

Some Transitivity Alternations in English

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1. Three cases of transitivity alternation.

The remarks which follow pertain to a particular facet of a general lexico-graphic study of verbal diathesis currently being undertaken in connection with the Lexicon Project of the Center for Cognitive Science at MIT. The overall aim of the project is to design lexical entries, primarily for predicators, which will express the linguistic knowledge which a speaker of a given language possesses in relation to lexical items. Our more limited purpose in this paper is to discuss certain alternations in the syntax of English verbs, specifically, alternations in transitivity which are not reflected by corresponding alternations in morphological form. The aim, in general, is to determine the minimum which must be said in a lexical entry in order to account for this particular aspect of English lexical knowledge. And our methodological approach is one which seeks, where possible, to rely solely upon principles which have been shown to be independently necessary within a well articulated general theory of grammar, in this instance, the theory developed in Chomsky's *Lectures on Government and Binding* (1981) and in a variety of publications since. The ideas which we employ in this discussion are, for the most part, ideas which are around, in the literature and in unpublished papers and discussions, and we wish to apologize in advance for the almost inevitable occasions in which we will fail properly to attribute them to their true originators.

In the first section of the paper, a certain amount of descriptive apparatus is set up to account for the observed syntactic behavior of selected English verb types. In the second and third sections, we set about dismantling this apparatus, in so far as we can, in an effort to arrive at an understanding of the *fundamental* grammatical elements involved. This is a preliminary version of our work, and assumptions made early in the paper will be contradicted, intentionally, in later parts. Our terminological usage in this preliminary version is also somewhat inconsistent. Thus, for example, we first use the terms *ergative* and *unaccusative* interchangeably. Later, however, we will distinguish "ergatives" (like *break*, *open* etc.) which have transitive and intransitive uses, from "unaccusatives" (like *appear*, *arrive*, *arise*, etc.), which have only the intransitive use but also allow There-Insertion. There are other rough spots in the exposition which we will attempt to eliminate in later versions.

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In line with this suggestion, we might propose initially that there exists in English a rule of the form:

(5) $aA \text{ --- } -aA$.

Assuming, as seems reasonable, that a given verb is basically either [+A] or [-A] in the lexicon, the above rule will apply to alter its transitivity, i.e., its ability to assign accusative case. What we would like to do in the first half this essay is investigate the extent to which it might be possible to account for a large range of English transitivity alternations as the interaction between the rule formulated in (5) and other principles of grammar. At a latter point, we will reconsider the question of whether (5) necessary as a *rule* of English grammar.

Let us suppose, for instance, that ergative verbs in general are basically [+A]. Case theory will require that a [+A] ergative verb take an object, and θ -theory together with the projection principle will require that a θ -role be assigned to that object by the verb (Chomsky, 1981). The extended projection principle (Chomsky, 1982) requires that a verb have a subject (or, in the sense of Williams, 1981, an "external argument"). In this manner, we account for the transitive alternants of ergative verbs.

We can account for the intransitive alternants of ergative verbs by proposing, simply, that they may undergo rule (5). A [-A] ergative verb, by virtue of the principles of case theory and θ -theory, will be monadic in surface structure, having only a subject and no object. We have, therefore, a gross account of the ergative transitivity alternation. We propose simply that these verbs are alternatively [+A] or [-A], and the rest follow from general principles. This is, however, a gross characterization only; much more needs to be said about the details of what transpires. In particular, we must be explicit about the relationship between transitivity and the assignment of θ -roles to the arguments of a verb. We must, for example, account for the fact that *the glass* is the theme in both (2a) and (2b); that *John* is the agent in (2b); and that there is no agent involved at all in the intransitive alternant (2a).

In syntactically nominative-accusative languages (that is to say, in the majority of the world's languages), verbs like transitive *break*, which assign both theme and agent θ -roles, assign the theme role to the grammatical object, and they assign the agent role to the external argument, or subject. This is the unmarked "linking" relation in the sense of Carter (1976). Let us assume that each of these conventions of θ -role assignment is a genuine principle of universal grammar, representing the unmarked case:

(6) *Unmarked θ -assignment Conventions*

- (a) The theme role is assigned to the object grammatical function.
- (b) The agent role is assigned to the subject grammatical function.

These conventions come into effect regularly where possible, i.e., where their application is not precluded for some reason, such as the prior application of some other convention or conventions, or the operation of other general principles of grammar. The proper trafficking of the interaction of conventions, rules, and general principles will, of course, be an issue of central concern in the account of English transitivity which we are attempting to develop here.

1.1. Ergatives (unaccusatives).

One well-known transitivity alternation is that exhibited by a large number of so-called *ergative* (cf. Burzio, 1981) or *unaccusative* (cf. Perlmutter, 1978) verbs, discussed and analyzed at length in, for example, Bowers (1973, 1981), Keyser and Roeper (1984), as well as in a number of other works. Some of these verbs are listed in (1) below:

- (1) *Ergative Verbs:*
 (a) break, crack, split, shatter, rip, tear, ...
 (b) open, close, unfold, bend, collapse, ...
 (c) tighten, loosen, lengthen, shorten, redden, ripen, ...
 (d) drop, slide, move, sink, spin, shake, float, lower, ...

An example of the syntactic alternation at issue here is provided by the following pair.

- (2) (a) The glass broke.
 (b) John broke the glass.

As is well understood, the single argument in the intransitive alternant here denotes a *passive* participant in the event or process depicted by the verb — this semantic relation is now typically referred to as the *theme* in the terminology of θ -theory.

Like the intransitive alternant of ergatives, *active intransitive* verbs of locomotion, in their canonical use, are monadic, and their single argument bears the subject function in syntax. This argument, however, unlike that of monadic ergatives, represents an *active* participant, and this is often said to be an *agent* within the vocabulary of thematic relations. Typical verbs of this category are the following:

- (3) *Active Intransitive Verbs of Locomotion:*
 walk, jump, swim, run, race, fly, gallop, canter, trot, dive, ...

The intransitive use is illustrated by sentences of the type represented by (4) below:

- (4) The horse jumped (over the fence).

Before going further, we will pause briefly to consider what linguistic mechanisms might be responsible for transitivity alternations of the type represented by the pair (2) above. We believe, with others (e.g., Burzio, 1981; Keyser and Roeper, 1984), that the basic principles at work here involve the interaction of case theory and θ -theory. Adapting (temporarily) a notation employed by Burzio, we will attribute to a given verb the feature [+A] if it is capable of assigning accusative case (also called objective case) to an object. If a verb is not capable of assigning accusative case, it will bear the feature [-A]. In order to account for the transitivity alternation exhibited by a verb like *break*, we can say that each such verb may have associated with it either the value [+A] or the feature [-A]. Thus, for example, the transitive alternant of *break* in (2) is [+A], while the intransitive alternant is [-A].

The conventions formulated in (6) give the correct θ -role assignment for the transitive alternant (2b). But what of the intransitive alternant? Our position here is the following. All ergative verbs are basically monadic [+A] verbs. That is to say, they assign a single θ -role, the theme, and they are, basically, transitive in the technical sense that they assign accusative case. However, in the unmarked case, all verbs have a subject. This is in accordance with the extended projection principle, which we paraphrase as (7) below:

(7) *The Extended Projection Principle*

A verb heads a predicate in syntax and, therefore, must have a subject.

The principle embodied in (7) corresponds, in effect, to the Final 1 Law of Relational Grammar (see Perlmutter and Postal, 1982).

Now, if ergatives are basically monadic [+A] verbs, they must undergo some modification in order to satisfy the extended projection principle. For the intransitive use, we assume that they undergo rule (5), which renders them [-A]; case theory will then force the sole direct argument, the theme, to assume the subject grammatical function in syntax, thereby satisfying (7).

In their transitive use, ergative verbs maintain their [+A] classification and, in conformity with (6a), the theme argument assumes the object function. We propose, for the present, that principle (6b) comes into play, in cooperation with the extended projection principle. The joint effect of these two principles is to add an agent to the argument structure of an ergative verb, which thereby becomes dyadic. The agent θ -role present in sentences of the type represented by (2b) is, therefore, not a part of the basic entry for an ergative verb; rather, it is *introduced*, as required by principles of grammar. An intransitive ergative, as in (2a), does not imply an agent.

To account for the transitive alternant of ergative verbs, we have assumed that an agent argument is introduced. Although this introduction of an argument is forced by principles of grammar, it seems reasonable to place a limit on the process. We therefore propose the following additional principle:

(8) *Introduced Arguments*

An introduced argument is always external (in the sense of Williams, 1981).

In accordance with (6b), furthermore, an introduced argument will be an agent.

1.2. Active intransitives (unergatives).

We turn now to a consideration of active intransitive verbs of the type represented by (3) above. These are for the most part verbs of *manner of locomotion*. Like ergatives, they are basically monadic, but they differ semantically from ergatives in that their single argument is active and, hence, presumably falls under the "agent" rubric for the purposes of the unmarked θ -assignment conventions (6). Let us assume, then that they are basically monadic [-A] verbs. This accounts straightforwardly for their canonical intransitive use, as in (4). Thus, active intransitives assign their single θ -role to the subject function and, in this

respect, contrast with canonical ergative intransitives, which assign theirs to the object function. However, we have also been entertaining the possibility that a verb may undergo rule (5), which, in this instance would derive a transitive alternant from the basic intransitive. Suppose, then, that the verb *jump*, say, undergoes rule (5), becoming [+A]. This will require that it take an object argument. But the extended projection principle requires that it have a subject, as well. But the verb is basically monadic, so an additional argument will have to be acquired somehow. This is precisely the situation we had above with the [+A] alternants of ergative verbs. And we might expect the same, or a similar, resolution to the "conflict" in this case. And, in fact, one resolution is essentially that — an argument is added, an external agent, in conformity with (8) and (6b). The inherent argument, since it cannot now assume the subject function, despite its "agentive" nature, must assume the object function. The transitive alternant arising in this manner is exemplified by the following sentences:

- (9) (a) John jumped his horse (over the fence).
 (b) John swam his horse (across the river).
 (c) John flew his plane (under the power line).
 (d) John bucked his horse (out of the chute).

...

The alternation appears to be quite productive with manner of locomotion verbs.

It should be pointed out, and we believe that it is significant, that both the subject and the object in sentences of the type represented in (9) correspond to active participants in the conceptual structures denoted by the verbs — they are both "agents" in an intuitively clear sense. And this follows directly from the suggested analysis, since the inherent argument is agentive and since the introduced argument is also, necessarily, an agent. These verbs afford a clear contrast with the transitive alternants of ergative verbs, where the object is entirely passive. Consider, for example, a sentence like (10), containing an ergative verb:

- (10) I slid John across the floor.

Here, the object is entirely passive, despite its animacy and despite the fact that it can be understood agentively in the related intransitive (11):

- (11) John slid across the floor.

The passive nature of the object argument in (10) follows from a basic lexical property of ergative verbs — i.e., the fact that their sole argument is a theme, not an agent. Thus, for example, (10) cannot mean that John slid (himself) across the floor with me riding and guiding him, though *I trotted my horse down the track* has just such a meaning. What has to be explained, of course, is why the subject can receive an agentive interpretation in (11) (cf. Fischer and Marshall, 1969, for relevant discussion concerning this type). Several possibilities come to mind, but the one we will assume here is that agency in this instance is a joint property of the construction and the entity denoted by the subject. The constructional contribution consists in the fact that the subject position is the canonical agent position (cf. Kisala, in preparation). And in (11), the subject refers to an animate being, the canonical agent. This combination of factors, we would

like to suggest, facilitates an agentive interpretation. We would claim, however, that the subject in (11) is *basically* a theme, not an agent, regardless of the interpretation. The verb *slide* is straightforwardly ergative (cf. Levin, 1983), and there is no need to accord it a double classification. Similarly, the verb *sink* is a canonical ergative, despite the difference observed in such pairs as (12a) and (12b) below:

- (12) (a) *The boat sank to collect the insurance. (Cf. Keyser and Roeper, 1984, where a somewhat different point is being made by means of this example, to be sure)
 (b) The submarine sank to evade the patrol.

The contrast here has nothing to do with the verb, we contend — it is, in *every* respect, the same verb in both cases. Rather, it has to do with the nature of the entities denoted by the subjects (not a linguistic issue, even) and the constructional factor noted above.

Some manner-of-locomotion verbs permit an alternative resolution of the conflict which arises as a result of the application of rule (5). The conceptual structures denoted by these verbs, as of any verb of linear locomotion, include a *path* substructure (cited in parenthesis in (4), for example). This may always surface as a prepositional phrase. But for some verbs, it may serve as a source for the direct object required by the [+A] alternant. Thus, certain verbs have the lexical property that the path θ -role may be assigned to object position; or to state it in the vocabulary of relational grammar (cf. Perlmutter and Postal, 1982), an oblique complement may *advance* to the object relation:

- (13) (a) The horse jumped the fence.
 (b) The horse swam the river.
 (c) John walked the trails of Appalachia.

It is probably significant that no alternant of this type exists for the canonical ergative verbs. Thus, while one can say (10) above, one cannot say

- (14) *John slid the floor.

with corresponding meaning. Now this could, to be sure, be a *lexical gap*, but we think not, since it is too regularly disallowed for ergatives. We suspect, rather, that it is due to the fact, or rather hypothesis (see above), that ergatives have the object position *filled* in their basic lexical forms — by virtue of their basic [+A] classification, entailing an object. Active intransitives do not. We will return to this issue at a later point in our discussion.

1.3. The middle construction.

Up to this point, we have been considering verbs which are arguably monadic in their basic lexical forms. If there is any reality to rule (5) in English, then it is reasonable to expect that it will also be relevant to the uses of verbs which are basically dyadic, like the paradigmatic agent-patient, or agent-theme, verbs listed in (15) below, for example:

- (15) cut, slice, crush, assemble, kill, maim, discourage, convince, corrupt, ...

The conceptual structures corresponding to these verbs involve two participants, one active, the other passive, and, as expected, they assign two θ -roles. We will assume that the active participant is represented, as usual, by the agent θ -role, and we will refer to the role representing the passive participant as the theme, though this may not be in precise conformity with technical Gruber-Jackendovian usage. It is expected, then, that these verbs will belong to the [+A] category, and, in accordance with now familiar principles, the agent role will be assigned to the subject function, and the theme role will be assigned to the object. This accounts for the use of *cut* observed in (16), for example:

(16) John cut the bread.

What happens when such a verb undergoes rule (5), assuming that it can? We suggest, firstly, that such a verb can indeed undergo the rule and, secondly, that this is the source of the so-called *middle* construction in English (cf. Keyser and Roeper, 1984), as exemplified in sentence (17) and other sentences of the type it represents:

(17) This bread cuts easily.

Application of rule (5) to *cut* renders it [-A]. It therefore cannot remain dyadic, in the sense of having two θ -roles to assign. We suggest that what happens, in this case, is that the agent θ -role is simply deleted from the predicate argument structure of the verb. Though there are complications with which we will have to deal in due course, we would like to propose, in general, that the external θ -role of a verb can delete freely, provided other principles of grammar are not violated. In the case of the middle construction, no principles of grammar are violated by deletion of the agent θ -role, since, by virtue of the application of rule (5), the erstwhile object (*bread* in the case of (17) above) is free to assume the subject function, satisfying the extended projection principle. Our proposal for the middle, then, is that it is simply a type of detransitivization — the result, simply, of the application of the general rule (5).

Anyone who has dealt with the middle construction can no doubt think of a number of objections to this simple account. And it is certainly true that a proper and thorough account of the middle is no simple matter. Nonetheless, we maintain that, from the point of view of the rather narrow domain which we are considering, namely that of transitivity alternations in grammar, the middle is in fact simply the consequence of the English rule (5) in conjunction with general principles. We will, however, attempt here to address the problems which have plagued us in arriving at this view of the construction, including (a) the problem of *agency* and (b) the observation that, in the majority of natural uses, the middle involves an *adverbial* (like *easily* in (17) above).

That the middle verb does not assign the agent θ -role is evident from Manzini's observation (see Keyser and Roeper, 1984, p. 407 and fn. 25) that the "implicit agent" of the middle construction cannot function as a controller; thus one cannot say **Bureaucrats bribe easily to keep them happy*, in the sense, roughly, of *Bureaucrats are bribed to keep them happy*. However, while the middle verb does not assign an agent θ -role in syntax, the middle construction nonetheless involves agency, in the sense that the conceptual structure denoted by the verb implies an active participant. Thus, for example, the meaning of *kill* in (18a) be-

low clearly differs, in just this respect, from the meaning of *die* in the roughly comparable sentence (18b):

- (18) (a) These chickens kill easily
 (b) These chickens die quickly.

The concept expressed by the verb *kill* simply entails an agent, while that expressed by *die* does not. Thus, the idea that *kill* in (18a) does not assign the agent θ -role cannot be said to mean that the agent, or active, participant in the conceptual structure of the verb is absent. Agency is not "washed out" in the middle construction, any more than it is in the passive (and for an account of the passive according to which the agent θ -role is assigned in syntax, see Baker, Johnson, and Roberts, 1983). The same is true of the derived adjective *killed*, as in *freshly killed chickens*, for example (as opposed, say, to *dead chickens*) — while an adjective can never assign the agent θ -role, the adjective derived from *kill* denotes a state of being for which some agent is responsible and, in this way, it involves agency to the same extent and in the same manner that the middle construction does.

It would perhaps be appropriate at this point to offer a brief preliminary account of what we assume the relevant parts of a lexical entry to be and, further, to express in somewhat more explicit fashion our conception of the "deletion" of external θ -roles.

We assume that the lexical entry of a verb includes not only its predicate argument structure — or as we will refer to it, following Stowell (1981), its " θ -grid" — but also its "lexical conceptual structure" (LCS), corresponding to what can loosely be called its "dictionary meaning" (closely comparable to the conceptual structures developed by Jackendoff in his important and detailed work, 1983, and in earlier publications; cf; also Hale and Laughren, 1983, for a related conception of lexical entries).

Let us suppose for present purposes that these two components of the lexical entry for the English verb *cut* are as follows:

- (19) (a) θ -grid for English 'cut': [agent, theme]
 (b) LCS for English 'cut':
 : x produce linear separation in the :
 : material integrity of y , by sharp :
 : edge coming into contact with y :

The LCS is expressed above in more or less ordinary English prose, rather than in a vocabulary of "primitive functions," since it is not our purpose here to enter into a discussion of the internal make-up of conceptual structures, nor do we wish to defend particular LCS representations over others. Whatever debate there might be concerning these matters, it seems to us to be incontrovertible that a verb denotes an action, process or state involving one or more *participants*. And it is this that we intend to express in (19b) for English *cut*. The participants in the action depicted by that English verb are represented in the LCS by means of the variables x and y .

It could well be that the conceptual structures which we have incorporated into the system are not, strictly speaking, grammatical entities, or even specifically linguistic objects. We maintain, however, that they *are* related to grammatical objects, perhaps in a manner analogous to that in which the model of a physical

representation of speech is related to a phonological representation. We propose that the relationship is mediated by θ -roles. We will say that the LCS *projects* one or more θ -roles into the θ -grid of the associated verb. In this way, for example, the variables x and y of (19b) are represented, respectively, by the θ -roles *agent* and *theme* in the θ -grid (19a) of the English verb *cut*. This latter object, the θ -grid, functions directly in the grammar of the verb.

With this background, we can attempt to articulate the notion of “ θ -role-deletion” which we need for our account of the middle construction exemplified by sentences like (17) above. First of all, what we want to express is the fact that the middle verb simply does not assign that role, although it continues to denote an event in which an agent is responsible. We achieve this by separating the notion θ -grid from the notion LCS. In the middle, the θ -grid is bereft of its agent role, but the LCS is left intact. Ideally, we should be able to get along without a specific rule deleting the agent role. Rather, we suggest that the “deletion” should be a result of the manner in which the components of a lexical entry interact in this instance, it has to do with the relationship of the LCS to the θ -grid. Let us suppose, then, that the following principle is at work:

- (20) A variable in LCS is projected as a θ -role T into the θ -grid of a verb only if the verb can assign T .

A verb can assign a given θ -role, in accordance with (6), for example, only if it is not prevented from doing so by some other principle of grammar.

In the case of the middle construction, the effect we want is this: The basically dyadic verb (e.g., *cut*) is marked [-A], thereby losing its ability to assign accusative case. Its object must assume the subject function. However, this will result in a violation of the θ -criterion if the verb also assigns the agent role to that function. Thus, the verb must be unable to assign the agent role — that is to say, the projection of the agent role into the verb’s θ -grid is blocked, in accordance with (20). In (17), therefore, the surface subject bears a single θ -role, as required by the θ -criterion. And so in general for middles.

This, in general, is the way we would like to proceed in the development of a theory without specific rules of θ -role deletion. But there are some rough spots in the story with which we will have to concern ourselves as we continue to develop the idea. For the moment, we point out just one wrinkle. It is clear on a moment’s reflection that (20) is not enough. Why, for example, does the theme “win out” over the agent in this confrontation of grammatical principles? We suspect that this is a general reflection of the special status of the “external” (i.e., subject) position — in some respects it is not a canonical θ -position. For the present, however, in the absence of a fully elaborated theory of external θ -role assignment, we will simply stipulate that convention (6b) is always the “elsewhere case” and, accordingly, applies only if the external argument position is free.

We will assume that it is possible to eliminate a rule of θ -role deletion. The special circumstance of the middle construction is that the verb is prevented from assigning the agent role, and principle (20) therefore comes into force. Note, however, that a “semantic” or “implicit” agent is inescapably present in the middle construction, since it is present in the LCS of the verb.

Let us reconsider now the reverse situation, namely, the "addition" of an agent θ -role. We have suggested that this takes place in the transitive alternant of an ergative verb, for example. In that case, we start with a monadic verb which is marked [+A]. In accordance with convention (6a), the single θ -role of the verb (the theme) is assigned to the object function. This leaves the subject position free, so that, in accordance with convention (6b) and principle (20), the agent role can be projected into the θ -grid of the verb. However, we know that ergatives, in their canonical monadic form (as exemplified by (2a), for example) do not have an implicit agent in LCS. The LCS of intransitive *break* is roughly as set out in (21) below:

- (21) : y come to have a separation in material :
 : integrity, ... :

Here y is a variable representing the single participant in the process depicted.

It is clear that an intransitive ergative LCS cannot project an agent role into the θ -grid of the verb; it can project a theme role only. However, it is simply an empirical fact that these verbs are paired with transitive counterparts whose θ -grids contain an agent role together with the theme. We must assume, therefore, that there is a productive process according to which a *cause* predicate (cf. Jackendoff, 1983; Carter, 1976, 1984; etc.), together with its agent participant, is affixed to a lexical conceptual structure. This process, applied to (21) would, let us suppose, derive (22):

- (22) : x cause y to come to have a separation :
 : in material integrity, ... :

And it is, naturally, only this LCS which can give rise to the θ -grid needed for convention (6b) to apply, giving the type represented by (2b), for example. It is worth pointing out that the transitive version of an ergative verb is itself available for detransitivization, yielding a middle, as in *This kind of glass breaks easily* (in the sense that one can break it easily); here the LCS of *break* clearly involves an agent in our terms. Analogous remarks apply to the transitivized alternants of manner-of-locomotion verbs, like *jump*, for which the subject position becomes free in the [+A] alternant by virtue of the fact that the *inherent* agent θ -role may be assigned to the object function. Derived transitives based on this type can also be employed in the middle construction; thus *This horse gallops easily* can be used in the sense: "it is easy for one to gallop this horse".

There is a certain awkwardness in the foregoing, as the reader will no doubt have noticed. How is it that the agent θ -role (i.e., the "inherent" agent of the basically monadic verb) can suddenly assume the object function, rather than the subject function as normally required in conformity with convention (6b)? Recall that we have already had to alter our conception of (6b), stipulating that it is the "elsewhere case," and we are now faced with a new difficulty in relation to it. We suspect that the message here is either that the convention must be reformulated or else that it should be eliminated altogether. Suppose we opt for the latter alternative. We might then simply appeal to the θ -criterion, which requires that each θ -role be assigned to a GF position, in order to get the necessary θ -role assignments. If monadic *jump*, for example, is marked [+A] by rule (5), its sole θ -role can be assigned to the object function (to satisfy case theory)

without doing violence to any unmarked θ -assignment convention. The extended projection principle will then come into play, forcing the addition of an external θ -role. This will, of course, require modification of the LCS through affixation of the "cause" function which, in turn, will project an agent θ -role into the θ -grid of the verb — and this latter θ -role will be assigned to the subject function, thereby satisfying case theory, θ -theory, and the extended projection principle.

It should be pointed out that this conception of the transitivity of a verb like *jump* (yielding the form used in sentences like (9a)) involves a *derivation* proceeding in several steps. First the basic monadic verb undergoes rule (5); then the inherent agent role is assigned, to object function; and finally an external argument is added, as required by the extended projection principle. Things could, however, have proceeded differently. Since we have eliminated (6b), the inherent agent is free to link either to the object function, as in the scenario just given, or to the subject function. In this latter case, the object position is left free. Case theory, however, requires that position to be filled (since the verb is [+A], having undergone rule (5)) — since object position is a case position, it is also an argument position and, by θ -theory, must be assigned a θ -role. As we have seen, many English verbs have the lexical property that the *path* role can be assigned to object position in just this circumstance (a 3-to-2 advancement, in the vocabulary of Relational Grammar; Perlmutter, 1982, and elsewhere), giving sentences of the type represented by (13a).

Turning now to the second issue of concern in connection with the middle, namely the almost invariable presence of an adverbial in the construction, we note that it is generally the case that not only is an adverbial required, but it also typically follows the middle verb immediately:

- (23) (a) Bureaucrats bribe easily.
 (b) *Bureaucrats bribe.
 (c) ?*Bureaucrats easily bribe.

It is very tempting to "make something of this" and to entertain the possibility that the presence of the adverbial, in fact, motivates the "movement" of the underlying object into subject position (as in Keyser and Hale, 1984, for example; and cf. also Keyser and Roeper, 1984, in which the middle is analyzed as involving "move alpha" in syntax). One might propose that the adverbial moves into the "case-adjacent" position immediately following the verb, perhaps taking the case itself, thereby preventing the "rightful" object from receiving case; this would force the latter to assume the subject function, where nominative case can be assigned to it. However, as Richard Sproat has pointed out (p.c.), the adverbial behaves like an adjunct, rather than a lexically governed category, under LF movement (cf. Huang, 1982). And this is true, in fact, for syntactic movement of the adverbial as well. Consider, for example, the following sentences:

- (24) (a) *How easily do you wonder whether politicians bribe *t*? (Cf. How easily do you think politicians bribe *t*?)
 (b) *Which politicians do you wonder whether *t* will be there?
 (c) ?What promises do you wonder whether politicians can keep *t*?

In (24b), a classic ECP violation (cf. Chomsky, 1981), the extracted NP subject leaves a trace which is not properly governed. The sentence is thoroughly

ungrammatical, as expected of one which violates both the ECP and subjacency (in this instance, the WH-island constraint). Sentence (24c), on the other hand, is merely a subjacency violation and is, accordingly, only mildly unacceptable. There, the extracted NP is an object, hence its trace is lexically (and therefore properly) governed, and the ECP is not violated.

The sentence of interest here, of course, is (24a). That sentence, on the interpretation indicated (i.e., where the fronted WH-phrase *how easily* is related to the position of the trace), is as unacceptable as (24b). This suggests that the extraction in (24a) violates the ECP, and not merely the subjacency condition. If this is so, then the trace is presumably not lexically governed. And this in turn can be taken to mean that the adverbial in the middle construction is an adjunct; it cannot, in any "literal" sense, occupy object position, therefore.

There is, of course, a paradox within this conception of the middle construction. While the adverbial which motivates the movement (from object to subject position) is, putatively, case-adjacent to the verb, it cannot truly be said to occupy the argument position normally associated with assignment of objective case; instead, it is an adjunct. The paradox quickly vanishes, however, when it becomes evident, after all, that a postverbal adverb is in fact not even necessary in the middle construction. Consider, for example, the negative sentence below:

(25) This bread won't cut. (It's frozen).

There is no paradox, because the hypothesis that the adverbial motivates movement of the object is simply wrong.

To be sure, something must be said about the complex semantics of the middle and about the complex requirements surrounding its use. We are convinced, however, that all that needs to be said about the fundamental *grammar* of the middle is what we have in fact proposed above — namely, it follows as a consequence of the application of rule (5) to a basically dyadic transitive verb, together with the operation of general principles of grammar. The "adverbial requirement" has to do, we believe, with the semantics attached to the middle construction and to the attendant conditions on its felicitous use. This, in turn, has been discussed very ably by Lakoff (1977) and van Oosten (1977), essentially absolving us of further responsibility in this regard, though we will take this opportunity to indicate, briefly and in an elementary fashion, how we imagine the insights of these two linguists might be integrated into the general theoretical perspective which we are assuming here.

Recall that an ergative intransitive verb may appear in a sentence, like (11) above, in which the subject receives an "agent" interpretation, despite the fact that the inherent θ -role assigned by a monadic verb to its single argument is the theme role, as determined by the verb's LCS. We suggested, following Kisala (in preparation), that the "agent" role involved here is, in some sense, *constructionally* determined and that it is *additional* to the inherent role projected from LCS. We would like to suggest that the phenomenon observed here is essentially what is involved in Chomsky's (1981) idea that the VP assigns a θ -role to the subject of which it is predicated, accounting, for example, for his observation that the sentence *John broke his leg* is "ambiguous" according to whether the subject bears the agent role or the experiencer role. We propose, essentially, that while the verb assigns its *inherent* roles (determined by its LCS) to its various

arguments, including the subject, the predicate which it forms with its complements (cf. Marantz, 1984), represented structurally by the VP, may assign a *constructional* θ -role to the subject. We might imagine that, just as there is a Lexical Conceptual Structure associated with a verb, there is a Predicate Conceptual Structure associated with the VP which the verb heads. Let us represent such roles in upper case letters. Thus, for example, for the experiencer "reading" of *John broke his leg*, the subject is assigned the EXPERIENCER role; and it seems to be quite generally the case in English that a VP of the form [V X's N], where X is an anaphor and N is a body part, can assign the EXPERIENCER role. Similarly, it is evidently true that any VP of the form [V ...], V an intransitive ergative, can assign the constructional θ -role AGENT, as in (11); and the sentence will be acceptable or not, depending on the nature of the entity referred to by the subject. Note that these additional roles need not be assigned, since the "literal readings" on sentences like *John broke his leg* and *John slid across the floor* are always available. We must also assume, of course, that the assignment of a *constructional* θ -role does not constitute a violation of the θ -criterion, which is presumably relevant only to *inherent* θ -roles. Finally, we might point out that VP idioms can probably be characterized as having a PCS (Predicate Conceptual Structure), but no LCS and, therefore, only a constructional θ -role.

Returning now to the middle construction, we would like to propose that van Oosten's suggestion that the subject of the middle verb is in a certain sense an "agent" is to be formalized precisely in terms of the notion 'constructional AGENT'. Van Oosten points out, for example, that the sentence (26) below attributes to the entity denoted by the subject complete responsibility for the property depicted in the VP — in a very real sense, the car actually *does* the "driving well," though the LCS of the verb *drive* is surely not different here from what it is in *John drives this car*, and *this car* is clearly not assigned the *inherent* agent role.

(26) This car drives well.

We can capture van Oosten's insight, we suggest, by proposing that the VP of the middle construction assigns to its subject the constructional θ -role AGENT. And the AGENT is to be understood as "the entity *responsible* for that which is denoted by the VP". This, in general, is what we propose for the middle construction. It is a highly marked construction semantically, inasmuch as it involves the assignment of the AGENT role to an argument which is, typically, an inherent theme. This involves a contradiction, of sorts, and the acceptability of the middle in a given instance depends upon the extent to which "responsibility" can be attached to the entity denoted by the derived subject, inherently the theme (or patient, in more traditional terminology; cf. van Oosten, 1977, and Lakoff, 1977, for much relevant discussion). The extraordinarily high frequency of the use of adverbials in the middle construction is, without question, to be explained in terms of the construction of felicitous predicates for the AGENT subject. The precise manner in which the required predicate conceptual structures are developed is not altogether clear, but it seems to us that the direction indicated by van Oosten and Lakoff is correct.

To summarize briefly, we maintain that the middle construction involves two principal components. First, it involves detransitivization of a dyadic [+A]

verb. This prevents projection of the inherent agent θ -role into the θ -grid of the verb and forces the object to assume the subject function. Second, the VP of the middle assigns the constructional θ -role AGENT to the s-structure subject. This is the *grammar* of the construction. The *acceptability* of the construction in a given instance depends upon other factors, briefly discussed above (and, more extensively, in the references cited).

2. Some simplifications and refinements.

In the foregoing discussion we have attempted to develop an account of three sorts of transitivity alternation in English. Our aim has been to minimize the amount of information which must be included in the dictionary entry for a given verb — while, at the same time, representing adequately what we take to be the lexical knowledge which a speaker of English presumably possesses in relation to that verb. In the process, we have suggested certain analyses which appear (to us, at least) to have some degree of initial plausibility, but we have also burdened the grammar and lexicon with an extraordinary amount of apparatus, much of which we hope to be able to eliminate. Our overall strategy has been to account for the behavior of verbs as a function of general principles independently necessary in the theory of grammar. We have succeeded in this only rather poorly, as yet. We would like now to see what can be eliminated from the apparatus which has evolved in our discussion, and to see also what must be taken as fundamental, or "primitive". One thing that we would like to eliminate is any *assignment* of the features [+A] or [-A] — including both assignment by rule (5) and stipulated assignment to the basic entries of verbs. We must continue to assume that the properties [+A] and [-A] exist, but we would like to eliminate, in so far as possible, any *stipulation* or specific *assignment* by rule. In short, we would like to eliminate rule (5), on the one hand, and the attribution of [A] to basic lexical entries, on the other (in so far as possible, of course). But before we begin investigating this possibility, let us first look briefly at the extended projection principle, to which we have referred rather often.

We believe that the extended projection principle is absolutely fundamental in the grammars of natural languages, and we will continue to refer to it by that name and to appeal to it as an explanation for certain observed behavioral properties of verbs. However, we would like to suggest that the theory of grammar does not contain any principle of the sort embodied in (7) above; (7) itself has no theoretical status, being merely the statement of an effect which follows from a more fundamental notion of grammar, namely, *predication* (cf. Williams, 1980; Rothstein, 1983). The effect expressed in (7) follows from the fact that a verb (together with its complement(s), if any) forms a *predicate* (cf. Marantz, 1984), expressed in syntax as the category VP (the maximal projection of V), and from the fact that a predicate must have a subject — that is the very nature of predication. This is, in effect, the extended projection principle. This view of the matter effects a conceptual simplification of our discussion, by eliminating (7) as an autonomous principle. In essence, we are following Rothstein (1983) in this reasoning.

We will attempt now to see what can be done by way of simplifying matters in relation to the "assignment" of [A].

2.1. Basic and altered transitivity.

In section 1.1, we proposed that the intransitive alternant of an ergative verb is basically monadic and that it belongs to the [+A] category with respect to its ability to assign case. Moreover, it assigns its single θ -role to the object function, in accordance with the markedness principle (6a). It may undergo rule (5), so that its object will be forced by case theory to assume the subject function, as a result of NP-movement, in order to satisfy the extended projection principle.

There is a great deal of redundancy here, and we suspect that it can be reduced rather easily. It is a matter, simply, of determining what principles we must take to be fundamental and what principles we can take to be derived. We have argued briefly that the extended projection principle is fundamental, following automatically from the very definition of the predication relation and from the circumstance that the VP, the maximal projection of V, functions as a predicate. Thus, the extended projection principle itself accounts for the fact that we must have a subject in an intransitive ergative sentence. We are persuaded also that (6a), or perhaps a more encompassing markedness theory of which (6a) is a part, is also fundamental (though the cautionary remarks of Rosen, 1982, should be kept in mind concerning what relational grammarians have termed the Universal Alignment Hypothesis). In this regard, it is sufficient for present purposes to hold, simply, that certain verbs have the basic lexical property that they assign a particular θ -role to the internal —i.e., object— grammatical function. Ergatives assign the theme role to that function, even where this is the sole θ -role projected into the θ -grid from LCS. The essential empirical evidence for this in English is the fact that the object function is, so to speak, "committed" to the theme, preventing any other role from being assigned to it (hence the general unavailability of sentences like (14) above; see Burzio, 1981, for more detailed discussion, and see the Relational Grammar literature, e.g., Perlmutter, 1978, for ample cross-linguistic empirical evidence for the existence of the unaccusative, or ergative, verb type and for evidence of its inherent character in regard to the object grammatical function and syntactic behavior).

In summary, an intransitive ergative verb is monadic because its LCS projects a single θ -role; that θ -role is assigned to the object function by virtue of (6a); and it follows from the extended projection principle that the VP headed by the ergative verb will have a subject (through NP-movement) in syntax. What, then, of the case assigning properties of the verb?

Let us assume that the caseassigning properties of a verb are simply what they need to be to satisfy the requirements of case theory at s-structure. We might, for example, take the position that the association of a verb with [A] is free, with the proviso that it must conform to case theory (a position which, in spirit, is akin to that recently formalized by Choe, 1985). This will permit us to eliminate the stipulation that the basic form of an ergative verb is [+A] and, therefore, the requirement that the intransitive variant undergoes rule (5). This all follows from case theory: the d-structure object of an ergative verb must not be assigned

case in the object position, since, if it were, its movement into subject position would result in an ill-formed case chain (given that a well-formed case chain is headed by a case-marked NP, or else by PRO, and that the point of origin, in a chain of more than one link, must be a position to which a θ -role, but not case, is assigned; cf. Chomsky, 1981). Thus, we are relieved of the responsibility of stipulating anything in regard to the case -assigning properties of an intransitive ergative verb. At the relevant points in the derivation of a sentence, the verb is necessarily [-A], as required by general principles.

A similar scenario applies to the transitive alternant of an ergative verb. In this case, the LCS projects two θ -roles into the θ -grid, an agent and a theme. The theme role, by (6a), is committed to the object function, while the agent role is, in the basic lexical entry, unassigned and, therefore, free to assume the subject function in syntax. If the agent does assume the subject function, the object cannot itself assume it and must, therefore (in the absence of some other alternative) remain in object position; accordingly, the verb must assign accusative case to the object. The verb must, therefore, be [+A] — though this need not be stipulated, since it follows from case theory (in this instance, the case filter; cf. Chomsky, 1981, and references cited there).

Before moving on to a consideration of manner-of-locomotion verbs, it is appropriate to say a few words concerning the derivation of the transitive alternant of a basically intransitive verb, in particular the causative. In the previous section, we implied that the feature [+A] on a basically monadic verb set into motion mechanisms which effected the introduction of an agent. However, we are now entertaining an alternative conception of the whole matter according to which the case-assignment properties of a verb are derived, rather than fundamental. Thus, for example, we have just argued that the case-assigning properties of the transitive alternant of an ergative verb follow straightforwardly from case theory, given the transitivity of the verb. If this is the correct view, then transitivity is not rooted in case, but rather in the predicate argument structure and the assignment of θ -roles to grammatical functions. What, then, is the relationship between the transitive and intransitive alternants of an ergative verb?

It seems reasonable to propose that these two alternants are related by means of a "causative rule" whose principal observable effect, in English, is to embed the monadic LCS of the intransitive alternant as the complement of the causative function, which is itself dyadic, having an agentive argument as well as the complement it receives as a result of the causativization process. Thus, for example, if the LCS of *break* is (in highly abbreviated form) [ν BREAK], then the derived causative is, approximately, [x CAUSE (ν BREAK)]. We are not certain whether this is solely an operation on the LCS components of verbs or whether it should be seen, rather, as the effect of a word-formation rule which, in English, is simply not accompanied by overt causative morphology (as it *is* in the majority of languages possessing such a rule). whatever the status of the rule in this regard, it is clear that the suggested effects on LCS is real.

The transitive use of manner-of-locomotion verbs, of the type represented in the sentences of (9) above, evidently involves the causative just described — though it should be pointed out that there is more to the semantics of a derived transitive verb like *jump* (as in *I jumped my horse (over the fence)*) than "pure causation" (since it entails *guiding* the horse in such a way as to cause it to jump

over the fence), and this must, of course, be accommodated in an adequate representation of the transitive LCS. For our purposes, however, no harm will be done by considering the verb to involve the embedding of the monadic LCS as the complement of the CAUSE function, as in the transitive alternants of the ergatives. The case-assigning properties of a derived transitive verb such as *jump* follow in the same fashion as for transitive *break*; if the verb takes a lexically headed NP object at s-structure, then it must assign case to this NP, in conformity with case theory. And there is, therefore, no need to have recourse to rule (5). That is to say, it follows from case theory that the verb will have the property which we have been representing by the feature notation [+A].

We must, of course, explain why the sentence *The horse jumped me over the fence* cannot mean *I jumped the horse over the fence*. We must, in other words, ensure that the θ -roles are properly aligned — the agent role projected by the causative predicator in LCS must be assigned to the subject function in syntax, while the agent role projected by the embedded intransitive LCS must be assigned to the object function.

The correct alignment here would follow under the assumption that the single θ -role of the intransitive LCS is committed to the object function when that LCS assumes the complement function in relation to the causative predicator (i.e., when it is “embedded” in the course of causativization). To justify such an assumption fully would require more discussion than we are prepared to give at the moment, but we would like briefly to sketch what we have in mind.

First, recall the situation represented by the causative (i.e., the transitive alternant) of an ergative verb like *break*. We assume that the monadic LCS is embedded as the complement of the causative predicator. Now, monadic *break* has the property, by virtue of the general principle (6a), that its single θ -role is committed to the object function. We can assume that this is so in the basic lexical representation of the monadic predicator and that this commitment is preserved when the monadic predicator is embedded in the causative. The resulting dyadic *break* will have a composit θ -grid containing (a) the theme role, originating with the embedded predicator and committed to the object function, and (b) the agent role, projected by the causative predicator and uncommitted (i.e., external). It is, for all purposes of syntax, like any canonical transitive verb.

We want to achieve an exactly analogous result with the derived causative *jump*. In this case, however, the circumstances are somewhat different. We have assumed, as is generally done, that the sole θ -role of monadic *jump* is not assigned to the object function: i.e., it is not internal, in the sense of Williams (1980), but external. And the θ -role, moreover, corresponds to an active participant in LCS and is, therefore, presumably an agent (as that term is generally understood). We must, somehow, contrive to *commit* the θ -role of the monadic predicator to the object function, in order to get the required result.

Suppose we say that an uncommitted θ -role may assign freely to any available GF. Such a θ -role will ordinarily assume the external (subject) function in syntax. This is how we will interpret the statement that a given verb “assigns an external role”. But we will also assume that a role which is uncommitted in the basic entry of a verb can, in principle, assume the object function, if that is available (i.e., if no θ -role is assigned to it in the basic lexical form). The object function is available, in the required sense, in the basic lexical forms of verbs

of the type represented by *jump*. Accordingly, we propose, the single θ -role of such a verb can assume the object function, by virtue of the principle of free assignment of uncommitted roles. We maintain that it is this form of the verb (i.e., that in which the single θ -role is assigned to the object function) that enters into the causative. From this the correct alignment of θ -roles will follow, precisely as with the ergative-based causative. But in order to *guarantee* this result, we must make a further assumption — we must assume that the operation which derives a causative verb is subject to a constraint: the embedded predicator must have no uncommitted θ -roles. We believe that this constraint is correct, though we will postpone further discussion of the matter to a later time.

For present purposes, it is sufficient to note that our account will attribute to causative *jupp*, and all derived causatives of the type it represents, the essential syntactic properties of a transitive verb; and each such verb will have associated with it a θ -grid in which the agent role projected from the causative predicator (i.e., the agent of causation) is uncommitted, or external, and in which the second θ -role (i.e., that projected from the embedded monadic predicator) is committed to the object function.

2.2. An aside on some formal notions.

In order to guarantee that the inherent agent argument of a basically monadic manner-of-locomotion verb not assume the subject function when that verb is causativized, we have had to impose a condition on the lexical rule to the effect that the embedded predicator have no "uncommitted θ -roles". In adding this condition, we have contradicted our general methodological approach of restricting ourselves to the use of fundamental, independently necessary, linguistic notions in our attempts to explain observable phenomena. The constraint just introduced, therefore, ought to reduce to something else. We are not completely convinced that we can demonstrate this adequately, but we are relatively certain that it follows straightforwardly from the notion predication. Briefly, a lexically incorporated predicator cannot function as a predicate in syntax, obviously, and, therefore, its "external" θ -role cannot be assigned "externally" (i.e., to the subject function). Either it must be assigned internally, or else it must not be assigned at all. This latter possibility, in the system we are developing, is to be understood to mean that the θ -role in question is not projected from LCS.

It seems appropriate at this point to be somewhat more explicit about the linguistic notions and elements which we are assuming. In particular, what do we mean when we speak of an "external" or "uncommitted" θ -role, and how exactly do we conceive of the entity commonly referred to now as the " θ -grid"?

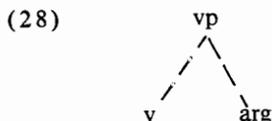
To formulate our understanding of these questions, we will first use a canonical transitive verb, i.e., *cut*. The properties of this verb, and of others of its class, are rather clear. For ease of exposition, let us represent the LCS of *cut* in abbreviated forms as in (27) below:

(27) [xCUTy]

We assume that it is a *lexical* property of this verb that the y -variable (i.e., the theme, or patient, as it is commonly called) projects into the verb's θ -grid

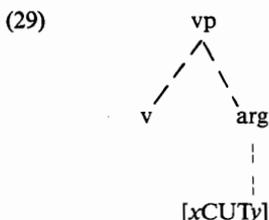
and is committed to the object grammatical function in syntax. By contrast, the x -variable (i.e. the agent, or actor) is assigned externally, i.e., to the subject function. The question is, how do we express these relations as *lexical* properties? The notion θ -grid is central to this question.

We take the position that the θ -grid is to be identified with the notion *lexical structure*, an abstract syntactic projection of the verbal lexical item, embodying the basic syntactic organization of its arguments (cf. Hale, 1983, and Mohanan, 1985, for related conceptions of lexical structure stemming originally from Chomsky, 1981). The lexical structure projection is defined by \bar{X} -bar Theory; and for a transitive verb like *cut*, it would take, roughly, the form indicated in (28):



We employ lower case to represent the nodes in this structure merely in order to signal the fact that we are dealing with the lexical structure (as opposed to what might be called “phrase structure” in the sense of a syntactic representation with overt, phonologically constituted elements in it). However, we take (28) to be a *syntactic* representation in the relevant sense; in particular, it represents the fact that the transitive verb governs an object. In respect to its configurational properties, we take lexical structure to be universal. In configurational languages, like English, phrase structure is for the most part isomorphic with lexical structure. Notice that the lexical projection of a verb will not include the subject, since the latter function is external to the verb phrase (as required by predication theory; Williams, 1980). The identification of the notion θ -grid with lexical projection, therefore, provides a natural expression of the concept “external argument”.

The full lexical representation of the verb *cut* will indicate the projection from LCS of the theme role into the θ -grid, which we will indicate simply as an association line between the y -variable in LCS and the object argument in the lexical structure, as in (29):



The x -variable, on the other hand, cannot project the agent role into the θ -grid, as we have defined it, since the subject is external to the verb phrase. Whether the agent role is projected from LCS or not depends upon whether the verb enters into a syntactic configuration in which a free subject position is available. In a transitive sentence, like *John cut the bread*, the agent θ -role projects from LCS and is assigned to the subject; but in a middle construction, like *The bread cuts easily*, the agent role does not project from LCS, since it cannot be assigned to an argument in syntax.

In short, according to this conception of the notion θ -grid, the "external" θ -role does not appear in the grid at all, in the lexical representation of a verb; and this follows straightforwardly from the identification of the notion θ -grid with the notion "lexical projection" of the verbal category, given that the maximal projection of the verb is the verb phrase. This, we feel, achieves a very desirable result, since it gives a rather natural account of the special behavior of the "external role". Notice that the assignment of that role is quite variable: (1) it may be assigned to the subject via predication of the verb phrase formed by the verb and its complements (if any); (2) it may fail to project from LCS, as in the middle construction; or (3) it may, via predication, be assigned to the object of a matrix verb which selects the so-called bare infinitive, as in sentences of the type represented by (30) below:

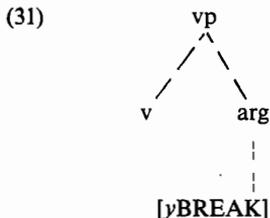
(30) I saw John cut the bread.

By contrast, the behavior of θ -roles which are assigned "internally" (e.g., to the object function) is stable, being a fixed lexical property in the typical case. And the notion "internal argument" follows as well, of course, from the identification of the θ -grid with the lexical projection, as constrained by \bar{X} -Theory.

2.3. Further remarks on the causative.

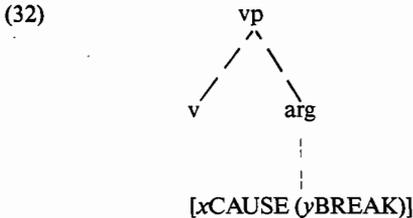
In section 2.1 above, we presented a tentative analysis of the transitive alternants of basically monadic verbs (ergatives and manner-of-locomotion verbs) according to which they are derived by a lexical rule part of whose effect is that of embedding the monadic LCS into a causative LCS. We assumed that the lexical properties of the monadic predicator, including its θ -role assignment properties, are preserved in the derived transitive predicator. This is, of course not the only possible conception of causativization, nor is it even the most obvious, but it is one which we would like to explore further, with a view to determining what, if any, advantage it might have over the most obvious alternative (i.e., that according to which the θ -properties of a derived transitive predicator are determined only *after* causativization). There are certain potentially embarrassing predications which the analysis we have chosen makes; we will discuss these at this point.

To review briefly, the lexical entry of the ergative verb *break* has the following form (highly abbreviated in regard to the LCS):

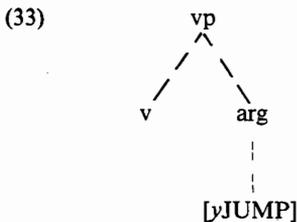


In accordance with the general convention (6a) of section 1.1, ergative verbs share the lexical property that their single θ -role is projected from LCS and

assigned to the object argument, as indicated in (31). This property, we claim, is inherited by the derived causative, which we express by means of the association line connecting the *y*-variable with the object in (32) below:



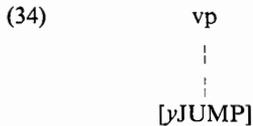
The θ -property inheritance follows naturally if the causative is formed on a fully specified lexical entry, as we are assuming. Manner-of-locomotion verbs (like *jump*, *walk*, *dance*, ...) are potentially problematic in this regard, since (being “unergative”) they have the lexical property that their single θ -role is uncommitted, in the sense that it is not necessarily assigned internally — that is to say, these verbs do not come under to provision of the general convention (6a). We have, however, taken the position that the projection from LCS of an uncommitted θ -role is free and that, accordingly, there is an “alternant” lexical entry of these verbs in which their θ -role is assigned to the object function (which is generally available for verbs, given the fact that the notion “position adjacent to and governed by the verb” is inherent in the notion lexical projection). Thus, for example, the verb *jump* has the alternant depicted in (33) below:



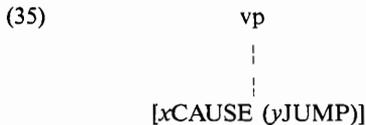
The lexical alternant (33) is available for causativization, to form the verb which appears in such usages as *John jumped his horse (over the fence)*; and similarly for other manner-of-locomotion verbs which readily exhibit transitive alternants. Given the alternant (33), the transitivity of *jump*, for the usage under discussion, proceeds in the same manner as does that of an ergative like *break*.

This seems to us to be a reasonable analysis of the transitive alternants of verbs like *jump*; it is entirely consistent with the observation that an analogous causative for a basically transitive verb is unavailable — it is unavailable simply because the object function is not free in a transitive, and the uncommitted (“subject”) θ -role cannot be assigned to the internal (object) position in the basic lexical entry. There is, however, a potential problem with the view which we are espousing here. Recall that we have maintained —with good reason, we feel— that the uncommitted θ -role in unergative verbs, and in transitives as well, is free to project from LCS or not to project, depending on other factors in a given derivation. Thus, in the case of *jump*, and the like, there is an alternant (in fact,

it is the more usual alternant) in which the single θ -role is not projected into the θ -grid in the lexical representation:



There is nothing in principle to prevent this entry from entering into the causative, and we would not wish to impose any constraint on the process which would prevent such a lexical derivation. In fact, we feel that our approach should be to forge ahead with this analysis, to determine its consequences and, thereby to determine whether it can be maintained or must be abandoned. Let us assume, therefore, that a causative can indeed be formed from (34), giving (35):



The causative introduces an additional argument variable in LCS, and this agent role can project and be assigned to a subject in syntax, via predication, in the normal way. But what of the second variable, i.e., that belonging to the original monadic predicator? We assume that this cannot project from LCS. This follows, we believe, from the fact that the lexical properties of the monadic predicator are inherited by the derived transitive — the essential property, in this instance, being that the single role in the monadic LCS is not projected into the lexical θ -grid and assigned there to the object function. And in the derived transitive, this role is prevented from assigning to the subject function by virtue of the fact that the monadic predicator, having been incorporated in the causative, cannot form an autonomous predicate and thereby assign its θ -role to the subject in syntax. The question now is this: is this a good result, or a bad result? It predicts that a string like (36) below is ambiguous:

(36) John jumped yesterday.

On one reading, we have *jump* of (34), the ordinary intransitive. On the other, however, we have a reading according to which *John* causes some entity to jump — that is the *jump* of (35), with the *y*-variable corresponding to some implied jumper. The question of whether or not this “ambiguity” is desirable or not depends upon the extent to which it is reasonable to account in this way for the interpretation of (36) according to which one is speaking of an equestrian jumping event in which John took part — i.e., an event in which John jumped his horse. It is quite clear that (36) can be used in that way, but it is not altogether clear that the sentence should receive the analysis implied by our approach. An alternative approach, according to which the projection of θ -roles into the lexical θ -grid follows causativization could avoid these consequences. Be this as it may, we will, for the present at least, continue with our suggested analysis and assume that causativization applies to fully specified lexical entries.

Another possible problem with our analysis has to do with basic transitive verbs. It follows from our analysis that there is no causative (in English) of the type represented by (37) below:

- (37) (a) *I cut John the bread.
 (b) *I cut the bread John.

As causatives, these are impossible; and this follows from the fact that there is no free object position in the basic transitive entry for *cut* (the "dative" alternation, with apparent "double objects" in syntax, being of fundamentally different character: cf. Kayne, 1981). That is to say, it is impossible to project the agent role from the LCS of a verb like *cut* and assign it to the object position in the lexical θ -grid, since that position is not free. It is possible, however, to fail to project the agent role of a transitive verb. In this case, according to our analysis, it should be possible to form a causative on a transitive. Here again, we predict an ambiguity in sentences of the type represented by (38) below:

- (38) John built a house.

This is in fact ambiguous in the predicted way, meaning either that John built a house, doing all of the work himself, with his own hands, or else merely that he had a house built. The latter reading involves the causative, the LCS variable corresponding to the agent of the incorporated verb being unexpressed in syntax. Many English transitive verbs can be used in this way. However, we hasten to say that while our analysis predicts this, we are far from sure that this is in fact the correct way to account for these possibilities of usage.

There is a final prediction that is somewhat more embarrassing to the analysis we are suggesting. We predict that the monadic interpretation of (36) above is syntactically ambiguous. Since we have claimed that the single θ -role of a manner-of-locomotion verb is free to assign to the object position (as in (33) above), there exists a derivation of *John jumped* according to which the surface subject has undergone NP-movement from object position. The meaning, of course, is the same as that associated with the more "direct" derivation in which the single θ -role of *jump* is assigned to the subject via predication (as would be the case in an intransitive clause based on (34) above). We know of no way in which we can argue, for English, that the NP-movement alternative should be allowed. If it should not, then we can only suggest, somewhat shamefacedly, that the "longer" derivation is disallowed by some general principle according to which the shortest derivation always takes precedence in cases of derivational ambiguity.

3. Some related issues.

In an important work on the case assignment properties and syntactic behavior of verbs, Burzio (1981) has proposed the following generalization:

- (39) Burzio's Generalization:

T «-----» A.

That is to say, the property (T) of assigning an external θ -role is directly correlated with the property (A) of assigning accusative case. If a verb assigns an external θ -role, then it also assigns accusative case to its object, and vice versa. Correspondingly, if a verb does not assign an external θ -role, then it does not assign accusative case, and vice versa.

We would like to suggest that Burzio's Generalization is not an autonomous principle of grammar governing the behavior of verbs but rather, to the extent that it holds, that it follows from the fundamental nature of basic linguistic elements and processes: For example, rather than stipulate that intransitive *break* and its fellow ergatives lack the ability to assign accusative case, we say instead that those verbs have the lexical property defined by the convention (6a), which determines that their sole θ -role, the "theme", is assigned to the object position in the θ -grid which they project. Whether or not they assign case depends upon other factors. In their intransitive use, naturally, they do not assign case, since NP-movement applies in syntax, leaving a trace in object position. In this circumstance, accusative case cannot be assigned, therefore, since a violation of case theory would result. The verb itself, we maintain, is free to assign case or not to assign case — if it does, we have a violation; if not, we have no violation. With the transitive alternant, likewise, the verb may or may not assign case — but if the object function is taken by a lexical NP at s-structure, then failure to assign accusative case will result in a violation of case theory. Analogous reasoning applies to the middle construction. A transitive verb, in its basic transitive use, has an object to which it must assign case; but such an object can, we have claimed, undergo NP-movement leaving a trace, to which case must not be assigned, according to case theory. Here again, we say of the verb itself that it may or may not assign accusative case — whether it does or does not, in a given instance, is governed by case theory.

The approach we are taking is rather vulnerable to counterexemplification. While verbs of the type so far considered do not present counterevidence, there is one class which apparently does. Burzio has pointed out that (39) predicts the ungrammaticality of sentences of the type represented by (40) below:

(40) *It seems John to be intelligent.

The verb *seems* is possibly an "ergative verb", since it permits NP-movement:

(41) John seems to be intelligent.

However, NP-movement is not forced by the extended projection principle in this case, since (42), with pleonastic *it*, satisfying the formal predication requirement, is perfectly grammatical:

(42) It seems that John is intelligent.

The ill-formed sentence (40) presents a problem for our analysis, since we have taken the position that an ergative verb may freely assign accusative case if, at s-structure, a lexical NP appears in the position it governs; and, so far, there is nothing to rule out (40) as an s-structure. We know, furthermore, that the position occupied by *John* is one which *seems* can govern — that position *must* be governed in (41). How, then, can we prevent case from being assigned to the post-verbal NP in (40)?

Let us assume that accusative case can be assigned by a verb to a following NP only under government. If the clause boundary in (40) is S-bar — rather than S, as in (41), where S-bar deletion must have applied — then *John* will be ungoverned and, therefore, unable to receive case from *seems*. We suggest that this is in fact the situation which obtains. We propose that the crucial feature of (40) is the appearance of a pleonastic pronoun *it* in subject position. In the well-formed (42), a pleonastic *it* appears in subject position, we contend, in order to permit the formal syntactic relation of predication to be realized. The true argument of *seems*, being clausal, cannot itself appear in subject position (cf. Koster, 1978) and must, therefore, be represented there by a pleonastic, with which it is coindexed. Assuming that a pleonastic must be coindexed with a *maximal* projection, an s-structure of the type represented by (40) is impossible, since the lexical NP subject of the infinitival is ungoverned and, therefore, cannot receive case.

Assuming it to be a lexical property of *seems*, and other ergative raising verbs, that they regularly induce S-bar deletion upon an infinitival complement, then we also account for the ill-formedness of (43) with (arbitrary) PRO as infinitival subject:

- (43) *It seems [PRO to be intelligent].
(Cf. It would be fun [PRO to be intelligent].)

Here S-bar deletion cannot apply, because of the predication requirement (fulfilled in part by coindexation). And even if it did apply, in violation of the lexical requirement, (43) would be ill-formed anyway, by binding theory, which requires that PRO be ungoverned.

To be sure, for the foregoing, we must stipulate that ergative raising verbs trigger S-bar deletion obligatorily. It would be good, of course, to be able to show that this property flows naturally from some fundamental attribute of the verb class, but we cannot now suggest what this property might be. For the present, we will simply live with the circumstance that certain lexical properties of this sort must evidently be stipulated. This will certainly be so with the next class which we will briefly consider.

3.1. Unaccusative verbs.

An unaccusative verb, like an ergative verb, assigns its θ -role to the object position in its lexical θ -grid. Unlike ergatives, however, unaccusatives appear in the "There-Insertion" construction:

- (44) (a) There arrived three guests.
(b) There arose a problem.
(c) There exist several solutions.

Moreover, they steadfastly resist transitivization:

- (45) (a) *I arrived three passengers at the station.
(b) *Don't arise any problems at the meeting.
(c) *We weren't able to exist any plausible solution to the problem.

The object of an unaccusative does, however, undergo NP-movement, like that of an ergative:

- (46) (a) Three guests arrived.
 (b) A problem arose.
 (c) Several solutions exist.

Belletti (1985) has recently argued that these verbs —which the Relational Grammarians have very aptly termed “unaccusative” (Perlmutter, 1978)— are capable of assigning case to their objects but that this case is *not* the accusative; rather, the case they assign is the partitive. This case is assigned to the post-verbal NP in the There-Insertion alternant. Belletti’s analysis, for which she argues convincingly, fits in well with the fact that the post-verbal NP to which the partitive is assigned is regularly indefinite, a characteristic of the partitive in many languages (cf. Levin, 1983, on the partitive in Basque; and see Belletti, 1985, for detailed discussion of her proposal). We are persuaded of the correctness of Belletti’s proposal and will adopt it, though we will develop a conception of it which incorporates certain ingredients of work by Saddy (1985) and Williams (1984) on There-Insertion.

Let us assume that it is a lexical property of unaccusatives that they must assign partitive case if they govern a lexical NP at s-structure. In English, of course, the post-verbal NP in the There-Insertion construction is evidently in the nominative, if we are correct in identifying number agreement with assignment of nominative case:

- (47) (a) There exists a solution
 (b) There exist several solutions.

To resolve this apparent contradiction, we will assume that unaccusatives do indeed assign partitive case to the post-verbal NP but that, in English, the partitive must be *realized* as the nominative. Moreover, following Saddy (1985), we will assume that the nominative itself (although it is the realization of the Partitive in our account) must be assigned *via* INFL. From this it follows that the unaccusative There-Insertion construction cannot appear as an infinitival complement. Thus:

- (48) *We expect there to arise a problem in the meeting.

The infinitival INFL *to*, as is well known, cannot assign case, and the lexical requirement of the unaccusative *arise* cannot be met — hence the ill-formedness of (48). Note that the auxiliary *be* of the more widely studied There-Insertion construction is not a main verb, according to Williams, 1984, and is, therefore, not an unaccusative verb of the sort we are concerned with here. That its behavior differs from that of unaccusatives presumably stems from its status as an auxiliary, though we have nothing in particular to say about it here.

We can now suggest a reason for the inability of unaccusatives to transitivize. We have maintained that it is a lexical property of unaccusatives that they assign partitive case (realized as nominative) to an NP in object position. And we have proposed that the lexical properties of a verb are fully determined at the time causativization applies. If these assumptions are correct, then it will be impossible to form a causative, of the type illustrated in (45) above, from an

unaccusative. This follows, since INFL can assign the nominative only once — so, in (45), one of the NPs must lack case. If nominative is assigned by INFL to the subject, then the object NP violates the case filter, as well as the lexical requirement that the verb assign partitive (= nominative) to its object; and if INFL assigns case to the object, then the subject lacks case. Thus, it follows from case theory that the sentences of (45) are ungrammatical. It is possible, furthermore, that the absence of expletive *there* in (45) is an additional factor contributing to the ill-formedness of those sentences, if we can extend to the unaccusatives Williams' (1984) argument that the expletive is necessary as a scope marker in There-Insertion constructions. In our terms, the expletive would function as a scope marker for the indefinites bearing partitive (= nominative) case.

It is at least plausible, we feel, to argue that the failure of unaccusatives to transitivize follows from general principles, given the lexical property that members of that class assign partitive case, as argued by Belletti. In the following paragraphs, we will examine another class of verbs which resists causativization.

3.2. Object-deletion verbs.

Verbs like *sing*, *speak*, *talk*, *eat*, *drink* and the like may appear with or without an overt object, as in

- (49) (a) John sang a song.
 (b) John sang.

In fact, an extraordinarily large number of English verbs exhibit this alternation, and it is not clear what limits, if any, should be placed on so-called "object deletion".

The question which interests us, essentially, is whether the verb in the object-deletion construction is transitive or intransitive. If it were intransitive, then one might expect it to enter into the causativization process. Clearly, however, it does not:

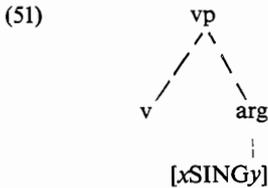
- (50) *I sang John.

We cannot use (50) to mean *I made/had John sing*. This would follow straightforwardly if *sing*, even in the use illustrated in (49b), were transitive in the sense of assigning a θ -role to object position in its θ -grid. If this were so, then the "agent" (i.e., "singer") role could not be assigned to the object, as would be required to form the causative; hence the ungrammaticality of (50).

Belletti and Levin (1985) have recently argued that the verbs under discussion here regularly take objects, and, in particular, that they take a non-overt object in the use illustrated in (49b). We believe that this proposal is correct. It accounts, among other things, for the observation that the object position is not, so to speak, θ -free, as it is in the case of verbs like *jump* — thus, one cannot say, **John sings this tavern on Thursdays*, or **John eats the best restaurants*, and so forth, though one can say such things as *John has walked the trails of Appalachia*, *skied the slopes of Mt. Lemon*, etc. We assume, therefore, that Levin and Belletti are correct in their analysis of the object-deletion construction. In adopting their proposal, however, we will suggest a particular interpretation

of the central notion — i.e., that these verbs have the lexical property that they take an object, whether or not that object appears overtly in phrase structure.

If these verbs are basically transitive, then they have the lexical property of assigning a θ -role to the object position in lexical structure (i.e., in their θ -grids). Thus, the lexical entry for the verb *sing*, in either of the uses illustrated in (49), will be as follows (abbreviated in regard to LCS):



Normally, of course, when a verb assigns a θ -role to a GF position, in a configurational language like English, that position will be represented by a nominal expression in PS (phrase structure) at d-structure. However, we would like to argue that English partakes to some degree of non-configurationality, allowing the θ -criterion to be satisfied “internally”, i.e., at LS (lexical structure) alone, under certain circumstances.

In non-configurational languages, like Warlpiri, or Navajo, the θ -criterion is fully satisfied at LS, in the sense that the arguments in the LS projections of predicates assume the θ -roles which the predicates assign. The LS arguments assume the role of *argument* entirely, rendering optional the appearance of overt nominal expressions in PS. The appearance of overt NPs in the PS structures of a non-configurational language is, therefore, not motivated by the projection principle. When overt NPs do appear, they are not, strictly speaking, argumental; rather, they are related to the true arguments (i.e., the entities occupying GF positions in LS) in much the way a dislocated NP would be related to a pronoun internal to the sentence in the dislocation structures of configurational languages (e.g., *John, everybody likes him*), and they must be considered to occupy non-argument positions in syntax (see, for example, Hale, 1983; Jelinek, 1984; Saito, 1985, for variants of this idea).

The non-configurational characteristic of interest here is that according to which a predicate assigns a θ -role to an argument position (in LS) in the absence of a corresponding overt NP in PS. This is possible, evidently, only if the LS argument is properly “identified”. The typical non-configurational language is one in which verbal or auxiliary morphology identifies full the pronominal categories (e.g., person and number) of the direct arguments of the verb —cf. Taraldsen, 1982, for a discussion of the relation between “rich inflectional morphology” and the licensing of non-overt arguments in phrase structure. While it is not altogether clear, as yet, that morphological identification is *absolutely* necessary (see Hale, 1983, in particular the fn. reference to kaititj), we will assume that identification of some sort is required to enable a GF position in LS to have complete argument status (thereby satisfying fully the θ -marking requirements of the verb with respect to that GF, without overt representation in PS).

In applying these observations to English object-deletion constructions, like (49b), we will argue that the internal argument of the verb in that usage is properly identified at LS and, therefore, fully qualifies as an argument for the purposes of the θ -criterion and projection principle, rendering unnecessary (and, most likely, impossible) the appearance of an NP object in PS. The mechanism of identification in this instance derives from the selectional properties of the verb. In a fully elaborated LCS for the verb *sing*, a clause would appear identifying the selectional restrictions on the evaluation of the y variable; such a clause might read, approximately, as in (52) below:

(52) [..., where y qualifies as a *TUNE*, ...]

It is typical of so-called object-deletion verbs — i.e., verbs that enter into the construction readily — that they impose a rather narrow constraint on the evaluation of the object variable (as was pointed out, for example, by Fischer, 1971, in an interesting and directly relevant discussion of the matter). We suggest that the operative mechanism in the object-deletion construction is the substitution of a constant mentioned in the selection clause (e.g., *TUNE*, in the case of *sing*) for the corresponding argument variable, giving a derived LCS, as in (53):

(53) [x SINGTUNE]

It is now a *constant* which is projected into the verbal θ -grid, at the appropriate FG. This, we contend, effects sufficient identification of that GF to give it full argument status. According to this analysis, the object-deletion construction lacks an object only at PS; at LS, where the θ -criterion must be satisfied (by definition of LS, in fact), the verb has an object, in every sense of the word. For this reason, a causative like (50) above is impossible — the object GF in the θ -grid is not θ -free and, therefore, the x -variable cannot project into that position, as would be required for the causative reading of (50).

It should be pointed out that the PS object position is free in an object-deletion construction. Therefore, it should be possible for the object-deletion verb to assign case to an NP in that position, even though it cannot assign a θ -role to it (the latter being assumed entirely by the object GF in LS). This possibility is, in fact, realized in English. The “subject” of what one might term the “translative small clause” (cf. Simpson, 1983), clearly not selected by the object-deletion verb, appears to receive case from the latter in sentences of the type represented in (54) below:

- (54) (a) John sang his heart out.
 (b) John drank Sam under the table.
 (c) John ate his mother out of house and home.
 (d) John talked my ear off.

Mary Laughren and Beth Levin have pointed out to us that, under our analysis, a sentence like *John sang two hours* should sound better than it does. While the sentence is not altogether unacceptable to us, we agree that it is not perfect (as (54a-d) clearly are); we cannot explain this.

Similar in nature to the object-deletion verbs are “inherently reflexive” verbs like *dress*, *shave*, *hide*. These may also appear without an overt NP object. Sigler (1985) has argued, however, that they do have objects, and she has developed

an analysis of them which, while cast in a somewhat different framework from ours, is similar in spirit to what we have suggested here.

3.3. On the syntactic vs. lexical status of rules.

We have assumed (following Burzio, 1981, and others) that NP-movement, a strictly syntactic (as opposed to lexical) process, is involved in the intransitive use of so-called ergative and unaccusative verbs. Since the rule is strictly syntactic, it is not dependent upon the θ -relation which the moved NP bears to the verb that governs it. Thus, NP-movement applies to the subject of an infinitival complement of *seems*, *happen*, *appear*, and so on, even though that NP is not θ -marked by the governing matrix verb. This possibility is to be expected if the syntactic rule of NP-movement is involved in constructions of the type represented by (41) above. Being a syntactic rule, deriving s-structure from d-structure, NP-movement is θ -blind.

A possible problem arises in relation to the English middle construction, for which we have also proposed that NP-movement is the central operation. It would appear that NP-movement in this case is θ -sensitive, since only an object θ -marked by the transitive verb may undergo the rule:

- (55) (a) *John considers easily to be intelligent.
 (b) *John expects easily to win.
 (in the sense *One easily expects John to win*, or the like)

We have no very convincing explanation for this, though we remain convinced that syntactic NP-movement is involved in the middle construction. In an effort to find an explanation for (55a-b), and the type which those non-sentences represent, we have attempted to relate the apparent θ -sensitivity of NP-movement here to the notion "constructional θ -role", which is evidently a regular and obligatory concomitant of the middle.

We propose, in short, that the constructional θ -role must be assigned in *conjunction* with the inherent θ -role assigned by the transitive verb to its direct object — the constructional and inherent θ -roles of the verb form a *composit*, assigned via predication to the subject. In a sense, then, the constructional θ -role is a *modification* of or *addendum* to the inherent θ -role assigned by the transitive verb which heads the middle construction. If this is correct, then the ill-formedness of (55a-b) follows, since the verbs *consider* and *expect* do not assign a θ -role to the NP *John* in those sentences. This, in general, is our, admittedly tentative and rather weak, explanation for the behavior exhibited by (55), and the like.

The proposals which we are entertaining in this paper depend very much on the difficult business of determining what is syntactic and what is lexical. Our tacit assumption has been that a rule relating the distinct (but related) uses of a given predicator (e.g., transitive and intransitive uses) is *syntactic* if it is formulated strictly in terms of the syntactic projection, as is NP-movement. On the other hand, it is *lexical* if its formulation requires reference to Lexical Conceptual Structure. This, of course, does not materially simplify matters, since it is, in the most interesting cases (such as the middle construction), difficult to

determine whether reference to the LCS is required. In the case of the middle construction, we have taken the position that there is a strictly syntactic component to it (namely, NP-movement) whose application is entirely free and irrelevant to the "acceptability" of the result (which latter is dependent, in a certain way, on the semantic roles of the verb and the predicate it heads). Our approach could, it goes without saying, be completely wrong in this case; it could be that the relation between the transitive and middle uses of a given verb is strictly lexical, involving a rule-governed relation between distinct Lexical Conceptual Structures associated the verb (see Jaeggli, 1984, and references cited there, for interesting discussion relevant to this issue).

Our analysis of causatives (e.g., *break the dish*, *jump the horse*) has been in contrast to that of the middle — i.e., it is, according to our ultimate reckoning, basically *lexical*, as opposed to syntactic. Here we have taken a position which one could argue quite persuasively against, we feel. There are at least two syntactic alternatives that come to mind, one of which we briefly flirt with in the first part of the paper. This is the alternative of having a syntactic rule according to which an external argument is simply "added" (perhaps as a case of the general syntactic rule Move- α), the semantic consequences (i.e., alteration of the LCS) following suit in some regular, albeit as yet unformulated, manner. We quietly abandoned this, since it was not clear to us how this squares with the notion "external argument" as developed in our conception of the θ -grid — according to which the latter is identified with the grammatical projection of a lexical item (i.e., the LS projection). Instead, we have chosen to analyze the causative as a relation between LCS representations, the causative (or transitive) LCS being formed, so to speak, by "embedding" an intransitive LCS under the causative predicator (which brings with it its own participant variable associated in syntax with the "external argument").

While this lexical treatment seems reasonable and is consonant with the fact that English causatives of the type under consideration appear to have certain characteristics normally attached to lexical rules (e.g., lexical exceptions and semantic restrictions), there is, nonetheless, something seriously wrong with a strictly lexical analysis of them. The "embedding" which we propose has exactly the characteristics and syntactic consequences of the productive syntactic causative, known from so many of the world's languages, in which a matrix causative verb takes (at d-structure) a sentential complement whose verb is (at s-structure) incorporated into it (i.e., into the matrix verb). This is, of course, the second syntactic analysis which comes readily to mind. Our analysis misses the parallel utterly, and to that extent, it is a failure. Since our lexical analysis and the syntactic analysis just alluded to involve embedding, with the same morphosyntactic consequences, they should reduce to the same thing. Our problem is reminiscent in important ways of that addressed in Baker's Mirror Principle (Baker, 1985), and it represents a failure in our general program of reducing linguistic observations to fundamental linguistic elements.

Although we will not develop a full scale analysis here, we feel that the solution to this problem is to be found in our conception of lexical entries — in particular, in our notion that the " θ -grid" is to be identified with the grammatical projection of lexical items (an actual *syntactic* structure defined by \bar{X} -bar

Theory). This view of lexical entries diminishes, in certain important respects, the distinction between syntax (as traditionally conceived) and the lexicon. It is perfectly reasonable, in this framework, to form lexical entries which are, in fact, syntactic embeddings of just the sort formed productively in the syntax of languages like Turkish (e.g., Knecht, 1985) and many others (cf. Baker, 1985).

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