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Grammatical Relations and Relational Grammar

Edited by Brian D. Joseph

Papers By

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Preface

In recent years, syntacticians have increasingly come to focus on the role played by traditional notions such as subject, direct object, and indirect object in the organization of the syntax of particular languages and of language in general. The importance of these so-called "grammatical relations" has thus become a major issue in descriptive studies in syntax as well as in theoretical studies. This interest in grammatical relations has given rise to a theoretical framework, commonly referred to as Relational Grammar, in which grammatical relations are taken to be primitive, undefinable notions that occupy a central role in the theory, but it extends into other theoretical frameworks as well, such as the Lexical Functional Grammar of Bresnan and Kaplan, in which grammatical relations are recognized as important but do not play as central a role in the overall theory.

The papers in this volume represent a contribution to the growing body of literature dealing with grammatical relations and their place in syntactic theory and description. The first three papers explore the role of grammatical relations in language-particular descriptive studies on Plains Cree, Picuris, and Modern Greek respectively, while the other papers are more concerned with theoretical aspects of general constraints on the use of grammatical relations in language descriptions or of their representation in linguistic theory. Some of these papers work within a Relational Grammar framework whereas others adopt, or argue for, different theoretical frameworks, such as Montague Grammar. What all of these papers have in common, though, is their examination of the role of grammatical relations in syntax.

Several of the contributions began as papers for seminars held within the Department of Linguistics in 1981 (Jolley's for B. Joseph's seminar on Relational Grammar and Nerbonne's for A. Zwicky's seminar on Argumentation in Linguistics), while the others have an independent origin--the paper by Zaharlick, a member of the faculty of the Department of Anthropology at Ohio State University, was read as an invited lecture before the Department of Linguistics in February 1981, Dowty's paper was given as part of the Harvard University Conference on Grammatical Relations in December 1981, and Joseph's paper on Greek advancements to subject was read at the winter meeting of the Linguistic Society of America in December 1981.

At this point, it is best to let the papers speak for themselves, though special thanks must be rendered to Ms. Marlene Deetz Payha of the Department of Linguistics for her skillful and speedy preparation of the typescript for this volume.

BDJ
March 1982

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On the Plains Cree Passive: An Analysis of Syntactic
and Lexical Rules

Catherine A. Jolley

1. General Introduction.

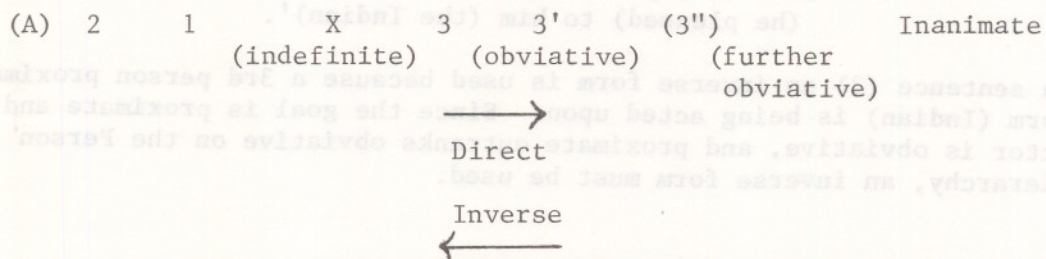
In this paper, certain verbal constructions in Plains Cree, traditionally interpreted as non-passive, are reanalyzed as passive and it is argued that by postulating a passive construction as an integral part of the Cree verbal system the entire Cree grammar is clarified.¹ Section 1 provides a brief sketch of the Plains Cree verbal system, and traditional analyses of the construction in question are reviewed. Section 2 considers the question of how we might best "diagnose" passives cross-linguistically and Perlmutter and Postal's characterization of a universal passive in a Relational Grammar (RG) framework is appealed to. Section 3 provides the central arguments for a passive construction in Plains Cree, and Section 4 considers a class of lexical passives in Cree.

1.1. Introduction to the Cree Verbal System.

Verbs in Plains Cree,² as in other Algonquian languages, exhibit complex verbal morphology, inflecting for number, person, and gender of both subject and object. Consequently, verbs can belong to at least one of the four verbal paradigms: transitive animate (TA), transitive inanimate (TI), animate intransitive (AI), or inanimate intransitive (II). Briefly, they are differentiated as follows: A TA verb expresses the performance of some action on an animate goal (i.e. object) by an animate or inanimate actor; TI verbs express some action on an inanimate goal by an animate or inanimate actor; AI verbs ascribe a quality or action to an animate entity;³ and an II verb ascribes a quality or action to an inanimate entity.

1.1.2. Direction.

Within the TA paradigm, in both the independent and conjunct orders,⁴ there is an additional category of direction, important for actor/goal distinctions in the sentence. The two sets which make up the category of direction are known as Direct and Inverse. Traditionally in Algonquian, direct and inverse forms, expressed morphologically in Cree by direct and inverse theme markers /e/ and /ekw/ respectively, have been analyzed as denoting "the direction of the action." All TA verbs include a special direction marker or theme marker, the choice of which is based on a person hierarchy, (in Hockett's terms (1966:60), an obviation hierarchy):



If the actor of a TA verb is higher on the hierarchy (leftmost) than the goal, in Hockett's terms "less obviated", the resulting form is direct; if the goal is higher or "less obviated" than the actor, the resulting form is inverse. So, for instance, a 1st person acting on a 3rd person goal would be indicated with a direct theme sign, while action by a 3rd person on a 1st person would be indicated by an inverse theme sign. (examples are given in Section 1.2.) The hierarchy in (A) may be better termed Direction or Person Hierarchy so as not to confuse it⁵ with the proximate/obviative distinction in 3rd person forms in Cree.

1.2. The following sentences exemplify the use of direct and inverse forms:

- (1) tsikāmā äkusi nistam kā- isih-wāpamat
 certainly thus first relative marker thus to see
 (TA conjunct direct 3-3')
- ayisiyiniw wāpiski- wiyāsah⁶
 human being white man [B2-23]
 (Indian) obviative
 proximate sg.

'Certainly, thus it was, that the Indian first saw white man.'

In this sentence we understand that a 3rd person (Indian) is the actor, and a 3rd person obviative (white man) is goal, therefore a direct form is used, given that proximates outrank obviatives on the Person Hierarchy given in (A).

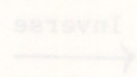
- (2) (ki)ka- muwāwāwak ōki atimwak [B8-16]
 future to eat those dogs
 (TA 2pl-3pl direct prox. pl. prox. pl.)

'You will eat those dogs.'

- (3) äwak öhtsih pikw isih-kā- tötäkut
 this because whatever thus relative to do
 (TA 3'-3 conj. inverse)
- mōniyāwiyiniwa [B6-7]
 Canadian
 obviative

'That is why the Canadian has been able to do whatever (he pleased) to him (the Indian).'

In sentence (3) an inverse form is used because a 3rd person proximate form (Indian) is being acted upon. Since the goal is proximate and the actor is obviative, and proximate outranks obviative on the Person Hierarchy, an inverse form must be used.



- (4) namuya matsi-kakway kā-kih-miyikuyāhk
 not evil thing rel. past to give
 (TA conj. inv. 3-1p)

manitōw [P4-23]
 spirit
 proximate

'It is not an evil thing which the spirit has given to us.'

1.3. Analyses of Inverse Markers.

Algonquianists have given various analyses of direct and inverse markers at various points in time. These different analyses are considered below.

1.3.1. Traditional Explanations.

At least some investigators have hypothesized that while direction markers do serve to specify actor and goal, inverse forms themselves are, in a sense, passive forms. (See Howse 1844, Hunter 1875, Voegelin 1946). Voegelin writes of Delaware, another Algonquian language, 'Transitive animate direct (active) and inverse (passive) third persons are marked, respectively, by suffixes -a(w)- and -kw. The two voice types are parallel, enjoying much the same possibilities of person and number affixation. Thus, in the direct (active), the prefixed person is actor while a third person is goal: nu·hala "I keep him"...But in the inverse (passive) the prefixed person may be regarded as a psychological subject with a third person agentive, or more briefly, the prefixed person may be translated as a goal with 3rd person as actor: nu·lhaləkw "I am kept by him".' In fact, many of the Cree inverse forms have been translated into English as passive (specifically in Bloomfield 1934).

- (5) nama wīhkats nipahik nāhiyaw piyāsiwah [B4-15]
 not ever to kill cree thunderers
 (TA inv. 3'-3 prox. obviative
 Indep. Indic.)

'Never is a Cree killed by the Thunderers.'

- (6) āka wīhkats uhtinwah kā-nipahikut [B4-14]
 not ever winds rel. to kill
 obviative (TA conj. inv. 3'-3)

'He is never killed by winds.'

- (7) nayāstaw wāpiski-wiyas matsi- manitōwah ä-
 only white man evil spirit conjunct
 proximate obviative (TA conj. inv. 3'-3)

kiskinōhamākut wayōtisiwin [B4-39/40]
 to teach wealth

'Only white man was taught by the Evil Spirit how to acquire wealth.'

- (8) äkwah nahiyaw wiya manitōwa kīh-
 now Cree himself God past
 prox. obviative (TA 3'-3 inv. Indep. Indic.)

kakäskimik
 to teach

[B10-33/34]

'The Cree was now taught by God himself.'

More recently, however, analysts have seen direct and inverse forms differently. Wolfart notes, 'The extensive symmetry of the transitive animate (TA) paradigm and the reversibility of direction in many forms are highly reminiscent of voice in the Indo-European languages. However, the tempting similarity of the verbal forms must not be allowed to obscure the fundamental difference' (1973:25). Also, as Wolfart points out, Bloomfield in his work with various Algonquian languages claims no voice contrast in the TA paradigm, but maintains the direct/inverse contrast, and Hockett follows his example in his description of Potawatomi (see Bloomfield 1958). Bloomfield and Hockett differ, however, as to whether there exists a productive passive in Cree. Bloomfield terms passive the indefinite actor forms in all four main paradigms, which usually translate into English as agentless passives. The following sentences provide examples of indefinite actor forms.

- (9) äkwah ispīh kiskinohamōwan tanīs ta-
 then at that time to teach how future
 (TA indef.-3 direct (AI 3rd
 Indep. Indic.) sg. conj.)

tōtahk
 to perform

[B4-3/4]

'And at the same time, he was taught how to perform it (by someone).'

- (10) nāhiyawak äkutah tahtw- āskiy
 Cree pl. to that place every year
 prox. pl.

kīhmiyawak
 past to give
 (TA indef.-3 pl. direct Indep. Indic.)

[B4-28/29]

'It was given to the Cree every year (by someone).'

- (11) potih nipahaw
 Oh! to slay
 (TA indef.-3 direct Indep. Indic.)

[B6-12]

'He was slain (by someone).'

Hockett, working with Potawatomi, which has no indefinite actor forms, argues against a passive in Algonquian in any sense. 'Algonquian "passives" are not like those of Latin or Greek; rather they (the indefinite forms) are special inflected forms for indefinite actor, showing the same inflectional indication of object shown by other inflected forms of the same verb' (Bloomfield 1958:vi.) I provide a different account of these indefinite forms in Section 3.

1.3.2.

The general consensus more recently, then, has been that inverse/direct forms should not be analyzed as passive but should instead be strictly interpreted as marked for "direction" so as to reflect the actor/goal relationship. It should be pointed out, however, that this consensus is based entirely on the notion of passive as known from Indo-European languages: a stylistic option derived in some sense from more basic active sentences, though there are restrictions even here. (Syntactic arguments are given below which shed a different light on the problem). It is argued on a number of grounds that these inverse forms, as Voegelin suspected, are indeed passives. (For parallel analyses in other Algonquian languages, see Rhodes 1980 and LeSourd 1976).

2.1.

What is needed, then, is a clear statement of what the passive construction consists of. I believe the reason for most Algonquianists' failure in recognizing the passive is this lack of a diagnostic tool. As Perlmutter and Postal (1977, henceforth P & P) point out, the cross-linguistic variation found in verbal morphology, nominal case marking, and word order in passive sentences is such that it is virtually impossible to "identify" universal passive indicators of any sort. However, it is possible, given general observations about passive universally, to characterize the construction succinctly and to use certain aspects of it diagnostically to determine "passiveness". P & P argue that in characterizing passive universally, we must appeal to notions such as "subject of" and "object of", two of the grammatical relation primitives of Relational Grammar. P & P's claim is that I and II below characterize passive in every language, though they will be manifested differently cross-linguistically. Thus, in the sentence John was hit by Bill a final passive intransitive stratum (intransitive in the sense that there is no object) results from an initial transitive stratum. The claim made by P & P is that intransitivity of the final stratum will be true of any passive construction in any language.

- I.
 - i. A direct object of an active clause is the (superficial) subject of the corresponding passive.
 - ii. The subject of an active clause is neither the (superficial) subject nor the (superficial) direct object of the corresponding passive (specifically, it is en chômeage or is absent entirely, as in many languages with agentless passives).

(i) and (ii) taken together have the following consequence:

- II. In the absence of another rule permitting some further nominal to be direct object of the clause, a passive clause is a (superficially) intransitive clause.

2.2.

Thus, we now have a diagnostic tool by which to test the so-called passive in Cree, in that if inverse forms can be shown to be syntactically intransitive, they may be called passive. It is argued that despite the claims to the contrary by Wolfart, Bloomfield, and Hockett, inverse forms in the TA paradigm are indeed passive forms. Moreover, it can be shown that these forms are obligatorily passive, based on the Person Hierarchy

discussed earlier. Finally, the passive analysis of inverse forms to be given here has the added benefit of explaining a number of troublesome grammatical relations and problems associated with any traditional analysis of the inverse forms:

- (1) Why inverse and direct forms appear to show an asymmetry with marking of direct object and subject at different syntactic levels.
- (2) Why the inverse theme marker gives no information as to the object or subject, while the direct theme marker does, in general.
- (3) Why some form of the inverse theme sign /ekw/ shows up, not only in inverse forms, but also in what Wolfart calls "marginal" paradigms-- the Indefinite Actor Paradigm and the Inanimate Actor Paradigm.
- (4) Why the indefinite actor forms show no inverse form with the TA paradigm.

By reanalyzing morphology traditionally treated as inverse markers as a marker of the passive, we can answer the above questions, and account for some of the seeming inconsistencies.

3.1.

Below we consider properties of Independent Order verb agreement in some detail. The analyses given in this section follow the traditional Algonquian approach in, for example, the use of terms actor and goal. In Section 3.3, we consider an alternative to such an analysis, which provides arguments for a passive analysis.

3.1.2.

It is first important to understand the agreement properties of the direct forms in the TA paradigm. TA verbs make inflectional references to an actor and an animate object. As was noted earlier, TA direct forms can conceivably be any one of the following types, based on the Person Hierarchy restrictions:

- (a) A second person acting on a first person:

kitasamin 'you feed me' [W24-2.5]

- (b) A non-third person acting on a third person:

nitasamāw 'I feed him' [W24-2.5]

kitasamāw 'you feed him'

- (c) A proximate third person acting on an obviative:

asamēw 'he (prox.) feeds him (obv.)' [W24-2.5]

- (d) An obviative acting on another (further) obviative:

asamēyiwa 'he (obv.) feeds him (obv.)' [W24-2.5]

- (e) An indefinite person acting on a third person:

asamāw 'someone feeds him' [W24-2.5]

In considering the inflectional morphology of the above examples, it is important to note four types of forms:

- (1) Those whose reference involves a third person and a non-third person--the mixed set;
- (2) Those whose reference is to third person only--third person forms
- (3) Those whose reference is to first and second persons only--the you-and-me set
- (4) Those whose reference is to an indefinite actor--the indefinite paradigm.

In the mixed set of the Independent Order, both actor and goal are expressed morphologically. In nitawamāw 'I feed him', ni- is the personal prefix identifying a first person and -w the suffix identifying a third person proximate singular form. The -a- functions as a theme marker for direct action.

In the third person forms, only the actor is expressed morphologically, so that in asamēw 'he (prox.) feeds him (obv.)', -w marks third person proximate singular, with -e- functioning as direct theme sign.

In the you-and-me set, only the actor is expressed morphologically, so that in kitasamin 'you feed me', the prefix ki- and the suffix -n taken together identify a second person, and -i- functions as the direct theme marker.⁷

It should be mentioned that not only can direct/inverse forms be identified in the Independent Indicative Order of the TA paradigm but also in the Conjunct Order. The same principle of direction follows there, though the specific conjunct morphology is not dealt with here.⁸

Now we turn to verbal morphology in the inverse forms. The following are inverse forms for the root asam- 'to feed' (based on the forms in [W24-2.5]):

- (a) A first person acting on a second person:

kitasamitin 'I feed you'

- (b) A third person acting on a non-third person:

nitassamik 'he feeds me'

kitassamik 'he feeds you'

- (c) An obviative third person acting on a proximate:

asamikwak 'he (obv.) feeds them (prox. pl.)'

- (d) A further obviative third person acting on an obviative:

asamikoyiwa 'he (further obv.) feeds him (obv.)'

- (e) An indefinite actor acting on a non-third person:

nitassamikawin 'someone feeds me'

The inverse theme marker in all but the you-and-me set is underlyingly /ekw/ ~ /eko/ ~ Ø, following Wolfart's morphophonemics, with phonological variants of -ikw, -iko-, -ik-, and Ø, and idiosyncratic

morphological variants such as -ikawi- in the indefinite actor paradigm. /et/ ~ /eti/ (realized as -it- and -iti-) marks inverse forms in the you-and-me set. Note the following agreement properties of the inverse forms:

In kitasamitin, ki--n agrees, in this case, with the goal, not the actor as it would were it a direct form. -it- marks inverse action.

In asamikwak, -wak marks a proximate plural goal third person and -ik marks inverse action.

In asamikoyiwa, -iko- marks inverse action, -yi is a thematic obviative morpheme, and -wa identifies that a third person is involved, in this case a third person goal.

Finally, in nitasmikawin, ni--n identifies a first person, in this case the goal, and -ikawi- is the suffix of the indefinite actor paradigm.

3.2. Passive Analysis.

It is essential, in order to get a clear picture of the Cree verbal system, to analyze agreement properties of personal affixes and direction markers separately. The marking of grammatical relations and how the direction markers and personal affixes function, given a traditional Bloomfieldian analysis, is contrasted with how they function give a passive analysis. I show that without a passive analysis of the inverse forms the appearance of personal affixes is not correlated with grammatical relations at any one level. With a passive analysis, however, a generalization can be made concerning agreement with final subjects. Further, if we analyze the inverse marker /ekw/ as a passive marker and direct markers as agreement markers for final objects, we can explain the fact that /ekw/ provides less information than direct markers concerning objects. It is argued that, in fact, /ekw/ signals the absence of a final object (though it does indicate that there was an initial object), which strongly suggests the intransitivity of these "inverse" forms.

3.2.1.

The following charts outline the information about grammatical relations which are available from personal affixes, given the traditional analysis of direct and inverse forms:

Chart A

	<u>Direct</u>	<u>Inverse</u>
(A) <u>Mixed Set</u>		
	Subject and Object	Subject and Object
	kitasamāw 'you feed him'	nitasamik 'he feeds me' ⁹
(B) <u>Third Person</u>		
	3-3' Subject	3-3' Object
	asamēw 'he (prox.) feeds him (obv.)'	asamikwak 'he (obv.) feeds them (prox.)'
	3'-3'' Subject and Object	3'-3'' Subject and Object
	asamēyiwa 'he (obv.) feeds him (obv.)'	asamikoyiwa 'he (further obv.) feeds him (obv.)'

Chart A (cont'd)

(C) You-and-Me Set

Subject	Object
kitasamin 'you feed me'	kitasamitin 'I feed you'

(D) Indefinite Forms

Object	Object
asamāw 'someone feeds him'	nitasamikawin 'someone feeds me'

The following chart shows information provided by direct/inverse theme markers concerning the object:

Chart B

<u>Direct:</u>	<u>Object</u>
ā	3 or 3'
ē	3' or 3''
i	1
<u>Inverse:</u>	
/eti/	2
/ekw/	1, 2, 3, 3', indef.

3.2.2.

If we assume that different grammatical relations can be marked at different levels (see Perlmutter 1980) and if we make the further assumption that inverse forms are passive, a pattern of agreement begins to emerge.

In the you-and-me set, kitasamin 'you feed me', the initial and final subject (second person) is marked by ki(t)-n. (In direct forms such as we have here, we assume that the initial level and the final level subject are the same; under a passive analysis initial object equals final subject for the same nominal). In this example, if -i- is analyzed as an object agreement marker instead of a direct marker, the final and initial object is also indicated. In kitasamitin, 'I feed you' agreement is with initial object (second person). If -it(i)- is analyzed as an agreement marker (instead of a passive marker) then initial subject is also marked here.¹⁰

In the mixed set, kitasamāw, 'you feed him', initial and final third person object is marked by -w. In the inverse forms, nitasamik 'he feeds me' and nitasamikwak 'they feed me', both initial object and initial subject are marked. ni- marks first person initial object/final subject and \emptyset marks a third sg. initial object (see footnote 9) and -wak marks a third pl. initial object.

In third person forms, as in asamēyiwa 'he (obv.) feeds him (further obv.) initial and final subject is marked; 3' is marked by -wa and the initial/final object, 3'', is marked by -yi. In the inverse form, asamikoyiwa, the initial object/final subject and the initial subject/final chômeur are marked respectively by -wa and -yi.

In the indefinite paradigm, direct form asamāw, 'someone feeds him', initial/final object is marked by -w, and again, if -ā- is an agreement marker, initial/final subject is marked. In a form in which an indefinite is acting on something higher on the hierarchy, for instance indef. -1, nitasamikawin 'someone feeds me' the initial object is marked by the prefix ni(t)- (the initial object is also the final subject, given the passive analysis).

The various direct and inverse markers are considered more closely below. The direct marker -ā- found in third person forms signals that an initial or final object is 3 or 3'. -ē-, also found in third person forms, signals an initial/final object as being 3' or 3''. An -i- direct marker, found in the you-and-me set, marks an initial/final object as being first person.

On the other hand, with the so-called inverse markers, we get exact information only as to what the initial object is; /et(i)/ signals the initial object as second person, and an inverse marker of /ekw/ signals an initial object of either first, second, third (prox.) or third (obv.) persons.

3.2.3.

Given Bloomfield, Hockett, and Wolfart's analysis of direction markers, it is not possible to link the appearance of specific personal affixes and their referents to certain grammatical relations at any one level. (See Chart A). With a passive analysis of these inverse forms, there is always agreement with final subject. We can formulate the following agreement rule for Cree:

- (D) The verb must always agree with final terms.

The indefinite forms seem to be an exception to this generalization, but if we posit \emptyset as the indefinite subject marker, we can save the generalization.¹¹

Although there is always agreement with final subject, there is, in some cases, also agreement with final object. The cases cited above involved 3''-3' forms, and third persons in the mixed set showing a mark for initial object/final subject in the inverse. Although this 'extra agreement phenomenon' may seem inconsistent with the operation of the other sets, its consistent application allows us to state just when extra agreement will occur and so does not threaten to weaken our generalization concerning agreement with final subject.

Let us turn to the implications of information given by direction markers: the imbalance of predictions made by direct and inverse markers cannot be overlooked. While direct markers help delineate the initial object to a fairly specific degree (since there are three different direct markers), /ekw/ gives no such information at all, with the same morpheme figuring in so many of the inverse forms (see above). From this observation, we might conclude that direct markers are in some sense agreement markers for final objects (i.e. direct theme markers mark both initial and final object, since the nominal has the same grammatical relation at both levels).

On the other hand, /ekw/ simply registers the possibility of one of several initial objects, and initial objects only.

In this way, then, the so-called inverse forms are rendered intransitive since these clauses show no final object (See Perlmutter 1980). The intransitivity of /ekw/ constructions is a crucial consequence for our passive analysis since this was recognized as a defining property of passive clauses in Section 2. Our analysis, in fact, rests on maintaining that all /ekw/ constructions are intransitive.

3.3.

It seems at this point, then, that the passive analysis is secure, supported by specific agreement phenomena noted above. Given what we now know about agreement, problems with the you-and-me set can be examined.

Up until this point we have assumed that subject-verb agreement is defined on final terms. Thus, if there is 2 → 1 advancement, the theme marker shows no overt indexing of the object. As LeSourd (1976) points out in examining this same question in Fox, another Algonquian language, the exception to this seems to be in the you-and-me set, where the inverse marker is /i/ ~ /en(e)/. The cognate forms in Cree, /e/ ~ /et(i)/, are unique in showing no form of /ekw/. Also in Cree, as in Fox, these "passive" markers indicate the object as being first person (/et/ occurs in the direct and inverse sets of the TA paradigm as the first person suffix). LeSourd has suggested that in order to account for these aberrant forms, which are counter to the generalizations which the passive analysis allows us to make, object agreement must (in his terms) precede passive in forms of the you-and-me set.¹² In this way, then, even after the passive has applied and the first person subject is place en chômage, the inverse marker notes the presence of a first person at some level. If we assume, as LeSourd does, that this is an object agreement marker, then we have a problem in not being able to call this clause intransitive; our passive hypothesis thus seems endangered. However, if we assume that, in this case, the passive marker is indexing the initial 1 in the clause and does not neutralize it as the other sets do, then our generalization is safe. This, I believe, is the more viable analysis, and below I discuss my reasons for arriving at this conclusion.

3.3.1. The you-and-me inverse forms can be analyzed:

- (A) As not being passives in the same sense as the other sets.
- (B) As being passives, but passives with a few special features:
 - (1) The passive marker is /et(i)/ instead of /ekw/ or some variant of it.
 - (2) Like the 3"-3' forms, there is agreement with more than just final subject, if /et(i)/ is an indicator of an initial first person subject.

First, let us look at reasons for not considering these forms as passive. Support for this analysis comes from the fact that no form of /ekw/ occurs as the "inverse" marker. A reason for this inconsistency of you-and-me forms not showing a normal passive form may lie within the you-and-me set itself. Hockett (1966:65) identifies you-and-me forms as "local" forms: 'Local forms can thus be classed (using Bloomfield's terms) as I-thee and

thou-me.' Thus, while first and second person forms rank highest on the hierarchy and are functional in defining direct vs. passive forms in the mixed set, it could be that in relation to one another you-and-me forms are not passive in the same sense as the rest. Interaction between first and second person positions on the hierarchy may not be the same as interaction between other positions on the hierarchy. In fact, first and second persons may form a unit, i.e. occupy the same rank on the hierarchy in which passive is not an option. This does not mean that first and second person forms are "immune" in some sense to passive, since they do operate in a predictable manner in the Mixed-Set. The suggestion is that they do not reciprocally form passive. Moreover, there seems to be evidence that such a restriction on first and second person forms is not uncommon. Specifically in Picuris, passive is obligatory if the subject is third person and the object is a non-third person. Passive is optional, however, when the subject and object are both third person, and impossible if subject is non-third person and object third person, or when subject and object are both non-third persons.

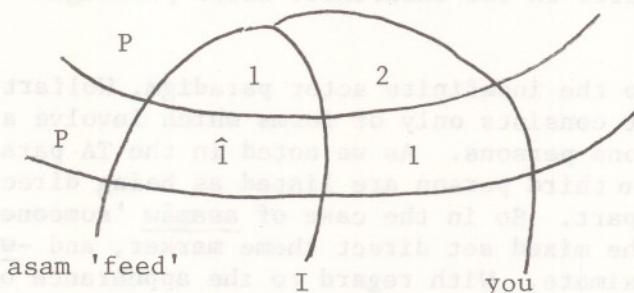
There is also a problem in that what we considered to be a mark of the passive, /ekw/ does not show up in you-and-me set "inverse" forms, though it does in every other set, and as we shall see certain "marginal" paradigms which are analyzed as passive. Obviously, /et(i)/ cannot be analyzed as a phonological variant of /ekw/. Though this absence of /ekw/ in the you-and-me set inverse forms is troublesome, it need not be the decisive factor in determining the non-passivity of these forms.

More troublesome is the fact that agreement in these "inverse" forms is not just with final subject. If /et(i)/ is analyzed as marking an initial first person subject, then, like the 3"-3' forms, we have agreement with more than final subject. This agreement with an initial subject (and given the passive analysis a final chômeur) creates two problems. First, it threatens the generalization stated as (D) in Section 3.2.3, and second, it seems to suggest that the chômeur is marked on the verb in these cases. As was suggested, we might assume that this marks agreement not with a chômeur but with an initial subject, a feature of Cree grammar which seems independently motivated by 3"-3' forms and third person forms in the mixed set in the inverse. Though this marking of initial terms in restricted forms may appear ad hoc, the consequences of not analyzing the forms this way must be considered. If we are forced to give up a passive analysis in you-and-me forms because of this agreement property, we will also be forced to give it up for the other forms similar to them. This would create a serious problem since 3"-3' forms do indeed show /ekw/ in their inflection. Further, this would mean splitting up third person forms and mixed set forms into those that do allow passive and those that don't. At present, there seem to be no independent reasons for doing this.

3.3.2.

The decisive evidence in favor of you-and-me inverse forms being analyzed as passive comes from the generalization concerning agreement with final subjects. If we do not interpret the inverse form as a passive, with second person initial object advancing to second person final subject, then the only exception to our generalization concerning agreement with final subjects is this one. If we assume, as the passive analysis allows us to, that second person is the final subject, we can safely posit

second person Subject in inverse forms, and we do not miss a generalization. In the you-and-me direct forms, then, kit-n in kitasamin 'you feed me', as does the kit-n in kitasamin 'you feed him' and also the same prefix which occurs in the IA and TI paradigms, for example, B8/9 kika-nimihitunawaw 'you (pl.) will dance' (AI), and B8/11 kik-astanawaw 'you (pl.) will place it' (TI), marks an initial and final second person subject, and in the passive form kitasamitin 'you are fed by me', kit-n marks a final second person subject. (The same principle can be stated in terms of ni-n where ni-n marks an initial/final first person in the AI and TI paradigms as well as in the TA paradigm direct forms where first person is acting on anything except a second person.) The stratal diagram below illustrates the change in terms kitasamitin:



The evidence of the final-subject agreement generalization suggests that it is a better option to consider you-and-me forms as idiosyncratic passives instead of non-passive forms. Otherwise, Generalization (D) is threatened and the agreement pattern which emerges from the Cree verbal system as a result of it is destroyed.

3.4. Extension of /ekw/ in other paradigms.

An analysis of /ekw/ as being the marker of passive allows us to account for two additional paradigms treated differently by Wolfart: the TA indefinite actor paradigm and the TA inanimate actor paradigm. In both of these paradigms, a variant form of /ekw/ occurs: /eko/ in the inanimate actor paradigm and /ekawi/ in the indefinite actor paradigm. Note the following sentences containing examples of these forms:

- (12) kīkway mākwahikōw [W61-5.83]
 something to bother
 (inanimate-3, inanim. paradigm)

'Something bothers him.'

In this case, an inanimate is acting on a third person animate; -iko is the inverse marker in this paradigm and -w marks a third person object.

- (13) äyukuh tahtw-āskiy kita- tōtahkik ayīsiyiniwak
 this annual future to do people
 (TI conj. 3 pl) prox. pl

kīh- miyāwak [B4-2/3]
 past to give
 (TA indef.-3 pl.)

'The people were given the annual performance of this rite.'

In this sentence, the goal is third person, so the verb is inflected as a regular TA independent indicative.

Contrast (13) with (14):

- (14) nipīhtokwehikawinān [W62-5.84]
to take inside
(Indef-1 pl. Indefinite Paradigm)
'We were taken inside (by someone).'

Since the goal in this sentence is non-third person with an indefinite actor, it is inflected in the indefinite actor paradigm.

3.4.1.

With regard to the indefinite actor paradigm, Wolfart (1973:62, Section 5.84) notes that it consists only of forms which involve a non-third goal, i.e. first and second persons. As we noted in the TA paradigm, forms with indefinite acting on third person are listed as being direct forms with no inverse counterpart. So in the case of asamāw 'someone feeds him' - -ā- functions as the mixed set direct theme marker, and -w- identifies a third person proximate. With regard to the appearance of /ekawi/ Wolfart states (1973:62): 'The relation between /ekw/ and the suffix of the TA indefinite paradigm /ekawi/ remains unexplained'. Though Wolfart, in making this statement, is concerned only with the morphology of the /ekw/ ~ /ekawi/ relationship, he gives no indication that they should be related in any way. By analyzing these indefinite actor forms as passive, we can account for (1) the similarity (though not the exact forms) of the morphemes /ekw/ and /ekawi/ and (2) the fact that the indefinite actors in the main TA paradigm have no inverse counterparts. In fact, the separate indefinite actor paradigm contains forms which are all passive as I have characterized passive in Plains Cree, and /ekawi/ is evidence of this. Given the Person Hierarchy and the position of the indefinite on it, if an indefinite acts on first or second persons it must be an inverse form, or, under the new analysis, a passive form. The reason that indef.-3 forms are not contained in this marginal indefinite actor paradigm is that they are included as direct forms in the TA paradigm, and rightly so, assuming the form of the hierarchy given earlier.

3.4.2.

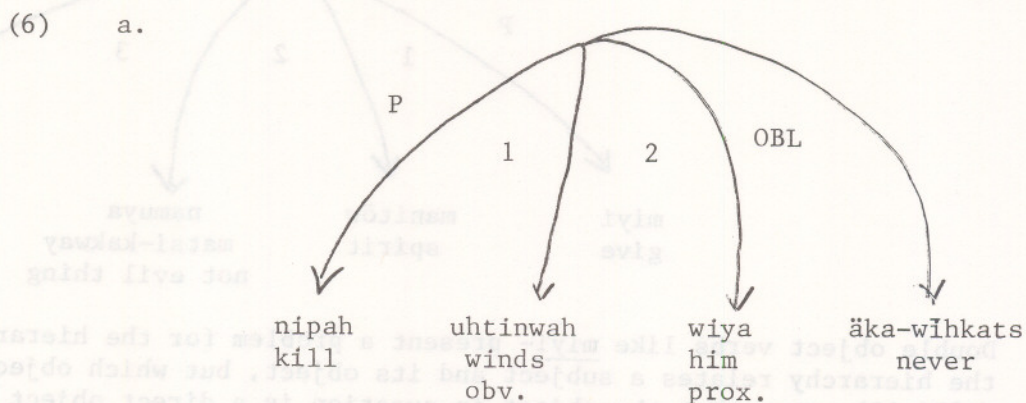
Following this same line of reasoning, it is also not surprising that we find /ekw/ in the inanimate actor paradigm. Wolfart states (1973:61): 'The transitive animate (TA) inanimate actor paradigm is based on the theme sign /ekw/ ~ /eko/'. Given our analysis of inverse forms as passives, we can account for the occurrence of /eko/. Assuming the person hierarchy, inanimates rank below all animates and would, therefore, require an inverse marker. Finally, in both the indefinite actor and inanimate actor paradigms, Generalization (D) argues for a passive analysis. In the sentence nipīhtokwēhikawinān 'they took us inside' where 'they' is indefinite, we note the first person plural affix ni-nan. Similarly, in the inanimate actor paradigm, Wolfart (1973:61) gives the following forms:

1	ni-	ikon
2	ki-	ikon
21	ki-	ikonanaw
3		-ikōw-, -ik
3 pl.		-ikwak

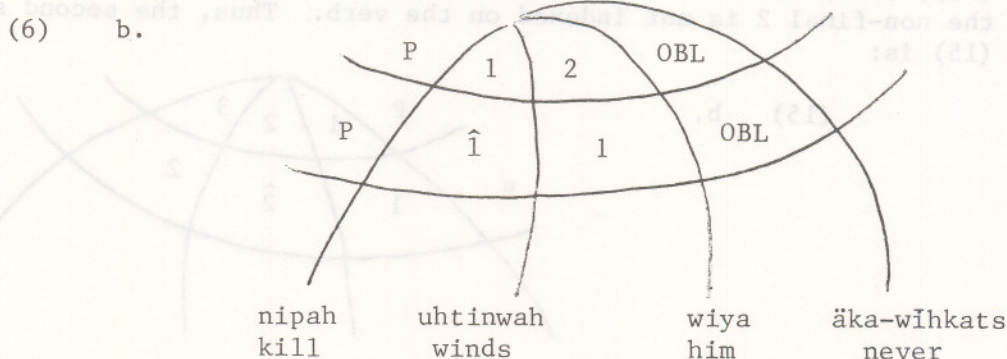
Thus, the distribution of ni- and ki- in these so-called marginal paradigms conforms Generalization (D) since first and second persons in these paradigms are final subjects in each case. Although the occurrence of the inverse marker within these two paradigms can be explained simply by appealing to directionality of an action, analyzing these forms as obligatory passive also allows us to account for the appearance of some form of /ekw/.

3.5.

Let us now give an analysis of sentence (6): äka wihkats uhtinwah ka-nipahikut 'He is never killed by winds' cited above employing the passive. In a relational framework, the initial stratum of this sentence would be:



In the initial stratum, then, winds is the subject and third person proximate form wiya 'him' is the object. Note that this stratum in Cree is not well-formed as a final stratum since a more obviated actor is acting on a less obviated goal. It is when this situation arises that the passive rule is obligatory, yielding the following network:



At this level in the network, /ekw/ marks the verb as passive, and -t marks the final subject as third person proximate sg. While there is no overt

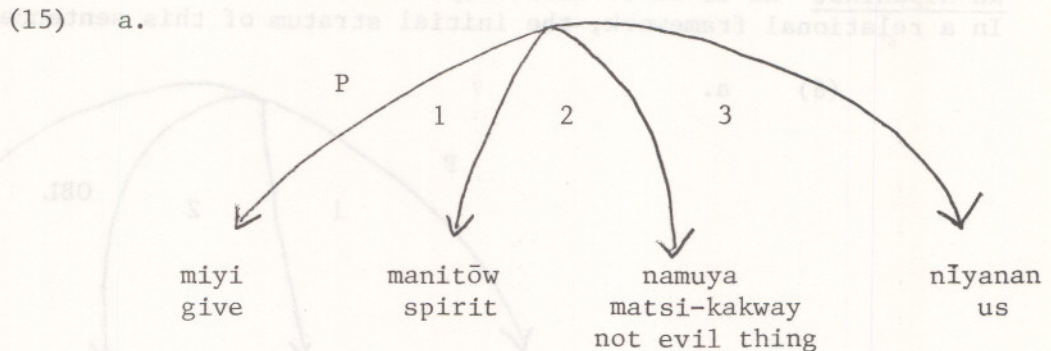
marker of uhtinwah as chomeur, it triggers no marking on the verb at all.

3.6. Double Object Verbs.

It is useful at this point to note consequences in Cree of Postal's (1980) Principle of Initial Determination. While in the above clause the proximate third person sg. pronoun is unquestionably the 2 term object, many 2 term objects in Cree are initial level 3's or Benefactees. Note the following sentence:

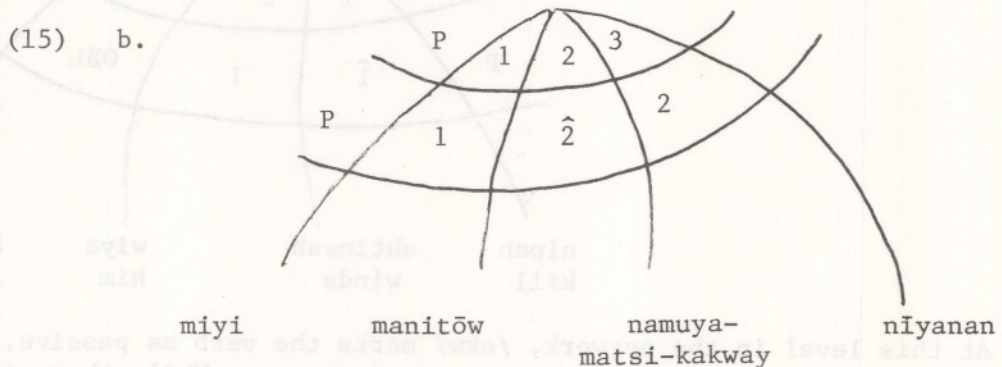
- (15) namuya matsi-kakwy kā- kīh- miyikuyāhk
 not evil thing rel. past to give
 (TA inverse conj. 3-1 pl.)
 manitōw spirit prox. [P4-23]

'It is not an evil thing which the spirit has given us.'



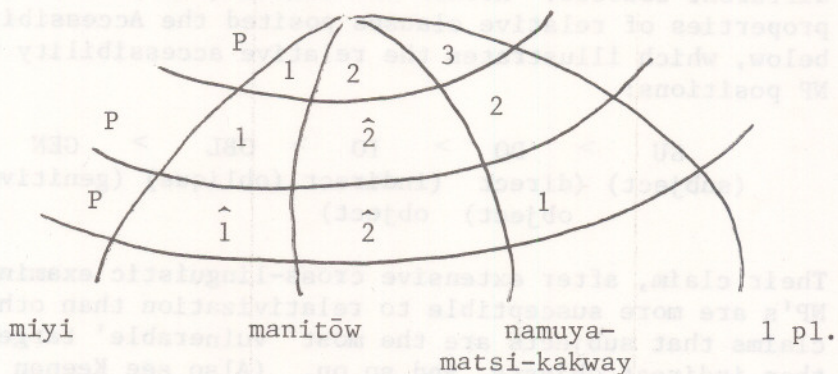
Double object verbs like miyi- present a problem for the hierarchy; i.e. the hierarchy relates a subject and its object, but which object? LeSourd (1976:19) notes that the object in question is a direct object only when a logical indirect object or benefactee object is absent: 'Whenever a logical indirect or benefactive object is present in a clause, it counts as a direct object for purposes of inflection'. The logical direct object triggers no index on the verb at all.

What these facts suggest is an advancement rule of in this case of (15), $3 \rightarrow 2$ with $2 \rightarrow \hat{2}$ as a necessary side-effect. This accounts for why the non-final 2 is not indexed on the verb. Thus, the second stratum of (15) is:



The rule, then, of $3 \rightarrow 2$ advancement is obligatory, and it is also the case that benefactees undergo obligatory $Ben \rightarrow 2$ advancement. In network (15b) the conditions are met for obligatory passive since a third person, which ranks lower on the Person Hierarchy than a first person, is acting on a first person. Thus the complete network appears as follows:

(15) c.



3.6.1.

Positing obligatory $3 \rightarrow 2$ or $Ben \rightarrow 2$ advancements has several important implications. First, it allows us to generalize the rule of passive as acting only on final 2's; otherwise, we would be forced to state a rule of "passive" at least 3 ways: once applying to direct objects, another to account for indirect objects, and still another to account for benefactee advancement. Although Perlmutter and Postal (to appear) argue that direct and indirect objects can be grouped together as simply Object, advancement of benefactee means a generalization to Object-advance-to-Subject won't work. Further, the $3 \rightarrow 2$ advancement analysis predicts the advancement of $2 \rightarrow 1$ under the conditions set forth by the Person Hierarchy. The analysis of Wolfart's (1973:75), which says that in double-object verbs the verb cross-references the subject and indirect (and not the direct) object, makes no such prediction. 'The meaning of these verbs clearly reflects their morphological structure: the inanimate goal of the underlying stem, although not cross-referenced in the derived verb, is still the primary object, and the animate goal of the derived stem is the secondary object; since in the great majority of instances it is the beneficiary of the action, we may also call these verbs "benefactive"'. What Wolfart fails to capture is a generalization concerning the different possible objects available in a TA form, and which ones actually receive morphological indexing in the paradigm.

3.7.

Thus, our passive analysis, taken together with $3 \rightarrow 2$ advancements accounts for the following facts:

- (1) The inverse and direct forms show an asymmetry with marking of direct object and subject at different syntactic levels.
- (2) /ekw/ provides no information as to object, in general.
- (3) /ekw/ shows up in the indefinite and inanimate actor paradigms.
- (4) The indefinite actor forms show no inverse form in the TA paradigm.

3.8. Support from Universal Grammar.

An additional piece of evidence which seems to support our passive analysis comes from Universal Grammar. Support for Johnson's Relational Hierarchy, given in Chapter 2, Section 2.1.2, has come from a number of different sources. Keenan and Comrie (1977) in their analysis of universal properties of relative clauses posited the Accessibility Hierarchy given below, which illustrates the relative accessibility to relativization of NP positions:

SU	>	DO	>	IO	>	OBL	>	GEN	>	O COMP
(subject)		(direct object)		(indirect object)		(oblique)		(genitive)		(object of comparison)

Their claim, after extensive cross-linguistic examination, is that certain NP's are more susceptible to relativization than others. The above hierarchy claims that subjects are the most 'vulnerable' targets, then direct objects, then indirect objects, and so on. (Also see Keenan (1975).) The similarity between the Accessibility Hierarchy and Johnson's Relational Hierarchy (SU < OBJ < IND. OBJ. < OBL) is striking.

Kuno's extensive work on the notion of "empathy" and syntax (1975, 1976a, 1976b, 1977) has resulted in hierarchies of the following sort:

speaker > hearer > third person

subject ≥ object ≥ by-agentive

human > animate nonhuman > thing

The similarity between Kuno's hierarchies and the Person Hierarchy in Cree is also striking (a difference being in the addresser/addressee positions).

Analyses which support some form of Johnson's Relational Hierarchy also indirectly support the passive analysis in Cree for the following reason. Given a passive analysis, final grammatical relations end up corresponding to final grammatical positions on the Relational Hierarchy; without passive, there is no such correlation. So, for instance, if the form nitasamik 'he feeds me' is analyzed as an inverse rather than a passive form, a lower position on the hierarchy is acting on a higher position of the hierarchy:

2 ① Indefinite ③

←

If, however, we analyze this form as a passive form, the first person, indicated by ni-, bears the final grammatical relation of subject, and the correlation between the Person Hierarchy and the Relational Hierarchy is maintained. Thus, everything which is a final subject in Cree ends up higher on the Person Hierarchy than any final non-subject. If there is, then, any basis for a universal hierarchy of the sort mentioned above, we can see this as providing a functional motivation for the application.

3.9.

It can be concluded, then, that the Cree passive is not limited to indefinite actor forms as Bloomfield believed, but is, in fact a quite

vital part of the verbal system. By examining more closely inverse forms in the TA paradigm, we can see that these forms constitute passive forms (as passive is defined universally).

As was noted in Section 1, the failure of Bloomfield, Hockett and others to analyze inverse forms in Cree as passive was a result of their own beliefs about what passives looked like--a belief not in keeping with the properties of the inverse forms. There are at least two characteristics of Cree passives which seem, to many Algonquianists, "unpassivelike": (a) the fact that passives are either obligatory or impossible, and (b) the fact that operation of passive is dependent on a person hierarchy, described in Section 1. Though this may, at first, seem to not be a feature of passives cross-linguistically, we must keep in mind that P & P's universal characterization of passives says nothing about optionality in this rule. Perlmutter (1980:203-204) states: 'The detailed study of individual languages reveals that a particular construction in a given language may be restricted to a particular mood or aspect...or possibly only in certain syntactic environments. Similarly, a particular construction may be linked in individual languages with semantic, pragmatic or presuppositional effects', and in Perlmutter (1978:183) he proposes that there can be 'Interaction of the Passive construction with hierarchies of person, animacy, etc.' For discussion of constraints on passive or "passivelike" construction similar to those in Cree, see Hale (1975) on Navajo and Zaharlick (this volume) on Picuris.

4.0.

Up until this point it has been assumed that passives in Cree were restricted to the sort described in Section 3. They were defined as passive on the basis of P & P's universal characterization of the construction (see Section 2.2) and it was argued that analyzing the construction as passive allowed for a more straightforward account of the workings of the Cree verbal system. Even those analysts who disagree with relational grammar's formalism of passive do agree with its description in a functional sense. Bresnan (1978:88), who argues for a lexical treatment of passive, states, 'An active-passive relation exists in many languages of the world, having highly different syntactic forms. The syntactic form of the relation seems to vary chaotically from language to language. But an examination of functional structures reveals a general organizing principle. Perlmutter and Postal (1977) have proposed that the active-passive relation can be universally identified as a set of operations on grammatical functions: "Eliminate the subject", "Make the object the subject".' She goes on to say, however, that 'Perhaps the active-passive relation belongs to a universal "logic of relations" by which the lexicon of a human language--the repository of meanings--can be organized' (p. 23). As is subsequently argued, Bresnan's conception of passive when applied to the Cree constructions in question is not consistent with other conceptions of lexical rules, notably Partee (1975), Dowty (1975, 1978) and Wasow (1976).

In examining Cree passives earlier, the passive marker /ekw/ was observed in other paradigms, and these were seen as consistent with generalizations made concerning obligatory passive and the Person Hierarchy. This does not exhaust the positions where /ekw/ or some form of it occurs, however, nor does it exhaust the form that passive constructions in Cree might take. This section looks at these constructions in Cree and argues that they might well be characterized as 'lexical' passives.

4.1.

Wolfart, in his discussion of word formation processes in Cree (pp. 70-71, Section 6.43), briefly lists a number of so-called intransitive and inanimate verb finals which form animate intransitive and inanimate intransitive verbs. Two abstract finals, -isi- /esi/ for animates and -a- or -an- for inanimates, are freely added to all stems--roots, extended roots, particles, and other verbs. So, from the root kaskitē- 'black' the addition of the final -isi- gives kaskitēsiw 'he is black'. These finals also occur in complex finals, i.e. a sequence of two or more medials or finals: Wolfart (1973:71) states, 'Thus -isi- is part of the complex final ākosi- which derives "medio-passive" verbs from transitive inanimate stems, e.g. itēyihtākosiw 'he is thus thought of' from itēyiht- (TI) 'think so of it'; nisitawēyihtākosiw 'he is recognized' from nisitawēyiht- (TI) 'recognize it'... (The other constituents of the complex final are the inverse or "passive" marker /ekw/ and a pre-final element -a-.¹³ These complex finals are noted as occurring with roots with finals denoting sensory perception 'such as TA -naw, TI -n 'see', TA -htaw-, TI -ht 'hear'; e.g. ohcinākosiw 'he is seen from there'... kitimākihtākosiw 'he sounds pitiable' (p. 71)'. Verbs with these particular complex finals generally denote single action, thus differing from so-called middle reflexives which refer to habitual action of some sort.¹⁴

-isi- -an- also combine with another alternant of /ekw/ to form the complex final -ikōwisi- meaning 'action by supernatural (or higher) powers'. These finals combine with TA stems, but like the medio-passives discussed above, are inflected in an intransitive paradigm. A common form is derived from pakitin- 'set him down by hand': pakitinikōwisiw 'he is set down by the powers'. Examples of usage with this particular complex final are numerous in Bloomfield's texts, a few instances of which are given below:

(16) mīna tahtuh kakway kā- sākikihk ōtah askīhk
 also every thing rel. to grow here earth
 (O. conj. AI) locative

āwakunih kīh- kiskinōha mākowisiwak kit-si-
 that past they were told (or shown future thus
 the way) by the Higher Powers

mawimustahkik [B 10-11/12/13]
 to worship

(3rd pl. conj. TI)

'Also everything which grows here on the earth, that they would worship, they were told by the higher powers.'

(17) ākutuh uhtsih ntāyihtānān nawats
 aside from that to think rather
 (first pl. AI Indep. Indic)

nāhiyaw āh- kitimākinākowisit [B4-16]
 Cree conjunct have compassion for

prox. (third sg. conj. AI)

'That is why we think that the Cree is favored by the Higher Powers.'

- (18) akutā ah-pawātahk wihtamakōwisiw
that place conj. to dream to tell by higher powers
(Indef. conj. AI) (AI third sg.)

nipākwasimēwikanik [B4-2]
Sun Dance Lodge

'Dreaming of that place, he was told by the Higher Powers
of the Sun Dance Lodge.'

- (19) āwaku wiyawāw utsipwāwak nikan kā- kīh-
that they Ojibwa first rel. past
prox. pl. prox. pl.

miyikōwisitsik mitāwiwin [B10-7/8]
to give by Higher Powers medicine ceremony
(AI conj. third pl.)

'They, the Ojibwa, were the first who were given the
medicine lodge by the Higher Powers.'

4.1.2.

In some respects the constructions cited above are similar to the inverse forms analyzed as passive in previous chapters. In other ways, they behave quite differently. These similarities and distinctions will be illustrated briefly below.

4.1.3.

The most obvious property these "lexical" constructions share with inverse passives is the occurrence of a morpheme /ekw/ in some form. Earlier, we analyzed /ekw/ as the passive morpheme, and since it occurs in these forms we might wonder if these are also passive. Though it is dangerous to do so, we might also consider as evidence that these are passives, the fact that they are translated by native speakers as such, at least in the 'higher power' constructions. And at least in some sense, medio-passives are passivelike, as we can observe from, e.g. itēyihtākosiw 'he is thus thought of' where the agent is completely indefinite.

4.1.4.

Despite the occurrence of /ekw/ in these forms, there are more characteristics which distinguish them from inverse passive forms than correlate with them. We will look at these characteristics in some detail later, but briefly, they are as follows:

(a) They are inflected in either the AI or II paradigm rather than the TA paradigm.¹⁵

(b) They tend to be more restricted in terms of which verbs can form them as a result of their highly specialized meaning (in a transformational sense, they may be thought of as lexically governed).

(c) They don't adhere to the same hierarchical constraints as the inverse passives.

(d) Instead of /ekw/ preceding personal endings as it does in the inverse passive, it precedes another final.

We will attempt to follow Wasow (1976) in arguing that differences (a)-(d) suggest a lexical analysis of these 'special' passive forms. If

we decide on a lexicalization of these passive forms, however, several questions are raised concerning (1) lexical vs. syntactic (relation changing) rules, (2) the assignment of inflectional types and when and where in the grammar assignment takes place and (3) where lexical rules fit into a relational grammar.

4.2.

There has been quite a bit of discussion lately centered around the problem of distinguishing lexical and syntactic rules. Many linguists, especially Montague grammarians, are convinced that many rules previously analyzed as transformational can, in fact, be better described as lexical rules. Passive is such a rule. (See Dowty 1978a, 1978b, Bach 1980, Thomason 1976, Bresnan 1978). By calling the 'special' passives in this chapter 'lexical' and thereby distinguishing them from the more productive inverse passive, it may be argued that we presuppose that the distinction has already been made. Though the purpose of this thesis is not to decide the theoretical question of lexical vs. syntactic rules, there seems to be no question that the previously analyzed inverse passives are syntactic. Before arguing for the constructions in Section 4.1 being lexical, the syntactic status of inverse passives will be discussed below.

4.2.1.

Dowty (1975, 1978a, 1978b) argues that for English, all lexically governed transformational rules such as Dative Movement, Raising to Object, and Passive can be better characterized as lexical rules in a Montague Grammar framework. Though he makes a good case that at least at an earlier point in English all passives were lexical (see Lightfoot 1979 and Lieber 1979 for other analyses), the same cannot be said for all passives. Dowty himself provides evidence for the non-lexicality of most Cree passives (1978a:120), 'A crucial fact about lexically derived expressions is that they are (or always can be) learned individually, whereas syntactically derived expressions are not. If they are learned individually, then there must always be at any one state of a person's linguistic knowledge, a fixed finite number of them, though this number may grow from time to time...These observations suggest the formalization of lexical rules not as a part of the grammar of a language proper, but rather as a means for changing the grammar from time to time by enlarging its stock of basic expressions.'

From this characterization, and it is shared by most lexicalists, it is obvious, given the facts of Cree in Section 2, that passive forms in the TA paradigm cannot be 'learned individually'. The Person Hierarchy is the central mechanism which decides active vs. passive constructions and it is unreasonable to suppose that only active forms are learned syntactically and passive forms individually as an additional part of the grammar.

Dowty also states (p. 397), 'From my point of view, a lexical rule need differ essentially from a syntactic rule only in the "role" it is claimed to play in a grammar--its outputs are recorded individually and sometimes idiosyncratically among the basic expressions ("lexical entries") of the language. Hence, it need not be fully "productive" nor are its outputs invariably strictly predictable in meaning.'

Here again, recalling passives in Cree, we note the fully productive nature of the construction (dependent on the Person Hierarchy of course) and the particularly invariant interpretation which it affords.

Dowty also states (1978b:422), 'From the point of view of MG (Montague Grammar) the properties of certain putative syntactic rules that might lead us to construct a theory of lexical rules for them are (a) their partial productivity (not all outputs of a putative syntactic process are acceptable as well-formed), and there is no systematic way of excluding the exceptions on syntactic grounds...' Here again, we conclude that there are no exceptions to passive when given the traditional interpretation, action on the Person Hierarchy is inverse. The 'exceptions' to passive (in fact the blocked passive) can be accounted for on syntactic grounds, i.e. constraints provided by the semantically based hierarchy. When Bresnan (1978:22) states, 'We can see, then, that it is the lexical relation between the noun phrase and its verb that governs passivization, not the syntactic relation between them', it is not clear whether she is stating this only in relation to English passive or is making a universal claim. If she is making a universal claim, it seems, again, that Algonquian languages (and many others for that matter) are an exception to it.

Dowty admits (1978b:419-420), 'Another thing that relation-changing rules cannot do in this theory is to account semantically for apparent movement from more than one distinct syntactic position. No single category-changing Passive rule, for example, could passivize both direct and indirect objects...because it would be impossible to define an adequate unique semantic interpretation rule for such an operation. Thus, unbounded movement and/or deletion rules cannot possibly be recast as lexical rules for two reasons: the NP's moved or deleted do not always stand in a categorically-defined relationship to a verb (or other functor category) and NP's are moved from different grammatical positions by the same unbounded rule.'

In Cree, recall that direct objects are advanced to subject only if there is no indirect object present. If there is an indirect object, 3 → 2 advancement is obligatory; the initial 2 → 2 and the non-initial 2 → 1. It is not clear that this sort of operation, where a non-initial direct object ends up as the subject of the clause, could also be recast as lexical, even excluding evidence against such an analysis up to this point.

Finally, Dowty illustrates the interface between morphology and syntax and the question of lexical vs. syntactic rules (1978a:123): 'Both morphological and syntactic operations may be available to be used in either syntactic rules or lexical rules. Thus we have a cross-classification such as in (30):

transformational rules and lexical rules can be either syntactic or lexical. The following table distinguishes between lexical rules and transformations in the following table:

Transformational Rules	Lexical Rules
need not be structure preserving	don't affect structure
don't change node labels	may relate items of different grammatical categories
need not be local; formulated in terms of structural properties of phrase markers	'local'; involve only NP's bearing grammatical relations to items in question

kind of rule	operation used	Syntactic Rules	Lexical Rules
Syntactic Operations		traditional syntactic rules (PS-like and transformation-like)	rules forming lexical units of more than one word
Morphological		<ol style="list-style-type: none"> rules introducing inflectional morphology rules introducing "derivational" morphology when unrestricted and semantically regular (polysynthetic lang.) 	rules introducing derivational morph., zero derivation, and compounding where partially productive and less than predictable semantics

Dowty (1978a:124) notes the productive nature of many polysynthetic languages such as Cree, and for this reason claims that 'morphological operations which are used by syntactic rules will correspond to those traditionally classed under inflectional morphology.'

4.2.2.

Thus, we may conclude from the above discussion that so-called inverse forms, reanalyzed as passive, can in no way be characterized as lexical. Their fully productive nature and exceptionless application indicates that they are indeed syntactic. The same cannot be said for the medio-passive and higher power passives outlined in Section 4.1. Using Dowty and Wasow's characterization of lexical rules, it is concluded that these constructions can best be characterized as lexical passives.

4.3.

Wasow (1976:8) outlines the differences between lexical rules and transformational rules and argues, as does Dowty, that the English passive can be either syntactic or lexical. He summarizes his criteria for distinguishing between lexical rules and transformations in the following table:

	Lexical Rules	Transformations
Criterion 1	don't affect structure	need not be structure preserving
Criterion 2	may relate items of different grammatical categories	don't change node labels
Criterion 3	'local'; involve only NP's bearing grammatical relations to items in question	need not be local; formulated in terms of structural properties of phrase markers

Criterion 4	apply before any transformations	may be fed by transformations
Criterion 5	have idiosyncratic exceptions	have few or no true exceptions

Though the above characterizations may look straightforward enough, the degree to which we may apply them successfully is limited. There are two reasons for this: (1) Wasow bases his criteria on language specific data--English, and his arguments supporting the criteria rest on English. (2) Wasow is "talking transformationally" so it is sometimes difficult to see what certain criterion translate into in a different framework such as Relational Grammar. Dowty notes similar problems in comparing Wasow's analyses with his own using a framework of Montague Grammar.

Despite the problems with this model, the above criteria serve as, at least, a vague guideline distinguishing syntactic and lexical rules.

4.3.1.

Denny (1981:23) in his work on Ojibwa argues for the classificatory medial ssak in sakk/issak/at missi 'the firewood is damp' as being syntactically derived rather than lexical on the following basis: 'is the incorporated medial joined to verb morphemes by derivational rules to form a new lexical item, or is the link a syntactic one in which case sakk-at and ssak are the lexical items although they must be combined by morphological processes? I think that syntactic combination is the more likely answer both because the medial expresses a semantic component of the noun and not the verb [ssak expresses the "sort of thing"--processed wood--which is the argument of the noun missi 'firewood'] and because any classificatory medial can be incorporated in the verb as long as it expresses a sort appropriate to the verb predicate.'

Denny concludes simply on the basis of productivity that the above-mentioned construction is syntactically and not lexically derived. Unfortunately, if a linguist working with a language other than English is interested in finding the appropriate component in which to place a rule or construction he is usually reduced to productivity vs. nonproductivity as the only available evidence for a lexical vs. non-lexical analysis. Although Wasow's criteria given in Section 4.2.1 are available, for reasons cited, they are difficult to use. Further, most of the reaction to Wasow (Bach, Dowty, Bresnan, Partee, Lightfoot) has been based solely on its usability for English. Section 4.2 below attempts to follow Wasow's criteria in deciding the status of so-called lexical passives in Cree described in Section 4.1.2. and I show that while suggesting a lexical analysis, the criteria are not useful enough to provide an entirely convincing argument for such an analysis. Section 4.4 discusses other features of these passives, briefly listed in Section 4.1.4 which further strengthen the case for a lexical analysis. It is concluded, finally, that Wasow's criteria, while perhaps valid for English, are not sufficiently universal in deciding the question of lexicality cross-linguistically and, in fact, language specific facts must be examined in the context of the language in deciding the question.

4.3.2.

Before listing his criteria for lexical vs. syntactic constructions Wasow states (p. 8): 'I assume (following Jackendoff (1975)) that lexical rules are part of the evaluation metric and will typically have unsystematic exceptions...the existence of numerous idiosyncratic exceptions to a relationship will be taken as evidence for handling it in the lexicon.' Thus, Criterion 5, which states that lexical rules have idiosyncratic exceptions, has already been introduced as the deciding criterion--if there are idiosyncratic exceptions, the rule will be treated in the lexicon. Dowty (1978b: 412) confirms this and notes that 'semantic exceptionality, as well as lack of full syntactic productivity is allowed for.' The semantic restrictedness of medio-passives and higher power passives was demonstrated in Section 4.1.2 and it was listed as a characteristic which set these passives apart from inverse passives in Section 4.1.4. There is no question that these passive forms are highly restricted, and according to Wasow and Dowty's criteria, would be analyzed as lexical constructions.

Criterion 1--Lexical rules don't affect structure--is interpreted by Dowty (1978b:412) in the following way: 'A 'transformationlike' syntactic rule is one that applies to syntactically complex expressions and may rearrange or otherwise alter the components of these input expressions producing in some cases a syntactic pattern not derivable from the 'structure building' (or phrase-structure like) rules alone. A lexical rule, however, can apply only to basic expression, which will then be treated the same as other basic expressions by the 'structure building' syntactic rules.' Note that this also goes hand in hand with Criterion 4, which says that lexical rules apply before any transformations while syntactic rules may be fed by transformations. Both Criteria 1 and 4 lead us to conclude, again, that the restricted passives are lexical for the following reasons. It seems that since these passives do not adhere to the same hierarchical constraints as the inverse passives (in fact they disobey them), they do not apply to the same 'syntactically complex expressions' that the inverse passives do. In fact, their marked status would classify them as exceptions which deviate from the regular syntactic operations of the language. Thus it seems that medio-passives and higher power passives do not affect structure, but instead apply only to basic expressions as Dowty predicts. It is difficult to evaluate the ordering stipulation in a relational framework but there seems to be no evidence to suggest that these lexical passives are fed by any sort of syntactic rule, but are built up by word formation processes as Wolfart suggests. We also note that there are no examples in texts which suggest that these lexically formed constructions can themselves feed syntactic rules. In other words, the "higher powers" morpheme in the "higher power" passives could not be reanalyzed as a subject (or anything else). This suggests that their status as lexical islands (similar to frozen idioms in English) is well established.

It is more difficult yet to apply Criteria 2 and 3 to the facts at hand except to say that the concept 'higher power' expressed by -ikōwisi- and interpreted as an agentive is grammatically realized as a complex final which surely suggests that node labels have been changed--an effect which Wasow would claim would force the rule to be classified as lexical.

4.4.

Though it seems to be clear at this point that medio-passives and higher power passives should be classified lexically, other characteristics

which set them apart from the more productive passives should be appealed to in order to strengthen the argument. These differences constitute more evidence for distinguishing them from syntactically produced passives.

The most obvious difference (besides the clear semantic difference) is the fact that these specialized passives seem to disobey the Person Hierarchy. In the medio-passive forms, for example, we would predict not to get /ekw/ since there is an indefinite acting on a third person. Since indefinite ranks above third person, one would expect a direct, active form, not a passive form with /ekw/. This deviation suggests that these forms do not obey the regular syntactic rules of the language and consequently must be derived in some other way.

Another observation concerning these restricted passives concerns the fact that they are inflected in the two intransitive paradigms rather than the TA paradigm. It was argued in Section 3 that despite their occurrence in the TA paradigm, the passive forms there are intransitive. It is interesting that these restricted forms should be inflected in a different paradigm, and it follows logically if we consider again Wasow's comments. According to Wasow, lexical constructions are formed before any syntactic rules operate. Given this assumption, /ekw/ would mark the constructions in question as intransitive before they are inflected--thus inflection in an intransitive paradigm is predicted. Though the matter of when and where in the grammar inflectional type is decided is still unresolved (see Piggott 1979 for further discussion for Algonquian) it is reasonable to assume that it would come after word formation in the lexicon.

Another difference brought out in Section 4.1.4 was that /ekw/ in the inverse passives immediately precedes personal endings, whereas in the restrictive passives it precedes another final, isi or -an-, again suggesting that /ekw/ is operating in conjunction with other finals to form a more restricted meaning of passive. Aissen (1974) has also suggested that the order in which a morpheme is added to a stem may correlate with its position in the derivation which would explain why the lexical passives are conjugated in an intransitive paradigm while the syntactic passives are not.

So, we may conclude that while a syntactic rule of passive plays a vital role in the verbal system, there also exists a small class of lexical passives in Cree which are restricted semantically and consequently less productive than the syntactic passive.

5.0.

Structuralists, from Michaelson and Bloomfield on have been perplexed by certain Algonquian morphemes, and special attention has been paid to the so-called direction morphemes. As I have argued, however, attempting to fit the morphemes into a paradigm based on direction of action does not provide an adequate explanation of what they are and how they operate. Only by examining the syntax of the constructions themselves can we gain insight into their function within the grammar. Thus, /ekw/ is not an inverse marker, but rather the marker of a construction which has undergone the relation changing rule of Passive. To simply say that the action is 'reversed' from direct action is not enough. Syntactic changes have occurred which the inverse/direct interpretation does not explain, but which the the passive/active interpretation does.

Another important theoretical issue raised in Section 4 is the lexical/non-lexical status of passive issue. As was noted in my discussion, many

linguists have been anxious in recent years to decide where in the grammar to put certain rules, and much ink has been spilled trying to argue that most relation changing rules, such as passive, are strictly lexical. More recently, however, there has emerged a somewhat solid consensus that such a strong hypothesis cannot be maintained. Dowty, Wasow, and Lightfoot all agree that some English rules of passive are arguably lexical, while others are arguably syntactic. The same dichotomy exists in Cree and can be maintained quite easily.

As a consequence of the two rules of passive in Cree, Relational Grammarians are faced with the necessity of responding, in some way, to the two different constructions. As their theory stands, there is no way of distinguishing between the two constructions, and there are obvious differences being missed. Donna Gerdtz (1980 LSA abstract), in working with the Salish language of Halkomelem, discovered a problem with describing both Anti-Passive and Passive as syntactic. In treating Anti-Passive as a lexical rule and Passive as a syntactic rule in this language she accounts for the recurrent differences between the two constructions. Her theory of Revised RG which allows for both lexical and syntactic rules, and in which the output of lexical rules constitutes the initial level, seems to account more clearly for the Cree facts. Although Revised RG is, as of yet, unformalized, the two different passives in Cree lend support to it.

Also arguing against the Principle of Initial Determination as stated in Postal (1980) are some facts from Southern Tiwa observed by Allen, Frantz, and Gardiner (1981). They provide a considerable amount of syntactic evidence which suggests that some initial direct objects in that language are phonologically null. 'The fact that these DO's are not required by the semantics of their clause makes it clear that the initial stratum in a relational grammar of Southern Tiwa cannot be equated with the semantic representation, nor can the latter completely determine the initial relations' (p. 11). If the Principle of Initial Determination in its strongest form must be given up,¹⁶ as it seems it will, we may gain insight into where in a grammar verbs are assigned properties such as being transitive or intransitive, a particular problem for a language such as Cree.

Theoretical issues aside, we may note the insights into Cree itself which the close examination of one construction has given us. The function of the rule has been illuminated, the crucial role which the Person Hierarchy plays is better understood, and the morphology and syntax which result are startlingly consistent with rules of agreement in the language. All in all, the interaction between morphology and syntax is more apparent and findings presented here may be applicable to other parts of the Cree grammar.

Footnotes

¹This paper is a part of my Master's Thesis, Ohio State University, Summer 1981. Some sections have been revised slightly, but the central points and arguments are unchanged. A chapter on the Relational Grammar framework as well as a chapter on the interaction of Person Hierarchies with relation changing rules cross-linguistically have been omitted altogether.

²Plains Cree is a member of the Algonquian family and is spoken in parts of Alberta and Saskatchewan, Canada. Data upon which the present study is based are taken from Bloomfield's published texts (1934) and Wolfart's Plains Cree: A grammatical Study (1973).

³In some cases, AI verbs may have an overt object in the clause though still be inflected like an AI verb. In these cases, the verb is marked with the derivational morpheme -hta.

⁴Basically, Cree verbs are inflected in three orders: independent, conjunct, and imperative. Affixes differ in these sets though there is some overlap (affixes associated with the conjunct are given in note 8). In terms of syntactic function, the independent and imperative orders can occur as independent clauses, and thus form full sentences. Conjunct forms, common in narrative, usually only occur in dependent clauses.

⁵Algonquian languages distinguish between the third person--one marked proximate which is considered to be 'in focus' (Wolfart 1973:17), the topic of the discourse, or the 3rd person first spoken of an already known, the other marked obviative which is considered to be 'not in focus'. We may also note that within any given contextual span only one third person is proximate while all others are obviative. Further discussion of problems associated with the proximate/obviative distinction is outside the scope of this paper, but it is important to note their position on the person hierarchy. 3rd person proximates are analyzed as the unmarked 3rd person and are ranked higher on the hierarchy than obviative 3rd persons. Thus a proximate 3rd person acting on an obviative 3rd person is marked with a direct theme sign and an obviative 3rd person acting on a proximate 3rd person is marked with an inverse theme sign. Further obviatives are not well motivated as independent persons (see Wolfart 1978).

⁶Citations from Bloomfield's published texts (1934) are indicated by B and the line and page number, e.g. B23-5. Examples which appear in Wolfart's grammar (1973) (some of which are from his unpublished field notes, others from Bloomfield's 1930 texts) are indicated by a W and page and section number, e.g. W16-2.2.

⁷The -t- in kitasamin is not a part of the second person prefix but is rather the result of an insertion rule, which inserts a -t- between personal prefixes and a stem which is vowel initial.

⁸Endings for the Simple and Changed Conjunct are as follows:

Mixed Set (direct)

indef.	ih	ihcik	imiht			
1st	ak	akik	imak	it	icik	iyit
2nd	at	acik	imat	isk	iskik	iyisk
1pl.	ayahk	ayahiki	imayahk	ikoyahk	ikoyahkik	ikowayahk
2pl.	ayahk	ayahkok	imayahk	ikoyahk	ikoyahkok	ikowayahk
2pl.	ayek	ayekok	imayek	ikoyek	ikoyekok	ikowayek

(inverse)

Third Person (direct)

3	at	imat	ikot
3pl	ayik	imacik	ikocik
3'	ayit		ikoyit

(inverse)

You-and-Me Set (Direct)

2	iyahk	iyahk	itan	itahk
2pl	iyek	iyahk	itakok	itahk

(inverse)

⁹Note that -ik is equal to /ekw/ in both the singular and plural forms. Since w is lost at morpheme boundaries in Cree, -ik could actually reflect /ekw + w/ and -ikwak could reflect /ekw + wak/, since -ww- is not a possible sequence in Cree.

¹⁰There are problems with the analysis of /eti/ in the you-and-me set. The problem centers around whether to call /eti/ an object agreement marker, or an aberrant form of /ekw/, the predominant passive marker. An analysis of each option is considered in Section 3.3.

¹¹This seems to be a fairly safe assumption to make since typologically the \emptyset morpheme is often associated with indefinite forms (See Watkins 1962).

¹²LeSourd also posits /ekw/ as an underlying passive marker which is obligatorily deleted in you-and-me forms. Though this move doesn't explain why this set is different, it does save his generalization that /ekw/ is present (at some level) in all passive constructions.

¹³It is very interesting that Wolfart should term /ekw/ a passive marker even in a qualified sense, since he spends an entire section (See Wolfart, p. 26, Section 2.53) arguing that /ekw/ is definitely not a passive marker.

¹⁴Middle reflexives also involve intransitive verb finals and a few examples of their use may be given from Wolfart, p. 73, Section 6.439: 'From the transitive inanimate stem masinah- 'mark, write it' and besides the animate intransitive verb masinahikē 'write' we find masinahikasow 'he is marked, pictured' and masinahikatew 'it is marked, pictured, written'.'

¹⁵AI and II endings are distinct from TA endings. (See Wolfart, Section 5.24-5.31 for the complete set of paradigms.)

¹⁶Also see Perlmutter (1980) for a similar problem in Achenese.

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Tanoan Studies: Passive Sentences in Picuris

Amy Zaharlick

Picuris is one of the two Northern Tiwa languages in the Tanoan family.¹ It is the language spoken by members of the Picuris Pueblo, a small group of Native Americans living about 45 miles north of Santa Fe, New Mexico. The author has studied Picuris since 1973.

In her dissertation (1977), the author identified the essential components of the passive construction: pronominal prefix, verb base, passive marker, and tense aspect suffix. It was also posited that the prefix correlated sentence subject with sentence object. In the present paper, subsequent work on passive sentences has been summarized. It is now seen that in some cases the prefix may correlate sentence subject with sentence indirect object and by examining the relationships between passive sentences and their active counterparts, it has been determined that specific conditions dictate the use of active or passive sentences. Unlike English, this use is not stylistically determined.

The choice of data and terminology used in this paper are in direct response to concerns voiced by participants at past Kiowa-Tanoan conferences.² Scholars at these meetings have expressed a uniform interest in syntax and have focused much of their attention on the analysis of passive sentences. However, there is considerable concern that statements for the passive in Tanoan continue to be tentative and general. Two factors have been identified as retarding progress in this area. These are the lack of comparable data for the several languages and the use of theoretically-specific terminology in analytical statements. By the latter it is meant that analyses are often presented in terminology which researchers must "translate" into familiar terminology before proceeding with their comparative studies.

For the sake of comparability, Picuris equivalents are used in this paper for the sentences Allen and Gardiner (1980) analyzed in their Relational Grammar study of the passive in Isletan Tiwa. It should be noted that the terminology used in the discussion below is intended to make the Picuris analysis immediately available for comparative purposes, not requiring "translation".

Picuris Passive

A comparison of sentences (1) and (2) indicates significant similarities between Picuris actives and passives and their English counterparts.

- (1) $\text{senene } \emptyset\text{-}\dot{\text{liw}}\text{-m}\dot{\text{o}}\text{n-}'\text{a}\dot{\text{n}}.$
The man saw the lady.
- (2) $\dot{\text{liw}}\text{ene } \emptyset\text{-m}\dot{\text{o}}\text{n-}\text{mia-}'\text{a}\dot{\text{n}} \text{senene-pa}.$
The lady was seen by the man.

Sentence (1), the active, and sentence (2), the passive, are logically equivalent despite certain syntactic differences in surface structure. The differences which distinguish the passives from the actives are roughly parallel and consist of an inversion of the noun phrases, insertion of an agent marker, and changes in the predicate. Specifically, in Picuris, senene in (1) is unflagged, while in (2) it is flagged by the clitic, or post-position, -pa. The noun liw in (1) is incorporated into the verb construction, while liwene in (2) is independent. There is also a difference in verb morphology between the two sentences; mia occurs in (2), but not in (1). Finally, it will be shown from data referring to first and second persons that the verb prefixes in the passive sentences are from a different set. Each of these points warrants further elaboration.

Nominal Flagging

Many languages mark agents in passive sentences with the same marker used to indicate instrument. The -pa which marks agent in (2) is the same clitic which marks instrument in Picuris, as sentences (3) and (4) indicate.

- (3) $(\text{n}\dot{\text{a}}) \text{ti-xw}\dot{\text{a}}\text{-te khun-pa}.$
I hit him with a shoe.
- (4) $(\text{n}\dot{\text{a}}) \text{ta-xw}\dot{\text{a}}\text{-tia-}'\text{a}\dot{\text{n}} \text{khun-pa}.$
I was hit with a shoe.

However, it must be noted that -pa never marks the subject in a Picuris sentence. Attempts to elicit forms such as that in (5) were rejected as ungrammatical.

- (5) $*\text{senene-pa } \emptyset\text{-}\dot{\text{liw}}\text{-m}\dot{\text{o}}\text{n-}'\text{a}\dot{\text{n}}.$
(The man saw the lady.)

The occurrence of -pa with senene in (2), therefore, gives evidence that senene-pa is something other than the subject of the passive sentence.

Noun Incorporation

A Picuris noun as subject is never incorporated into the verb complex. A noun occurs in absolute form as base with accompanying morphemic suffix which classifies it as belonging to one of three classes --A, B, or C. In sentence (6) the sentence subject, liwene, occurs with its morphemic suffix -ne indicating that it belongs to Noun Class A. Sentence (7) is ungrammatical because the base for lady, liw, is incorporated into the verb complex.

(6) $\text{\textbackslash}iwene \emptyset\text{-}me\text{-}'\text{\textbackslash}an.$
The lady went.

(7) $*\emptyset\text{-}liw\text{-}me\text{-}'\text{\textbackslash}an.$
(The lady went.)

On the other hand, a Picuris noun as direct object can be incorporated into the verb complex, as examples (8) and (9) illustrate.

(8) $\text{\textbackslash}iwene \emptyset\text{-}s\text{\textbackslash}en\text{-}m\text{\textbackslash}on\text{-}'\text{\textbackslash}an.$
The lady saw the man.

(9) $s\text{\textbackslash}enene \emptyset\text{-}\text{\textbackslash}iw\text{-}m\text{\textbackslash}on\text{-}'\text{\textbackslash}an.$
The man saw the lady.

The fact that the subject cannot be incorporated into the verb complex suggests why sentence (5) is rejected as ungrammatical. Sentence (10) is also rejected as ungrammatical for the same reason, despite the fact that in this instance the passive marker mia also occurs.

(10) $*s\text{\textbackslash}enene\text{-}pa \emptyset\text{-}\text{\textbackslash}iw\text{-}m\text{\textbackslash}on\text{-}mia\text{-}'\text{\textbackslash}an.$
(The lady was seen by the man.)

Because s\text{\textbackslash}enene is flagged by -pa, it cannot function as subject, which would then leave the other noun, \text{\textbackslash}iwene, to fill that position. However, in (5) and (10), \text{\textbackslash}iw is incorporated into the verb complex and as such can function only as object. Therefore, we are left without a noun to fill subject position, a position that is required by both the verb prefix specification and by the semantics of the verb complex. Thus, (5), (7) and (10) must be rejected as ungrammatical. A comparison of (10) with (2), then, leads to the conclusion that \text{\textbackslash}iwene is the subject of the passive sentence in (2).

Verb Morphology

Consider now sentences (11) - (14).

(11) $\emptyset\text{-}m\text{\textbackslash}on\text{-}'\text{\textbackslash}an.$
pre-base-suf
He saw him.

(12) $\emptyset\text{-}m\text{\textbackslash}on\text{-}mia\text{-}'\text{\textbackslash}an.$
pre-base-PASS-suf
He was seen.

(13) $\emptyset\text{-}xw\text{\textbackslash}a\text{-}t\text{\textbackslash}e.$
pre-base-suf
He hit him.

(14) $\emptyset\text{-}xw\text{\textbackslash}a\text{-}tia\text{-}'\text{\textbackslash}an.$
pre-base-PASS-suf
He was hit.

It is clear that (12) differs from (11) because of the occurrence of mia in its verb stem. Likewise, (14) differs from (13) because of the presence of tia. Both of these morphs mark passive in these examples. Note the different past tense suffixes in (11) and (13). Preliminary analysis suggests that there are a number of different verb classes in the language, each of which requires a different past tense suffix when the indicative mood is expressed in an active sentence. In passive sentences, it appears that the passive marker instead of the verbal suffix distinguishes these verb classes, hence the variation in passive markers.

Passive Prefixes

Examples (15) - (20) indicate that the verb prefix marks a distinction between singular, dual, and plural for the surface-level subject in passive sentences.

- (15) ta-møn-mia-'aṅ sənene-pa.

I was seen by the man.

- (16) 'a-møn-mia-'aṅ sənene-pa.

You were seen by the man.

- (17) 'aṅ-møn-mia-'aṅ sənene-pa.

We (du) were seen by the man.

- (18) 'i-møn-mia-'aṅ sənene-pa.

We (pl) were seen by the man.

- (19) mṅ-møn-mia-'aṅ sənene-pa.

You (du) were seen by the man.

- (20) mṅ-møn-mia-'aṅ sənene-pa.

You (pl) were seen by the man.

If sentences (15) - (20) are compared, in sequence, with the intransitive sentences (21) - (26), it can be seen that the intransitive prefixes are identical to those used in passive verb constructions.

- (21) ta-me-'aṅ.

I went.

- (22) 'a-me-'aṅ.

You went.

- (23) 'aṅ-me-'aṅ.

We (du) went.

- (24) 'i-me-'aṅ.

We (pl) went.

(25) mən-me-'ən.
You (du) went.

(26) mə-me-'ən.
You (pl) went.

When these prefixes occur in intransitive sentences, such as (21) - (26), or in passive sentences, such as (15) - (20), they indicate the person and number of the subject, making a distinction between singular, dual, and plural for all three persons.

Verb Agreement

If a sentence in Picuris contains two nouns (or pronouns), then the semantic content of the verb prefix specifies the person and number of the subject and the noun class of the object. Sentences (27) - (29) provide some examples of these transitive verb prefixes.

(27) ti-chon-pay-'ən.
I made a shirt. (Class A)

(28) ta-chon-pay-'ən.
I made shirts. (Class C)

(29) pi-xin-pay-'ən.
I made a hat. (Class B)

By holding constant the person and number of the subject, it is apparent from examples (27) - (29) that the verb prefix varies with the class of the object. Likewise, by holding constant the object, it is possible to see how the prefix varies in relation to the person and number of the chosen subject. Because "shirts" belongs to Noun Class C, the prefixes employed must come from the set of prefixes which correlate person and number of the subject with Class C objects. Sentences (30) - (34) provide some examples of these forms.

(30) ta-chon-towe-'ən.
I bought shirts.

(31) (nə) kan-chon-towe-'ən.
We (du) bought shirts.

(32) (nə) ku-chon-towe-'ən.
We (pl) bought shirts.

(33) ('ewən) 'ən-chon-towe-'ən.
They (du) bought shirts.

(34) 'u-chon-towe-'ən.
They (pl) bought shirts.

These sentences also demonstrate that the prefixes mark a singular, dual, plural distinction for subject.

Now consider sentences (35) - (38).

(35) ti-møn-'aŋ.
I saw him/her.

(36) 'a-møn-'aŋ.
You saw him/her.

(37) may-møn-'aŋ.
You saw me.

(38) (nə) 'a-møn-'aŋ.
I saw you.

These four sentences are slightly different from those in (30) - (34). Object position is filled in each of them by a pronoun referring to persons rather than to inanimate objects. Because all terms referring to singular persons are found in Class A, we would expect the same prefix to occur in (35) and (38) and a different one to occur in (36) and (37). This is clearly not the case. What we do find is that (35) and (36) do contain the prefixes expected for the persons and numbers of the subjects with Class A objects. However, (37) and (38) contain prefixes which occur in an altogether different set. This other set of prefixes is used when reference is made to non-third person objects. Consider sentences (39) - (44).

(39) 'a-møn-'aŋ.
I saw you.

(40) 'a-møn-'aŋ.
We (2) saw you.

(41) pən-møn-'aŋ.
I saw you (du).

(42) pən-møn-'aŋ.
We (pl) saw you (du).

(43) pi-møn-'aŋ.
I saw you (pl).

(44) pi-møn-'aŋ.
We (pl) saw you (pl).

Sentences (39), (41), and (43) demonstrate that the verb prefix distinguishes object number. However, a comparison of (39) with (40), (41) with (42), and (43) with (44) shows that subject number is not indicated in these sentences. When non-third person objects occur in sentences

such as these, it appears that prefix specification is the reverse of that for third person objects. With non-third person objects, the prefix specifies person and number for the object and person without number distinction for the subject.

Returning now to third-person objects, consider sentences (45) - (48).

(45) p̄an-ɬiw-m̄on-'ān wese.
They (du) saw two ladies.

(46) p̄an-ɬiw-m̄on-'ān p'anu.
They (du) saw five ladies.

(47) pi-ɬiw-m̄on-'ān wese.
They (pl) saw two ladies.

(48) pi-ɬiw-m̄on-'ān p'anu.
They (pl) saw five ladies.

Even though the object in each of these sentences refers to persons, the prefixes do not mark the dual/plural distinction for object as they did for person objects in (39) - (44). What seems to set sentences (45) - (48) apart from those in (39) - (44) is that the object is third person. As third person objects, they are recognized as members of the class to which they are assigned by virtue of their morphemic suffixes -- Class A if singular and Class B if non-singular. Whether the object is "two ladies", "five ladies", or "fifty ladies", it does not matter for in their non-singular form, they are all included in Noun Class B and assigned the prefix which correlates person and number of subject with Class B nouns.

Necessary Passive

Sentences (1) and (2) provide evidence that the passive is optional when both the subject and direct object are third person. However, when sentences containing third person subjects and first or second person objects are elicited, such as English "The man saw me," and "The man saw you ", sentences (15) and (16), repeated below, are given.

(15) ta-m̄on-mia-'ān s̄enene-pa.
I was seen by the man.

(16) 'a-m̄on-mia-'ān s̄enene-pa.
You were seen by the man.

From these examples it can be seen that s̄enene "man" is flagged with the clitic -pa while the verb morphology is the same as for other passives. Attempts to elicit active counterparts of (15) and (16) were unsuccessful, as were attempts to elicit passive constructions such as (49) and (50).

(49) *s̄enene Ø-m̄on-mia-'ān n̄a-pa.
(The man was seen by me.)

- (50) *sēnēnē Ø-mōn-mia-'ān 'ē-pa.
(The man was seen by you.)

However, a few Picuris speakers offered (51) and (52) as corrections.

- (51) sēnēnē ti-mōn-'ān.
or ti-sēn-mōn-'ān.
I saw the man.

- (52) sēnēnē 'a-mōn-'ān. or 'a-sēn-mōn-'ān.
You saw the man.

The same was true for sentences containing first and second person subjects and objects. In the sentences below, (53) was considered unacceptable, corrected, and given as (54) and (55) was corrected to (56).

- (53) *ta-mōn-mia-'ān 'ē-pa.
(I was seen by you.)

- (54) ('ē) may-mōn-'ān.
You saw me.

- (55) *'a-mōn-mia-'ān nā-pa.
(You were seen by me.)

- (56) (nā) 'ā-mōn-'ān.
I saw you.

Taking into account all of the above data, it is possible to suggest the following rules:

- a. When subject and object are both third person, passive is optional.
- b. When subject is third person and object is non-third person, passive is required.
- c. When subject and object are both non-third person, passive is not possible.
- d. When subject is non-third person and object is third person, passive is not possible.

Indirect Objects

When subject, object and indirect object occur in a sentence, the prefix correlates subject and indirect object. The object is not specified by the prefix. However, the base of the noun object is usually found incorporated into the verb complex.

- (57) nā ti-ʔu-ʔu-me I gave him an arrow. (B object)

- (58) nā ti-ʔu-ʔu-me. I gave arrows to him. (C object)

- (59) ną ti-kwɨn-ɬu-mę. I gave a dog to him. (A object)
(60) ną ti-kwɨn-ɬu-mę. I gave dogs to him. (B object)
(61) ną pi-khun-ɬu-mę. I gave a shoe to them (2). (B object)
(62) ną pi-khun-ɬu-mę. I gave shoes to them (2). (C object)
(63) ną pi-kwɨn-ɬu-mę. I gave a dog to them (2). (A object)
(64) pi-kwɨn-ɬu-mę. I gave dogs to them (2). (B object)
(65) pi-kwɨn-ɬu-mę. I gave a dog to them (3+). (A object)
(66) pi-kwɨn-ɬu-mę. I gave dogs to them (3+). (B object)
(67) pi-p'am-ɬu-mę. I gave a flower to them (3+).(B object)
(68) pi-p'am-ɬu-mę. I gave flowers to them (3+).(C object)

Sentences (57) - (60) contain objects from Noun Classes A, B, and C, but employ the ti- prefix because all four sentences contain the same subjects and indirect objects. The same holds for sentences (61) - (68) except that pi- is the prefix. Notice that in (65) - (68) the prefix remains the same despite the fact that there is a number change for the indirect object. This is true because the transitive prefixes required in these instances correlate person and number of subject and class of indirect object. All non-singular persons are included in Class B. Therefore, a number distinction is not required and the same prefix is used for dual and plural indirect objects. Sentences of this type appear only in the active form with transitive prefixes.

If the indirect object is first or second person and the subject is third, then the intransitive set of verb prefixes must be used. These prefixes specify person and number of the indirect object. Sentences of this type occur only in passive form, as examples (69) - (71) demonstrate.

- (69) ta-mosa-ɬu-mia- ąn.
He gave me a cat.
(70) ta-mosa-ɬu-mia-'ąn.
He gave cats to me.
(71) 'a-mosa-ɬu-mia-'ąn.
He gave you a cat.

If both the indirect object and the subject are third person, then either the passive or the active forms may occur. If passive, as before, the intransitive forms specify person and number for the indirect object -- see (72) - (74). If active, the transitive verb prefixes specify person and number for subject and class of object, with Class A forms for

singular indirect objects and Class B forms for non-singular indirect objects -- see (75).

- (72) \emptyset -kwɪn-ɫu-mia-'aŋ.
He gave a dog to him.
- (73) 'aŋ-ɫu-ɫu-mia-'aŋ.
He gave arrows to them (du).
- (74) i-ɫu-ɫu-mia-'aŋ.
He gave arrows to them (pl).
- (75) i-ɫu-ɫu-mɛ.
He gave arrows to them.

If the indirect object is first or second person and the subject is first or second person, then another set of transitive prefixes is used which specify person and number for the indirect object, but only person for the subject. Consider (76) - (78). These sentences occur only in active form.

- (76) 'a-kwɪn-ɫu-mɛ.
I gave a dog to you.
- (77) paŋ-kwɪn-ɫu-mɛ.
I gave a dog to you (2).
- (78) pi-kwɪn-ɫu-mɛ.
I gave a dog to you (pl).

In fact, if sentences (76) - (78) are compared with sentences (39), (41), and (43), it is apparent that the two sets of prefixes are identical. In other words there is only one set of verbal prefixes which specifies the correlation between non-third person subjects and non-third person objects or indirect objects.

Summary

In the Picuris language both active and passive sentences occur. Passive constructions are identified as verb constructions with the structure

pronominal prefix - (incorporated noun object) - verb base -
passive marker - tense aspect suffix.

Comparing Picuris passive sentences to active ones shows further that in passive sentences there is an inversion of the noun phrases, insertion of an agent marker, and changes in the predicate. The predicate changes include the insertion of a passive marker, the use of another set of prefixes, and, in some cases, the use of a different tense aspect suffix. In

addition, under certain conditions, the incorporated noun object in an active sentence is deleted from the verb complex and occurs in absolute form in its passive counterpart. An incorporated noun may serve as object only, never as subject.

The intransitive set of verb prefixes (SET I)³ is used when an agent is unspecified or in passive verb constructions. These prefixes indicate the person and number of the sentence subject (object in the active counterpart) and make a distinction between singular, dual, and plural for all three persons.

If a sentence in Picuris contains two nouns (or pronouns) - one as subject (agent) and one as object - then the transitive set of prefixes (SET II)⁴ is used. The semantic content of these verb prefixes specifies the person and number of the subject (agent) and the noun class of the object - either A, B, or C. Again, these prefixes mark a singular, dual, plural distinction for all three persons for subject. These prefixes are found in active sentences only and obligatorily encode a third person object.

However, if both subject (agent) and object refer to either first or second person, then another set of verb prefixes must be used. With non-third person objects, these prefixes (SET III)⁵ specify person and number for the object and person without number distinction for the subject. These prefixes occur only in active sentences.

When subject, object, and indirect object occur in a sentence, the indirect object serves as direct object for purposes of correlation and specification. Hence, in these instances, the prefix correlates subject (agent) with indirect object. The noun object is not specified by the prefix. However, in these sentences, the base of the noun object is usually found incorporated in the verb complex.

If the indirect object is third person and the subject is first or second person, then the transitive verb prefixes, SET II, are used. These prefixes specify person and number for subject and class for indirect object. Thus, sentences with first or second person subjects and third person singular indirect objects would employ the Class A forms. Sentences with first or second person subjects and third person dual or plural indirect objects would employ the Class B forms. These sentences would appear only in the active form.

If the indirect object is first or second person and the subject is first or second person, then another set of transitive prefixes is used, SET III, and the resulting sentences occur only in active form. The prefixes specify person and number for the indirect object, but only person for the subject. The prefixes used in this instance are the same as those used for the correlation of first or second person subjects with first or second person direct objects. Whenever the subject is second person and the object (either direct or indirect) is first person, the required pre-

fix is may-. If the subject is first person and the indirect or direct object is second person, then the prefix specifies the person and number of the indirect or direct object and person only for the subject.

If the indirect object is first or second person and the subject is third person, then the intransitive set of verb prefixes, SET I, must be used. These prefixes specify the person and number of the indirect object, and the indirect object serves as sentence subject. These sentences occur only in passive form.

If both the indirect object and the subject are third person, then either the active or passive forms may occur. If passive, the intransitive forms occur specifying person and number for the indirect object. As such, the indirect object serves as subject in the passive sentences. If active, the transitive verb prefixes are used and specify person and number for subject and class of object with Class A forms for singular, third person, indirect objects and Class B forms for non-singular, third person, indirect objects.

The Picuris data and analysis make it clear that there are conditions which determine when passive can and cannot be used. These conditions concern the hierarchical ranking of persons in the language and the effect this ranking has on the well-formedness of active and passive sentences. First and second persons act upon third persons, but the reverse is not true. Active (transitive) prefixes, SET II, obligatorily encode a third person object and thus cannot be used in sentences with first or second person direct or indirect objects. Hence, sentences with first or second person indirect or direct objects and third person subjects must be realized as passive. Thus, it is possible, in most instances, to state precisely when active and passive sentences will occur in Picuris. Specifically,

- when subject and indirect or direct object are both non-third person, active sentences will occur and passive is not possible.
- when subject is non-third person and indirect or direct object is third person, active sentences will occur and passive is not possible.
- when subject is third person and indirect or direct object is non-third person, passive is required.
- when subject and indirect or direct object are both third person, either active or passive sentences will occur, i.e. passive is optional.

These rules which specify when passive sentences can and cannot occur indicate the near-complementary nature, syntactically and semantically, of active and passive sentences in Picuris. Consequently, the complementary interrelationship of Picuris active and passive sentences is in contrast with the stylistic interrelationship of English active and passive sentences.

Relational Grammar and the Picuris Passive

The preceding discussion presents a number of generalizations regarding active and passive sentences in Picuris. At this point a number of questions can be formulated. Why are there three different sets of prefixes employed? Why do the prefixes vary in their specification of person and number for subject, object, or indirect object in various types of sentences? Why do the prefixes correlate different noun positions in such sentences? Why in some cases do the prefixes specify only person and number of a sentence noun while in other cases such specification is correlated with the noun class or person specification of a second sentence noun? Is there a theory that can explain or account for these observations or, better still, predict them?

It is beyond the scope of this paper to answer these questions. However, it appears that the answers may be found in the theory of Relational Grammar, as presented in Perlmutter and Postal (1977). For example, the three "term" relations--subject-of, object-of, and indirect object-of--speak directly to the description of the Picuris passive and to the analysis of prefix correlation. The Law of Stratal Uniqueness claiming that no two nominals may bear the same term relation to a verb in the same stratum explains why the subject of the active sentence cannot be specified as the subject of the passive sentence, assuming that for Picuris marking on the verb is determined by grammatical relations at the same syntactic level, in this case, the final level. Further, a rule which advances the indirect object to direct object position, thereby placing the former direct object en chômage, can explain why in these sentences containing subject, direct object, and indirect object, the prefix correlates subject with indirect object and there is no direct object specification in the prefix.⁶ Finally, the Relational Grammar characterization (Perlmutter and Postal 1977) of Passive as a rule which creates intransitive clauses out of transitive ones explains why the intransitive verb prefixes are used in the person marking for passive verbs in Picuris, under the assumption made above that the final syntactic level is the one relevant for the determination of verb marking. These and other explanations derived from the theory of Relational Grammar, or from other theoretical perspectives, can aid our understanding of passive and active sentences in Picuris--once the data are made available and descriptive analyses provided.

Footnotes

- ¹ The Tanoan family is divided into four subgroups: Kiowa, Tiwa, Tewa, and Towa. Tiwa is further subdivided into Northern Tiwa, spoken at Taos and Picuris and Southern Tiwa, spoken at Sandia and Isleta.
- ² The first annual conference was organized by Zaharlick and held in Albuquerque, N.M., June 15-16, 1979. At the 1980 conference, it was determined that there was no reason to distinguish Kiowa from the other Tanoan languages as depicted in the designation "Kiowa-Tanoan". Therefore, in the remainder of this paper, "Tanoan" will be used in place of "Kiowa-Tanoan".

³ SET I Prefixes

1	singular	ta-
	dual	'aŋ-
	plural	'i-
2	singular	'a-
	dual	maŋ-
	plural	ma-
3	singular	∅-
	dual	'aŋ-
	plural	'i-

These prefixes have accompanying high tone.

⁴ SET II Prefixes

	Subject	Object of Class		
		A	B	C
1	sg.	ti-	pi-	ta-
	du.	'aŋ-	paŋ-	ko-
	pl.	'i-	pi-	'o-
2	sg.	'a-	'i-	kaŋ-
	du.	maŋ-	paŋ-	maŋ-
	pl.	ma-	pi-	'aŋ-
3	sg.	∅-	'i-	ku-
	du.	'aŋ-	paŋ-	mu-
	pl.	'i-	pi-	'u-

⁵ SET III Prefixes (Partial listing)

Non - Third Direct or Indirect Objects

Subject	1 sg.			2 sg.		
	1 sg.	du.	pl.	1 sg.	du.	pl.
1	sg.			'a-	paŋ-	pi-
	du.			'a-	paŋ-	pi-
	pl.			'a-	paŋ-	pi-
2	sg.	may-	may-	may-		
	du.	may-	may-	may-		
	pl.	may-	may-	may-		
3	sg.			'a-	maŋ-	ma-
	du.			'a-	maŋ-	ma-
	pl.			'a-	maŋ-	ma-

⁶ An identical rule is found in the analysis of passive in Plains Cree (Jolley 1981).

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(5) Only final terms relativize

so that Maria in (2) above, as an indirect object (or direct object if 3 → 2 advancement is responsible for one of the forms (2) takes), can be relativized.

Thus Perlmutter and Postal argue that Kinyarwanda has both 2 → 1 and 3 → 1 advancement rules, as well as 3 → 2. They further claim that these first two rules can be generalized to OBJECT → 1 by making use of the typology of grammatical relations (see Perlmutter 1980, for example) in which direct object ('2') and indirect object ('3') are grouped together as OBJECT terms. Moreover, even though the same morphological marker appears with both 2 → 1 and 3 → 1 advancement, a fact which one might seek to explain by positing only 2 → 1 and having -w- be a marker of 2 → 1 advancement, an equally valid generalization concerning -w- is that its appearance depends on the advancement of an object term to subject.

This revised analysis saves the Stratal Uniqueness Law and furthermore is motivated to the extent that it misses no generalizations which Gary and Keenan's analysis captures and does not involve any complications internal to Kinyarwanda. From the standpoint of Universal Grammar, however, it may seem ad hoc to posit both a 2 → 1 rule and a 3 → 1 rule, as well as a 3 → 2 rule, when 3 → 2 plus 2 → 1 would have the same effect ultimately as 3 → 1 and so would seem to be all that would be needed to account for the ultimate advancement of an initial (underlying) indirect object to subject status. While Perlmutter and Postal (p. 56) point to Western Austronesian languages such as Malagasy (Keenan 1972, 1976) and Cebuano (Bell 1976) as languages with both 2 → 1 and 3 → 1, it is not clear that these languages have 3 → 2 as well (though Malagasy may).

There is another language, though, namely Modern Greek, which has a rule configuration identical to that posited by Perlmutter and Postal for Kinyarwanda, and, it is motivated by even stronger language-internal facts than in Kinyarwanda. The existence of another such language lends credence to Perlmutter & Postal's revision, since it shows that Kinyarwanda, in their analysis, is not unique in having such a set of rules.¹

The evidence for this group of rules in Standard Modern Greek comes from the syntactic behavior of one verb, didasko 'teach'.² Didasko occurs in three different active-voice patterns:³

- (6) a. didásko s ton Yáni tin gramatikí
teach/sg. to John/ACC the-grammar/ACC
'I teach grammar to John.'
- b. didásko tu Yáni tin gramatikí
John/GEN
'I teach grammar to John'
- c. didásko ton Yáni tin gramatikí
John/ACC
'I teach John grammar.'

Although certain aspects are somewhat unclear⁴ concerning the relationship among these three types, especially between the patterns of (6a) and (6b), their exact analysis is not crucial to the point being made here.

The types in (6a) and (6b) seem to involve alternative morphological "spelling out" of the marking for initial (and final) indirect object, although other possibilities, including an advancement or demotion analysis for one or the other, cannot be ruled out entirely. The type in (6c), however, seems clearly to involve the advancement of an indirect object to final direct object status, as indicated by the change in case-marking, since accusative is the usual case marking for final direct objects in Greek, and by the possibility of cross-indexing ton Yáni with an accusative clitic pronoun, an emphasizing process which seems to be restricted to final direct objects (for example, in (7b), tin gramatikí is a final 2-chômeur, while in (7e) it is a final 2):

- (7) a. ton_i didásko ton Yáni_i tin gramatikí
him/ACC John/ACCⁱ grammar/ACC
'I am teaching John grammar.'
- b. *tin_i didásko ton Yáni tin gramatikí_i
it/ACC
'I am teaching John grammar.'
- c. *ton didásko tu Yáni tin gramatikí
him/ACC John/GEN
'I am teaching John grammar.'
- d. *ton didásko s ton Yáni tin gramatikí
to John/ACC
'I am teaching grammar to John.'
- e. tin_i didásko tu Yáni/s ton Yáni tin gramatikí_i
it/ACC
'I am teaching grammar to John.'
- cf. f. ton_i vlépo ton Yáni_i
him/ACC see/1 SG John/ACC
'I see John.'

An important fact about the type of (6c) with 3 → 2 advancement is that not all speakers accept such sentences--for many, 3 → 2 advancement is not a possibility, and only the types of (6a) and (6b) occur.

In the passive voice, two patterns occur with didásko, illustrated in (8):

- (8) a. i gramatikí didáskete
The-grammar/NOM.SG taught/3 SG PASS
tu Yáni/s ton Yáni (apó ména)
John/GEN to John/ACC by me
'Grammar is taught to John (by me).'

- (8) b. o Yánis didáskete tin gramatikí (apó ména)
John/NOM be-taught/3 SG. PASS
'John is taught grammar (by me)'

(8a) seems clearly to involve advancement to subject of the initial direct object, gramatikí. The analysis of (8b), though, is more interesting.

The obvious analysis of the (8b)-pattern, especially for speakers who accept (6c), is that it involves a two-step "process", 3 → 2 advancement with 2 → 1 advancement as well. This "obvious" analysis, however, is probably not the correct analysis.

In particular, for speakers who do not allow 3 → 2 advancement with didásko, i.e. those who reject (6c), such an analysis requires an ad hoc filter of some sort to prevent the intermediate stage, (6c), from surfacing. For such speakers, an analysis of (8b) as involving direct advancement of the indirect object to subject status, i.e. a 3 → 1 advancement rule, is thus called for instead. Moreover, even for speakers who allow 3 → 2 advancement and accept the pattern of (6c), certain facts concerning cliticization with the accusative clitic pronouns argue for a 3 → 1 analysis of (8b).

In standard Modern Greek,⁵ the cliticization of accusative⁶ pronouns is restricted to final level 2's (direct objects).⁷ Thus the direct object in (9a), which is a final (and initial) 2, can cliticize, as in (9b).

- (9) a. vlépo ton Yáni
see/1 SG. John/ACC
'I see John.'
- b. ton vlépo
him/ACC
'I see him.'

whereas the subject in (10a), which is a direct object at the initial level but not at the final level, cannot, as in (10b).

- (10) a. o Yánis vlépete (apó ména)
John/NOM be-seen/3 SG. PASS by me
'John is seen by me.'

- b. *o Yánis ton vlépete (apó ména)
him/ACC

Furthermore, this restriction on accusative-cliticization accounts for the following clitic facts with didásko:

- (11) a. didásko ton Yáni tin gramatikí
John/ACC the grammar/ACC
'I teach John grammar.'

b. *tin didásko ton Yáni
it/ACC

'I teach John it.'

c. ton didásko tin gramatikí
him/ACC Sg.

'I teach him grammar.'

(11a) involves $3 \rightarrow 2$ advancement, with Yáni as the final 2, displacing gramatikí, which is the initial 2 but final 2-chômeur. Accordingly, if accusative cliticization is possible only for final 2's, ton Yáni of (11a) should be able to cliticize but gramatikí should not--this prediction is borne out by (11b) and (11c).⁸

The argument for $3 \rightarrow 1$ advancement comes from the cliticization possibilities of a sentence such as (8b), repeated here for convenience:

(8) b. o Yánis didáskete tin gramatikí

'John is taught grammar.'

Under a $3 \rightarrow 2$ cum $2 \rightarrow 1$ analysis of (8b), gramatikí would be a 2-chômeur and so should not be able to cliticize, just as it could not in (11b) above. However, it can cliticize, as shown by (12):

(12) o Yánis tin didáskete (apó ména)
John/NOM it/ACC

'John is taught it (by me).'

The acceptability of (12) is evidence for direct $3 \rightarrow 1$ advancement, for otherwise, there is no principled way to exclude (11b)⁹ but allow (12)--under a $3 \rightarrow 1$ analysis, gramatikí is a final (and initial) 2,¹⁰ and as such can cliticize.

Thus these facts indicate that Modern Greek has both $2 \rightarrow 1$ advancement and $3 \rightarrow 1$ advancement, as well as, for some speakers, $3 \rightarrow 2$ advancement.¹¹ The morphological effect of both of these advancements to subject is the same, namely the appearance of the verbal morphology traditionally called "middle" or "passive" or "mediopassive", involving a special set of endings in the present and imperfect tenses,¹² and a special morpheme $-(\theta)ik-$ in the aorist and a related one $(-\theta)-$ in the future. This parallel morphological effect of these advancements to subject can be accounted for by generalizing the $2 \rightarrow 1$ and $3 \rightarrow 1$ rules as OBJECT \rightarrow 1 and taking the "mediopassive" morphology to be the result of an object term advancing to subject.¹³ This is similar to the approach used by Perlmutter and Postal in their reanalysis of Kinyarwanda advancements.

Modern Greek, therefore, provides a parallel to the rule configuration posited by Perlmutter and Postal for Kinyarwanda and so renders their analysis all the more compelling from the standpoint of Universal Grammar. Moreover, to the extent that their analysis is supported, the Stratal Uniqueness Law receives additional support, for their analysis was designed to be in keeping

with this law (while Gary and Keenan's was not). In addition, Greek provides another language in which there is a significant generalization, here the appearance of medio-passive morphology, which can be captured through the grouping of direct object and indirect object together as object terms-- as such it gives added support to this aspect of the typology of grammatical relations proposed in Perlmutter (1980).

Finally, the data discussed here from Greek bears on the "Advancee Laziness Law" of Kimenyi (1980:29):

- (13) An NP undergoing an advancement will advance to the lowest point in the hierarchy permitted by universal and language-particular conditions.

Kimenyi (idem.) exemplifies this law as follows:

That is, if the language has rules such as the following:

non-term, 3 → 2

2 → 1

it will not allow

non-term, 3 → 1

without passing through the intermediate stage, namely

non-term, 3 → 2

Perlmutter and Postal's account of Kinyarwanda presupposes the abandonment of this law and Greek, as described here, confirms that this abandonment was justified, for Greek is a language which clearly has 3 → 2 and 2 → 1 but allows advancement of 3 → 1 without the 3 passing through the intermediate 2 stage.

Footnotes

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¹Even if Malagasy should prove to have 3 → 2, 3 → 1, and 2 → 1, the fact that yet another language, Modern Greek, has this same set of rules is still supportive of Perlmutter and Postal's position.

²The verb danízo 'lend' has been analyzed by Kakouriotis (1979) as allowing advancement to subject of its underlying indirect object because of the apparently related mediopassive verb danízome 'borrow' (i.e. 'be lent (something)'). An animate subject of danízome, however, unlike an animate subject of didáskome 'be taught (something)', is agentive, and can, for some speakers, occur with a modifier like mónos tu 'on one's own', which does not generally go well with nonagentive subjects. Also, as pointed out to me by Marios Fourakis, the preposition apó has the meaning 'from' (i.e. source) when used with danízome, even though it regularly marks the

agent in passive clauses and does so with didáskome. Thus it seems that danízome is best treated as a lexicalized medio-passive verb (see footnote 11) and not derived (syntactically, at least) from the active verb danízo.

³This account ignores the possibility of permuting the word order in these patterns. Also, there are some restrictions, irrelevant here, on the use of the genitive case for indirect object marking, due to potential (and actual) interference from the possessive function of the genitive. Finally, these sentences are all given with the definite article tin accompanying the initial direct object gramatikí 'grammar'--although Greeks prefer such sentences without the definite article, nonetheless it can occur and is included here so that there can be no doubt about the definiteness of the object and its eligibility for cross-indexing with a definite clitic pronoun.

⁴Some of the uncertainty comes from speaker variability (see also footnote 5) and some from ambiguities of analysis with clitic copying--see Joseph (1982) for a consideration of different possible analyses of the (5a) and (5b) type and Warburton 1977 for extensive discussion on indirect objects in Greek.

⁵The designation "standard" (i.e. Athenian Greek) is used to exclude from consideration Northern Greek dialects in which the accusative case is used to mark indirect objects and (some) benefactives. Many speakers of these dialects have the "standard" cliticization schema as a sociolect, though there are still some "pure" Northern speakers with only the accusative in these functions.

⁶Only the cliticization of accusative pronouns is necessarily linked to one particular grammatical relation--while genitive clitic pronouns do serve to mark indirect objects, they also mark other grammatical relations, such as benefactive, as well. The cliticization of accusative pronouns must be dependent on the grammatical relation of direct object because there are accusative nominals which express temporal and instrumental relations which in pronominal form cannot cliticize onto the verb:

(i) a. pérasa ekíni tin óra apó to grafío
passed/1SG that-the-hour/ACC by the-office
'I passed by the office at that hour.'

b. *tin pérasa apó to grafío
it/ACC
'I passed by the office then.'

(ii) a. yémisa ti lípsi pu mónon tha esthanótan
filled/SG the-sorrow/ACC that only FUT felt/3 Sg.
énas élinas
a-Greek/NOM
'I was filled with the sorrow which only a Greek could feel.'

b. *tin yemisa
it/ACC
'I was filled with it.'

This restriction to direct objects is shown also by the fact that (iib) is acceptable on the reading 'I filled it' where tin is the direct object, and also by the fact that ekíni tin óra can cliticize when pérasa has the meaning 'pass/spend (time)' and so takes a direct object:

- (iii) a. pérasa ekíni tin óra s to magazí
spent/1 SG that-the-hour/ACC in the-store
'I spent that hour in the store.'
- b. tin pérasa s to magazí
it/ACC
'I spent it at the store.'

Thus it is not enough to have accusative-cliticization triggered by any accusative nominal after the verb.

⁷There is, to my knowledge, one systematic exception to this generalization, namely expressions like éxo anáŋgi ('need' (literally "have need/urgency")) or káno kéfi 'like' (literally "make good-mood") which govern NPs in the accusative case as direct objects. When in pronominal form, the NPs governed by these expressions cliticize, with the accusative clitics, onto the verb:

- (i) a. éxo anáŋgi ton Yáni
have/1 SG need John/ACC
'I need John.'
- b. ton éxo anáŋgi
him/ACC
'I need him.'
- (ii) a. den káno kéfi tin gramatikí kaθólu
not make/1 SG mood the-grammar/ACC at-all
'I don't like grammar at all.'
- b. den tin káno kéfi kaθólu
it/ACC
'I don't like it at all.'

Probably, these expressions involve some sort of restructuring rule, making, for example, káno and kéfi into a single verb which would govern gramatikí as its object. This would be not unlike the type of restructuring that is probably needed to account for English passives like Mary was taken advantage of by one and all. Although positing such a restructuring rule is admittedly an ad hoc move, it seems that these facts would be difficult to account for otherwise in any other treatment of cliticization in Greek.

⁸Since the order pidásko tin gramatikí ton Yáni is marginally acceptable, according to some speakers consulted, the cliticization rule cannot be stated simply in terms of the nominal immediately to the right of the verb without an otherwise unmotivated extrinsic rule ordering.

⁹For speakers without 3 → 2 advancement, (11b) is ungrammatical since it has no possible source. For the same reason, (11c) is ungrammatical for those speakers, a way in which they differ from speakers with 3 → 2 advancement.

¹⁰Warburton (1977:281) states that in sentences like (8b), gramatikí "regains its direct object status"; by contrast, what is being claimed here is that it never loses this status. Moreover, Warburton's example (84) with a clitic copy (tin) of gramatikí:

(84) ta pedyá tin_i didáskonde tin gramatikí_i
 the-children/NOM it/ACC be-taught/3 Pl the-grammar/ACC

'The children are being taught grammar.'

may well provide yet another argument for direct 3 → 1 advancement if one assumes that the clitic copying is a distinct process from the accusative cliticization discussed above. Warburton assumes that the two represent a single process, although it is not necessarily obvious that they should, inasmuch as they have different functions and different outputs (e.g. the full nominal is retained in one but not the other). Thus if accusative clitic copying is restricted to final direct objects, as it appears to be, then (84) gives an additional argument for 3 → 1 advancement with didásko, since in a 3 → 2 cum 2 → 1 analysis, tin gramatikí would be a 2-chômeur and thus ineligible for clitic copying.

¹¹Actually, 3 → 2 advancement is not restricted to didásko, as 3 → 1 is. A few other verbs, e.g. maθéno 'teach', kernó 'treat', allow 3 → 2 advancement, and it is safe to say that all speakers allow 3 → 2 with at least a subset of these verbs.

¹²Excluding dialectal and innovative variants, the mediopassive endings are as follows:

(i)		PRESENT				IMPERFECT			
1 Sg	-me	1 Pl	-maste	1 Sg	-mun	1 Pl	-mastan		
2	-se	2	-sθe	2	-sun	2	-saste		
3	-te	3	-nde	3	-tan	3	-ndan		

while the active endings are:

(ii)		PRESENT				IMPERFECT			
1 Sg	-o	1 Pl	-me	1 Sg	-a	1 Pl	-ame		
2	-is	2	-te	2	-es	2	-ate		
3	-i	3	-un	3	-e	3	-an		

¹³This morphology has other functions as well--among other things, it marks reflexive and reciprocal verbs with reflexivity/reciprocity between initial subject and initial direct object, e.g. ksirízome 'I shave myself', vlepómaste 'we see each other' (whereas (8b) has only passive value and not reflexive); it occurs with many intransitive verbs, e.g. travyéme 'withdraw', kunyéme 'move'; and, it is found idiosyncratically with a limited number of "deponent" verbs that are active in meaning and syntactically transitive, e.g. θímáme 'remember', skéftome 'think of', etc.

It does not seem possible, however, to make any significant generalizations subsuming all the contexts in which this morphology occurs. In particular, although there are some suggestive parallels, for example, with the analysis for Italian se-verbs based on the "Unaccusative" Hypothesis and the "Multi-attachment" Hypothesis given by Perlmutter (1980) (see that paper for a discussion of this terminology), medio-passive morphology in Greek cannot be said to be associated with all networks in which a single nominal heads a l-arc and an OBJECT-arc, as se is in Italian, because of intransitive verbs with "middle" meanings, such as anígo 'open' (as in i pórtá anígi 'the door opens') which do not have the expected morphology. Conversely, there are verbs which have mediopassive morphology e.g. the transitive deponents like skéftome or intransitives like kunyéme, but which do not readily admit of an analysis in which a single nominal heads a l-arc and an OBJECT-arc.

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(11)

	IMPERFECT		PRESENT
-ano	1 B1	1 B1	1 B1
-alo	2	2	2
-an	3	3	3

This morphology has other functions as well--among other things, it marks reflexive and reciprocal verbs with reflexivity/reciprocity between initial subject and initial direct object, e.g. katáxome 'I shave myself', vláxomaste 'we see each other' (whereas (8b) has only passive value and not reflexive); it occurs with many intransitive verbs, e.g. tráxome 'I drew', kunyéme 'I moved', and it is found diathematically with a limited number of "deponent" verbs that are active in meaning and syntactically transitive, e.g. stáxome 'I remember', skéftome 'I think of', etc.

Some Passives Not Characterized by Universal Rules:

Subjectless Impersonals*

John A. Nerbonne, Jr.

"Wenn wir ohne vorgefasste Theorie an die Frage herantreten, werden wir darauf zurückgeworfen anzuerkennen, dass ohne Gedanken an ein Subjekt der Vorgang einfach in dieser Form hingestellt werden konnte."

--Jacob Wackernagel, Vorlesungen über Syntax I, 116

Introduction

German impersonal passives certainly seem to allow no superficial subject:

Es wird gearbeitet
it AUX work (pass past)

'People work.'

The evidence that these sentences lack superficial subjects is presented in part I of this paper. A treatment in categorial grammar is proposed.

Part II concerns an alternative treatment in Relational Grammar. Perlmutter (1978) has argued that all impersonal passives be analyzed as having subjects at the 'final' level of analysis. While the postulation of 'final' subjects may be compatible with the absence of superficial subjects, it complicates the grammatical description of German. The complication cannot be justified if one restricts attention to the facts of German grammar.

Perlmutter's justification postulates a universal rule of passive formulated in terms of grammatical relations. According to this Relational Grammar account, all passives, including impersonal passives, result when an object (2) becomes a subject (1) in a clause with a subject (1). Impersonal passives are simply the special case where a dummy 2 becomes a 1. One can describe German passives in these terms, but the use of the dummy ought to require justification.

The purpose of the abstract characterization is clarified in the interaction of the passive with other proposed rules in Relational Grammar. In particular, Perlmutter (1978) claims that one can characterize a large class of predicates which fails to appear in the impersonal passive.

These are the unaccusative predicates--representing those intransitive verbs whose underlying forms show only a 2, which must become a 1. Note that since this 2 → 1 advancement does not occur in a clause with a 1, it is not an example of passive. Perlmutter (1978:10) then further claims that only one such advancement to 1 may occur in a clause ('1-Advancement Exclusiveness Law'). Since unaccusative predicates always involve an advancement to 1, and only one such advancement is possible per clause, no unaccusative predicates may appear in impersonal passives.

The predictive power of this characterization results from the independent characterization of unaccusative predicates--roughly, as those which describe neither willed or volitional acts, nor involuntary bodily processes. The prediction then is that no such predicates may appear in impersonal passives in any language.

In part III of the paper impersonal passives from (A) Lithuanian, (B) Irish, and (C) Estonian are presented which clearly involve predicates with meanings of the unaccusative variety. These passives refute the only clear empirical prediction of the unaccusative hypothesis.

If one were to withdraw the semantic characterization of the unaccusative hypothesis, this might seem to result in a system lacking predictions about impersonal passives, but nonetheless coherent. Part IV, however, presents evidence from (A) German, (B) Lithuanian and (C) Irish that refutes the 1-Advancement Exclusiveness Law. This shows that there is no internal motivation within the theory of Relational Grammar which could explain the failure of unaccusative predicates to appear in impersonal passives.

The refutations of the Unaccusative Hypothesis and the 1-Advancement Exclusiveness Law do not demonstrate that Relational Grammar's proposed universal law of passive is wrong, merely that it is empirically empty. Part V argues, contrary to Perlmutter and Postal (1977) (A) that the particular way in which Relational Grammar has characterized passives should be avoided because of its use of dummies which deform categorial structure its conflation of distinct grammatical constructions, and its commitment to questionable underlying structures, and (B) that there is no reason to expect linguistic theory to characterize a universal rule of passive.

I. The Structure of German Impersonal Passives: Subjectlessness.

These passives have been called subjectless for good reason. In particular, there is no plausible candidate for subject in the sentence, so that there is no customary division of the sentence into subject noun phrase and predicate verb phrase.¹

In spite of the Relational Grammar analysis of impersonal passives, the es which appears in (1) is not the subject of (1). It is not a 'dummy' which was promoted from object position by the rule of passive.

- (1) Es wird gefeiert
It is celebrated

'Celebrations are under way.'

According to the account under attack the es is subject noun phrase and the sentence is of standard structure.²

But this es doesn't behave at all like a noun phrase. The rule of passive, which normally promotes noun phrases into subject position, is not responsible for the presence of es. Besides its clear uses as a pronoun, es is used in two distinct ways: on the one hand, as a pleonasm connected with daß-clauses (and in cleft sentences or as the 'weather pronoun',) and on the other hand as an empty stylistic variant. The first group is generally parallel to English it (in It is raining or It is clear that she knows) while the second is mirrored by English there (There comes a time when nothing seems to fit.)

The es in the first group of uses is a noun phrase or its pleonastic remnant. In particular, es is free to occur outside absolute initial position, as are all NPs in German clause structure.

- (2) Es regnete gestern
Gestern regnete es
Yesterday rained it
'Yesterday it rained.'
- (3) Uns scheint es allen komisch, daß P kommt.
Us (dat.) seems it all (dat.) funny, that P comes
'It seems funny to all of us that P is coming.'
- (4) Wir bedauern es alle, daß P kommt.
We regret it all, that P comes
'We all regret P's coming.'
- (5) Ihn { freut } es, daß P kommt
 { ärgert }
Him (acc.) { pleased } it that P comes
 { displeased }
'He is { pleased } that P is coming.'
 { displeased }
- (6) Jetzt friert es mich
Now freezes it me (acc.)
'I'm freezing now.'
- (7) Ihm gefällt es, daß P kommt.
him(d) please it that P comes
'It pleases him that P is coming.'
- (8) Heute gibt es Grund zur Sorge.
Today gives it reason for concern
'Today there is reason for concern.'

Opposed to these uses of es is the use of es as a stylistic particle, which is limited to absolute initial position in S. Note that this es fails to appear even in questions.

- (9) Es kam ein Ritter aus dem Osten
it came a knight from the east
'There came a knight from the east.'
- *Ein Ritter kam es aus dem Osten
A knight came it from the east
Ein Ritter kam aus dem Osten
A knight came from the east
- *Kam es ein Ritter aus dem Osten?
Came it a knight from the east

Kam ein Ritter aus dem Osten?

Came a knight from the east

'Did a knight come from the east?'

- (10) Es fielen mir zwei Eigentümlichkeiten auf
It fell me (da) 2 peculiarities on

'There struck me two peculiarities.'

*Mir fielen es zwei Eigentümlichkeiten auf
Me(da) fell it 2 peculiarities on

Mir fielen zwei Eigentümlichkeiten auf
Me(da) fell it 2 peculiarities on

'Two peculiarities struck me.'

Zwei Eigentümlichkeiten fielen mir auf
Me(da) fell it 2 peculiarities on

*Zwei Eigentümlichkeiten fielen es mir auf
Me(da) fell it 2 peculiarities on

*Fielen es dir die Eigentümlichkeiten auf?
Me(da) fell it 2 peculiarities on

Fielen dir die Eigentümlichkeiten auf?
Me(da) fell it 2 peculiarities on

The es which appears in German impersonal passives belongs to the group of empty stylistic particles. It can appear only in clause initial position, and thus is barred even from questions. (Noted by Curme (1922: 338).)

- (11) Es wurde ihm geholfen
It was him (dat.) helped

'He was helped.'

*Ihm wurde es geholfen
Him (dat.) was it helped

Ihm wurde geholfen
Him (dat.) was helped

*Wurde es ihm geholfen?
was it him helped?

Wurde ihm geholfen?
Was he helped?

- (12) Es wurde auf dem Marktplatz getanzt
It was on the market plaza danced

'People danced on the market plaza.'

*Auf dem Marktplatz wurde es getanzt³
On the plaza was it danced

Auf dem Marktplatz wurde getanzt
On the plaza was danced

'People danced on the market plaza.'

*Wurde es auf dem Marktplatz getanzt?
Was it on the market plaza danced?

Wurde auf dem Marktplatz getanzt?
Was on the market plaza danced?

(13) Es wurde dan geschlafen
It was then slept

'People slept then.'

*Dann wurde es geschlafen
Then was it slept

*Wurde es dann geschlafen?
Was it then slept

Dann wurde geschlafen
Then was slept

Wurde dann geschlafen?
Was then slept

'People slept then.'

'Did people sleep then?'

The first group of uses of es allow full nounphrases instead of es, although these are severely restricted in the case of the 'weather phrases'.

(2') Die Steine regneten auf die Polizei hinunter
The stones rained on the police down

'The stones rained down on the police.'

(3') Der Chef scheint uns allen komisch
The boss seems us (dat.) all (dat.) funny

'The boss seems funny to all of us.'

(4') Wir bedauern alle sein Versehen
We regret all his error

'We all regret his error.'

(5') Sein Erfolg freut uns
His success pleases us (dat.)

(6') Sein Blick friert mich
His look freezes me

'His look gives me a chill.'

(7') Sein Erfolg gefällt mir
His success pleases me

- (8') Sein Verhalten gibt Grund zur Sorge
His behavior gives reason for concern
'His behavior is reason for concern.'

No full noun phrases, even maximally vague ones, may be used in place of the stylistic particle es:

- (9') *Dies kam ein Ritter aus dem Osten
This came a knight from the east
- (10') *Dies fielen mir zwei Eigentümlichkeiten auf
This fell me (dat.) 2 peculiarities on

Nor may full noun phrases, even very vague ones, be used in place of the es which appears in impersonal passives.

- (11') *Dies wurde ihm geholfen
This was him (dat.) helped
- (12') *Dies wurde auf dem Marktplatz getanzt.⁴
This was on the market plaza danced
- (13') *Dies wurde dann geschlafen
This was then slept

As a third point of contrast, note that the es in the first group of uses may appear in embedded clauses, while those in the second group cannot.

- (2'') P weiß, daß es regnet
P knows, that it is raining
- (3'') P weiß, daß es uns allen komisch scheint, daß er kommt.
P knows that it us all funny seems, that he comes
'P knows that it seems funny to all of us that he is coming.'
- (4'') P weiß, daß wir es alle bedauern, daß er kommt.
P knows that we it all regret that he comes
'P knows that we all regret his coming.'
- (5'') P weiß, daß es M freut, daß er kommt.
P knows that it M pleases, that he comes
'P knows that it pleases M, that he is coming.'
- (6'') P weiß, daß es mich friert
P knows that it me freezes
'P knows that I'm freezing.'
- (7'') P weiß, daß es M gefällt, daß er kommt.
P knows that it M pleases that he comes
'P knows that it pleases M that he is coming.'

- (8") P weiß, daß es Grund zur Sorge gibt.
P knows that it reason for concern gives
'P knows that there is reason for concern.'
- (9") *P weiß, daß es ein Ritter aus dem Osten kam.
P knows that it a knight from the east came
- (10") *P weiß, daß es mir zwei Eigentümlichkeiten auffielen.
P knows that it me 2 peculiarities on-fell

The es which appears in impersonal passives is likewise prohibited from appearance in embedded clauses. (Cf. Curme 1922:338).

- (11") *P weiß, daß es ihm geholfen wurde.
P knows that it him helped was
- (12") *P weiß, daß es auf dem Marktplatz getanzt wurde.
P knows that it on the market plaza danced was
- (13") *P weiß, daß es dann geschlafen wurde.
P knows that it then slept was

The es which appears in impersonal passives is thus not a subject.⁵ It is a filler for any otherwise unfilled first positions in matrix clauses-- in impersonal passives as in the (9) and (10) sentences above. The presence of es provides no evidence that any dummy was promoted or ever existed.

There is furthermore no other likely candidate for subject in sight. One might suggest that dative objects such as ihm in the sentence below might be surface subjects, but this would concern only one of the many relevant structures found in impersonal passives.

- (14) Ihm wird geschmeichelt
he (dat.) AUX flatter (part.)
'He is flattered.'

There are, moreover, many sound reasons for refusing to view such a dative complement as subject. In particular, it has the wrong case marking and it doesn't control number agreement. Furthermore, as Cole et al. (1980: 727ff) note, such dative objects in passives display none of the subtler properties of subjects. They are subject to no EQUI rules, they do not delete under identity in conjunction reduction with subjects and cannot participate in the preposed relative clause construction. In this they contrast, point for point, with the notional accusative objects which are promoted by the standard rule of passive.

The argument thus far has taken the form that there is no plausible candidate for subject in the surface structure of impersonal passives. But there is also some positive indication that these sentences are subjectless.

It is because this construction has no subject that it fails to participate in any infinitival constructions:

- (15) *...ohne geschlafen zu werden.
without slept to be
*Er mu te stundenlang warten, ohne geholfen zu werden.
He must (past) for hours wait, without helped to be

Note, on contrast, the other constructions with es:

- (16) Es hat geblitzt und gedonnert, ohne zu regnen.
It has flashed and thundered, without to rain
'There was lightning and thunder without rain.'
- (17) Es fiel auf, ohne komisch zu scheinen, daß er zugegen war.
It fell on without funny to seem, that he present was
'It was striking, although it didn't seem peculiar, that he was present.'
- (18) es isn't a subject in (4)
- (19) Es überrascht mich, ohne mich zu freuen, da sie kommt.
It surprises me, without me to please, that is he comes
'It surprises but doesn't please me that she is coming.'
- (20) Ihr Blick kann mich nicht streifen, ohne mich zu frieren.
Her glance can me not light on, without me to freeze/chill
'Her glance cannot light upon me without chilling me.'
- (21) Es fiel ihr zuf, ohne ihr zu gefallen.
It fell her on, without her to please
'It struck her without pleasing her.'
- (22) Sein Benehmen fällt auf, ohne Grund zur Sorge zu geben.
His behavior falls on without reason for concern to give
'His behavior is noticeable, although there is no reason for concern.'

In the present (categorial grammar) framework, these infinitival constructions are derived from verb phrases. (In standard theory, one might have regarded them as derived from sentences with empty subject nodes, which would then be bound pragmatically. Since there are no subject nodes in impersonal passives, this would explain why impersonal passives cannot be used in these infinitivals.)

Those who promote the dummy analysis of impersonal passives would perhaps like to attribute this failure of impersonal passives to participate in the infinitival construction to a failure of control in the infinitive. This attribution fails (a) because one ought to be able to effect control from dummy to dummy, but cannot:

- (23) *Es wurde tagelang gefeiert, ohne geschlafen zu werden.
It was for days celebrated, without slept to be

and (b) because syntactic control isn't absolutely required in infinitival complements of the relevant sort. Thus impersonal passives and agentless constructions can appear in the matrix of these constructions.

- (24) Dann wurde gegessen, ohne ihn zu fragen.
Then was eaten, without him to ask

'Then people ate without asking him.'

- (25) Es regnete tagelang, ohne uns zu stören.
It rained for days, without us to bother

'It rained for days without bothering us.'

The suggestion that the dummies inserted in the Relational Grammar treatment are "non-referential" might be made in order to explain why the infinitivals above allow no control, since non-referentials certainly cannot be coreferential. I am suspicious of this explanation, however. The dummies are assigned the status of noun phrases, which, in systematic treatments, are all to be semantically interpreted in a unified fashion. (This interpretation is usually a set of properties, i.e. a quantifier.) But then dummies cannot be simply non-referential, although they may be assigned a "distinguished variable" as semantic value which guarantees that they do not satisfy that predicates. In this case, however, some control, whether grammatical or pragmatic, ought to be possible in those constructions where other noun phrases exhibit control. As the examples above indicate, no such cases have been forthcoming.

This is not to suggest that the problem is insoluble or even that we are always forced to treat dummies either as referential or as syncategorematic. We could also specify in the rule assigning control that the meanings of dummies may not be assigned as control. But this would be a suspicious restriction, especially given the lack of NP properties of the dummies in question here. Dummies which enjoy NP status with none of the semantic responsibilities of reference are in violation of the hypothesis that categorial structure in syntax is parallel to argument structure in semantics.

In the present analysis, impersonal passives are simply categorially wrong for the infinitival construction. This follows from a treatment of impersonal passives as constructions which automatically lack subjects, if we suppose that the infinitivals are derived from verb phrases with verb phrase meanings (which might be regarded as sentences with empty subject nodes, where the argument position of the VP meaning is supplied contextually.) Impersonal passives have the syntactic make-up of verb phrases, but they are sentences categorially and have sentence meanings with no empty argument position.⁶

There are undoubtedly mechanisms one could deploy to let impersonal passives mimic subjectlessness while retaining a "dummy" subject. These ought to be specified prior to further discussion.

A further argument for the subjectlessness of impersonal passives is available if one is willing to examine idiolects. Some (few) native speakers accept passives in the complements of verbs of perception:

- (26) Sie sah ihn verprügelt werden.
she saw him beaten AUX

'She saw him being beaten.'

But impersonal passives are never found in these constructions.

- (27) *Sie sah getanzt werden.
She saw danced AUX

This follows again from the conception of impersonal passives as phrases with sentence meanings if we assume that verbs of perception in this idiolect, at least, take VP complements with standard VP meanings. Impersonal passives simply are not VP complements with VP meanings. If there is no subject in German impersonal passives, then it is a genuinely impersonal construction, i.e. a subjectless one.

As such, the construction stands nearly alone in German, though certainly not in the family of languages. There are two similar constructions in German, one involving the verbs dürsten and hungern, exemplified below:

- (28) Mich {dürstet
 hungert} nach Abenteuer
me (acc.) {thirst
 hungers} after adventure
'I {thirst
 hungers} after adventure.'

This construction is decidedly non-colloquial, though not archaic. It is similar to the impersonal passives in lacking a subject, but the subcategorization is completely different. Here we see S = (nach NP) + Ac NP + VP_{imp}, while in the impersonal passives S = (Obl. NP) + (PP) + Past Part + Pass Aux.

The other is found in the idiom:

- (29) Mir liegt an der Sache.
Me (dat) lies on the matter
'The matter is important to me.'

This is an example of S = Obl. NP + PP + V_{imp}, but both the oblique NP and the PP are obligatory. There are no basic structures S = Obl. NP + V or S = PP + V or S = V in German, although the outputs of the rule admitting impersonal passives may take these forms. (Thus this rule is not structure preserving in the sense of Emonds (1976:3).)

The rule creating impersonal passives will now be specified. To formulate the rule, let 'I' designate a two place relation between individuals and states of affairs, i.e. sets of possible worlds, such that 'I(x)(p)' is true iff the individual represented by 'x' intends that the state of affairs represented by 'p' came about.

For α a V which does not take an accusative complement, we may assume without loss of generality that α is of categorial structure S/NP/X, then PASS(α) is past participle (α) + werden and is of categorial structure S/X. The meaning of PASS (α) is specified, depending on α 's syntactic category:

- (30) i. if $\alpha \in VP$, $\text{PASS}(\alpha)' = \exists x \alpha'(x) \wedge \exists x I(x)(\alpha'(x))$
ii. if $\alpha \in TVP$, $\text{PASS}(\alpha)' = \lambda x \exists y \alpha'(x)(y) \wedge \exists y I(y)(\exists x \alpha'(x)(y))$
iii. if $\alpha \in VP/PP$, $\text{PASS}(\alpha)' = \lambda p \exists x \alpha'(P)(x) \wedge \exists x I(x)(\exists p \alpha'(P)(x))$,
where P is variable over prepositional phrase meanings.

Passivization with agent phrases (for those idiolects which accept them) will be treated by parallel rules. Note that the condition on intentionality specifies only that someone could intend the action, not that the actual person who completed the action intended it.

This is correct, as is evidenced by one of the Badische Zeitung's editorials of October, 1981:

- (31) "Auto-Freiheit. Und dafür ist es [das Volk] auch gerne bereit zu zahlen. Mit abgeholzten Wäldern, mit stinkender Luft und einem verbogenen Rückgrat. Weil das natürlich auch Freiheit ist.
(Ganz nebenbei: Es wird auch gestorben für diese Freiheit.)"
 incidentally Aux also die (part) for this freedom
'Incidentally: people die for this freedom.'

The people spoken of in this sentence do not die willingly. Rather, they, and in so doing, do what might be done willingly. The sentence thus strongly suggests that they, and others, are responsible. Curme's phrase, that the initiators of the action act as "free moral agents", is really quite good. (There are more complicated cases as well, in which it is suggested that those performing the action do so according to someone else's intention.

- (32) Da wurde sich anständig benommen.
 there AUX self politely behave (part)
'There people had to behave.'

This may very well be a realization of the same deontic component of meaning which allows the impersonal passive to function as an imperative.)

There are several further aspects of this rule which I call attention to here without justifying. The rule assumes canonical SOV word order. It operates on lexical verbs, creating a constituent Pass. Part. + werden. The rule says nothing about the predominance of durative (i.e. atelic) predicates in the impersonal passive. Finally, the rule does not output phrases of the category VP which require subjects. The structure of a sentence such as (33) is given in (33'):

- (33) Dann wird gefeiert.
 then AUX celebrate (pass. part.)
'Then people celebrate.'

(33') dann wird gefeiert, S (V-fronting, fronting)⁷

↓
dann gefeiert wird, S (tensing)

↓
dann gefeiert werden, S

↙
dann, S/S

↘ gefeiert werden, S (passive)

↓ *
feiern, S/NP

We are concerned only with the step in the derivation marked with the asterisk. The output, gefeiert werden, has sentence status. It thus can function as a sentential complement (e.g. with scheinen), but never in a VP complement with verbs of perception or in the infinitival construction with ohne, which is likewise constructed from verb phrases.

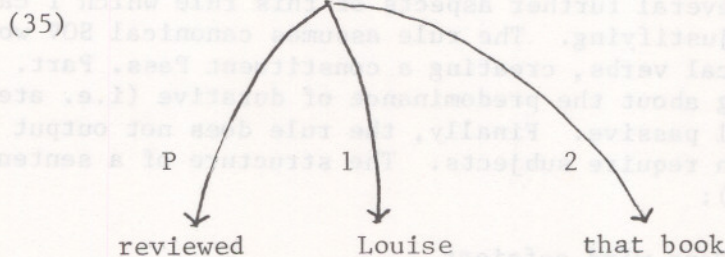
The situation with verbs taking oblique complements or prepositional phrase complements is exactly parallel, except that these complements must first be added to the passivized verbs to derive sentences. But at no stage of the derivation of impersonal passives with these verbs do we encounter phrases of the category S/NP_{nom}, i.e. verb phrases.

II. A Treatment in Relational Grammar

The analysis proposes that clauses be described at two levels. At an underlying level, the structure of the minimal clause includes a predicate (P) and a number of noun phrases ("terms") and a specification of the grammatical relations which each term bears to the verb, e.g. 'subject' (1), 'direct object' (2), 'indirect object' (3), 'oblique object' (00), etc. At a level closer to the surface, these may have changed or have been augmented by rules collapsing clauses. Perlmutter and Postal (1977) consider the following sentences, which have identical underlying grammatical relations:

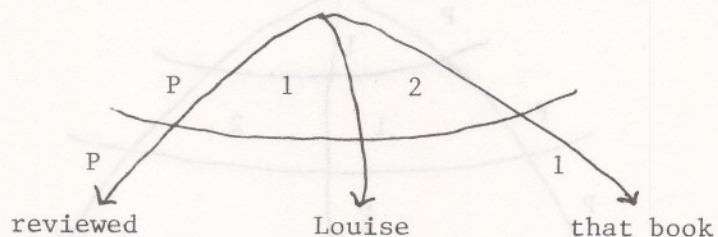
- (34) a. Louise reviewed that book.
b. That book was reviewed by Louise.

The underlying structure may be represented in a 'Relational Network' as in (35).



For points relevant to this discussion, this network is a sufficient description of the relational structure of (34a). (34b) has a differing surface configuration of relations, however, which require some extension of the figure.

(36)



The new figure has relabeled the arrow ("arc") to that book as a 1-arc, announcing that it is the subject. The relabeling is licensed by the universal rule of passive. Passive is universally defined, as 'advancing' or 'promoting' the 2 to a 1, in a clause which already contains a 1.

The line separating the '2' from the '1' on this arc signifies a division of "strata", a concept which Relational Grammarians have introduced, but which may be clarified to generative grammarians easily. Stratum (n+1) may appear below stratum (n), if and only if this is licensed by a rule of grammar; just as the second stratum in diagram (36) is licensed by the rule of passive. Strata are thus analogous to lines in derivations: line (n+1) may appear below line (n) if, and only if this is licensed by a rule of grammar.⁸ There is a difference in the Relational Grammar view, however. While earlier generative grammarians never attributed theoretical importance to the structure of derivations, the concept of 'line in a derivation' or 'stratum' is important in Relational Grammar.

This becomes obvious when we ask which grammatical relation Louise bears after the application of the passive, i.e. in (34b). That it is no longer the subject is guaranteed by the Stratal Uniqueness Law (Perlmutter and Postal 1977:408): "Only one dependent of a clause can bear a given term relation in a given stratum." This is novel significance for the line in derivations. Figures which like (36) include indication of strata are "stratal diagrams". The actual grammatical status of the initial subject is specified by the Chômeur Condition: if a term N_a in a stratum S_i bears a given relation and another term N_b bears the same relation in S_{i+1} , then N_a bears the Chômeur relation in stratum S_{i+1} (paraphrasing Perlmutter and Postal 1977:408). A chômeur of a term which previously bore the 1 relation is signified 1, a 2-chômeur is $\hat{2}$, etc.

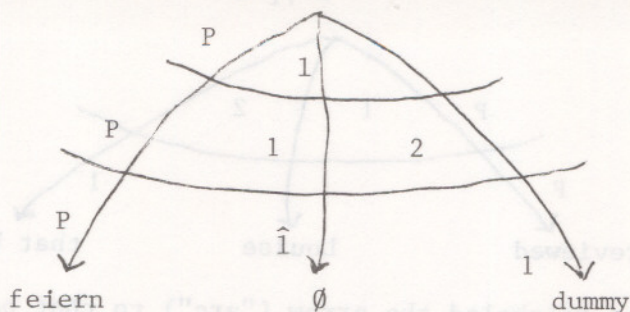
One further proposed relational law will be relevant below. Perlmutter (1978:156) refers to the Motivated Chomage Law which he characterizes as violated by the analysis of impersonal passives as "spontaneous demotion" of subjects. Impersonal passives are those without (surface) subjects, such as the following example from German:

- (37) Gestern wurde gefeiert/Es wurde gestern gefeiert.
 Yesterday was celebrated
 'There was celebrating yesterday.'

Even though no surface 1 may be found in these constructions, the universal rule of passive would have it that they, too, are examples of 2 to 1. The justification of this will occupy us below.

Perlmutter (1978) suggests that impersonal passives such as the one above contain a dummy object prior to the application of the passive rule. The dummy is advanced to subject position by the same rule of passive demonstrated in figure (36) above. An appropriate network for an impersonal passive would then be (38):

(38)



The relabeling of 2 to 1 is sanctioned by the passive rule and the consequent relabeling of 1 to $\hat{1}$ is required by the Chômeur condition.

Perlmutter claims one advantage for his analysis, namely, that it can predict which predicates may appear in impersonal passive constructions. The "Unaccusative Hypothesis" divides verbs which have only one NP complement (in English, intransitives) into two classes: those which have only underlying subjects "unergatives" and those which have only underlying objects "unaccusatives". The underlying objects of unaccusatives must be advanced to subject position by a 2-to-1 (non-passive) advancement rule, known as "Unaccusative Advancement". Because of the 1-advancement Exclusiveness Law, no other advancement to 1 is possible in this clause, in particular no passives (Perlmutter 1978:166). Thus the prediction: initially unaccusative clauses may never appear in impersonal passives.

Unaccusatives are recognized primarily by their membership in the class of semantic predicates which excludes those describing willed acts and those describing involuntary bodily processes such as coughing. The excluded class forms the "unergative" group, according to Perlmutter (1978). The prediction: all the verbs in impersonal passives are unergative predicates and have the meanings associated with these.⁹ This prediction is correct for German (as reflected in my formulation of the rule above.)

There are then two hypotheses about the meaning of impersonal passives (in German). According to the unaccusative hypothesis, verbs which describe acts which might be willed may be selected to appear in the impersonal passive. The rule of passive does not change meaning. According to the alternative proposed here, it is a part of the meaning of the construction that the act it describes might be willed. Since this alternative treats the phenomenon semantically, we might refer to it as 'the semantic hypothesis.' In contrast, the unaccusative hypothesis is syntactic. The rule of passive may not apply to syntactic structures of a certain sort.

Even as alike as they are, the two hypotheses still do not make completely identical predictions. According to the semantic hypothesis, a verb which describes an act which cannot normally be willed might still appear in the impersonal passive construction, although this will be rare, and may sound implausible in many contexts. The syntactic hypothesis cannot explain this possibility except as a case of homonymy.

Curme (1922:338) discusses one such case in which the verbs verbluten 'to bleed to death' and sterben 'to die' appear felicitously in the impersonal passive. The semantic hypothesis accommodates this possibility straightforwardly--a situation is described in which such acts are willed. The syntactic hypothesis must resort to homonymy--the postulation that there are two verbs verbluten, one which means 'willingly bleed to death' and another 'bleed to death in an unwilling fashion.' Since Curme's example suggests that there may be a number of similar homonyms, the syntactic hypothesis becomes somewhat messy, (but by no means untenable.)

I believe that this difference in the treatment of the implicature of volitionality and the issue of subjectlessness are the only empirical distinctions between the two treatments, although methodological differences abound. (Cf. part V.A below). Both the evidence on the subjectlessness of impersonal passives and the evidence that there is no clearly defined class of unergative verbs favor the categorial approach advocated here.

The appeal of the Relational Grammar treatment is not based on the facts of German, but rather on the circumstance that it makes predictions about passive rules in all languages. The relational laws and hypotheses described above are intended to hold for all languages. I would not suppose the rules formulated in the categorial treatment above to hold for all languages, but only that the reference to categories is universally employed. This is an unsurprising claim.

Relational Grammar makes the following surprisingly strong claims: (i) No unaccusative predicate is ever found in an impersonal passive in any language; (ii) No language contains sentences in which two advancements to 1 have taken place.

These claims are strong because they may be tested, and potentially falsified on the grounds of data from any language. For this reason the claims are intriguing and worthy of attention.

Let me clarify my position: if we were to judge the Relational Grammar analysis on the basis of the facts of German alone, I am certain we should regard it as inferior. A great deal of theoretical apparatus generates very few concrete predictions. But we are to judge it not on the basis of one language, but rather on the basis of all languages, for which it makes identical predictions. If these claims are verified, then the unattractive analysis of German would be a small price to pay for an impressive set of universal laws in language. For this reason I propose to turn to the question of the universal validity of the unaccusative hypothesis and the 1-Advancement Exclusiveness Law.

III. The Unaccusative Hypothesis

III.A. Lithuanian¹⁰

The Lithuanian passive is formed by combining the present passive participle in -m- or the past participle in -t- with forms of the auxiliary būti 'to be' in any tense. The participle normally agrees in gender and number with the superficial subject of the passive sentence, if there is any. The passive superficial subject usually corresponds to an accusative object in an active counterpart, but may correspond to an oblique object. It is clearly 2 → 1 advancement in the sense of Relational Grammar.

(39) jîs (yrà) myli - m - as
be(nom.) be(3s) love(pres. pass.) (masc. nom. s.)

'He is loved.'

(40) jî (yrà) myli-m- a
she is love(pres. pass.) (fem. nom. s.)

'She is loved.'

(Hyphens have been employed above to show the morphological structure of the participles. There are no hyphens in normal orthography.) The verb 'to be' has been placed in parentheses for this form may be omitted in

the present tense.

Impersonal passives are formed from verbs without accusative objects, including intransitives (Geniušienė (1974:210).)

- (41) (jono) išėita iš kiemo
(Jonas(gen.)) go out(past. part.)(n) from courtyard
'Someone has gone out of the courtyard.'
('Jonas has gone out of the courtyard.')

But they are also formed from transitive verbs with direct objects, which means that some sentences have two passives:

- (42) Namu ne - pastatė
house (gen.) not build(past 3s)
'They didn't build a house.'

- (43) Namas ne-pastatytas
house(nom.) not build(past. pass.)(nom.s.)
'The house has not been built.'

- (44) Namu ne- pastatyta
house(gen.) not build(past. pass.)(n)
'A house has not been built.'

(The latter, impersonal passive corresponds to the indefinite reading of the noun phrase in the active.) The impersonal passive is formed from the same participial desinences as personal passives (although the participles always show neuter endings in impersonal passives), which are combined with buti just as are the participles personal passives. It is clear that we are dealing with impersonal passives.

Perlmutter (1978:162) provides a list of the semantic predicates which should universally be absent from impersonal passives because they are unaccusatives. The following is a selection from his list:

"Predicates determining initially unaccusative clauses

- (45) a. Predicates expressed by adjectives in English.
This is a very large class, including predicates describing sizes, ..., smells, states of mind, etc."

re: states of mind (Senn 1977:377)

- (46) jõ ēsama gēro žmogaūs
he(gen.) be(pres. pass.)(n) good(gen.) man (gen.)
'He is a good man.'

jõ appears in the genitive because this is the regular case for agentives (underlying subjects) to assume in passives. gēro žmogaūs is genitive because it is in predicative construction with jõ.

re: sizes

- (47) jō ēsama aukštó, dideló
he(gen.) be(pres. pass.) tell(gen.), tall(gen.)
'He is tall.'

re: smells

- (48) ?kvepta blogai
small(past. pass.)(n) bad(adv.)
'It smelled bad.'
- (49) skambeta blogai
sound(past. pass.)(n) bad(adv.)

Perlmutter (1978:163) warns that his list of predicates cannot be used in the sense of "best glosses" of verbs in other languages. So we must take care that we do not misconstrue the intended sense of the predicates listed. The predicates must at the very least not be understood as describing willed or volitional acts or involuntary bodily processes. None of the above examples involve errors of this type, however.¹¹

- (45) "b. Predicates whose initial nuclear term is semantically a patient. burn,...,lie(involuntarily), ..., die, disappear, etc." (Perlmutter 1978:162-3).

- (50) degama
burn(intr.)(pres. pass.)(n)
'Things burn.'

- (51) búvo mirštama
be(past 3) die (pres. pass.)(n)
'People would die (sometimes).'

- (52) cia pranykstama
here disappear(pres. pass.)(n)
'People disappear here.'

Normally, both personal and impersonal passives are understood as involving a person or persons in the position of underlying subject (Geniušienė (1976:145) and Geniušienė (1974:207).) This explains the translation of the last example. The tendency to understand passives this way is not absolute. Cf. the examples above but also (Geniušienė (1976:145).):

- (53) Taigoje bundama anksti
taiga(loc.) wake(pres. pass.)(n) early
'In the taiga they wake up early.'

where the animals of the taiga are meant. Note as well however the following examples of impersonal passives of verbs describing natural events (Geniušienė (1974:212).):

(54) Pasnigta
snow(past pass.)(n)

'Snow has fallen.'

(55) Palyta
rain(past pass.)(n)

'It has rained.'

There is some semantic differentiation between these and the corresponding actives. Geniušienė (1974:212) suggests that these are used when the results of the events continue to be evident. The native speaker respondent I interviewed concentrated on the "modus relativus" sense of passives and felt that the passive emphasized that it was surprising that there had been precipitation. There is no indication of volition, however.

Some further examples showing the irrelevance of volition in the underlying subject are worth noting:

(56) Ir pamiršom visi
and forget(past)(1 pl.) all

'And we've all forgotten.'

(57) kur mūs gimta, kur augta
where we(gen.) be born (past pass.)(n) where grow up (past pass.)

'Where we were born, where we grew up'

The intransitive verbs 'be born' and 'grow up' are clearly not volitional. Similarly, Geniušienė (1974:211) reports of impersonal passives with the following verbs: persalti 'to catch cold', gulėti 'to lie (involuntarily)' and senti 'to grow old'.

The predicates expressed in impersonal passives may also be states rather than acts. Thus:

(58) jø gyvėnta šitame kambaryjė (Senn 1966:377)
he(gen.) live(past pass.) this(loc.) room(loc.)

'He lived in this room.'

(59) norima dirbti (Geniušienė 1976:141)
want(pres. pass.)(n) work(imp.)

'People want to work.'

Cf. as well the examples (46) and (47) above. The predicates expressed may also be non-volitional states as in the case of galėti + inf. 'to be able' and tuerti - inf. 'to be obliged (Geniušienė 1974:219).

(60) turima rimtai ruošti egzaminui
ought(pres.pass.) seriously prepare exam(dat.)

gālīma 'to be able (pres. pass.)' and negālīma, its negation, are also cited in Senn (1966:376).

(45) c. "Predicates of existing and happening. (Perlmutter
...end up..." 1978:163)

(61) jò pasiródyta tìkro dídvyrio
he(gen.) turn out(past pass.)(n) real(gen.) hero(gen.)
'He turned out to be a real hero.'

(45) d. "Non-voluntary emission of stimuli that impinge on
the senses (light, noise, smell, etc.)"
(Perlmutter 1978:163).

Cf. examples (48) and (49) above.

(45) e. "Aspectual predicates
begin, start, stop..." (Perlmutter 1978:163)

(62) pradedama domėtis muzika
begin(pres. pass.) be interested (inf.) music(inst.)
'Some are beginning to be interested in music.'
(Geniušienė 1974:163)

(63) { imama } ruoštis egzaminui
{ baigta }
{ start(pres. pass.) } prepare(inf.) exam(dat.)
{ finish(past pass.) }
'They are starting to prepare for the exam.'
'They have finished preparing for the exam.'

The discussion above should not be taken to indicate that the passive in Lithuanian is possible with every verb. As Geniušienė (1974:207) points out, it is impossible with most subjectless verbs and all verbs denoting predicates whose first arguments are obligatorily non-human. To this may be added idioms and verbs expressing logical relations (such as 'correspond to') or measurements (e.g. 'weigh'). These restrictions extend to impersonal passives.

But the unaccusative hypothesis predicts a particular pattern of exceptions in impersonal passives which is not found in Lithuanian. Before discussing possible modifications of the unaccusative hypothesis, I turn to Irish for further evidence.

III.B. The Irish Autonomous Form

Perlmutter and Postal (ms.:48-49) treat the Irish autonomous form as an impersonal passive, i.e. an example of 2 → 1 advancement. There is no motivation in Irish surface syntax for this treatment, since nominals with 1 status never occur in these constructions.

(64) Bhuailleadh go tobann é
strike(aut.) suddenly him(acc.)
'He was suddenly struck.'

The pronoun é which appears as subject in the translation is the object in the Irish sentence. It is marked as object by its non-subject form (sé, nom., would be impossible) and by its position separated from the

verb (where nominatives do not occur.) McCloskey (1979:141) further notes that nominals in this position are subject to oblique relativization-- unlike nominatives. In relational terms, it would seem that this construction would best be described as $1 \rightarrow \hat{1}$, i.e. the underlying subject simply is not expressed. This, indeed, is the analysis proposed by Comrie (1977) for the cognate construction in Welsh.

Perlmutter (1978:157) claims that no such "spontaneous demotion" may be countenanced in any language. This is his motivation for analyzing the Irish autonomous form as uniform $2 \rightarrow 1$ advancement of dummy. The predictions of the analysis are exactly as in Lithuanian: no unaccusative predicate may appear in the construction.

Some counterexamples to these predictions (the letters 'a' etc. refer to Perlmutter's 1978:162-3 categories quoted above, III.A):

a. (65) Táthar briste (Stenson 1981:154)
be(aut.) broken

'Things are broken.'

(66) Táthar sásta (Siadhail 198)
be(aut.) satisfied

'People are satisfied.'

(67) Ní bhítear buíoch dom (Dillon & Cróinín 1961:112)
not be(past aut.) grateful to me

'People were not grateful to me.'

b. (68) cionnas táthar agat? (Lloyd 1904:56)
how be(aut.) at you

'How are things with you?'

(69) caithfear a bheith cúramach (Stenson 1981:146)
must(aut.) at be(ger.) careful

'One must be careful.'

(45) f. Duratives (Perlmutter 1978:163)
...stay..."

(70) d'fhantaí sa mhaile níos minice an t-am sin (Stenson
(past)stay(aut.) at home more often the time that 1981:146)

'One stayed home more often then.'

(Cf. Vendryes (1956, especially 194-5) for further examples in Old Irish, including examples expressing the predicates 'to come of age', 'to come to one's last hour' on p. 194 and 'to be king', '...innkeeper', '...melodious' on p. 195.)

The examples from Irish are valuable not merely for their further refutation of the unaccusative hypothesis but also because (i) they include examples from Perlmutter's class (f), "duratives", which were not found in Lithuanian and (ii) they haven't the same tendency as the Lithuanian examples to be understood personally.

III.C. Estonian Impersonals

Like the Irish autonomous form, Estonian impersonals lack superficial subjects, and show identical marking on objects in both active and passive. Also like the Irish forms, they are not limited to describing volitional acts and involuntary bodily processes. Below is a sample of forms in this construction. 'a' etc. refer again to Perlmutter's classes introduced in III.A above.

- a. (71) Lapimaal ollakse alati näljas
Lapland(all) be(imp.) always hungry(iness)

'One is always hungry in Lapland.'

The predicates expressing good (well-behaved), despressed, and be in a bad mood also appear in the impersonal construction.

- b. (72) Siis elati kauem
then live(imp.)(pret.) longer

'People lived longer then.'

Similarly, we find impersonals with the meanings die, be born (intrans.), burn, disppear and be able.

- c. (73) Ollakse, aga ei teata, miks
be(imp.) but not know(imp.) why

'People exist, but don't know why.'

Both the stative know and the verb of existence (also stative) be appear impersonally. End up in trouble may also be expressed impersonally.

- d. (74) selles linnaosas haisetakse
this(iness) city-part(iness) stink(imp.)

'It stinks in that part of town.'

- (75) Suvel nähakse parem välja
summer(all) see (imp.) better away

'People look better in the summer.'

- e. (76) Selle vastu hakatakse huvi tundma
this(gen.) against begin(imp.) interest(nom.) know(ma-infinitive)

'People are beginning to get interested in this.'

- f. (77) Selles ametis ei püsita kana
this(iness) job(iness) not last(imp.) long

'People don't last long in this job.'

Survive and stay are also used impersonally.

The examples above are taken from an initial two-page questionnaire and so don't represent the fruits of a thorough search. They are included here to provide a broader range of data to those who might be interested

in reanalysis. The Estonian impersonal is a superficially distinct sort of construction from the Lithuanian passive, the source of most of the other counterevidence.

If the evidence from German and Lithuanian were viewed alone, one might wish to entertain a form of the unaccusative hypothesis in which duratives and predicates taking non-human arguments were unaccusative cross-linguistically. But the Irish examples (70) and (68) refute this formulation. (In fact, we also saw some examples of predicates taking only non-human arguments in the Lithuanian examples; the constructions only tend to be understood as about humans.) The Estonian examples refute the proposed revision as well.

Counterexamples for all of the supposed characteristics of unaccusatives have been adduced from only three languages. This does not demonstrate that there is no class of unaccusative predicates--a proposition which cannot be empirically demonstrated--, but only that none has been shown to exist. The range of counterexamples does suggest, however, that even if a class of unaccusative predicates might successfully be delineated, so that one could predict the ill-formedness of some impersonal passives universally, that class of predicates would be so small and heterogenous as to have little explanatory value.

Perlmutter (1978:161) has actually anticipated this refutation of the unaccusative hypothesis, and has indicated his reaction, which would be to retreat to a weaker version of the unaccusative hypothesis, one in which (Perlmutter:1978:161)

"Initial unaccusativity vs. unergativity varies from language to language. There is no way to predict which clauses in a given language will be initially unergative and which initially unaccusative."

This is more than a weakening of the unaccusative hypothesis; it amounts to a near abandonment. For suppose it were adopted. The empirical import of the hypothesis is then that some exceptions to the rule of formation for impersonal passives form a syntactic class. There is no further constraint on deciding what is unaccusative. But it is completely uninteresting to say that a part of a group of objects forms a class in some sense. What is required is a characterization, not an assertion of existence.

IV. The 1-Advancement Exclusiveness Law

The claim that some exceptions to impersonal passivization are predictable rests not only on a characterization of unaccusative predicates, but also on the 1-Advancement Exclusiveness Law. Unaccusative verbs are to be excluded from impersonal passivization because they already obligatorily require advancement to 1 which is not passive. This advancement to 1 bars the unaccusative from passivization.

Evidence is adduced in the present section that there is no 1-Advancement Exclusiveness Law. This means that even if unaccusatives could successfully be characterized, there would be no explanation for their failure to undergo passivization within the theory of Relational Grammar. (We should also note that, if it turns out that the 1-Advancement Exclusiveness Law is invalid, this sufficiently explains the unaccusative predicates found in impersonal passives in III. Some version of the Unaccusative Hypothesis might then still hold.

In demonstrating below that some sentences involve multiple advancements to 1, I will proceed from Perlmutter and Postal's (1977:412-3) characterization of four types of passives.

(78) a. Plain Personal Passives

Solche Sachen werden nicht gesagt
'Such things aren't said.'

b. Reflexive Personal Passives

Solche Sachen sagen sich nicht
'Such things aren't said.'

c. Plain Impersonal Passives

Es wird hier getanzt
'Dancing takes place here.'

d. Reflexive Impersonal Passives

Es tanzt sich gut hier
'One dances well here.'

We shall especially be concerned with type (78b), reflexive medio-passives. I take it to be crucial here that the sentence in (b) have a medio-passive meaning and not a reflexive one even though it is marked reflexively. I.e. one does not understand (b) to be about things which say themselves, but rather which are said.

IV.A. German

Reflexive medio-passives and impersonal passives do interact.

(79) a. Sie versammeln ihre Sachen
they gather their things

b. Sie versammeln sich
they gather self
they

'They gather', not 'They gather themselves', but
'Something or someone gathers them.'

c. Jetzt wird sich versammelt¹²
now AUX self gather(part.)

'People should now gather.'

(80) a. Er erinnerte sie ans Geld
he reminded her of money

'He reminded her about the money.'

b. Sie erinnerte sich ans Geld
she reminded self of money

'She remembered the money', not (necessarily) 'She reminded herself.' but 'Something reminded her.'

- (80) c. Jetzt wird sich ans Geld erinnert
 now AUX self of money reminded
 'People should now remember the money!'

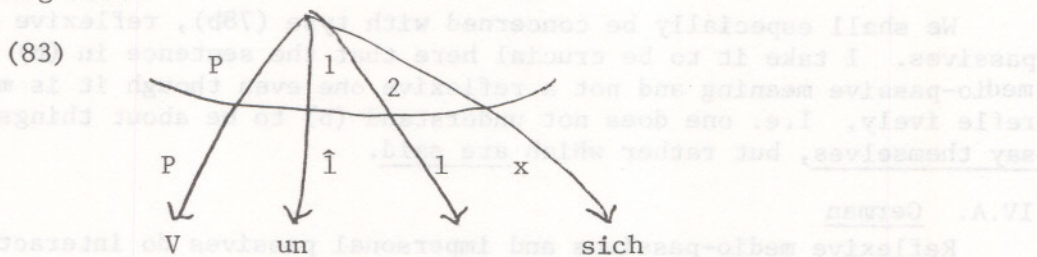
Wackernagel (1926:147) cites another example. From ärgern 'to annoy', is formed sich ärgern, 'to be annoyed' not 'to annoy oneself'. This forms an impersonal passive:

- (81) nun wird sich wo anders geärgert
 now AUX self where other annoy(part.)
 'Now people can get annoyed someplace else.'

To derive the above sentences, we need a rule of 2 → 1 advancement such as the following:

- (82) for $\alpha \in TV$, sich $\alpha \in IV$ where $\forall x$ Sich α '(x) iff $\exists y \alpha'(x)(y)$
 where x, y range over NP meanings

In a relational framework, the rule would have to admit networks of the following sort:



where x specifies the grammatical relation of sich in the b sentences. (In surface syntax, this is a 2 in all the examples cited, but other possibilities exist.)

IV.B. Lithuanian

Lithuanian, like German, has reflexive medio-passives, but these are marked not by reflexive pronouns, but by the affix -s(i)-, which appears word finally in unprefix verbs and between prefix and stem in the case of prefixed verbs. (-s(i)- is not restricted to medio-passive meaning, just as German reflexivization is not.)

- (84) skolinti, 'to lend (x to y)'
skolinti-s, 'to borrow (x)(imperfective);, i.e. not 'to lend oneself(x)', but rather 'to be a y such that there is a z who lends x to y.'
pa-si-skolinti, 'to borrow (perfective)'

In this case we see an advancement to 1 from the position of the notional indirect object, the recipient of the loan. This should preclude passivization, but passives are formed:

- (85) buvo skolinas; skolintasi
be(past) borrow(pres. pass.)(n.); (past pass.)(n)
'People were borrowing; People had borrowed.'

Passives may be formed from the prefixed perfective as well. My respondent assures me that these passives may be used impersonally quite freely. Further examples are much easier to find here than in German.

- (86) itikinti, 'to convince'
i-si-tikinti, 'to be convinced', i.e. not 'to convince oneself.'

- (87) (Mokslininku) buvo isitikinta
scholars(gen.) be(past) become convinced (past pass.)(n)
kad...
that
'People (scholars) were convinced that...'
(Geniusienė (1974:210))

- (88) linksminti, 'to delight, please'
linksmintis 'to be delighted (intr.)', i.e. not 'to delight oneself.'

Geniusienė (1974:211) asserts that impersonal passives are formed from this verb.

- (89) jaudėti 'to excite', jaudėtis 'to get excited', i.e. not 'to excite oneself' and the impersonal passive:

nemažį tada buvo jaudintasi
not-little then be(past) get excited (past pass.)(n.)

'People became more than a little excited then.'
(Geniusienė (1976:142))

- (90) priminti 'to remind', primintis 'to remember', i.e. not 'to remind oneself' and the (personal) passive:

susrinkime buvo prisiminti
meeting(loc) be(past) remember(past pass.)(nom. pl.)

ir seni darbininkai
also old workers(nom.)

'The old workers were remembered at the meeting as well.'
'One was reminded about the old workers at the meeting as well.'

The example is from Geniusienė (1976:142). It is particularly important because it would stand as a counterexample to the 1-Advancement Exclusiveness Law even if the analysis of impersonal passives as 2 → 1 advancement were abandoned. Some further (impersonal) examples:

- (91) kelti 'to raise' forms keltis, posikelti 'to rise', i.e. not (necessarily) to 'raise oneself.' This may be found in impersonal passives:

buvo posikelta
be(past) rise(past pass.)(n)

'They rose', 'Some people rose.'

- (92) užkabinti 'to hook, hand' forms užsikabinti 'to get hooked, hanged', which is found in passives:

buvo užsikabinta
be(past) get caught(past pass.)(n)

'Things got caught', 'There were snags.'

- (93) skirti 'to separate, choose' forms skirtis 'to become separate', i.e. not 'to separate oneself.' This is found in impersonal passives:

buvo skirtas
be(past) become separate(past pass.)(n)

'They got separated.'

IV.C. Irish

In addition to the autonomous form, Irish has a genuine passive as well.

- (94) bualann sé an gadhar
strike he(nom) the dog(obj)

'He strikes the dog.'

- (95) Tá an gadhar buailte aige
is the dog(nom) strike(past) at-him

'The dog has been struck by him.'

The underlying object is clearly marked as subject in the passive both by verb agreement:

- (96) táimíd buailte aige
be(1-pl) strike(part) at-him

'We have been struck by him.'

and by its position next to the verb. The underlying subject is optionally expressed as the object of the preposition ag, 'at', or, less frequently, le, 'with'. The latter has instrumental meaning. Dillon and Cróinín (1961: 41) refer to this construction as the 'perfect tense.'

This passive construction has its own autonomous forms.¹³

- (97) Táthar buailte
be(aut) strike(part)

'Some have been struck.'

Example (65) above is similarly composed of an autonomous form of ta and a participle. The construction is straightforward and regular, involving two advancements to 1 in a single clause in the analysis in which autonomous forms are derived by $2 \rightarrow 1$ advancement of a dummy.¹⁴

To sum up part IV: If impersonal passives are derived by $2 \rightarrow 1$ advancement of a dummy, then the 1-Advancement Exclusiveness Law does not hold. Example (90) indicates that the proposed law is not valid even for clear cases of advancement to 1, but further evidence should be sought. Given even the restricted invalidity of the law, the unaccusative hypothesis, even if correct, has no predictive power. There is no explanatory profit to be gained from analyzing impersonal passives as the obligatory advancement of a dummy object.

V. The Universal Rule of Passive

I argue in A that the acceptance of Relational Grammar's proposed universal rule of passivization commits one to questionable underlying structures (where the underlying subject must be expressed), a questionable conflation of grammatical structures, viz. the passive and the reflexive medio-passive, and questionable theoretical apparatus, viz. the Relational Grammar 'dummy.' In B I argue that no need for a universal rule of passive has ever been established or is likely to be.

V.A. The Mechanics of the Rule

Passive is universally defined within Relational Grammar as the advancement of an object to subject position in a clause which already contains a subject. That qualifier in the definition--that a passive clause must contain an underlying subject--is hard to justify in view of the fact that there are languages, such as Latvian, where underlying subjects never appear in passive sentences (Lazdina 1966:165). In all languages I have been described, underlying subjects seldom appear in passives and it is almost never argued that these play a role in determining the applicability or form of passivization. But then they should not be regarded as part of the syntactic structure of passive sentences. The qualifier is required within Relational Grammar to distinguish passives from unaccusative advancements. But, as we have seen, the unaccusative/unergative distinction is not very fruitful. Its abandonment would obviate the need for unaccusative advancements, and the qualifier in the definition.

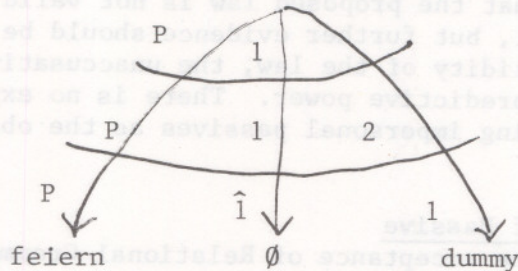
A second problem with the Relational Grammar treatment arises in regarding transitive $2 \rightarrow 1$ advancement as a characterization, i.e. a necessary and sufficient definition of passivization. Constructions of very different sorts involve transitive $2 \rightarrow 1$ advancements, however. These must not be conflated. As evidenced by their discussion of various types of passives in German (cf. above, p.), Perlmutter and Postal are aware that not all transitive $2 \rightarrow 1$ advancements need be treated the same or even marked consistently within a language. But then in what empirically testable sense are they all instances of the same rule?

This is not an idle or merely polemical question. In German, the analytic werden passive and the reflexive medio-passive apply to different groups of verbs. The outputs of the rule have different syntactic structures: participle plus werden forms a constituent while the sich in reflexive medio-passives has no very strong tie to its verb, but rather displays clitic properties. The werden passive applies to medio-passives, but not vice versa.¹⁵ There is nothing parallel to the impersonal passive in the

case of reflexive medio-passives.¹⁶ It is the task of syntax to illuminate these differences.

A third problem with the mechanics of the universal rule of passive involves the manipulation of "dummies," as explained in the discussion concerning (38) above, repeated for convenience here:

(38)



The first scruple one might air about the dummy inserted in the second level here is that it explains nothing about which verbs are found in impersonal passives. The verbs must be marked for dummy insertion much as they might be marked as subject to passivization.¹⁷ If the dummy is inserted, it must be advanced, resulting in an impersonal passive. The device is thus perfectly opaque. If we see an impersonal passive, there must have been a dummy and if there was a dummy, there must be an impersonal passive. The analysis is coherent but not explanatory enough. The sort of analysis one would prefer ought to link the possibility of impersonal passives to independently verifiable aspects of structure.

The use of the "dummy" here deviates from established use significantly. The device was introduced by Postal (1970:458) (as the morpheme Doom). Postal's original dummies had the same privileges of occurrence as the category "Noun Phrase", which allowed one to view the dummy as a sort of pronoun. Postal could even argue that the use of the dummy allowed the supposition of an underlying sentential form which is canonical with respect to sub-categorization.

(98) a. Joan wants the man to go
The man goes

b. Joan wants * to go
goes

c. Joan wants Doom to go
She goes

(98a) shows that the surface complement of want may stand alone as a sentence, and (98b) shows that it need not. Postal's introduction of a dummy pronoun makes sense of this contrast: the gap occurs where pronouns might occur elsewhere. He also showed that the usual rule of coreferential pronominalization would affect only those positions at which such gaps actually occur. Most importantly, Postal's use of the dummy respected categorial assignment to verbs. Go appears with nominal subjects, including the underlying pronoun Doom. Thus go could continue to be categorized: [NP].

Perlmutter's proposal forces a weakening of the plausible and well-confirmed hypothesis that categorial structure in syntax is parallel to argument structure in semantics.¹⁸ Syntactically, it is quite clear that

German impersonal passives are formed from some intransitives which semantically have only one argument position. But Perlmutter proposes that all these verbs have two nominal complements (albeit one of which is only marked 'to be optionally added' in the base form of the verb.) The second, dummy NP complement, plays no semantic rule, and thus violates the syntax-semantics parallelism.

V.B. The Need for a Universal Rule of Passive

I take it that the appeal of the Relational Grammar treatment of passive is that it describes a rule which, whatever its faults, might be regarded as universally encoding passive. This is the one point at which no competition exists. But the appeal of this initially attractive proposal is, on close inspection, quite limited.

In an introduction to their paper, Perlmutter and Postal (1977:394), offer the following motivation for their attempt at a universal characterization of passive:

This paper has two goals: to offer an introductory, relatively informal characterization of passivization in language-independent terms and to draw some implications of this characterization for the nature of grammatical rules and linguistic structure in general.

Any adequate theory of language must be able to achieve the first goal. There exists a vast literature on the most diverse languages making use of concepts such as passive, passive voice, and passivization. While the phenomena in particular languages referred to in these terms are usually described as having language-particular and idiosyncratic features, what is striking about the descriptions in the literature is the fact that in using such concepts they appeal to a universal underlying reality of some sort. The nature of this universal underlying reality, however, is not specified. We maintain that no grammatical theory can be considered adequate unless it is able to give these notions substantive content."

If this is intended to support the position that a universal characterization of passive is a necessary feature of grammatical theory, it is certainly invalid and rather unencouraging.

The existence of a vast literature making use of a particular term or set of terms is invoked to justify proper categories of analysis. But the widespread use of terms may be attributable to dogma, misanalysis, encrusted scholarly tradition, or--and most to the point--the attempt to clarify alien patterns of grammar somewhat metaphorically. One can explain the novel by comparison to the familiar, even though this results in a sort of "understanding by analogy." There is no reason to criticize the analogical terminology some descriptions employ as long as the limits of analogy are not obscured. The descriptions remain understandable, verifiable and perhaps even enlightening. But analogy is an intransitive relation. Because a is analogous in some respect to b and b to c, it doesn't follow that a is analogous in any relevant respect to c. The passive in Irish is analogous to that in Old Icelandic, which in turn is analogous to the English passive. But it doesn't follow that Irish and English passives have anything of interest in common.

Independent of the analysis of a number of languages, no argument is likely to establish the universality of relational rules. There is precedent for the attempt to justify the need for syntactic universals on purely theoretical grounds, however (as opposed to justifications which purport to extract generalizations from the analyses of a number of languages). Chomsky is famous for the argument that the complexity of the language learning task, specifically in syntax, would be insurmountable in the absence of specific linguistic mechanisms which limit the class of possible languages. These limitations constitute universals. The validity of this argument has not been universally accepted, nor have its premises gone undisputed. The premises that the task is complex and that it is successfully executed (to the relevant degree of exactitude) have been challenged, as has been the step in the reasoning that proceeds from a specific learning task to mechanisms specific to the task.¹⁹ But the point here is more basic: even if one accepted Chomsky's argument, one could not expect similar arguments to be forthcoming about specific sorts of universals. The reason for this is not hard to find: even if one established that the expression of e.g. grammatical relations was complex in a given language, it would not follow that the rules responsible for this were complex. The source of the complexity might lie in nearly independent phenomena, such as the concrete mechanisms employed to designate grammatical relations.

This leads to a related and final criticism of the argument above. Perlmutter and Postal conclude from the frequent mention of passive, passive voice, and passivization that one must characterize passivization in language-independent terms. 'Passivization' is usually taken to be a transformation on sentences. The terms that are mentioned frequently in the handbooks are passive and passive voice. The former is a sentence construction which might be described by a rule of combination and the latter is a genus verbi, which is a lexical derivative of a verb. Neither is properly described by a sentence operation, much less a language universal sentence operation.

The probity of the claim of universality for relation changing rules depends only on the analyses which it prompts, and not at all on general theoretical considerations. But these analyses, as we have seen, are faulty.

VI. Conclusions

Part I demonstrated (i) that there is no reflex of a subject in impersonal passives in German and (ii) there is some advantage to regarding impersonal passives as subjectless. The counterclaim, presented in Part II, that subjectless impersonal passives should never be countenanced as a matter of principle, was shown to make false predictions in Part III (the Unaccusative Hypothesis) and to rest on an invalid principle (the 1-Advancement Exclusiveness Law) in Part IV.

One might nonetheless wish to analyse impersonal passives as having final subjects in order to preserve the universal characterization of passivization proposed in Perlmutter and Postal (1977). Part V argued that the adoption of the proposed universal rule commits one to questionable theoretical apparatus, questionable underlying structures, and a questionable conflation of analytic categories while making no clear empirical predictions. It is also noted that there is no clear need for a universal rule of passive.

I conclude, with Wackernagel (cf. his remark quoted as introduction above), that there are genuinely subjectless constructions, including impersonal passives.

Footnotes

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¹ Since relational networks lack information about constituent structure, it isn't clear whether relational grammarians would posit a verb phrase constituent in German. It is the existence of a subject which is crucial here, however, not whether the remainder of the sentence forms a constituent.

² Perlmutter and Postal (ms.:55) state that the "advanced 1-arc is headed by the dummy es" in the case of German impersonal passives. Perlmutter (1978:156) refers to the Dutch er in impersonal passives as a dummy and on p. 158 indicates that the German construction is to be treated similarly.

³ Unless es is interpreted pronominally (unlikely) in which case it is a personal passive.

⁴ Cf. Note 3 for a qualification.

⁵ It is worth mentioning that the es in the other construction which Perlmutter and Postal (1977:413) regard as passive is a genuine NP and not a stylistic particle. Thus

(i) Es tanzt sich gut in dem Saal
it dance self good in hall
'It is good to dance in this hall.'

(ii) In dem Saal tanzt es sich gut
(glosses as above)

(iii) Tanzt es sich gut in dem Saal?
(glosses as above)
'Is there good dancing in the hall?'

(iv) P weiß, da es sich gut in dem Saal tanzt.
P knows that (as in (i))

This divergence of behavior is inexplicable on any account which conflates (i) to the rule of passive.

⁶ This argument (but not the others) carries over into Dutch.

(i) ...,zonder het te vragen
without him to ask
'without asking him'

*,zonder (er) op het ijs geschaatst te worden
without it on the ice skated to AUX

This indicates that Dutch impersonal passives are likewise subjectless, even though er, the counterpart of German es, is not quite as restricted

in its distribution. In Dutch, er seems to be a lexical accompaniment to impersonal passives in all clauses, both clause-initially and immediately after the verb in matrix clauses.

⁷These rules are described and justified in Lernerz (1975) and Thiersch (1978).

⁸Cf. Chomsky (1957:26) for one early use of rules vis-a-vis lines in derivations. Strata are more exactly analogous to the lines in generative semantics derivations, however, since in both cases rules may refer to information in more than one line (stratum).

⁹Perlmutter (1978:185) claims that the insight that there is any connection between impersonal passives and intentionality is due to a Relational Grammar. In the case of German, this neglects all the standard references: Behaghel (1924:211-215), Curme (1922:338) and Bierwisch (1963:49).

¹⁰My presentation follows Senn (1966:374f).

¹¹Ideally, one should consistently compare the meanings of the Lithuanian impersonal passives with those predicates which cannot form impersonal passives in Dutch allegedly because they are unaccusative. For reasons of space, the comparisons have not been reproduced. But the interested reader is invited to compare his (52), (54), (61), (66), (67), and (71) (pp. 169-170) with my (57), (70), (52), (50), (51) and (48-49).

¹²These examples sound abominable to many speakers of German, but are perfectly acceptable, if a bit pushy, to many others, particularly in the South.

¹³The significance of this fact did not escape the traditional grammarians. Cf. Christian Brothers (1910:101): "No, it is not passive, for it has a passive of its own." (Quoting O'Leary in the Gaelic Journal.)

¹⁴Bielenstein (1972:344f) reports on Latvian examples which appear to refute the 1-Advancement Exclusiveness Law. Reckendorf (1898:52) reports on Arabic that "von dem Medium wird übrigens auch ein Passiv gebildet," in fact, both personal and impersonal passives. Fuller, in an OSU dissertation in progress, analyzes the Arabic examples.

¹⁵Thus the meaning of those constructions in which impersonal passives and reflexive medio-passives coincide is consistently based on the meaning of the reflexive form. A full discussion of these matters requires a long diatribe on the various sorts of reflexives in German. This may be found in Nerbonne (ms.)

¹⁶See Perlmutter and Postal (1977:412-3). Cf. note 5 above.

¹⁷I.e. the Unaccusative Hypothesis could not be supposed to explain all failures of impersonal passivization, even in German.

¹⁸The hypothesis is explicit in Montague (1974:232) and Bresnan (1978).

¹⁹Cf. Putnam (1971).

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A Note on the Oblique Law*

Brian D. Joseph

Perlmutter and Postal (1978a:15) posit the following "law" within the framework of Relational Grammar:

- (1) We say that B is a C_i arc if B is an arc one of whose coordinates is C_i . Then: if A is an oblique arc, A is a C_1 arc.

This law is known as the Oblique Law because it constrains the extent to which oblique nominals, i.e. those bearing the nonterm core grammatical relations¹ such as benefactive, temporal, circumstantial, locative, etc. can participate in syntactic operations; the law means that any oblique which appears in a sentence must bear that oblique relation in the initial level.

The original intent of this law as indicated by Perlmutter and Postal's discussion (p. 15) of it, was to rule out advancements or demotions² to any oblique grammatical relation. However, as it is currently formulated, it is more general than that and rules out ascensions (i.e. raisings) to an oblique relation as well. The purpose of this note is to show that at best, only the more restricted interpretation of the Oblique Law is valid, because there is a construction in Modern Greek which provides a counter-example to the broader interpretation, as well as other facts which might bear on even the more narrow version of the law.

The Greek construction in question is the one called Raising-to-Oblique in Joseph (1979), and involves the circumstantial preposition me 'with'.³ Me can govern simple nominal complements, as in (2), or clausal complements, as in (3):

- (2) me tóso θórho, ðen borúsa na ðulépsa
with so-much noise/ACC not could/SG VBL PART work/1 SG
'With so much noise, I couldn't work.'

- (3) me to na stékete ekí étsi
with NOMINALIZER VBL PART stand/3 SG there thus
o Yánis, ðen borúsa na ðulépsa
John/NOM
'With John standing there like that, I couldn't work.'

The evidence against the Oblique Law comes from a construction which is a variant of (3), in which the subject of the clausal object of me is raised to become itself the object of me. This pattern is exemplified by (4):

- (4) me ton Yáni na stékete ekí étsi, den borúsa na dulépsō
John/ACC

'With John standing there like that, I couldn't work.'

The essential synonymy between (3) and (4)⁴ plus other syntactic evidence such as the ability of idiom chunks to be "raised" and a synonymy relation holding between active and corresponding passive Raising to Oblique pairs together argue for a raising analysis for the construction in (4) and against an analysis in which ton Yáni is initially (i.e. underlyingly) the object of me. Moreover, the case-marking of accusative on ton Yáni in (4) is exactly what is expected for the object of the preposition me, as indicated by θórivō in (2). Thus in sentences such as (4), a nominal which is not the object of me at the initial syntactic level is the object of me at the final level⁵ --in other words, ton Yáni in (4) bears an oblique grammatical relation, namely circumstantial, at the final level even though it is not also an initial-level oblique.

Accordingly, this construction is in violation of the Oblique Law as given in (1)⁶ and interpreted in the broadest manner to apply to all types of rules. However, since (4) involves an ascension rule, the Oblique Law as originally intended could still hold. A different formulation is needed, though. Since advancements and demotions can be classed together as reevaluation rules, the Oblique Law can be revised and reformulated as follows:

- (5) Oblique Law (Revised)

No oblique relation can be the target of a reevaluation rule.

With this revision, advancements or demotions to any oblique relation, i.e. rules of the sort 3 → BENEFACTIVE, 1 → INSTRUMENTAL, TEMPORAL → LOCATIVE, LOCATIVE → TEMPORAL, etc., are ruled out, while ascensions to oblique are permitted.

This revision, therefore, saves at least part of the empirical content of the original version of the Oblique Law. It may be the case, though, that even this revised version cannot stand, because of yet another set of facts from Greek. However, since there are some uncertainties in the analysis of these facts, the revised Oblique Law may yet be valid--still, an examination of these facts is warranted.

The facts in question concern the marking associated with indirect objects. Two patterns are to be found in Greek which seem to function as indicators of the indirect object relation⁷--the genitive case, also used for indicating possession, and a prepositional phrase made up of the preposition s(e) plus a noun in the accusative case. These are illustrated in (6) with the verb díno 'give':

- (6) a. édosā s ton Yáni to vivlíō
gave/1 SG to John/ACC the-book

'I gave the book to John.'

b. éδosa tu Yáni to vivlío
John/GEN

'I gave the book to John.'

Other orders of the words in (6a) and (6b) are possible, but they play no role in the discussion to follow and so can be ignored.

Two additional facts are relevant here. First, the se+NP type of marking has the same form that obliques generally take in Greek, namely that of a prepositional phrase. In fact, the preposition se is itself used in marking locative and directional obliques, as well as some types of temporals:

(7) a. méno s tin Aθína
live/1 SG in the-Athens/ACC

'I live in Athens.'

b. pigéno s tin Aθína
go/1 SG to

'I go to Athens.'

c. févgo s tis tris (i óra)
leave/1 SG at the-three/ACC the-hour/NOM

'I leave at 3:00.'

Second, the possibility of emphatically cross-indexing the indirect object with a genitive clitic pronoun is not realized uniformly for both types. In particular, whereas all speakers seem to allow clitic copying with the genitive type:

(8) tu éδosa tu Yáni to vivlío
him/GEN. CLIT gave/1 SG John/GEN the-book

'I gave the book to John.'

There is some variability from speaker to speaker as to the acceptability of sentences like (9), with some speakers accepting them and others not:⁹

(9) tu éδosa s ton Yáni to vivlío
him/GEN. CLIT to John/ACC

'I gave the book to John.'

Several possibilities for analyzing the facts of (6) through (9) present themselves, depending on whether the morphological difference between (6a) and (6b) is thought to be correlated with a difference in grammatical relations. Each of these possibilities has a consequence of some interest either for the Oblique Law specifically or for other aspects of Relational Grammar.

In particular, if the morphological difference is taken to be significant as an indicator of grammatical relations, then one could say that the se+NP type is actually an oblique relation of some sort, presumably directional (cf. (7b)), and therefore maintain the genitive case as the marker of the

indirect object relation proper. Then, starting with the indirect object type (which would surface as (6b)) as "basic", one could say that (6a) involves a demotion rule of 3 → OBLIQUE (more specifically, 3 → DIRECTIONAL). Alternatively, if one were to take the oblique relation type (which would surface as (6a)) as "basic", then (6b) could be analyzed as involving an advancement rule of OBLIQUE (DIRECTIONAL) → 3.

The grammatical relations borne by these nominals and the syntactic level at which they bear them in these two different analyses are summarized in the following table:

(10)	tu Yani	s ton Yani
ADVANCEMENT ANALYSIS (OBL → 3)	INITIAL OBL and FINAL 3	INITIAL OBL and FINAL OBL
DEMOTION ANALYSIS (3 → OBL)	INITIAL 3 and FINAL 3	INITIAL 3 and FINAL OBL

In these analyses, the clitic copying facts of (8) and (9) can be accounted for in the following manner. For speakers who find (9) unacceptable, one could say that clitic copies of Indirect Objects can cooccur only with final level 3's, for in either analysis, s ton Yani would be a final level oblique grammatical relation and so would be ineligible for this copying rule, whereas tu Yani would be final level 3.¹⁰ Speakers who accept (9), on the other hand, would, in the advancement analysis, have to be said to have this clitic copying rule determined not by considerations of grammatical relations but instead either by structural considerations, with prepositional phrases being eligible for cross-indexing with genitive clitic pronouns, or perhaps even by functional considerations, since s ton Yani functions as an indirect object, i.e. as a recipient, even though from the standpoint of grammatical relations, it would be not a 3 but an Oblique.¹¹ This type of account would also work for such speakers under the demotion analysis, although a clitic copying rule triggered by a 3 at any level--initial, final, or otherwise¹²--would also work, since s ton Yani is an initial 3 in that analysis.

On the other hand, if one takes the morphological difference between (6a) and (6b) as signalling nothing about grammatical relations, they would represent nothing more competing options for indirect object; in that case, then, both s ton Yani in (6a) and tu Yani in (6b) would be initial and final 3's. For speakers who accept (9), then, clitic copying with the genitive pronouns would be triggered by 3's of either type, whereas speakers who reject (9) would presumably require some morphological matching between the clitic and the indirect object it cross-indexes so that the genitive pronoun could only go with the genitive-case indirect object and not the prepositional type.

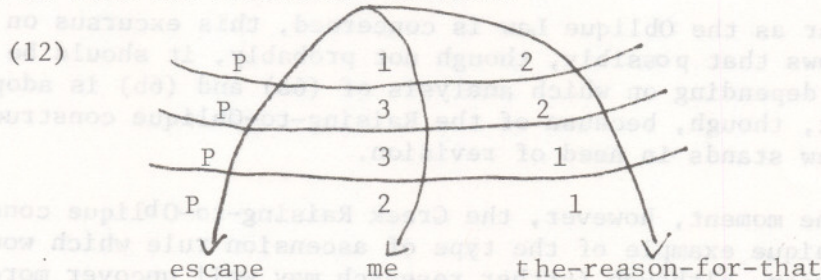
Thus there are (at least) three different ways of accounting for the alternate patterns in (6a) and (6b). Unfortunately, there does not appear to be a principled way of deciding among them, for each one requires some claim or potential claim within Relational Grammar to be given up. The most one can say is that one claim might be more easily given up than another.

For example, adopting the demotion ($3 \rightarrow$ OBLIQUE) analysis would mean that the Oblique Law, either in its original form or in the revised form, would have to be abandoned, for an oblique relation would be the target of a reevaluation rule and would be a final oblique while not being an initial oblique as well.¹³ If, instead, the advancement analysis (OBLIQUE \rightarrow 3) is adopted, then the revised Oblique Law can remain, but the principle called the Principle of Initial Determination in Postal (1979) and the Universality of Initial Termhood in Frantz (1979:67), by which the initial level grammatical relations are claimed to be determined universally by the semantics of the governing predicate, is endangered. This is so because a predicate like dino 'give', by virtue of its meaning, would be expected to govern a subject, direct object, and indirect object, in all languages--under the advancement analysis, its initial level grammatical relations would be subject, direct object, and oblique, and therefore different from what is found in (many) other languages.

Finally, if the third alternative is adopted, then we have a clear case showing the dangers inherent in positing too close a connection between morphological "trappings" and grammatical relations--while Relational Grammar from its inception has stressed the point that morphology is not a reliable indicator of grammatical relations, some recent analyses in this framework have conversely used relation-changing rules to account for details of morphology. For example, in Perlmutter and Postal (1978b:27) a sentence such as (11)

(11) The reason for that escapes me

is claimed to have the relational network:



That is, (11) involves Inversion ($1 \rightarrow 3$) and $3 \rightarrow 2$ advancement; this last "step" guarantees that the first person nominal will end up as me, the usual direct object form, and not marked with to, the usual (final) indirect object marking in English. Thus the relation-changing rule $3 \rightarrow 2$ advancement is used here to account for morphological details in the surface form of this sentence, instead of appealing to, for instance, a special marking for certain 3's that result from Inversion. In the case of Greek indirect object marking, such a match-up of morphology and grammatical relations would not work unless the Oblique Law or the Principle of Initial Determination were given up.

As noted above, it is not necessarily obvious which of these alternatives should be chosen and thus which consequence is to be accepted. Probably the third analysis, which holds that se+NP and genitive case are competing markings for (final) indirect object in Greek has the least serious consequence from the standpoint of the overall theory of Relational Grammar; that is, any potentially strong claim concerning the connection between morphology and grammatical relations would be much easier to abandon than the Principle of Initial Determination or the Oblique Law. However, since it has already been shown that the Oblique Law as originally formulated is in need of revision and can stand only in a somewhat weakened form, one might be inclined to do away with it altogether and seek some other explanation for the considerations which originally motivated it. Similarly, since there is some evidence, e.g. from the behavior of certain unaccusative verbs with regard to verb agreement in Achenese (Perlmutter 1980b) and from the behavior of a class of intransitive verbs in Southern Tiwa (Allen, Frantz, and Gardiner 1981), to suggest that the principle of Initial Determination is too strong, one could perhaps adhere to the advancement analysis of (6a) and (6b) and say that they constitute additional evidence against this principle.

At any rate, these facts from Greek indirect object marking show at least that differences in morphology do not always signal what they might in terms of grammatical relations. Under different evaluations of these analyses, however, it may be the case that other, more important, aspects of Relational Grammar might be threatened.

As far as the Oblique Law is concerned, this excursus on the indirect object shows that possibly, though not probably, it should be given up in any form, depending on which analysis of (6a) and (6b) is adopted; at the very least, though, because of the Raising-to-Oblique construction, the Oblique Law stands in need of revision.

At the moment, however, the Greek Raising-to-Oblique construction seems to be a unique example of the type of ascension rule which would oblige this revision, although further research may well uncover more; Don Frantz (personal communication) has suggested that English sentences such as

(13) We want very much for you to come

may involve the ascension of you to become the object of for. If so, and if other such "oblique ascensions" are to be found, then the proposed revision to the Oblique Law would gain further support, for Raising-to-Oblique would then be established as a legitimate rule of Universal Grammar. If, on the other hand, no such other constructions are forthcoming, then it becomes a question for future investigation to determine what properties of Greek distinguish it from other languages in allowing for this construction.

Footnotes

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¹See Perlmutter and Postal (1978a:8) for this term--nonterm core grammatical relations are opposed to the term core grammatical relations

subject (symbolized 1), direct object (symbolized 2), and indirect object (symbolized 3).

²These terms refer to changes in grammatical relations relative to the "Relational Hierarchy", $1 > 2 > 3 >$ Non-term--see Johnson 1979, and Perlmutter 1980a for some discussion.

³Me also serves to mark comitative and instrumental relations as well. Joseph (1979) also discusses Raising-to-Oblique sentences involving genitive complements to nouns--these are ignored here because the point of this note can be made with just the me-sentences.

⁴At most, they differ somewhat in focus or emphasis.

⁵The reader is referred to Joseph (1979) for fuller discussion of the evidence for this analysis.

⁶As pointed out in Joseph (1979), this construction also provides a counter-example to the Host Limitation Law in that an element which bears a nonterm (here oblique) relation nevertheless serves as the host of an ascension.

⁷With a few verbs, e.g. didásko 'teach', initial (underlying) indirect objects can (or sometimes must) occur in the accusative case; this pattern, however, seems to involve $3 \rightarrow 2$ Advancement, by which the indirect object becomes the direct object (See Joseph (1982) for some discussion of $3 \rightarrow 2$ Advancement in Greek.) The different patterns discussed here for indirect object marking are available for all indirect objects, without concern for the governing lexical item.

⁸In some permutations with the genitive type, the reading in which the genitive functions as a possessive comes through more strongly than the reading with the indirect object sense of the genitive.

⁹Warburton (1977:263) claims that such sentences have only the benefactive reading of the clitic pronoun in which it is not coreferent with the nominal in the prepositional phrase (i.e. 'I gave the book to John for his (e.g. George's) sake'). Some speakers I consulted did not make this distinction (although it is perhaps a subtle one which naive consultants might not think to articulate) and in at least one textbook for Modern Greek, Pappageotes and Emmanuel (1970), such sentences are sanctioned: "The indirect object may also be expressed twice for emphasis: (Autoi)mou tá édōsan se ména (They gave it to me)" (p. 203). In this example, given in transliteration, the clitic pronoun mou (= [mu]) cross-indexes the "indirect object" in the prepositional phrase se ména 'to me'. These considerations make it likely that we are dealing with a real dialectal split here with regard to the acceptability of sentences like (9).

¹⁰This is not to say that the genitive clitics can be copies only of indirect objects; in fact, for some speakers, including ones who reject (9), they can cooccur with Benefactives in prepositional phrases headed by ya 'for', e.g.:

- (i) mu agorásate ya ména típote?
me/GEN.CLIT bought/2 PL for me/ACC. STRONG anything
'Did you buy anything for me?'

and for all speakers, they can cooccur with Benefactive nominals in the

genitive case:

- (ii) tu agorásame káti tu Yáni
 him/GEN.CLIT bought/1PL something John/GEN

'We bought something for John.'

While (ii) could involve BENEFACTIVE → 3 advancement, so that the clitic copy would be of a final 3, such an analysis is not possible for (i). Thus speakers who accept (i) have a clitic copying rule that is not restricted to terms (1, 2, or 3) and so can be triggered by at least some obliques. See footnote 11 for more discussion of this point.

¹¹Since there are speakers who accept sentences like:

- (i) mu agorásate ya ména típote?

'Did you buy anything for me?'

(see footnote 10), but who reject sentences like (9), it can not be the case that all speakers have a completely structurally determined clitic-copying rule. Speakers who accept (i) and accept (9), though, could have such a rule.

¹²The rule could not be triggered just by initial 3's because it is possible with final indirect objects which are initial 1's (subjects), as in the so-called "Inversion" (cf. Perlmutter 1979) construction:

- (i) tis arésun tis Marías ta peýá
 her/GEN·CLIT like/3 PL Mary/GEN the-children

'Mary likes children.'

(literally, "Children are pleasing to Mary.")

where Mary, on semantic grounds as an experiencer, could well be an initial 1. The fact that the prepositional-phrase type indirect object can also occur in this construction:

- (ii) aresun s ti Maria ta peýá
 like/3 PL to the-mary/ACC

'Mary likes children.'

is further evidence supporting the ultimate conclusion drawn below that unless one wants to give up the Oblique Law in any form, these se-PP's are not obliques.

¹³See also the discussion in the previous footnote.

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More on the Categorical Analysis of Grammatical Relations*

David R. Dowty

0. Introduction

Syntactic and semantic analyses of natural languages produced since the mid 1970's by linguists who adopted Richard Montague's ideas about semantics differed from previous research in three ways: First, this work used a more sophisticated and explicitly-formulated semantic theory. Second, it did not involve a level of "semantic representation" at all but rather what Bach (1980) has termed "rule-to-rule" semantics, that is, each syntactic rule is associated with a semantic rule that directly gives the conditions of truth and denotation of the constituent formed by the syntactic rule. Third, it adopted the methodology of doing syntactic and semantic analysis of each construction simultaneously. By looking at the relationship between syntax and semantics in this new way, researchers were led to ignore the traditional transformational analyses of Passive, Equi, Raising and such rules, and to generate such sentences syntactically in terms of their surface structure alone. (Cf. Partee's "Well-Formedness Constraint," Partee 1979). The resulting theory is radically "monstratal" in every sense of the word: it involves neither multiple levels of syntactic structure on the one hand, nor any levels of "semantic representation", "logical form", etc., on the other.¹ Rather, the syntactic analysis tree of a sentence (the series of steps by which it is put together syntactically) and the semantic rules (which correspond one-for-one to syntactic steps) are the sole determinants of the compositional semantics of a sentence. The most recent widely-known version of such a theory is the Generalized Phrase Structure Grammar (GPSG) of Gazdar (1982) and others, which restricts syntactic rules to context-free PS rules.

In a series of papers (Dowty 1975, 1978, 1982) I have compared these sorts of theories with the claims of universal generalizations about grammatical relations presented in Relational Grammar (Perlmutter and Postal 1977) and proposed tentatively that all important generalizations about grammatical relations can be captured in this monstratal Montague-type analysis. I will very briefly review this approach in §1 and then go on to discuss two issues which it raises: relational-changing rules which apparently apply to more than one grammatical relation (§2) and the distinction between Equi and Raising Verbs and the treatment of "dummy" NPs (§3). Those familiar with (Dowty 1978) or (Dowty 1982) may skip directly to §2, (p. 108).

1. The Categorical Analysis of Grammatical Relation.

In these earlier papers, I proposed essentially that so-called grammatical relations can be adequately treated simply as an artifact of the hierarchical order in which a multi-place verb combines with its various arguments. Following Montague's (1973) lead, I suggest that a multi-place verb of n arguments always be represented as a functor combining with one argument to give a $n-1$ place verb (phrase) as its value; this may be termed the "Montague-Schoenfinkel" principle, after Schoenfinkel (1924) and Montague (1973):

- (1) (Montague-Schoenfinkel principle). A multi-place verb of n arguments is always represented as a functor of one argument that yields a n-1 place verb (phrase) as its value.

By using (1) recursively, it follows that a verb need only combine with one argument at a time, no matter how many arguments it ultimately receives. By this principle, verbs of one, two, and three NP arguments will be assigned to the categories listed in (2):

- (2) Categories of verb/verb phrases:

Symbol	Categorial Definition	Name
IV	S/NP	intransitive VP
TV	IV/NP	transitive VP
TTV	TV/NP	ditransitive VP

Syntactic rules (whose semantic interpretation is functional application) will then combine a NP with any verb on this hierarchy to yield a phrase of the next higher category as output (or in the case of IV, yielding a sentence as output). Of course, other obligatory complements of a verb, such as infinitive VPs, PPs and Adjectives, will also be treated as arguments of a verb in this one-step-at-a-time fashion, but I won't discuss these here. Lest such a hierarchy seem to be an unnecessary complication, note that it does two things which any syntactic and semantic theory must do: (1) it subcategorizes verbs syntactically according to the number of NPs they take and (2) it provides a means for matching the meaning of an NP argument with the proper argument position of the meaning of the verb. The reason for arranging these categories so that each "feeds" the next higher one is that certain NPs are treated alike no matter how many arguments the verb has--for example, the NPs we call subjects are treated alike, in case marking and/or syntactic position, whether the verb is transitive, intransitive or ditransitive. Such a hierarchy predicts this, and we may in fact define grammatical relations in terms of it:

- (3) 1. A subject is any NP combined with an IV to produce a S.
2. A direct object is any NP combined with a TV to produce an IV.
3. An indirect object is any NP combined with a TTV to produce a TV.

While these definitions and this hierarchy are putatively language-universal, the actual syntactic operations that combine each kind of VP with its argument are language particular and of course vary from language to language. One language may combine a subject with an IV to produce a S by putting the NP before the verb, another by putting the NP after the verb, yet another by marking the NP with nominative case but perhaps not specifying a fixed order of subject and verb. According to this theoretical definition, therefore, the empirical diagnostic we should use in identifying subjects, direct objects, etc., in any natural language is (4):

- (4) 1. Find NPs which are treated syntactically alike (in terms of case marking, position, and by other syntactic processes) with intransitive, transitive, and ditransitive verbs; these NPs are subjects.
2. Find NPs which are not subjects but are treated alike with transitives and ditransitives; these are direct objects.
3. Find NPs which are not subjects or direct objects (and are treated alike in ditransitives and four-place verbs if any); these are indirect objects.

Of course, languages are not always completely uniform in the way they treat the arguments of one of these verbal categories. German, for example, marks the argument of most of its two-place verbs with accusative case but that of other two-place verbs with dative case, still others with genitive. It will thus sometimes be necessary to distinguish syntactic subcategories of verbs of a given number of arguments for the purpose of case marking. Other syntactic rules may observe this subcategory distinction as well; for example, German two-place verbs that take accusative objects will passivize, but those taking datives will not. To accord with traditional terminology, I will reserve the terms subject and object, transitive and ditransitive to refer to the largest or unmarked class of verbs of each number of argument and make up new terms, if necessary, for the arguments of the exceptional verbs. For example, I will refer to the third NP in (5) as indirect object in English, but the third NP in (6) is not marked with to, even though it occupies the parallel position in the argument hierarchy of the verb, so the verb spare must be put in a distinct subcategory from tell; I will thus call this third NP in (6) a secondary object:

(5) Mary told the story to John. (John is indirect object; give of category TV/NP_[+to], or DTV)

(6) Mary spared John the trouble. (the trouble is secondary object; spare of category TV/NP_[-to], or TTV)

Because of this complication, grammatical relations will not always be completely definable in terms of the semantics of the argument hierarchy: the verb's syntactic category (which determines its "grammatical relations" on the syntactic side), to be sure, uniquely determines the type of function it denotes, but the type of function a verb denotes will not quite determine its syntactic category in the case where the language has two or more distinct subcategories for this configuration of arguments. To avoid weakening the explanation of grammatical relations and relation-changing rules (cf. below), I propose we should always ask for independent motivation for such subcategorization. For example, it would be legitimate to appeal to subcategorization of two-place verbs into two classes to explain the lack of passives for some of them only if the language treats this same subclass of two-place verbs differently in some other way as well, for example, in case marking.

Another important distinction for the argument hierarchy theory is between the arguments of a verb (subject, object, indirect object, and other obligatory complements) and modifiers of a verb (in the case of NPs, locatives, benefactives and instrumentals are usually modifiers,

cf. Dowty 1982, 89-90). Modifiers are treated as functors which map a VP into a new VP of the same type, e.g. an IV into an IV.

With the distinction defined this way, the diagnostic for separating arguments from modifiers should be two-fold: whereas modifiers such as locatives, instrumentals and benefactives are compatible (up to the limits of real-world plausibility) with verbs of any number of argument places, the number of true arguments a verb takes is fixed by the lexical meaning and subcategory of a verb. Second, a modifier (as the names "instrumental," "locative" and "benefactive" indicate) contributes to meaning in the same way in any sentence in which it is used, whereas the semantic role played by an argument depends entirely on the lexical meaning of the verb--a subject or object, for example, may denote a thing that comes to exist with one verb, a thing that ceases to exist with another, an experiencer of an emotion with a third, and so on.

Ultimately, however, I have argued (Dowty 1982, 116-119) that the distinction between arguments and modifiers should be recognized as somewhat fluid from the point of view of language change and language acquisition, if we are to explain the large number of convergent case markings in various languages between the two kinds of NPs, e.g. between datives and benefactives, or between agents of passives and instrumentals. What for the child (or at an earlier stage of the language) are NP modifiers of an n-place verb may later be reanalyzed as NP arguments of a n+1 place verb.

Since we are dealing with a monostratal syntactic theory, so-called "relation changing rules" are not analyzed as rules which change the grammatical status of a NP argument but are rather treated as rules which alter the grammatical and semantic properties of a verb (or verb phrase) itself before its NP arguments are combined with it. Specifically, the denotation of a verb or verb phrase is an n-place relation, and the semantic effect of relation-changing rules is to perform simple algebraic operations on verb meanings, operations such as reducing an n-place relation to a n-1 place relation, rearranging the argument places of a relation, or expanding an n-place relation to an n+1 place relation. Agentless passive and indefinite object "deletion" are examples of relation-changing rules which reduce a relation by eliminating the subject or object argument, respectively. Agentive Passive, Dative Shift, and the Raising rules are examples of operations which rearrange the argument hierarchy of a VP. Finally, causative rules and rules for the "applied" forms in Bantu languages are examples of relation-expanding rules (rules which increase the number of argument positions of a verb phrase). Formalizations of all of these rules can be found in (Dowty 1982), so for now, let me illustrate the application of relation-changing rules, as well as the derivation of sentences with unchanged grammatical relations, by only a few examples.

The agentless passive rule in English can be given the (somewhat simplified) formulation in (7): it converts a transitive verb to a passive intransitive verb syntactically, and semantically it existentially quantifies the verb's original subject and reinterprets its new subject like the original direct object:

(7) (Agentless Passive). If $\alpha \in TV$, then $F_7(\alpha) \in IV$, where
$$F_7(\alpha) = \underline{be} \alpha + EN.$$

Translation: $\lambda p [\alpha' (p) (\exists x^*)]$

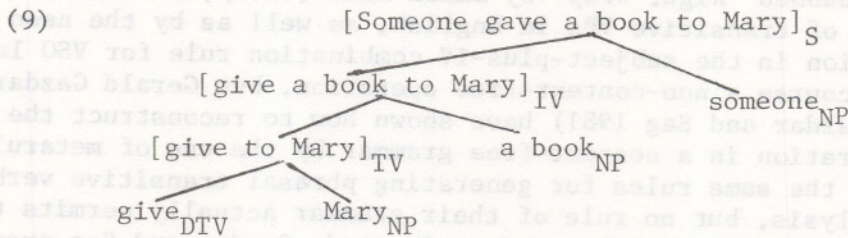
(here, " $\exists x^*$ ") abbreviates " $(\hat{P}\exists xP\{x\})$ "

Dative Shift can be formulated as in (8): syntactically, it shifts a verb between the two English subcategories of three-place verbs I mentioned earlier, that is, from DTV (the category of dative transitive verbs) to TTV (the category of ditransitive verbs). Semantically, the rule alters the meaning of the original verb by inverting the direct and indirect arguments:

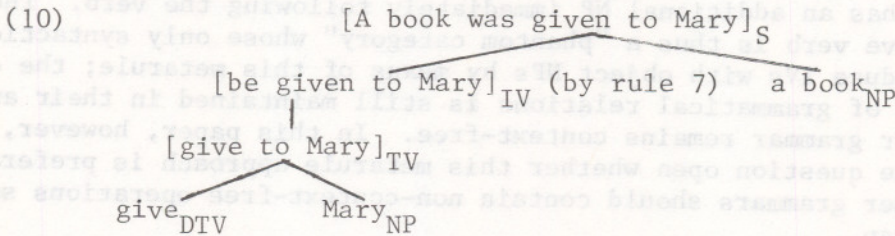
(8) (Dative Shift). If $\alpha \in \text{DTV}$, then $F_8(\alpha) \in \text{TTV}$, where $F_8(\alpha) = \alpha$.

Translation: $\lambda p_1 \lambda p_2 \lambda p_3 [\alpha' (p_2) (p_1) (p_3)]$

The analysis tree in (9) illustrates a sentence with a three-place verb in which neither of these two rules is used; (10) is an example with Agent-less Passive alone; (11) is an example with Dative Shift, and (12) illustrates the use of both rules. By the translation rules given in (7) and (8), all three sentences will receive logically equivalent interpretations, specifically, that of the translation (9').



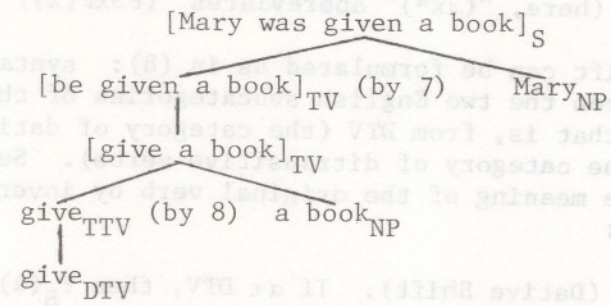
(9') $\exists x \exists y [\text{book}'(y) \wedge \text{give}'(x, y, m)]$



(11) [Someone gave Mary a book]_S

A syntax tree for the sentence "[Someone gave Mary a book]". The root node is the sentence S, which branches into the IV node "[give Mary a book]" and the NP node "someone". The IV node branches into the TV node "[give a book]" and the NP node "Mary". The TV node branches into the TTV node "give (by 8)" and the NP node "a book". The TTV node branches into the DTV node "give" and the NP node "a book".

(12)



(The Raising rules, not given here, will also interact with passive to produce and correctly interpret those examples which are produced in transformational accounts by successive 'movement' of a NP through various clauses, though of course no movement is involved in this analysis.)

One thing that should be noted in these analysis trees is that a transitive verb phrase is uniformly combined with the direct object NP not by simply concatenating the two phrases but rather by inserting the object NP after the first word in the phrasal transitive verb. This operation, dubbed "Right Wrap" by Emmon Bach (1980), is motivated by other cases of transitive VPs in English, as well as by the need for this operation in the subject-plus-IV combination rule for VSO languages. This is of course a non-context-free operation, but Gerald Gazdar and Ivan Sag (Gazdar and Sag 1981) have shown how to reconstruct the effect of this operation in a context-free grammar by the use of metarules. They employ the same rules for generating phrasal transitive verbs as in this analysis, but no rule of their grammar actually permits the node TV to be dominated by another node. Instead, Gazdar and Sag propose a metarule which specifies that for any rule producing a transitive VP, there is to be another rule producing an IV that is exactly like it except that it has an additional NP immediately following the verb. The category transitive verb is thus a "phantom category" whose only syntactic function is to induce IVs with object NPs by means of this metarule; the categorial analysis of grammatical relations is still maintained in their analysis, but their grammar remains context-free. In this paper, however, I will leave the question open whether this metarule approach is preferable or whether grammars should contain non-context-free operations such as Right Wrap.

This account of grammatical relations, I have argued, gives a superior account of many natural language phenomena (Dowty 1982, 98-108). These include, briefly, (1) it predicts that relation-changing rules are structure-preserving, (2) it predicts that the morphemes signifying relation-changing rules such as passive appear on verbs, rather than elsewhere in the sentence, (3) it predicts that if relation-changing rules are lexically governed, they should be governed by verbs, rather than other elements of the sentence, (4) it permits relation-changing rules to be formulated in the same way whether they are syntactic rules (i.e. fully "productive") or lexical rules (partially productive) in a given language, (5) it permits an elegant explanation of certain "discontinuous constituents" such as the constituent "verb phrase" in VSO languages like Breton, (6) it gives rise to a simple explanation of the distinction between subject controlled complements, as with the verb promise, and object-controlled complements as with the verb persuade, (7) it predicts the behavior of derived causatives which led Newmeyer (1976) and Aissen (1974) to propose that causative

is a precyclic transformation, (8) it allows a simple yet adequate account of the "wanna" contraction facts, (9) and perhaps most important of all, I suggest that it provides a natural and fairly adequate account of "grammatical relations" which neither takes grammatical relations as completely primitive concepts, nor makes reference to multiple levels of syntactic description, nor requires that grammatical relations be defined in any way in terms of so-called thematic relations such as agent, patient, goal, theme, etc., nor in terms of any intermediate level of description between syntax and semantic interpretation (i.e. denotations and truth conditions). This last point is particularly important to keep in mind in comparing the categorial analysis of grammatical relations with other, more complex accounts involving multiple levels. For if these more complicated accounts purport to capture certain linguistic generalizations which the categorial analysis does not, then it behooves us to examine these putative generalizations to see whether they are really so significant or so cross-linguistically valid to outweigh the relative theoretical complexity which these other accounts require.²

2. Rules Generalized over Grammatical Relations

2.1. Passives

Having now sketched the outlines of the categorial account of grammatical relations and relation-changing rules, I turn to some unresolved problems for this analysis.

The first kind of problem is the case of languages where it has been suggested that two NPs behave as direct object (DO) in the same clause simultaneously. For example, Seiter's (1979) analysis of Nieuwean proposes that this language has a rule which advances an instrumental NP to DO. This advanced instrumental then participates in several syntactic processes that are otherwise restricted to subjects and objects, but the original DO NP still participates in these same processes after the instrumental has been advanced.

Similarly in a number of Bantu languages, there is a construction in which a NP with locative, benefactive or instrumental meaning appears in the syntactic position of the DO and behaves, with respect to other syntactic rules, as if it were a DO. (Yet the original DO still passivizes.)

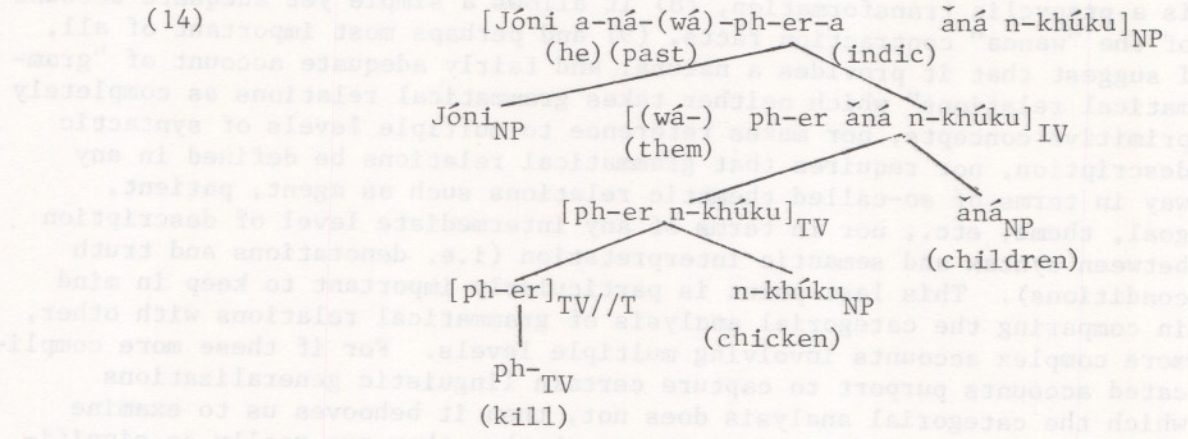
In the categorial analysis, this will be a case of a relation-expanding rule in which the added NP appears as the DO of the derived verb and the original DO becomes the secondary object of the new verb. The syntactic rule for the benefactive construction of this group can be described by the rule in (13):

(13) (Bantu applied benefactive construction)

If $\alpha \in TV$, then $F_{13}(\alpha) \in TTV$. (For Chichewa, $F_{13}(\alpha) = \alpha + (e/i)r$).

Translation: $\lambda p_1 \lambda p_2 \lambda p_3 [\text{ben}'(p_2)(\alpha'(p_1))(p_3)]$

The corresponding translation rule specifies that the meaning of the direct object of the new verb will be used semantically as a benefactive VP modifier would be used in English: ben' is here a constant denoting the benefactive relation. The secondary object of the new verb is interpreted as the DO of the original verb. The illustrative analysis tree (14) is based on Chichewa data from Trithart (1979):



'John killed the chicken for the children.'

Translation: (ben'(the-children'))(kill'(the chicken'))(John')

This construction has been viewed as a problem for the theory of Relational Grammar for two reasons. First, as Trithart observes, there is no corresponding sentence, in many of these languages, in which the benefactive, instrumental or locative surfaces in unadvanced form, so there is no purely syntactic motivation for this advancement rule. The second problem, the one which is of interest to us, is that in "applied" sentences, sentences like (14), it is possible to passivize not only the putatively "advanced" instrumental, benefactive or locative but also the original NP as well. Thus corresponding to the active sentence (15), there are two passive forms (16a) and (16b):

(15) Cátherine a- ná- (wá-) phik- ir - a ǎ-ná n-síma
 Catherine she past them cook apl. indic children nsima

'Catherine cooked nsima for the children.'

(16) a. á-ná a- ná (yí) phik-ir - idw -a n-síma
 children they past (it) cook apl. pass indic

'The children were cooked nsima.'

b. n-síma yi-ná (yí) phik - ir - idw - a ǎ-ná
 nsima it past (it) cook apl. pass indic children

'Nsima was cooked (for) the children.'

Of course, we do not have to go so far from home to see this sort of problem, for it can be found in some dialects of English as well. If example (18) indicates a case where an indirect object has been advanced to DO, *vís-a-vís* (17),

(17) John gave a book to Mary.

(18) John gave Mary a book.

then if Passive indeed applies only to DO (which is to say, in the categorial analysis, that it applies only to transitive verb phrases), then the only passive corresponding to (18) should be (19); in some dialects, however, the passive (20) is acceptable as well:

- (19) Mary was given a book (by John).
 (20) A book was given Mary (by John).

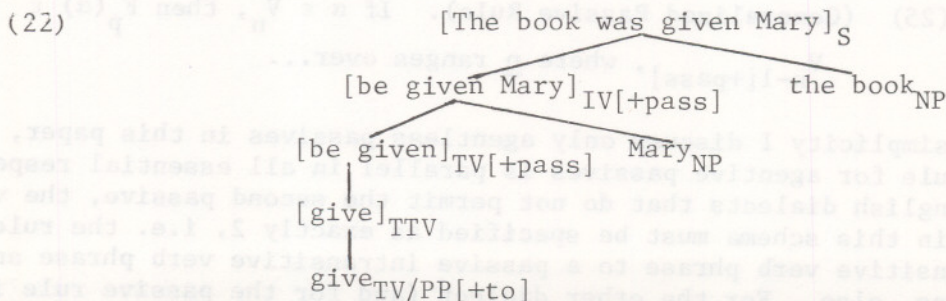
This example, and the Chichewa case (16), present a problem both for the categorial analysis and for early versions of Relational Grammar. In Relational Grammar, this situation conflicts either with the Chômeage condition or the Stratal Uniqueness Condition. If we try to maintain that the second NP after the verb in (18) is a demoted DO, then the Chômeage Condition is violated in examples like (10), since a NP that is en chômeage is not supposed to be advanceable by Passive or other advancement rules. If on the other hand we maintain that both NPs following the verb are DOs at the time that Passive applies, then the Stratal Uniqueness Law is violated, which states that only one NP can occupy a single grammatical relation at a given stage of the derivation.

Because of cases like this where more than one NP seems to behave as a DO (and especially because of cases like Niuean where several syntactic processes seem to identify two NPs as DOs), some relational grammarians (Seiter 1979, Keenan and Gary 1977) have indeed proposed that Stratal Uniqueness be abandoned. In the theory of Relational Grammar it is possible in principle to dispense with this law and still leave the theory otherwise intact, for that theory is presently formulated as a large body of axioms (including Stratal Uniqueness) which are theoretically independent of one another, hence any one can be deleted without any inconsistency. In the categorial analysis, on the other hand, this move is not possible, for the equivalent of Stratal Uniqueness is not an axiom but a principle which follows automatically from the Montague-Schoenfinkel method of defining grammatical relations in the first place.³

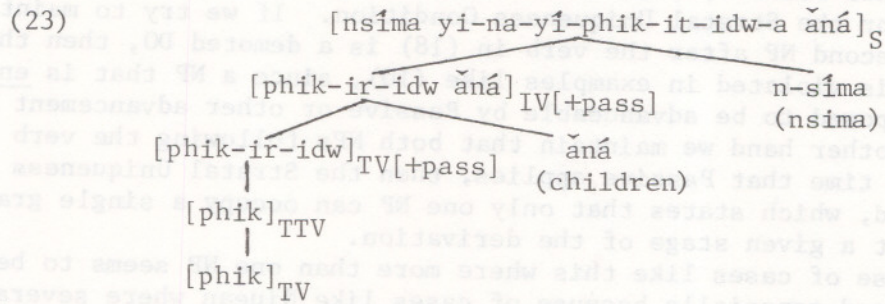
Rather, the categorial analysis seems to force us to the claim that these two NPs bear distinct grammatical relations; therefore since both of them can passivize there is no alternative in the categorial analysis but to suppose that there are two distinct passive operations involved here: one the regular passive (which passivizes a transitive verb phrase and thus leads to the sentence (19)) and another, which I have called in earlier papers (Dowty 1978, 1981) the second passive rule, is responsible for the passive form (20). This second passive rule can be formulated as (21) for English: it passivizes a ditransitive verb and yields a passive transitive verb as a result; this passive transitive verb then combines with a NP argument as illustrated in (22) to form an intransitive passive verb phrase.

- (21) (2nd passive rule). If $\alpha \in \text{TTV}$, then $F_p(\alpha) \in \text{TV}[+\text{pass}]$,
 where $F_p(\alpha) = \text{be } \alpha \text{ +en}$.

Translation: $\lambda p_1 \lambda p_2 [\alpha' (p_2) (p_1) (\exists x^*)]$



The second passive rule for Chichewa and other Bantu languages would be exactly parallel to this English rule; a sample analysis tree is given in (23):



'Nsima was cooked (for) the children.'

This method of "doubling" the passive rule will be at least observationally adequate for any language in which secondary objects as well as direct objects passivize, and other syntactic rules that apply to both direct and secondary objects in various languages (e.g. quantifier floating in Niuean) can likewise be "doubled". However, this method is open to the charge of missing a significant generalization, namely, that these rules in these languages all seem to be treating direct objects and secondary objects exactly alike and therefore should preferably be described by a single passive rule (or a single quantifier floating rule, etc.) that applies to direct and secondary object position indifferently.

Although I have made it clear why the two kinds of passive rule cannot literally be the same rule under the categorial analysis, we could however capture the generalization in question here by making the passive a rule schema which applies to more than one category of verb phrase. This is exactly what I now propose to do.

First, let us rename the categories intransitive verb phrase, transitive verb phrase, and ditransitive verb phrase by designating them all with the symbol V plus a numerical subscript indicating the number of arguments the verb takes, as indicated in (24):

- (24) V_1 = intransitive verb phrase (categorially, IV)
 V_2 = transitive verb phrases (categorially, TV, or IV/T)
 V_3 = ditransitive verb phrases (categorially, TTV, or TV/T)

The generalized passive rule is now written as (25):

- (25) (Generalized Passive Rule). If $\alpha \in V_n$, then $F_p(\alpha) \in V_{n-1}[+pass]$, where \underline{n} ranges over...

(For simplicity I discuss only agentless passives in this paper, since the rule for agentive passives is parallel in all essential respects.) For English dialects that do not permit the second passive, the value of \underline{n} in this schema must be specified as exactly 2, i.e. the rule converts a transitive verb phrase to a passive intransitive verb phrase and does nothing else. For the other dialect (and for the passive rule in Chichewa),

the value of \underline{n} must be allowed to be equal to or greater than 2, hence the rule may also convert a ditransitive VP into a passive transitive VP, thus giving rise to derivations like (22) as well as "regular" passives like Mary was given a book.

Now consider how the corresponding semantic rule may be schematized. The translation rule we want to arrive at for the case where the input phrase α is a transitive verb is (26a), and the rule we want for the case where the input phrase is ditransitive is (26b): what do these two translations have in common?

- (26) a. For $n = 2$: $\lambda p_1 [\alpha' (p_1) (\exists x^*)]$
 b. For $n = 3$: $\lambda p_2 \lambda p_1 [\alpha' (p_1) (p_2) (\exists x^*)]$
 c. For $n = 4$: $\lambda p_2 \lambda p_3 \lambda p_1 [\alpha' (p_1) (p_2) (p_3) (\exists x^*)]$
 d. For $n = 1$: $[\alpha' (\exists x^*)]$

It seems that both these cases can be characterized as "advancing" by semantic means the lowest argument of a verb (its direct or secondary object) to its highest argument (i.e. its subject) and putting an "existential quantifier" in place of the original highest argument. Now I presently know of no cases where such a generalized passive rule needs to apply to a four-place verb, but as long as we are schematizing the rule, let us go ahead and hypothesize, for the sake of illustration and for concreteness, what such a generalized rule might do in this case. Suppose in this case that the rule needs to advance the lowest argument to the highest one, existentially quantify the original highest argument position, and leave the intermediate arguments in the same hierarchy. Then the translation rule we would want for this case is the one in (26c). Now in order to write the schematized translation let me introduce some abbreviations:

- (27) $\lambda(1, \dots, n)$ abbreviates $\lambda p_1 \lambda p_2 \dots \lambda p_n$
 $\alpha(1, \dots, n)$ abbreviates $\alpha(p_1) (p_2) \dots (p_n)$

A lambda in front of a parenthesized ellipsis 1 through \underline{n} abbreviates a sequence of lambda operators each attached to the respective variables p_1, p_2 , etc. through p_n . A predicate α in front of an ellipsis 1 through \underline{n} indicates the predicate α applied first to the argument p_1 , then to the argument p_2 , and so on, until finally applied to p_n . We now write the schematized translation rule as (28).

- (28) (Translation rule for Generalized Passive):
 $\lambda(2, \dots, n-1, 1) [\alpha' (1, \dots, n-1) (\exists x^*)]$

The numbers 1 and 2 which appear in this rule must of course be understood to be limited by the value of \underline{n} : that is, if $\underline{n} = 2$, then p_2 does not actually appear in this instance in the translation rule (i.e. in (26a)) since the last element in the ellipsis is $\underline{n}-1$, which is 1.

Similarly, if we considered the instance of the schema where $\underline{n} = 1$, then

$\underline{n}-1$ is zero and both ellipses represent empty sequences, hence the interpretation of the translation schema for $\underline{n} = 1$ is (26d).

Now the particular notation I have chosen to represent this schematized translation rule may be a bit clumsy and could in any case be written in other ways. All that is involved here, as far as the model-theoretic interpretation which these translations represent is concerned, is simply generalized operations over \underline{n} -place relations, operations such as reducing an \underline{n} -place relation to an $\underline{n}-1$ place relation or inverting an \underline{n} -place relation. W. V. Quine, for example, discusses just these operations in his article "Variables explained away", Quine (1966), but he symbolizes these generalized operations not by lambda expressions but by defining single operator symbols which represent each generalized operation. The translation rule here could be written much more simply in Quine's notation by prefixing to α first the operator which inverts a relation and then prefixing in turn the operator which reduces a relation by one place (by existentially quantifying its last argument position). However, I think the notation I have used here may be a bit more perspicuous for our purposes.

This use of a passive rule schema gives us a way of saying, in effect, that the language simply does not distinguish between transitive and ditransitive verb phrases when it comes to applying the passive rule. If this is a significant fact about some languages, then presumably this means that transitive and ditransitive verb phrases (or equivalently, the notions direct object and secondary object) form a natural syntactic class. If so, then we might want to make this fact explicit by proposing that a syntactic feature defines this class, and use this feature to restrict the passive schema, rather than restricting the value of the numerical subscript in the rule schema. We might thus distinguish the various transitivity classes of verb phrases by a system of two features such as (29):

(29) Transitivity classes defined by syntactic features

- [+nuclear] $\{V_1, V_2\}$ (the set of transitive and intransitive VPs)
- [+transitive] $\{V_2, V_3\}$ (the set of transitive and ditransitive VPs)

Here the feature [+nuclear] (a term borrowed from Relational Grammar) designates the putatively natural class of 1-place and 2-place predicates, while the feature [+transitive] designates the class of 2-place and 3-place predicates. Combinations of values for the two features can also single out intransitives, transitives, and ditransitives separately. With this system, we could say that in Chichewa and in some dialects of English the passive rule applies to the class [+transitive], while in other dialects of English (those that do not allow sentences such as A book was given Mary), the passive rule applies to the class [+nuclear, +transitive]. Whether such "natural classes" are actually well-motivated, however, is a question I would like to leave open for now.

The use of rule schema to abbreviate a sequence of individual rules is reminiscent of Gerald Gazdar's (1982) use of schema to represent rules for conjunctions of \underline{n} constituents. However, I do not believe the idea of schematizing rules to apply to predicates of varying numbers of arguments is very familiar, so let me motivate this idea by suggesting some further

applications for it. Since we have employed this schema to generalize passive over transitives and ditransitives, we might also ask whether languages might generalize passive "upward", that is, so that it applies to intransitives as well as transitives. In fact, I suggest this is just what does happen in the case of impersonal passives. That is, if n is set equal to 1, then the generalized passive rule (25) will derive a zero-place predicate from an intransitive verb phrase and will give the appropriate semantics for an impersonal passive, namely that of the case (26d) above. (I should point out that von Stechow (1979) has also proposed a treatment of passives and impersonal passives in German that is much like what I am proposing here.) Of course, further syntactic details of impersonal passives in various languages will still have to be specified; for example, some languages such as German allow a dummy "it" in impersonal passives (cf. (30)),

(30) Es wird heute getanzt.

and some other means besides the generalized passive rule must be found for introducing this dummy. However, it has been observed (Curme, 1924; Nerbonne, this volume) that this "it" in German is definitely un-subject-like and fails to behave as subjects in German ordinarily do in a number of ways (even though other dummies in the language, such as "weather" it and the it of extraposition, do behave as subjects in all these same respects). Nerbonne concludes that the best analysis of (30) is that it is a subjectless sentence. Also, languages such as Turkish (Perlmutter 1978) have impersonal passives but have no dummy subjects at all. If there are other languages in which impersonal passives exhibit a dummy that is truly a subject in all respects, then a modification of the generalized passive rule I have given will be necessary here.

It may also be noted that this treatment of impersonal passives will permit impersonal passives to be formed on transitive and other verb phrases as well. For when a transitive verb has combined with its object, it then constitutes an intransitive verb phrase, and this phrase can undergo impersonal passivization just like a VP consisting of a lexical intransitive verb alone. On the other hand, impersonal passive might be a lexical rule in some languages (just as any relation-changing rule might be, under the categorial analysis, cf. Dowty 1982), but if it is a lexical rule it could not be fed by syntactically complex expressions such as verb phrases consisting of a transitive verb plus object. Thus it is a prediction of this kind of analysis that if impersonal passivization has lexical exceptions in a language, then transitive verbs should not have impersonal passives in that language, and conversely, if a language does permit impersonal passives with transitive verbs, then it is a syntactic rule and should not have lexical exceptions. (This is a prediction parallel to one made about regular passives of transitive verbs in the categorial approach: the regular passive rule might be either a lexical or a syntactic rule in general, but if it is a lexical rule, it should be fed only by lexical transitive verbs, not by syntactically complex transitive verb phrases. Since English, for example, does exhibit passives of complex transitive verb phrases, it follows in this theory that passive in English is a syntactic rule, a position that has been defended at length by Emmon Bach (1980).)⁴

2.2. Purpose Clauses

A second case where we might employ rule schema generalizing over grammatical relations is the case of the purpose classes discussed by Emmon Bach (1982). Bach has claimed that infinitival purpose clauses, such as that exemplified in (31), are restricted to transitive verb phrases, or else are the arguments of one of a handful of verbs lexically subcategorized for them such as have and be. Thus (32) is unacceptable, according to Bach, because the verb come in is intransitive.

(31) They brought in the Dean for us to talk to.

(32) *The Dean came in for us to talk to.

Bach's analysis of a sentence such as (33) is that the purpose clause is a modifier of a transitive verb phrase, so the sentence (33) has a syntactic analysis (34):

(33) John bought War and Peace to read to the children.

(34) [John bought War and Peace to read to the children]_S

[buy War and Peace to read to the children]_{IV} John_{NP}

[buy to read to the children]_{TV} War and Peace_{NP}

[to read to the children]_{TV/TV} buy_{TV}

(PRO) to read him₃ to the children

This transitive verb modifier is formed by syntactically and semantically binding the DO variable him₃ within the clause: this will ultimately be bound by the DO of the matrix clause. The subject of the purpose clause, here PRO, is however an instance of free control according to Bach; its interpretation is determined by various semantic and pragmatic conditions, but its binding is not a matter of compositional semantics at all. Purpose clauses are subject to further semantic and pragmatic conditions, but they are not of interest to us here.

Unfortunately for Bach's claim, there are counterexamples to it in his own paper. These are cases such as (35).

(35) John gave Mary War and Peace to read to the children.

Assuming the analysis of ditransitive give which I have argued for (and which Bach likewise assumes), it is not the NP War and Peace which is the grammatical DO in (35) but rather the NP Mary. Nevertheless, it is War and Peace which clearly binds the gap in the purpose clause in this sentence. Notice that it would not help Bach's position to suppose that there is a second syntactic analysis for give in this case according to which the NP War and Peace is the true grammatical DO. This is because (36) shows that Mary can be passivized in this example, and this clearly indicates that Mary is the true DO.

(36) Mary was given War and Peace to read to the children.

Just to complete the picture, let us note that there are also cases with the dative form of the verb give and a purpose clause (37), and here War and Peace IS the grammatical DO.

- (37) John gave War and Peace to Mary to read to the children.
- (38) War and Peace was given to Mary to read to the children.

Although both the DO and the secondary object of a verb like give can bind the gap in the purpose clause, it is not the case that just any NP within the matrix VP can bind this gap. Note that in (39) the gap can only be bound by the object NP the book, not by the (pragmatically more plausible) prepositional object the table:

- (39) John put the book on the table to study on.

We could of course salvage Bach's analysis by supposing that such purpose clauses are systematically ambiguous--that they may modify either transitive verb phrases such as give to Mary in (37), or ditransitive verbs such as give in (35); in either case, the object NP next added to the VP would be the one binding the gap in the purpose clause. (For pragmatic reasons discussed by Bach, only one reading would be apparent in each sentence.) Such a suggestion would be open to the charge of failing to capture a generalization. But here again, we could counter this objection by formulating the purpose clause rule as a rule schema which applies to both transitive and ditransitive phrases, just as we did with passives. This generalized rule might be written as in (40):

- (40) (Generalized Purpose Clause Rule). If $\alpha \in V_n$ and $\beta \in IV$, then

$$F_{40,m}(\alpha, \beta) \in V_n, \text{ where } F_{40,m}(\alpha, \beta) = \alpha \text{ to } \beta', \beta' \text{ being } \beta$$

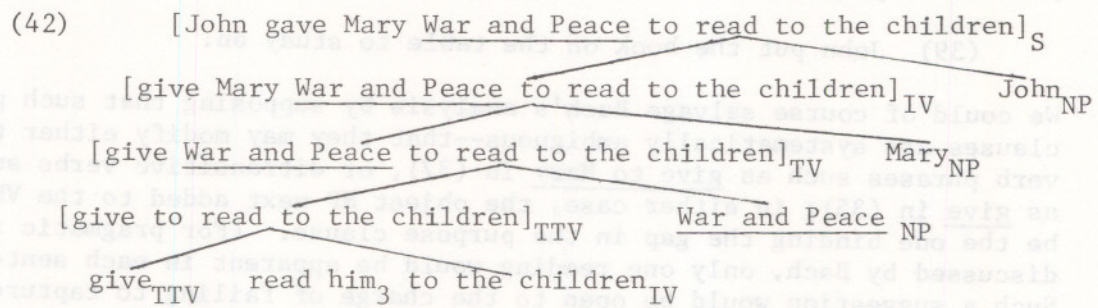
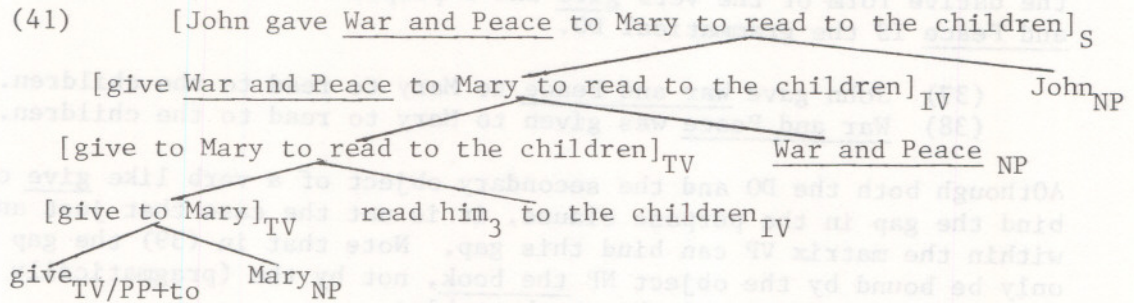
with him_m deleted. Here, $n \geq 1$ (or, equivalently, the rule

applies to $V_{[+transitive]}$.)

Translation: $\lambda(1, \dots, n)[\alpha'(1, \dots, n) \wedge \text{intend-}$

$$\text{that}'(\mathcal{P}_n, \hat{[\mathcal{P}_1\{\hat{x}_m[\beta'(z)]\}]})]$$

The second half of this translation rule is for illustrative purposes and should not be taken too seriously; it may only roughly approximate the meaning of purpose clauses. (The variable z on the right is to be a free variable, corresponding to the pragmatically controlled "PRO" in Bach's tree.) For illustration, (41) and (42) are analysis trees in which the two instances of this schema have applied, the purpose clause modifying a transitive VP in the first case, a ditransitive VP in the second:



The translation rule schema will assign the proper interpretation to each of these trees: that is, the NP War and Peace will bind the object gap in the purpose clause in each case.

2.3. Reflexive Control

Next, I will point out a case where generalized rules can be used to efficiently describe a process that applies to both direct objects and subjects in English. In their paper "Passives and Reflexives in Phrase Structure Grammar" (Gazdar and Sag 1981) Gerald Gazdar and Ivan Sag show how the syntactic distribution and semantic binding of reflexive pronouns in English can be treated in a Generalized Phrase Structure Grammar. There are two syntactic positions in English which control reflexive pronouns: subject and object. Gazdar and Sag's analysis involves two rules whose translation specifies this semantic binding. By making the slight notational changes necessary to recast their analysis in the grammatical format I have adopted here, we might restate their analysis as the two rules (43) and (44):

(43) If $\alpha \in IV_{[+SELF]}$, then $F_i(\alpha) \in IV_{[-SELF]}$ (F_i is the identity mapping).

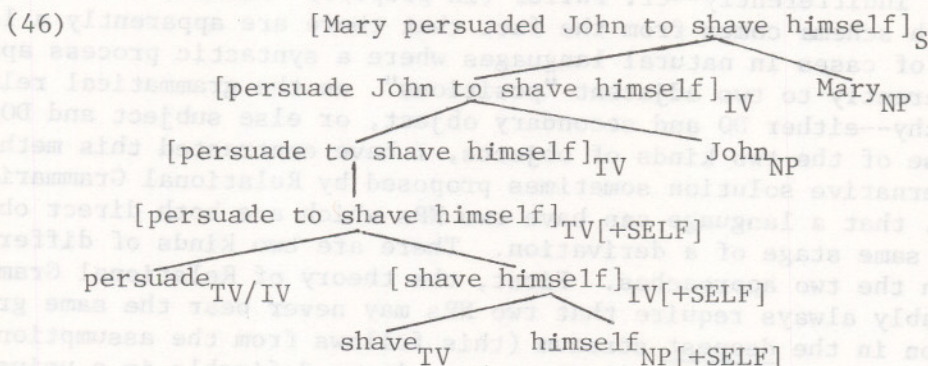
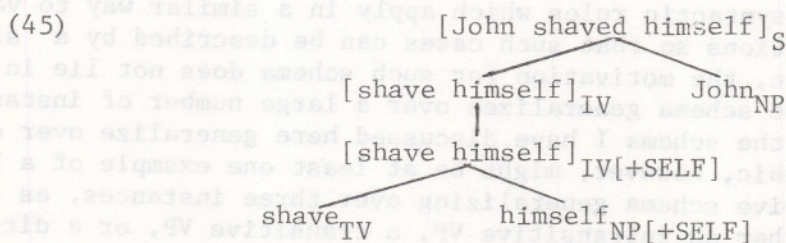
Translation: $\lambda P P \{ \hat{r}[\alpha'(r^*)] \}$

(44) If $\alpha \in TV_{[+SELF]}$, then $F_i(\alpha) \in TV_{[-SELF]}$

Translation: $\lambda P_1 \lambda P_2 P_1 \{ \hat{r}[\alpha'(r^*)(P_2)] \}$

I assume that reflexive pronouns such as himself, herself, yourself, etc. carry the syntactic feature [+SELF] and that there are general syntactic feature conventions, essentially the same as Gazdar and Sag's, for passing

this feature and other syntactic features recursively up onto the syntactic category label of any constituent containing a reflexive pronoun. (Since Gazdar and Sag are using phrase structure rules rather than the inductive syntactic rules I am using, their conventions are actually viewed as passing such features "down" the tree rather than "up" an analysis tree as I view them here; but this is not an important difference.) In the present version, the two rules (43) and (44) then "eliminate" this feature [+SELF] and at the same time specify that the argument of the IV or TV in question will semantically "bind" the reflexive pronoun within the verb phrase. These rules will then give rise to derivations such as (45) and (46) and will assign these the appropriate interpretations:



Actually, Gazdar and Sag's analysis does not really involve the analogue of (45) and (46) as true syntactic rules but rather as metarules--that is, rules which take any existing syntactic rule that forms a non-reflexive IV or TV from non-reflexive parts and give as output a new syntactic rule that is identical except that it forms a non-reflexive IV or TV from constituents that do involve the feature [+SELF]. We could in fact adopt this metarule approach here, but I do not in the interest of expository simplicity: if we did use the metarule approach note that the analysis trees (45) and (46) would in fact be one node shorter, as they would lack the TV and IV nodes, respectively, that bear the feature [+SELF].

Nevertheless, the analysis involving rules (43) and (44) is suspiciously redundant (as is Gazdar and Sag's original analysis) in that it involves two rules and two translation rules that look exactly alike except that one involves the category IV where the other involves the category TV.

We can, once again, avoid this redundancy by replacing both rules by the single rule schema (47) that generalizes over these two categories:

(47) (Reflexive control rule generalized)

If $\alpha \in V_{n[+SELF]}$ then $F_i(\alpha) \in V_{n[-SELF]}$; here $n \leq 2$ (or equivalently, the rule takes $V_{[+Nuclear]}$ as input)

Translation: $\lambda(1, \dots, n) \mathcal{P}_1\{\hat{r}[\alpha'(r^*)(2, \dots, n)]\}$

To conclude this section, let me say that I have proposed a method of generalizing syntactic rules which apply in a similar way to various grammatical relations so that such cases can be described by a single rule. To be sure, the motivation for such schema does not lie in the fact that any one schema generalizes over a large number of instances: in fact, all of the schema I have discussed here generalize over exactly two cases. (Arabic, however, might be at least one example of a language that uses a passive schema generalizing over three instances, as it appears to passivize either an intransitive VP, a transitive VP, or a ditransitive VP indifferently--cf. Fuller (in prep.)). Rather, the motivation for such schema comes from the fact that there are apparently a large number of cases in natural languages where a syntactic process applies indifferently to two adjacent "positions" on the grammatical relation hierarchy--either DO and secondary object, or else subject and DO. In the case of the two kinds of objects, I have contrasted this method with an alternative solution sometimes proposed by Relational Grammarians--namely, that a language can have two NPs which are both direct objects at the same stage of a derivation. There are two kinds of differences between the two approaches. First, the theory of Relational Grammar will presumably always require that two NPs may never bear the same grammatical relation in the deepest stratum (this follows from the assumption that the deepest grammatical relations are always definable in a universal way in semantic terms). Rather, the case of two NPs bearing the same grammatical relation could only arise if one of the two had been promoted or advanced from some other relation. As I already mentioned in the Bantu case, however, there is sometimes no real independent syntactic motivation for deriving, say, an "advanced" benefactive NP from an underlying non-direct object position, so this is an ad hoc assumption.⁵ Also in English this kind of assumption would lead to syntactically unmotivated underlying strata. As far as I am aware, the dialects of English that allow a secondary passive with verbs like give, as exemplified in (48),

(48) A book was given John.

also allow secondary as well as primary passives of verbs like spare, deny, and forgive, as in (49)-(51):

- (49) a. The ordeal was spared us.
- b. We were spared the ordeal.

- (50) a. Our sins were forgiven us.
- b. We were forgiven our sins.

- (51) a. A fair trial was denied him.
- b. He was denied a fair trial.

However, such verbs do not occur in sentences where the personal object occurs after the preposition to, i.e. sentences such as *Someone spared the ordeal to us, *Someone forgave our sins to us, etc. are ungrammatical. It would be ad hoc to assume that such sentences have underlying indirect objects in order to explain why they can come to have two direct objects and therefore two passives.

A second difference between these two ways of explaining how two NPs can behave as direct objects is that in my account, the generalization of syntactic operations over grammatical relations is stated rule by rule: thus it allows us to say that some rules may fail to distinguish between two adjacent grammatical relations while other rules in the same language apply to only one of the cases. And in fact we want to be able to say this in the cases I have discussed here. Trithart observes that Chichewa treats the applied object (or DO) and secondary object alike with respect to passive, but only the applied object, not the secondary object, can be reflexivized. And in the case of English, many American English dialects treat DO and secondary object alike as far as purpose clauses go, but nevertheless allow only DOs to passivize. A language like Niuean is simply the limiting case where all syntactic rules of the language fail to distinguish between a DO and a secondary object.

The examples I have discussed in this section do not exhaust the cases where generalized rules of this sort can be put to good use. One obvious application is the "accessibility hierarchy" for relativization. While I admitted in Dowty (1982) that the analysis of that paper offered no account of the role the Relational Hierarchy seems to play in limiting the accessibility of NPs to relativization (Keenan and Comrie 1977), schema generalized over grammatical relations can be used to replace the familiar "variable binding" analysis of relativization in traditional Montague Grammar in such a way as to permit a simple statement of Keenan and Comrie's generalizations. (If relativization applies to V_{n+1} in a given language, it must apply to V_n as well.) This analysis has been developed by Pauline Jacobson in her comments on David Perlmutter's paper at the 1981 Annual Meeting of the Linguistic Society of America and may appear in future work of Jacobson's.

3. Equi and Raising Verbs and the Treatment of Dummies.

The last topic I want to address is the treatment of the distinction between Equi verbs and Raising verbs in the categorial analysis.

- (52) a. Mary tried to win.
- b. Mary seemed to win.
- (53) a. Mary persuaded John to be present.
- b. Mary believed John to be present.

While classical transformational grammar assumed that pairs like (52a)-(52b) and (53a)-(53b) have differing deep syntactic structures, more recent "surfacy" syntactic theories (cf. Brame 1978, Bresnan 1978, Gazdar 1982) of course do not. Nevertheless, many of these recent analyses persist in assuming that there is still somehow or other a distinction in the compositional semantic structure of these pairs. That is, it is suggested that semantic rules must sooner or later assign (52a) a semantic structure like (56), in which the meaning of "to win" is supplied with its own subject "John", a duplicate of the matrix subject,

(56) try'(win'(John'))(John')

and (52b) is assigned a semantic structure like (57), in which the meaning of seem is a function applying to the whole proposition "John wins":

(55) seem'(win'(John))

Similarly, it is assumed that the semantic structures of (53a) and (53b) must differ along the lines of (56) and (57):

(56) persuade'(be-present'(John'))(John')(Mary')

(57) believe'(be-present'(John'))(Mary')

This kind of assumption appears most recently in a paper by Ewan Klein and Ivan Sag called "Semantic Type and Control", read at the 1981 Annual Meeting of the Linguistic Society of America. I don't want to discuss the very interesting and ingenious explanation of control properties of verbs that they present, but rather merely note that their analysis rests in part on the assumption that the basic lexical meanings of, say, try and seem differ in semantic type in just the way (56) and (57) indicate. (What they do in the paper is propose a set of rule-independent semantic principles that in each case will resolve the discrepancy between the lexical type of a verb and the syntactic structure in which that verb appears in such a way as to predict all control properties correctly.)

However, this traditional and time-honored assumption about a difference in the semantic structures of Equi and Raising verbs is quite gratuitous; rather it suffices for the grammar to put together the meanings of Equi and Raising sentences in exactly the same compositional way. Specifically, the meaning of the matrix verb in both (52a) and (52b) can quite simply be treated as a function applying to a VP meaning to give another VP meaning (much as Montague did in PTQ), and this is then applied to the subject meaning to give that of the whole sentence. To say the same thing, these verbs will denote relations between individuals and properties. Thus the meanings of both sentences can be produced compositionally as in (58)-(59)

(58) try'(win')(John')

(59) seem'(win')(John')

The same goes, mutatis mutandis, for persuade and believe, as in (60) and (61)

(60) persuade>('be-present')(John')(Mary')

(61) believe'(be-present')(John')(Mary')

What semantic differences there are between each pair of cases can, and, I believe, should be treated entirely as a matter of semantic entailments of the lexical meaning of these verbs, not of their lexical semantic type, nor of their specified "control properties".

First, consider the assumption that the meaning of seem has a single, propositional argument. This assumption must be due to the fact that so-called raising sentences with seem are (approximately) paraphrasable with that-clauses such as (62):

(62) It seems that Mary won.

However, as Sag and Klein themselves recognize, a propositional-argument seem and a subject-and-infinitive-argument seem are in principle completely interdefinable, as might be made explicit by a "meaning postulate" (63):

$$(63) \quad VP \square [\text{seem}_1'(\wedge P(\phi)) \leftrightarrow \text{seem}_2'(P)(\phi)]$$

This means that any conceivable semantic entailment that we would need to capture with "propositional" seem (or seem₁) could equivalently be captured with "individual and property" seem (or seem₂), and conversely. Thus there is no real reason for taking one or the other as the more basic.

Similarly with Equi verbs like try, a predicate try₂ that takes only an individual and a VP meaning as argument is interdefinable with a predicate try₁ that takes an individual subject and a "like-subject" propositional complement as arguments: cf. meaning postulate (64):⁶

$$(64) \quad VP \square [\phi \{ \hat{x} \text{ try}_1'(P(x^*))(x^*) \} \leftrightarrow \text{try}_2'(P)(\phi)]$$

So once again, there is really no semantic motivation for taking either as more basic.

In the case of try, the intuitive notion that this verb MUST be analyzed semantically in terms of an "invisible" embedded subject for the complement verb seems to be a hard notion for linguists to rid themselves of, so let me further explicate this point by reference to an analogous situation. In the early 1970's George Lakoff observed that active and passive sentences with the adverb willingly differed in their possible interpretations, as (65) versus (66) indicate:

(65) The doctor willingly examined John.

(66) John was willingly examined the doctor.

In order to explain this so-called "passive willingly" reading of (66), Lakoff (1970) assumed that willingly is a semantic predicate which has its own subject in underlying structure, independently of the subject of the main verb. This subject would be the same as that of the main verb in (65) but can be the same as the surface subject in (66). Thus Lakoff proposed that these examples have semantic structures (67) and (68) respectively:

(67) willingly'(the doctor examine John)(the doctor')

(68) willingly'(the doctor examine John)(John')

However, the well-known predicate-modifier analysis of adverbs of Stalnaker and Thomason (1973) showed that this complicated analysis was unnecessary. By treating passive verb phrases as predicates in their own right (rather than deriving them from active sentences) and by treating willingly as a predicate modifier (a word that combines with a predicate to give a new predicate), the logical forms (69) and (70) suffice to describe all the semantic properties of these examples correctly:

- (69) willingly'(examine John')(the doctor)
 (70) willingly'(be examined by the doctor')(John)

The point to observe here is that, semantically, the logical type of willingly under the Stalnaker-Thomason analysis is exactly the same as that of try under the analysis I am defending, hence a "double" subject for try sentences is just as superfluous semantically as a "double" subject for willingly sentences. If we wanted to formally capture the fact that the sentence "John was willingly examined by the doctor" entails, say, "John was willing that the doctor examine him" then we could do so by means of the meaning postulate (71):

$$(71) \quad \forall P \forall P' \square [\text{willingly}'(P)(P') \rightarrow P\{\hat{x} \text{ be-willing-that}'(P(x^*))(x^*)\}]$$

But by the same token we could also capture by a meaning postulate alone the fact that the sentence "John tried to win" entails "John intended that he win" i.e. by the postulate (72):

$$(72) \quad \forall P \forall P' \square [\text{try}'(P)(P') \rightarrow P\{\hat{x} \text{ intend-that}'(P(x^*))(x^*)\}]$$

The point is, there is enough "information" in the formula on the left side of the conditional in both cases to be able to describe all necessary entailments as artifacts of the lexical meaning if willingly or try respectively.

Now it might be supposed that there is in fact motivation for taking the lexical logical types of Equi and Raising to be as Klein and Sag and others have taken them to be because their analysis would obviate the need for separate lexical entries to relate the seem that takes raising to the seem that takes that-clauses, or to relate the persuade that occurs in (73a) to the persuade that occurs in (73b).

- (73) a. John persuaded Mary to be present.
 b. John persuaded Mary that she should be present.

However, this is not so, for three reasons. First, this consideration still does not in itself determine which of the two logical types that must be related is the more basic, e.g. does not give us reason to say that propositional-argument seem is more basic than "raising" seem. Second, as Klein and Sag themselves observe, there are actually additional idiosyncratic differences in the meanings of many verbs from one subcategorization frame to another. For example, to get a paraphrase of (73a) in a structure with a full complement clause as well as direct object, we need to add a modal should in the complement (cf. (73b)), and even this is not quite a paraphrase of (73a), as Klein and Sag note. So even if the verbs are treated as having the same logical type in the two cases, the double lexical entries are needed anyway to capture these further differences in meaning. Third, there are some Subject Raising verbs, like tend, which have no counterpart with a that-clause, so with such verbs there is no motivation at all from such considerations for having the meaning of the verb represented as a predicate of propositions. The same point can be made for object-Equi verbs like force, which likewise cannot be paraphrased in English with a full complement clause.

It is commonly supposed, of course, that there are also syntactic differences between Equi verbs and Raising verbs--specifically, that Raising but not Equi verbs permit dummy subjects or objects such as the it of "Extraposition" and there--and that this difference is to be explained either by deriving Equi and Raising sentences from different deep structures or else explained by a difference in the grammatical relations or compositional semantic structures assigned to these two classes of verbs. Since the analysis I am defending here posits no such difference, this difference in the distribution of dummies like there and it has often been viewed as a significant problem for the categorial analysis (as it was for Montague's original analyses).

However, there is a difference in the lexical meanings of Equi and Raising Verbs whose significance has not been fully appreciated. To the best of my knowledge, every Equi verb has what used to be called "selectional restrictions" on its controlling NP, while every Raising verb has no such restrictions on the corresponding surface NPs. I take it it is now universally agreed that the proper way to describe selectional restrictions is that these are entailments, or conventional implicatures, of the meanings of verbs with regard to their arguments. Thus the anomaly of (74)

- (74) a. ?The proposition tried to be true.
b. ?Water tries to consist of hydrogen and oxygen.

is to be explained by the assumption that the verb try conventionally implicates (or entails and conventionally implicates) that its subject is a sentient being capable of volition.

Now it certainly can be claimed to follow from the classical transformational analysis of Raising verbs that there should be no such selectional restrictions applying to the "raised" NP, and if selectional restrictions are semantic in origin, the same can be said to be true of analyses in which Raising verbs are assigned a propositional argument, rather than an individual argument, in semantic structure. On the other hand, it is an accident, according to these analyses, that all Equi verbs do have such selectional restrictions. After all, not all argument positions of all verbs have any selectional restrictions at all.

What I want to suggest here is that the presence of a selectional restriction for its NP argument may be the only thing that distinguishes Equi from Raising verbs; the difference in dummy NP behavior can be shown to follow from this alone.⁷

In particular, this result will follow if we adopt what has been called an "ugly object" analysis of there-insertion sentences.⁸ By this I mean an analysis in which the word there is treated as a kind of NP and is assigned a denotation just like all other NPs are; the difference is that this denotation is a so-called "ugly object," an entity that is quite different from other NP denotations in the universe of discourse. The semantic rules are then set up in such a way that predicates of existential sentences, such as be a unicorn in the garden, are given an interpretation in which their subject will play a vacuous role. Just to illustrate one way of carrying this out, we might arrange the rules so that the phrase be a unicorn in the garden is translated with vacuous lambda abstraction for its subject argument, as in (75)

(75) denotation of be a unicorn in the garden:

$$\lambda P [\exists x [\text{unicorn}'(x) \wedge \text{in-the-garden}'(x)]]$$

The sentence there is a unicorn in the garden will then translate directly into (76)

$$(76) \lambda P [\exists x [\text{unicorn}'(x) \wedge \text{in-the-garden}'(x)]](\text{ugly-object}')$$

but since the lambda binding is vacuous, this is equivalent to (77):

$$(77) \exists x [\text{unicorn}(x) \wedge \text{in-the-garden}'(x)]$$

Now it is a well-known consequence of such an "ugly object" analysis of the simple form that I have sketched that it would treat sentences like (78) as syntactically well-formed and at most only semantically deviant:

(78) ?There walks to the post office.

But more upsetting than this is that (79) would be generated with the same interpretation as there is a unicorn in the garden (in addition to its correct interpretation).

(79) John is a unicorn in the garden.

However, it is not hard to avoid these unwelcome consequences, if we wish to do so, by making use of a syntactic feature and the feature-passing conventions of GPSG to restrict the NP there to cooccurrence with existential VPs. (Such a treatment was once proposed by Gazdar in unpublished work.)

To carry this suggestion out, let us write the rule for forming existential VPs.

(80) If $\alpha \in \text{NP}$, $\beta \in \text{PP}$ or Adj , then $F_{80}(\alpha, \beta) \in \text{IV}_{[+\text{there}]}$, where

$$F_{80}(\alpha, \beta) = \text{be } \alpha \beta.$$

Translation: $\lambda P [\beta'(\hat{\alpha}')]$

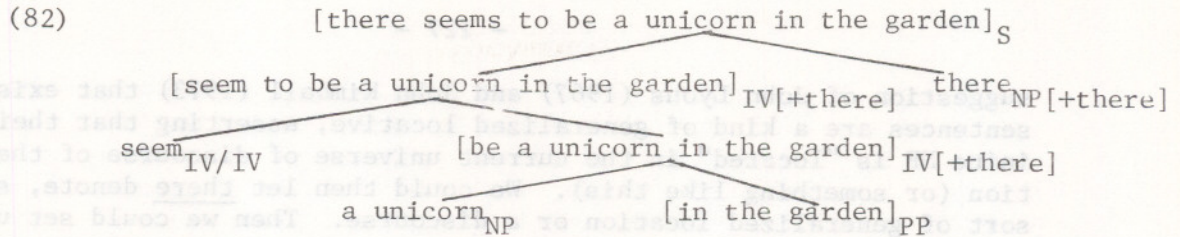
We next add a rule that combines the NP there with a VP bearing the feature [+there] and thereby eliminates the "there" feature:

(81) If $\alpha \in \text{NP}_{[+\text{there}]}$, $\beta \in \text{IV}_{[+\text{there}]}$, then $F_{81}(\alpha, \beta) \in \text{S}_{[-\text{there}]}$,

(F_{81} is otherwise like the subject-predicate operation)

Translation: $\beta'(\hat{\alpha}')$

I assume that when a VP with the feature [+there] is combined with a VP complement verb such as seem, try, or expect, the syntactic feature conventions will pass this feature [+there] up onto the higher VP that is formed. Thus an example like there seems to be a unicorn in the garden will be produced as in the analysis tree (82):



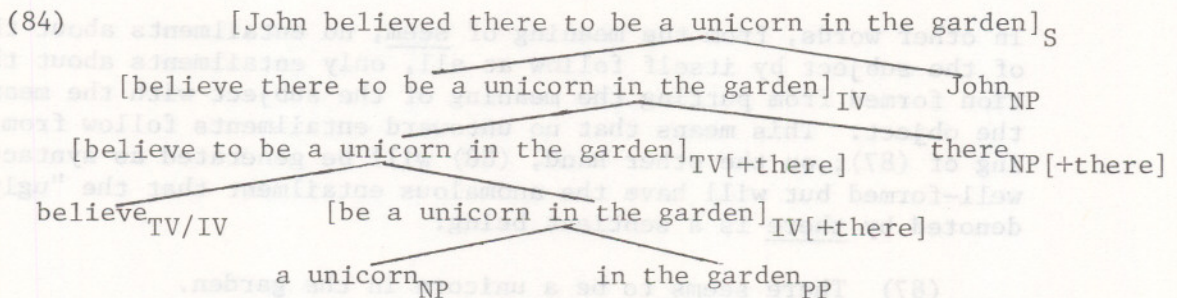
Note that the semantics of this sentence will be given correctly by the same lexical and compositional semantic interpretations needed for sentences where there does not occur, e.g. for John seems to have left.

Of course we still need to account for the appearance of there in direct object position in sentences like John believes there to be a unicorn in the garden. We could do this by adding a second rule parallel to (82) for object position, but since we have introduced the idea of rule schema generalizing over grammatical relations, we can here again take advantage of such schema to account for there in both positions by the same rule. The schema needed would be (83)

(83) If $\alpha \in \text{NP}_{[+there]}$, $\beta \in \text{V}_{n[+there]}$, then $F_{83}(\alpha, \beta) \in \text{V}_{n-1[-there]}$, where $n \leq 2$.

Translation: $\beta'(\alpha')$

Where the value of n equals 2, this schema would lead to analyses trees such as (84):



(Note that the semantics again comes out right.) However, this schema as it stands is not exactly right, for the syntactic operation that (83) purports to generalize over really has to consist of two distinct operations, a subject-predicate operation that puts the NP to the left of the VP, and a verb-object operation that right-wraps the transitive VP around the object NP. In fact, what we should do is replace (83) with a meta-rule (in the sense of Gazdar 1982) generalized over grammatical relations, a rule that takes existing basic rules such as the subject-predicate and verb-object rules as input and gives derived rules just like these except that they mention the feature [+there]. But to save space, I omit this correction here.

In fact, once we have taken this step of restricting the syntactic distribution of there, it is not really necessary to treat the denotation of there as a vacuous "ugly object" at all. Suppose we agree with the

suggestion of John Lyons (1967) and John Kimball (1973) that existential sentences are a kind of generalized locative, asserting that their indefinite NP is "located" in the current universe of discourse of the conversation (or something like this). We could then let there denote, say, a sort of generalized location or a discourse. Then we could set up the semantics of the VP of an existential sentence, for example be a unicorn in the garden, to denote the property that locations or discourses have when they contain a unicorn that is in the garden. Whether we take this tack is not at issue here, however. (Of course, there are other aspects of the semantics of existential sentences which I have not attempted to discuss or incorporate into the translation of rule (81), but I don't think these are relevant to the issues at hand.)

Now let us finally return to the distinction between Equi and Raising verbs. By saying that Equi verbs such as try have a selectional restriction for subject, I mean that the essential characteristic of Equi verbs like try is that they have a conventional implicature and/or entailment approximately of the form of (85):

$$(85) \text{ VP VP } \square [\text{try}'(P) (\mathcal{P}) \rightarrow \text{sentient-being}'(\mathcal{P})]$$

By saying that Raising verbs have no such implicature, I mean that their essential characteristic is that any entailments that follow from the meaning of these verbs have the form of (86), where δ is some predicate of prepositions.

$$(86) \text{ VP VP } \square [\text{seem}(P) (\mathcal{P}) \rightarrow \delta(P\{\mathcal{P}\})]$$

In other words, from the meaning of seem, no entailments about the meaning of the subject by itself follow at all, only entailments about the proposition formed from putting the meaning of the subject with the meaning of the object. This means that no untoward entailments follow from the meaning of (87); on the other hand, (88) will be generated as syntactically well-formed but will have the anomalous entailment that the "ugly" object denoted by there is a sentient being:

- (87) There seems to be a unicorn in the garden.
- (88) ?There tried to be a unicorn in the garden.

And I propose that nothing further needs to be said about the anomaly of (88) beyond this. To put it in different terms, the anomaly of (88) is claimed to arise for exactly the same reason as the anomaly of (74):

- (74) a. ?The proposition tried to be true.
- b. ?Water tries to consist of hydrogen and oxygen.

To be sure, this flies in the face of traditional wisdom that (88) is syntactically ill-formed while (74) is only semantically anomalous; however, both these examples are clearly deviant, and the history of syntactic and semantic theory has taught us that traditional assumptions about which anomalies are syntactic and which are semantic are often best revised.⁹

Before closing this paper, I should comment on the appeal to meaning postulates I have made in analyzing the entailments of the lexical meanings

of try and seem. One sometimes hears the objection that meaning postulates are ad hoc and that "with meaning postulates, one can do anything," as if their use added an unwelcome power that might not be present in certain other theories. This is false. First, there are conceivable restrictions on model-theoretic interpretation which cannot be captured by meaning postulates (Barbara Partee, personal communication), but more importantly, this objection rests on a misunderstanding of the role that meaning postulates play in model-theoretic semantics. It is an important feature of model-theoretic semantics that it leaves the values assigned to lexical meanings deliberately unspecified. To say that try is treated as a non-logical constant of type $\langle s, \langle s, \langle e, t \rangle \rangle, \langle e, t \rangle \rangle$ (or equivalently, to say that try translates into a constant try' of intensional logic of this type) is to say that its interpretation in any of the arbitrarily chosen models defined by the theory is some function in the set:¹⁰

$$\left(\left(\left(\{0,1\}^{De} \right) \right) \right) \quad I \times J$$

Of course, in the actual model for the English language we all speak, the meaning of try is just one particular function in this huge set, but the basic theory does not tell us which model this is. This approach (quite prudently) allows us to postpone specifying the actual semantics for try (and most other lexical meanings) while carefully circumscribing the range within which each meaning lies.¹¹ Meaning postulates are just one technical device for narrowing down the class of possible meanings for a lexical item (though not fixing it uniquely) in order that certain important classes of entailments from this item can be shown to be formally describable. If the actual model for English were some day precisely determined (and the unique semantic value for try were thereby fixed), then all (correct) meaning postulates involving try would be completely redundant, as these would simply be statements about entailments that this actual meaning had "already", as it were, determined.

If we now compare this treatment of lexical meaning with other kinds of semantic theories, e.g. the Lexical Functional Grammar of Kaplan and Bresnan (1981), we find that lexical meanings are also treated as unanalyzed primitives in these theories. Of course, any viable semantic theory must provide the means for specifying, sooner or later, more about these lexical meanings, whether one uses meaning postulates or some other device. To take a familiar example, it is an uncontroversial fact that a sentence Siegfried killed the dragon entails The dragon died, and anyone's theory must allow this kind of fact to be captured eventually. Moreover, it is now almost universally agreed that this fact should be attributed to the lexical meaning of kill rather than as an artifact of sentence semantics (as in Generative Semantics). It is hard to see (and certainly has not been shown) how a theory of lexical semantics would allow this kind of entailment to be captured and yet prohibit the kind of lexical entailment I have ascribed to try in (63) or to seem in (64). We could not for example prohibit a theory of lexical meaning from "manipulating grammatical relations" altogether, since in the case of the kill example, the NP the dragon is a

direct object in the original sentence but a subject in the entailed sentence. Thus there is no prima facie reason to believe that the account of lexical meaning in Lexical Functional Grammar (or any other theory) can in principle be more restrictive than the one I have appealed to in this paper.

Thus the central point of the argument in this section of the paper can be succinctly stated: it is one of simplicity. Any theory must be able to ascribe entailments to the meanings of lexical items. Since it appears that under any reasonable theory of lexical meaning the relevant entailments of Equi and Raising sentences can all be captured from the simple compositional semantic structures try'(win')(John') and seem'(win')(John'), there is simply no good argument for assuming the compositional semantics of these sentences is any more complicated than this. Of course, I have not presented any direct arguments that this compositional structure is not more complicated, and one cannot rule out the possibility that, for example, psycholinguistic experiments may someday show that the status of John as the subject of win in John tried to win is more "psychologically real" than the status of the dragon as the subject of die in Siegfried killed the dragon or of John as the subject of is willing in (66). But until such evidence has been presented, it seems reasonable to place the burden of proof on those who would advocate the more complicated compositional analysis. In defending a lexical reanalysis of the passive and other such transformations, Bresnan (1978) once speculated that "it is easier for us to look something up than to compute it." If this speculation is correct, then a purely lexical account of the "control properties" of Equi and Raising verbs is to be preferred, since it is perfectly feasible and simplifies compositional (i.e. "computed") semantics. While the account of dummy NPs that I have included to accompany this analysis may well be improved upon, or completely supplanted, the much more basic issue raised by the analysis of Equi and Raising verbs presented here is, I believe, one that any compositional theory of semantics cannot ignore.

Footnotes

*This paper was presented at a conference on grammatical relations at Harvard University on December 12, 1981. It will also appear in the proceedings of this conference, edited by Annie Zaenen and distributed by the Indiana University Linguistics Club.

¹The role of translation into intensional logic in Montague Grammar must not be misunderstood: this translation step is primarily for the convenience of the users of the theory and could be by-passed if desired. It is only the model-theoretic interpretation of English resulting indirectly from this translation step which is ultimately of importance to the theory.

²I do mean to imply that so-called thematic relations (Agent, Patient, Goal, etc.) play no role in natural languages whatsoever. It is well-known that there is an early stage of language acquisition at which children in effect rely on such relations rather than grammatical morphemes to interpret sentences (i.e. at that stage at which they may interpret The man ate the meat and The man was eaten by the meat as synonymous), and certain aphasics who have lost the ability to process syntactic structure appear to do so as well (Zurif and Blumstein 1978). Rather,

I mean simply that the full grammatical system of normal "adult" languages I am acquainted with seems to be describable in the most natural and simple way without appeal to such thematic relations. Evidence may be eventually forthcoming that an appeal to thematic relations in grammar is needed in some way as well, but I do not believe this need has been clearly demonstrated yet. Also, the existence of "true" or "deep" ergative languages such as Dyirbal and the simplicity with which they can be described in the present framework (Dowty 1982, Schmerling 1979, Trechsel 1981) shows that such thematic relations do not correlate with grammatical relations in a language-universal way at all.

³ Even if we somehow reconciled the claim that there can be two direct objects in a clause with the categorial analysis, it would not be obvious how to make sense out of the semantics of such an analysis. This is because the argument hierarchy of a verb, i.e. its grammatical relations, is the only means for determining which NP is which argument of the verb. (And unlike the Relation Grammar, I cannot appeal to an underlying stratum of the derivation to distinguish the two, for there is only one stratum of GR in the categorial account.) Nevertheless, a sentence such as John gave Mary the book is not in any way vague or ambiguous as to the interpretation of these two objects (as we might expect it to be in the categorial theory if both these NPs literally bore the same grammatical relation); rather, it clearly means that John gave the book to Mary, not that John gave Mary to the book.

⁴ An alternative analysis of impersonal passives has been proposed by Perlmutter (1978), involving the Un-Accusative Hypothesis (UAH) and the One-Advancement Exclusiveness Law (IAEX). Though I do not have anything to say about many of the facts about impersonal passives supposedly captured by this analysis, I will comment on three points. First, the UAH/IAEX analysis requires that impersonal passives have at some stage a dummy DO NP in addition to their underlying subject, this NP being advanced to subject by Passive. However, I see no independent syntactic motivation for an intermediate-stage DO in impersonal passives, nor any semantic motivation for this NP; as mentioned above, moreover, this dummy is not really motivated as even a surface subject in German and Turkish. Given the methodological assumptions with which I began--that syntactic and semantic analysis need not and should not depart from surface syntactic form unnecessarily--it is clearly desirable to dispense with this intermediate dummy. Secondly, while it is problematic enough that Perlmutter admits that the two "universal" classes of predicates posited by the UAH (i.e. "unergatives" vs. "unaccusatives") are not semantically characterizable in the same way in all languages, it is even worse that Nerbonne (this volume) has observed one language, Lithuanian, in which impersonal passives can be formed with verbs of all of the six semantic types explicitly characterized as "unaccusatives" by Perlmutter. Further examples of "unaccusative" impersonal passives have been pointed out in Irish (Nerbonne, personal communication) and in Arabic (Fuller, in preparation). Thus the prediction of the UAH/IAEX analysis of impersonal passives is either wrong in the case of these languages, or else the UAH is empirically vacuous as a universal since there would have to be at least one language, Lithuanian, which has virtually (or absolutely) no unaccusative predicates. There may well be many languages in which unaccusative predicates do not form impersonal passives, but this generalization can be described in

the categorial analysis simply by making it a conventional implicature of the impersonal passive rule that the action denoted is not a voluntary action of a human agent (or an involuntary bodily process); cf. Nerbonne (this volume). Of course, it would not follow from anything else in this theory that such a restriction should hold, but since it is not a truly universal fact about languages that impersonal passives are restricted in this way, this is not a very damaging objection. Thirdly, Brian Joseph has pointed out to me that the predictions made by this dummy analysis of impersonal passives with respect to unaccusatives only hold if the IAEX is valid. In fact, apparent counterexamples to the IAEX have been noted by Nerbonne, Gerdtz (1980), and perhaps elsewhere. If the IAEX is abandoned, then the Lithuanian, Irish and Arabic data are not a problem for the UAH per se, since the UAH and dummy analysis of impersonals now make no predictions about unaccusatives.

⁵When I say no motivation, I mean of course no motivation other than the theoretical assumption of Relational Grammar that an NP that is benefactive in meaning must necessarily not be a DO in the lowest stratum; as I have said, I see no necessity for saying that grammatical relations are universally semantically characterizable in terms like agent, patient or benefactive.

⁶This same point about try is made in Dowty, Wall and Peters (1981), pp. 235-236.

⁷This suggestion dates from a letter I wrote to Richmond Thomason in 1975, though I did not develop the analysis in detail at that time.

⁸Though "ugly object" analyses of dummy NPs have been widely discussed (the term is due to Lauri Karttunen, I believe), the only published example of such an analysis that I know of is Sag (1982); his treatment differs in a number of ways from that sketched below, however.

⁹If it is objected that (88) sounds more anomalous than (74), and an explanation is wanted, I can offer this: Of all the real-world entities that there are, the question of which entities have the ability to "try" to do things is more of a synthetic than analytic fact, and we can imagine with some effort, say, science fiction stories in which some inanimate things like propositions might have the attributes necessary to be able to "try" things. But the semantics of the existential construction is a res sui generis; we do not predicate anything of the entity or situation denoted by "there" except in existential sentences, and it is hard to imagine the semantics of such sentences being different without departing radically from the English language. This may also account for the subtle intuition that in trying to make sense out of an anomalous sentence such as There tried to be a unicorn in the garden, we are more likely to try to imagine try as a Raising verb than to interpret there as having a sentient denotation; it has been observed, after all, that verbs of English have often shifted historically from the Equi to the Raising class (Ard, 1977).

¹⁰For an explanation of this notation, see Dowty, Wall and Peters (1981).

¹¹For a lengthy excursus into the possibilities for describing word meaning in model-theoretic semantics, see Dowty (1979).

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