If transitive verbs are absolute exceptions to the passive, then transitive sentences to which subject raising has applied should be ungrammatical. If they are not absolute exceptions, however, grammatical sentences will result even if the passive is prevented from applying - and these grammatical sentences will be instances of transitive active radicals which retain, in part, their active form in surface structures.

In most type-B languages, the constraint (11) will, in fact, disallow the grammar posited under hypothesis I. For some, however, the constraint against neutralization does not disallow hypothesis I. In Walbiri, of central Australia, for example, there exists a subject raising rule whose application prior to the passive prevents the radical-changing portion of the rule from applying - the portion which effects the passive inflection of the verbs, however, does apply.[4] The grammatical sentences which result maintain a portion of the underlying active radical structure. The deep structure object remains in the verb phrase and, as expected under the case-marking convention, is marked for objective case, and *not* for nominative as it would if the radical-changing portion of the passive applied. For Walbiri, then, the ergative-equals-passive hypothesis does not lead to a violation of the constraint (11). I will assume, therefore, that the grammar of A, minus the lexical redundancy rule, is a possible grammar for Walbiri.

And I will refer to languages of the Walbiri-type as **pseudo-ergative** languages (as provided in (9) above).

The question remains whether the constraint against absolute neutralization should be enforced for those type-B languages whose transitive sentences are, without exception, of the passive radical form. A conceivable argument in favour of the constraint might take the following form: the absolute neutralization which relaxing (11) would permit eliminates a major part of the surface structure evidence which a child language-learner needs in order to determine the existence in the grammar he is learning of a radical-changing transformation. That is to say, it greatly increases the capability which must be attributed to the language-acquisition device. The constraint against neutralization amounts to saying, in effect, that a transformational relationship between a deep structure and a radically different surface structure can be posited only if there exists a corresponding Harris-type transformational relationship between radical surface structures, and it implies that the latter condition is necessary in order for the child language-learner to determine the existence of a manipulative transformation.[5] Whether or not this is a reasonable naturalness condition to impose in syntax is an empirical question, and it is worth contemplating the kinds of empirical evidence that might support it.

Let us use the term **true-ergative** for languages whose transitive sentences *always* have agents in the ergative case and patients in the nominative case - i.e., in which the case inflection is always as in (2iii) and never as in (1iii). Let us assume further that the change from a type-A language to a true-ergative language involves at least the loss of the lexical redundancy rule (4i7), i.e., we retain the historical portion of Hypothesis I in all cases - for true-ergative and pseudo-ergative alike.

If we maintain the historical portion of Hypothesis I, i.e., that the lexical redundancy rule was lost, and if we also require that the constraint against neutralization be met, it is clear that we cannot maintain the synchronic portion of Hypothesis I for any of the true-ergative languages - i.e., we cannot maintain the view that the grammar of a true-ergative language is identical to that of an accusative language save for the redundancy rule (7i4). Instead, we must suppose that the grammar becomes reanalyzed in such a way that it is capable of developing the existing, more limited range of surface structures in some *direct* fashion. I suggest that this is the empirical test for the constraint against absolute neutralization in syntax. If it can be demonstrated that reanalysis does in fact take place in circumstances

like the one under discussion, then it seems reasonable to suppose that a child language-learner does not construct a grammar which has deep structures that never appear in some surface structures, but rather that he constructs a grammar which develops surface structures in the most direct way possible - with the proviso, of course, that it must also express the significant generalizations in the language.

Given the surface structures which exist when a language has lost the lexical redundancy rule, there are two possible reanalyses. The most obvious is that posited under Hypothesis II:

(12) In (true) ergative languages, structures of the radical form (6ii) are developed directly by the rules of the base component. There are no radical structures of the form (6i) (or, equivalently, (5iii)) for transitive sentences. Regular verbs are in two conjugations (corresponding to the distinction between transitive and nontransitive). The change from type-A to type-B involves not only the loss of the lexical redundancy rule (4i7), but also a *radical* reanalysis of the grammar on the basis of a more limited range of actual surface structures. It also involves a reinterpretation of the passive inflection as a conjugation marker.

(13) *The Grammar of B under Hypothesis II.*

The rules of the base component develop the radical structure of (6ii) directly. By a redundancy rule, transitive verbs are in the L-conjugation, and nontransitives are in the Ø-conjugation. There is no passive transformation. Case marking is according to the immediate domination of noun phrases. Nominative NP's are subjects in both deep and surface structures; ergative (= agentive) NP's are constituents of VP in deep structures. Languages which have this grammar will be called type-B_2, or passive ergative languages.

(i) The Base:

1) S --→ NP^VP

2) VP --→ $\left\{ \begin{matrix} \text{NP} \\ \text{AGT} \end{matrix} \right\}$ V^Tense

3) AGT --→ NP

4) NP --→ N

5) V --→ CS

6) Lexicon:

[+V, +___Tense]-n^{y}ina

[+V, +NP___Tense]-waŋka

[+V, +AGT___Tense]-paka

7) Conjugation Assignment:

$$[+V] \rightarrow \begin{Bmatrix} \text{L-Conj} \\ \text{Ø-Conj} \end{Bmatrix} / \left[\frac{\quad}{+\text{AGT}\ \ \text{Tense}}\right]$$

(ii) Case Marking Convention (as in A).

(iii) Scrambling (as in A).

The principal change here is in the radical structures generated by the base (as provided in (13i2,3)); there is no change in the system of case marking. I will call a language which has a grammar of the form (13) a **passive-ergative** language, or a type-B_2 language.

The grammar of a passive-ergative language explicitly provides that the ergatively inflected NP is *not* the subject of a transitive sentence - rather, the nominative NP is the subject regardless of the sentence type.

In the second conceivable reanalysis, and the one which is most amply represented in Australia, the ergatively inflected NP, i.e., the agent of the passive in the ancestoral language, *is* the subject in a transitive sentence. The subject of a nontransitive and the object of a transitive are in the nominative. This is the classically ergative state of affairs. The synchronic and historical postulates for this case are expressed in Hypothesis III:

(14) True ergative languages have radical deep structures of the form (5i-iii). They lack radical structures of the form (6i-ii). Verbs are subcategorized in the lexicon as transitive or nontransitive. Case is assigned by government - i.e., there is a set of rules which provide that: 'the subject of a nontransitive verb is in the nominative,' 'the subject of a transitive is in the ergative,' and so on. The change from type-A to type-B under this hypothesis does not involve a radical reanalysis, but rather, loss of (4i7) and the Passive rule, and a rather fundamental reanalysis of the system of case marking.

(15) *The Grammar of B under Hypothesis III.*

Rules of the base component develop radical structures of the form (5i-iii) only. Conjugations are assigned as in type-B_2. Case is by government. Languages which have this grammar will be called type-B_3, or **active ergative** languages.

(i) The Base:

1) S --→ NP^VP

2) VP --→ (NP) V^Tense

3) NP --→ N

4) V --→ CS

5) Lexicon:

[+V, +___Tense]-n^{y}ina

[+V, +NP___Tense, -Trans]-waŋka

[+V, +NP___Tense, +Trans]-paka

6) Redundancy Rules:

[+V, +___Tense] --→ [-Trans]

$$[+V] \text{ --→ } \begin{cases} \text{L-Conj} \\ \text{Ø-Conj} \end{cases} / \left[\overline{\text{+Trans}}\right]$$

(ii) Case Marking:

$$NP \text{ --→ } \begin{cases} [+Erg] / \text{ ___}_{VP}(X[+Trans])_{VP} \\ [+Obj] / \text{ } _{VP}(\text{___}[-Trans])_{VP} \\ [+Nom] \end{cases}$$

(iii) Scrambling (as in A).

That is, the basis on which case is assigned is completely different - case depends on the strict subcategorization of the main verb, rather than on the immediate domination of NP's. The system of conjugations is assigned on the same basis as under Hypothesis II. A language which has a grammar of the form (15) will be called a type-B_3 or **active-ergative** language.

The indications are that reanalysis *has* taken place in the true-ergative languages of Australia. The majority of languages appear to be of the active-ergative type, but a few are passive-ergative.

The observations contained in (16,17) are consistent with reanalysis, and, to that extent, support it:

(16) (i) In the majority of type-B languages in Australia, the rules and constraints in the grammar which make reference to the relation 'subject-of' show that the subject of a nontransitive sentence is the **nominative** NP and that the subject of a transitive sentence is the **ergative** NP. This is entirely consistent with the reanalysis posited under Hypothesis III - i.e., it is consistent with the grammar B_3. It is inconsistent with the reanalysis posited under Hypothesis II, and with the grammar B_2. (The rules and constraints relevant here include: 1) the imperative (the subject must be 2nd person); 2) obviative and proximate conjoining (obviative if subjects distinct, proximate if identical); 3) complementizer insertion (depending on identity of embedded

subject with NP object or subject in superordinate sentence); 4) subject agreement in **AUX**, for those languages which have it; 5) deep structure constraints associated with certain superordinate verbs. In fact, most rules and constraints which depend on the identity or distinctness of **NP**'s require reference to the notion 'subject-of-S'.)

(ii) In at least one type-B language, Tjirpal-Mamu-Kiramay, of the rain-forest area of Qld., the rules involved in the development of well-formed 'topic-chains' (as described by R. Dixon, 1967) and the rules of complement reduction identify the subject as the nominative **NP** in all sentences. The 'topic-chain' is equivalent to **S**-conjoining in other type-B languages. The facts of Tjirpal-Mamu-Kiramay are entirely consistent with the reanalysis posited under Hypothesis II, but they are inconsistent with the reanalysis III.

The observations (17) in **active-ergative** languages are also consistent with reanalysis. And, more important perhaps, they are (to some extent at least) *inconsistent* with the grammar which must be posited if reanalysis had failed to occur:

(17) 1) The conjugation system becomes partially inconsistent with strict subcategorization. Counter-examples appear in both directions (i.e., transitives in Ø-Conj, nontransitives in L-Conj).

2) Development of a more elaborate system of case-government. Case and strict subcategorization are partially inconsistent with one another. Some verbs govern cases which were formerly **oblique** (e.g., locative, directional, admonitive, etc.).

3) Languages which develop a fixed word order pick the order attributed to the deep structure under reanalysis (e.g., Pitjantjatjara has fixed **Erg-Nom-V** order in transitive sentences, and fixed **Nom-Obj-V** order in middle sentences).

4) Some languages 'invent' an entirely new passive (e.g., Ngaḷuma-Yintjipaṇṭi, of the Northwest, which are type-**A** in superordinate and simple sentences, but type-**B** in embeddings; and, evidently, Kuku Yalantji, of the Northeast (Hershberger, 1964)).

I have attempted in this account to show how an ergative language might conceivably develop from an accusative language. An important step in this development, regardless of the type of ergative language that results, has been the loss of the lexical redundancy rule which provides that transitive verbs may appear without an agent phrase.

But the really important question remains. In order for a rule to be lost, it is necessary that surface structures available to new learners of a language be such that they fail to provide evidence that the rule exists. In the case under discussion, it is necessary that the active surface structures become disfavoured to the extent that they cease to exist as an independent sentence type. At this point, the evidence for the lexical redundancy rule will cease to exist as well. The question is, then: What are the circumstances which would lead to disfavourment of a surface structure type? I cannot suggest a reason why the active, rather than the passive surface structures should become disfavoured, but there is a circumstance under which one or the other might become so.[6]

I have suggested that Hypothesis I is correct for Walbiri of Central Australia; i.e., that Walbiri still has a passive rule. If so, then Walbiri is quite unlike most other languages which have a passive, since all of the rules which make reference to the notion subject-of-S identify the ergative (i.e., agentive) noun phrase, rather than the nominative noun phrase, as the subject of a transitive sentence. In other words, it is the deep subject, and never the surface subject, which is identified as the subject for the purposes of grammatical rules. That is to say, the grammatical rules which refer to the subject always pick the NP which bears that relation in *deep structure*, never the NP which is the subject in surface structure.

Let us call the assemblage of rules which refer to the referential identity of noun phrases pronominalization. If Walbiri has a passive rule, then to account for the facts just mentioned, the proposition in (18) must be true:

(18) *Pronominalization precedes the Passive rule in Walbiri.*

Among the rules which refer to the referential identity of NP's in English is pronominalization; and, for that language, it is well known that pronominalization follows the passive rule (at least in the sense that it must apply in sentences which have already undergone the passive rule). The English system appears to be the usual one among the languages of the world. The situation represented by Walbiri, if the above account is at all correct, is without doubt exceedingly rare. Nonetheless, there are other examples. Thus, in the Polynesian language Maori, passive and active surface structures clearly exist. And the evidence which I have been able to obtain concerning pronominalization in Maori indicate rather strongly that pronominalization precedes the passive in that language as well.[7]

Notice that if pronominalization precedes the passive in Walbiri, it will account for such facts as that a sentence whose "literal" translation into English is *'I saw John while the kangaroo was being killed'* has the meaning *'I saw John kill the kangaroo,'* that a sentence with the literal translation *'I want the kangaroo to be speared,'* means *'I want to spear the kangaroo,'* and the like. Similarly for Maori.

The ordering of pronominalization before the passive is interesting in another way. Under this ordering, pronominalization is restricted in its application to active radical structures. I.e., it applies only to a limited selection of the radical structures which exist in the language - in a real sense, it is not maximally utilized.

Paul Kiparsky, in a recent paper (Kiparsky, 1968a), has suggested that there is a tendency in language change toward 'fullest utilization' of grammatical rules. Attendant upon this suggestion is the implication that systems which do not exhibit fullest utilization are unstable and liable to change. His suggestion is amply supported by data from phonology. It is conceivable that it is also true of change in syntax. If so, and if the type-A language postulated as the ancestor of modern type-B languages in Australia ordered pronominalization before the passive, then it is not surprising that it changed. There are two ways in which such a language could change: by eliminating one radical-structure type, or by reordering the pronominalization and passive rules. Either change would result in maximal utilization of the rule of pronominalization.

I propose, very tentatively, that the condition embodied in (19) is responsible for the change from accusative to ergative in Australia:

(19) The ordering

Pronominalization

Passive

is unstable. Languages which have this ordering tend to become B-type languages, by abandonment of all active surface structures, or else they tend to reorder the rules into a 'feeding' relationship (*cf.*, Kiparsky, 1968a, pp.196-8).

If the type-A ancestor of modern ergative languages in Australia, is also ancestral to the Wellesley Island languages, which order the passive before pronominalization, then both types of change have occurred in Australia. Similarly, if the common ancestor of the Polynesian languages had a passive and ordered it after pronominalization, then, Hawaiian has reordered the rules, Tongan has eliminated the active (and become ergative), and Maori, with its strong bias for passive surface structures is drifting toward the ergative type.

3. CONCLUDING REMARKS

In conclusion, I wish to emphasize that the hypotheses advanced in the preceding section must be regarded as suggestive only. There remains a large number of unanswered questions, and a considerable amount of research must be done before it will be possible either to support adequately or destroy totally the arguments presented. I will mention here a few of the difficulties which remain.

I have claimed that under the constraint (11) certain Australian languages, e.g., Walbiri, can still be analyzed as having a passive rule applying to deep structures of the form (6i). I suspect that this will eventually prove to be incorrect and that: (a) Walbiri is in fact an active-ergative language of the type characterized by the grammar (15), and (b) the partial survival of accusative surface structures under marginal conditions in Walbiri is either a relic from the supposed type-A ancestor, or else is to be explained in a manner completely different from the one suggested. This suspicion is encouraged by the fact that the Walbiri reflexes of the L- and Ø-conjugations are partially inconsistent with the strict subcategorial division between transitive and nontransitive verbs. This inconsistency would, of course, be impossible if the L-conjugation marker were *synchronically* the passive suffix, as is maintained under Hypothesis I.

There is another doubt which exists in relation to the L-conjugation. It remains to be demonstrated by the comparative method that the phonologically more complex conjugation is, in actual fact, cognate with a morpheme which now serves, or once served, as a passive inflection in some language in Australia. There is some very scant evidence indicating that the L-conjugation goes back to a suffix of the form *-L(i) (with *L representing an as yet unidentified liquid or, possibly, semivowel) and that the same form is continued by a suffix associated with the passive or middle voice in some modern Australian languages - *cf.* Arandic /-l/ **reflexive, middle**; Tjapukay /-yi/ **reflexive, middle**; Lardil /-yi/ (on monosyllabic verbs) **reflexive, passive.**

These considerations raise the question as to whether a historical connection between the passive inflection and the L-conjugation should be made at all. Perhaps the L-conjugation is really no more than it appears to be on the surface, namely, a phonological peculiarity that for some reason or other is associated with transitivity. The hypotheses in section 2. above proceed in part from the belief that such an essentially accidental relationship is unlikely. Nonetheless, it is quite conceivable that the proposed explanation is entirely

incorrect. The competing possibility that the L-conjugation reflects an earlier causative suffix, deriving transitives from nontransitives, should not be overlooked - in fact, it is suggested rather strongly by the existence, albeit marginal and unproductive, of such pairs as /kampa- : kampaL-/ *'to burn* intr. *: to burn* tr.' in many type-B languages.

Perhaps the most important, and disturbing question which remains has to do with personal pronouns. In many, perhaps most, type-B languages, case inflection on pronouns conforms to the accusative pattern, while the case inflection on nouns conforms to the ergative pattern. Furthermore, in these pronominal systems, an accusative case (normally marked by a suffix which continues *-$n^y a$) is distinguished from a dative (from *-ku, on objects of middle verbs and on indirect objects). In a limited number of languages (limited in number but not in geographic distribution) the suffix *-$n^y a$ appears on nouns as well. At present, I do not see how these observations can be viewed as at all consistent with the historical development which I have suggested. Nor do I see any obvious explanation for another correlation which is most certainly important: languages in which both pronouns and nouns conform strictly to the ergative pattern of case-marking are exactly those languages in which a system of person agreement (i.e., person concord between a noun phrase functioning as subject or object and the auxiliary or verb) is most highly developed.[8]

I hardly need to repeat that the history of Australian languages is extremely difficult to study. We will certainly never have anything more than hypotheses which can be evaluated in terms of their ability to account for the total range of data observable among the related languages of Australia. Nonetheless, it is important to persist, since the study of linguistic change, like the study of language acquisition, will play a central role in determining the reality of certain suggested limitations on the possible forms of grammars.[9] I have suggested here that one such limitation might be the constraint (11). If it should turn out that the above account of the Australian ergative is correct, then the suggested constraint on synchronic grammars would thereby receive some empirical support.

NOTES

1. This work was supported in part by the National Institutes of Health (Grant MP-13390-01).

2. I give examples from actual Australian languages in this note. First, Lardil (of Mornington Island, Qld.), a type-A language:

(1') (i) ʈaŋka puti-ʧuɾ
(man fall-future*)*
'The man will fall down.'

(ii) ʈaŋka ka-ŋkuɾ piɾŋen-kuɾ
(man speak-future *woman*-obj:fut*)*
'The man will speak to the woman.'

(iii) ʈaŋka ɳe-ʧuɾ piɾŋen-kuɾ
(man hit-future *woman*-obj:fut*)*
'The man will hit the woman.'

(iv) ŋawa pe-ʧuɾ piɾŋen-kuɾ
(dog bite-future *woman*-obj:fut*)*
'The dog will bite the woman.'

(v) piɾŋen pe-yi-ʧuɾ ŋawu-kan
(woman bite-passive-future *dog*-agt:fut*)*
'The woman will be bitten by the dog.'

For a discussion of the Lardil passive, see Hale, 1965.

To exemplify type-B, I use Walbiri, of Central Australia:

(2') (i) ŋarka lpa-Ø n^{y}ina-t^{y}a
(man past-*he sit*-past*)*
'The man was sitting.'

(ii) ŋarka lpa-Ø-ļa kaɳʈa-ku waŋka-t^{y}a
(man past-*he*-her_{d} *woman*-obj *speak*-past*)*
'The man was speaking to the woman.'

(iii) ŋarka-ŋku ǀpa-Ø-Ø kaɳa paka-ɳu
(man-erg past-*he-her*$_a$ *woman hit*-past*)*
'The man was hitting the woman.'

3. Kiparsky has assembled an impressive body of evidence supporting this position in an as yet unpublished paper entitled 'How abstract is phonology?' (1968b).

4. I have discussed this in an unpublished paper (Hale, 1967) specifically about Walbiri. I attempted there to account for the possibility of objective (or dative) inflection on objects in such sentences as

ŋat^{y}u ka-ɳa ǀawa n^{y}ina-mi, wawiri-ki panti-ɳi-
n^{y}t^{y}a-waŋu
(I present-*I* negative *be*-nonpast, *kangaroo*-obj
spear-conj-infinitive-negative*)*
'I have not speared a kangaroo. I am negative with respect to having speared a kangaroo.'

by arguing that the passive transformation is blocked in the embedding due to the fact that the subject (/ŋat^{y}u/ *'I'*) is raised into the dominant sentence. Since the passive does not apply, the object (/wawiri/ *'kangaroo'*) remains under VP and, therefore, receives objective inflection by the case-marking convention. I would now reformulate this proposal slightly - i.e., subject-raising prevents application of the radical-changing portion of the passive rule, but it does not block the part of the rule which inserts the passive inflection (that is to say, the conjugation marker (-conj-)) in the verb word.

5. For a discussion of transformational relationships among surface structures, see Harris, 1957.

6. It might be worth considering the possibility that the preference for the passive surface structures relates to the suggestion that children, in language acquisition, prefer marked forms over unmarked forms (*cf.*, Slobin, 1968, pp.42-3).

7. I have discussed this evidence in Hale, 1968.

8. I am referring here to the person-marking suffixes appearing in the auxiliary (second word) in such Walbiri sentences as

ŋat^{y}ulu-ḷu ka-ṇa-ŋku n^{y}untu n^{y}a-n^{y}i
(I-erg present-*I-you you see*-nonpast*)*
'I see you.'

n^{y}untulu-ḷu ka-npa-t^{y}u ŋat^{y}u n^{y}a-n^{y}i
(you-erg present-*you-me me see*-nonpast*)*
'You see me.'

and in the verb-word in such Nyangumata sentences as

ŋat^{y}u-lu n^{y}untu yiri-limi-ṇi-nti
(I-erg *you see*-future-*I-you)*
'I will see you.'

For a description of the Nyangumata person-markers, see O'Grady, 1964.

9. The relevance of historical studies to synchronic grammars is discussed at length in Kiparsky, 1968a,b.

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