

# Explaining and Constraining the English Middle

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## 1 Introduction

In a recent paper on the middle construction (1986) we proposed that the verb of sentences of the type represented by (1a) below belongs to the same class as the verb of (1b):

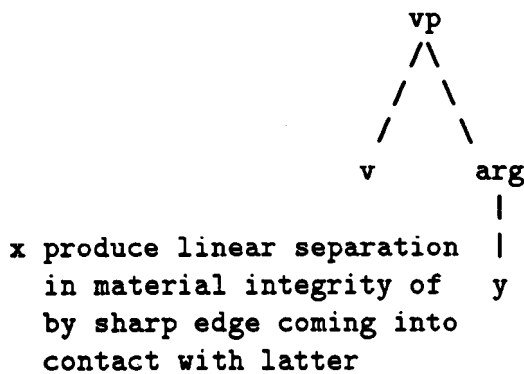
- (1) a. The bread cut easily (when I took it out of the oven).  
b. The pot broke.

That is, the middle construction is nothing other than an unaccusative in the sense of Perlmutter (1978) or in the terminology of Burzio (1986), the intransitive member of an ergative alternation.

As is well known, a justly acclaimed theory of unaccusative verbs (cf. Perlmutter, Burzio *op cit.*) maintains that the single syntactic argument of such verbs assumes the object grammatical function at the d-structure level of representation of sentences. Unaccusative verbs, therefore, contrast with other intransitives like *laugh*, whose single argument is a subject at d-structure. Our purpose in this paper is to investigate further the nature of unaccusative verbs, including middles, in order to attain a better understanding of their grammar and to attempt to explain what we take to be the basic fact about them, namely, that their single syntactic argument is "internal". By "internal" we mean that the single syntactic argument assumes the object function at the deepest level of syntactic representation. In the traditional account of unaccusative verbs the deepest level of syntactic representation is the so-called d-structure, which is present once the syntactic projections of lexical items are brought into construction with one another—e.g. the construction formed by the verb and its object, namely, the verb phrase and the construction formed by the verb phrase and

the syntactic projection of INFL, namely, the sentence. There is, however, another reasonable position to take as to the identity of the "deepest level of representation". In Hale and Keyser (1986, 1987), it was argued that an essential component of the *lexical* entry of a predicator, say, is a syntactic projection of the category embodying, among other things, the organization of its arguments. For example, the lexical entry of a verb such as *cut* would, on the view developed there, include the syntactic projection depicted in (2) below:

(2) Lexical Entry for English *cut*:



This entry includes a representation of the conceptual structure named by the verb *cut* together with a syntactic projection of the category 'verb'. The first of these entities will be referred to as the Lexical Conceptual Structure (LCS) and the second will be referred to as Lexical Structure (LS), corresponding approximately to the structure so-named in Chomsky (1981) and Mohanan (1983-4). The LS is represented here as a tree structure, as is customary in the framework we are assuming although, to be sure, other modes of representation could also be used to express the basic grammatical fact about this verb—namely, the fact that the argument represented in LCS by the *y*-variable (the argument sometimes called the theme) is associated with the object grammatical function. This is indicated in (2) by means of an association line linking the *y*-variable with the internal argument, i.e. the argument which is immediately sister to the verb.

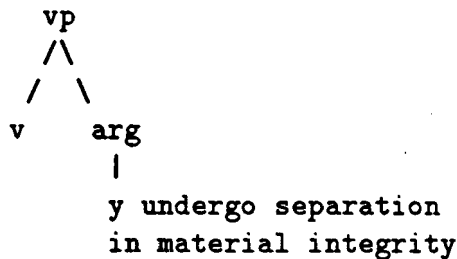
## 2 The Internal Argument

We wish now to consider the possibility that there is an explanation for the fact that it is the *y*-variable—i.e. the affected theme, in Anderson's usage (1979)—which assumes the internal (or object) grammatical function in the syntactic projection of the verb.

We doubt that this fact is to be explained in terms of some "linking convention" which simply states that the affected theme is internal. Rather we believe there is a true explanation in the sense that the observed theta-commitment follows from the fundamental nature of the elements involved. If this is true, then it will also follow, we believe, that the unaccusative, i.e. monadic, variant of a verb like "cut" will also commit the affected theme to the object function in the syntactic projection. Thus, if an explanation such as the one we are alluding to actually exists, then the properties of unaccusative verbs will be explained, and the optimism of the original formulators of the Relational Grammar theory of the association between semantic structure (in our terms, Lexical Conceptual Structure) and the initial representation of grammatical relations in syntax will prove to have been justified (cf. Perlmutter (1978); but see Rosen (1982) for a cautionary point of view).

In pursuing this question we will use the canonical ergative verb '*break*' since its semantics are relatively clear. We assume the unaccusative hypothesis and therefore assign to the verb of (1b) the lexical entry given in (3):

(3) *Break* Lexical Entry



Our task is to explain why the affected theme (represented here by the *y*-variable) is committed to the object function in accordance with the unaccusative hypothesis which we are assuming. That is to say, we must explain why the monadic verb '*break*' of (1b) does not have the intransitive, or "unergative", lexical syntactic structure (4) projected by verbs of the type represented by *laugh*, *cry*, *sleep*, etc:

(4) *Laugh, Cry, Sleep* Lexical Syntactic Structure



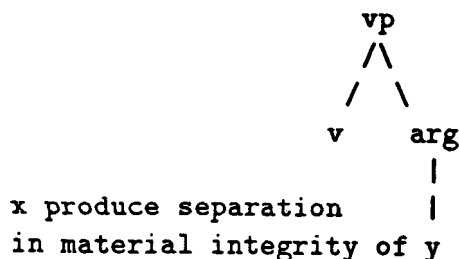
This Lexical Conceptual Structure, as can be seen, has the verb projecting to the phrase category VP without a complement argument. The associated Lexical Conceptual Structure would, of course, contain a variable corresponding to the participant in the activity denoted by the verb. This variable would naturally be uncommitted in the lexical representation of the verb. Only when the verb entered into construction with the functional category INFL would the single argument be assigned to an argument in syntax. This, in short, is the manner in which we represent the notion "external argument".

In addressing the problem which we have identified, it will be helpful to look at the transitive variant of an ergative verb as in (5) below:

(5) John broke the pot.

Here, of course, the verb is dyadic and, correspondingly, must have a Lexical Conceptual Structure containing two variables, as does the Lexical Conceptual Structure of transitive *cut* depicted in (2) above. The lexical entry of *break* closely parallels that of *cut*:

(6) Lexical Entry for English *break*:



This Lexical Conceptual Structure is somewhat simpler than that for *cut* since it lacks the means clause which stipulates the manner in which the change of state

undergone by the *y*-participant comes about. This contrast, we have argued (Hale and Keyser (1987)), accounts for the well-known differences in semantics and usage between the canonical middle use of verbs like *cut* and the canonical unaccusative use of verbs like *break*. We are using the simpler unaccusative verb simply for expository convenience though our belief is that the middle is grammatically a type of unaccusative.

Now let us consider our original problem from the point of view of the transitive lexical entry. The problem now is to explain why it is that the *y*-variable rather than the *x*-variable is committed to the internal, i.e. object, grammatical function. We consider it no answer whatsoever to say simply that there is a universal linking convention which associates the "affected theme" (participant undergoing change of state or condition; cf. Anderson (1979)) to the object function. Such a convention, in our opinion, would not properly confront the ineluctable fact that this association is universal in the true sense of a phenomenon having no exceptions.<sup>1</sup>

Our hunch is that the theta-commitment properties of unaccusative verbs are fully determined by the structure of their Lexical Conceptual Structure representations. In essence what we would like to explore is the possibility that the syntactic projection of a verb is, in effect, an impoverished reflection of its Lexical Conceptual Structure representation. In the case under discussion (i.e. ergative verbs like *break*) this would mean, if true, that the notion "internal argument" can be defined not only in syntax but also in Lexical Conceptual Structure and that this same notion in syntax is literally a reflection of its Lexical Conceptual Structure origins.

While the lexical entry of transitive *break*, as depicted in (6), corresponds to a single event—in the sense of Davidson (1980) and Higginbotham (1985), according to which the argument structure of the verb has a single event place (notated "e")—it is nonetheless true that the conceptual structure of the verb is complex and, in fact, decomposable into more than one subevent. The proposition *John broke the pot* can, with good reason, be decomposed into two subevents: (1) *John did something* and (2) *the pot developed a separation in its material integrity* (cf. Dowty (1979)). The relationship between these two subevents is one commonly referred to as causation, that is to say, the one subevent (John's doing something) leads to or results in the second subevent (the pot's breaking).

We suggest that the relationship between these subevents is asymmetrical in that one is subordinate to, or dependent on the other. In this case the "central event"—i.e. the pot's breaking, the subevent present in both the dyadic and the monadic use of

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<sup>1</sup>There are, of course, apparent exceptions and there is one possible systematic and real exception. This is the case of languages which are truly ergative in syntax, such as Dyirbal of North Queensland, Australia—cf. Dixon, (1972). This class of cases has been discussed in detail, within a framework akin to that which we are using, by Marantz (1984) and Levin (1983).

the verb—is subordinate to the causal subevent. We submit that it is this asymmetry which is directly reflected in the syntactic projection which defines the organization of the verb's arguments as internal or external. The participant(s) represented by the variable appearing in the subordinate subevent is necessarily the internal argument since it is the subordinate subevent which directly corresponds to the immediate projection of the category V. In short we propose that the syntactic projection—i.e. the Lexical Structure—of a lexical item is a depiction of the asymmetry in the Lexical Conceptual Structure representation of the verb. In the LS representations which we have been using so far, in which the maximal projection of a verb dominates the latter and its object but not its subject, this asymmetry will be expressed by having the subordinate subevent overtly represented in the syntactic projection while the superordinate subevent will not be overtly represented in the LS component of the lexical entry itself. Only when the verb is combined with INFL will the full argument structure of the verb be expressed in syntax.

An elementary expression of the Lexical Conceptual Structure of transitive *break*, as we now see it, is given in (7) below:

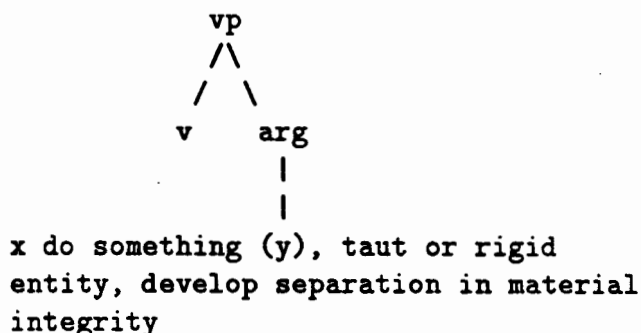
- (7) Lexical Conceptual Structure of *Break*  
 $x$  do something  $\rightarrow$  ( $y$ , taut or rigid entity, develop separation in material integrity)

The two subevents flank the symbol  $\rightarrow$ , which is to be read “result in” or “leads to”. The orientation of the arrow expresses the asymmetry which we claim to be inherent in this conceptual structure. Here, the subevent following the arrow is the subordinate subevent. In future representations of LCS we will simply suppress the arrow and utilize the bracketting itself to express the asymmetry. Thus, the LCS will have the form (8):

- (8) Lexical Conceptual Structure of *Break* (Version 2)  
 $x$  do something ( $y$ , taut or rigid entity, develop separation in material integrity)

The asymmetry expressed by the bracketting is projected automatically into the LS representation if we assume that the subordinate subevent corresponds to the verb phrase. Under this assumption, of course, the  $y$  variable will necessarily be associated with the internal (i.e. object) grammatical function, as depicted in (9) below:

(9) Lexical Entry for English *Break*:



Our claim that the syntactic asymmetry is a reflection of the asymmetry inherent in the LCS of English *break* is a reasonable one, it seems to us, in the case of the dyadic variant of this verb. But it is not obvious that it is appropriate to the monadic variant. We believe, nonetheless, that it is correct for that use as well. In fact we would like to suggest that the essential structure of the LCS representation of monadic *break* is in the relevant respects identical to that of the dyadic. It has been suggested by Guerssel (1986) that the primitive human classification of processes recognizes a class whose realization is always the result of some external force or condition. We believe that the so-called "ergative verbs" belong to this class. The transitive use of a verb like *break* clearly corresponds to a process resulting from an external force, as depicted in the LCS of (9) above. If we are correct in adopting Guerssel's suggestion, then the monadic *break* must also involve some external cause and therefore exhibit the same LCS asymmetry that the dyadic variant exhibits. We suggest that the elementary LCS representation of both uses of English *break* takes the form set out in (10) below:

(10) Elementary Lexical Conceptual Structure of *Break*

$c \rightarrow (y, \text{taut or rigid entity, develop separation in material integrity})$

This is to be read as follows: some circumstance (c) results in (...). This corresponds not only to the use of *break* seen in *John broke the pot.*, where the circumstance "c" corresponds to "John did something", but also to its use in a sentence like *The heat broke the pot.*, in which the circumstance "c" corresponds to the condition of it being hot, or the like. We would also like to claim that this LCS corresponds likewise to the situation described in the intransitive sentence *The pot broke.*, in which the circumstance "c" is simply some unspecific condition or event. If this view of the matter is correct, then the essential grammatical property of both dyadic and monadic *break* is entirely comprehensible. In fact given our view of the relation between LCS and

the syntactic projection of predicators, the syntax of *break* could not be other than what it actually is.

The essence of our claim here is that some notion of causation is present in both the dyadic and the monadic uses of English *break*. We would claim, further, that this is a defining characteristic of all ergative verbs, not only of English but of all languages. We will attempt to argue further for this position at a later point. First, let us contrast the ergative verbs with the canonical unergatives of the type represented by *laugh*, *sleep*, etc. We have claimed that the monadic use of these verbs projects a syntax of the form depicted in (4) above. That is to say, these verbs lack any internal argument. Their sole syntactically realized argument is external. Here as well we would like to claim that the syntactic projection follows inevitably from the LCS representation.

What might the LCS representation of the verb *laugh* be? We believe that it is not unreasonable to suppose that the LCS representation of unergative verbs is similar in essence to the overt morpho-syntactic representation of members of the unergative class in Basque. In that language unergative verbs consist of the transitive verb corresponding roughly to English *do* combined with an inherent partially "incorporated" object nominal denoting the action depicted by the verbal expression. Assuming that something of this sort actually reflects an unergative LCS, we might propose that English *laugh* has the lexical representation set out in (11) below:

(11) Lexical Entry for 'laugh'

vp  
|  
v

[x do LAUGH]

In the LCS representation here there are two 'variables'. The first is the standard argument variable which we have seen before. As indicated in the entry as a whole, it is not committed to an internal GF position in the lexicon. It will, therefore, be assigned to the subject—i.e. the external position in the syntax which results from the combination of the verb with the functional projection from INFL. The second variable in this LCS representation is what we might call a "restricted" variable. It is represented by an English word, in capital letters, corresponding to the relevant action. This is to be regarded as an abbreviation for some fuller definition of that action, in this case laughter. We can think of the restricted variable as a tacit "object" of the verb. Normally, in English, this is not realized in the syntax, though it can be as in:



(12) John laughed a hearty laugh.

The grammaticality of (12) and the grammaticality of sentences like:

(13) The audience laughed us off the stage.

indicate clearly that *laugh* and presumably other unergative verbs as well do not lexically commit the  $x$ -variable to the internal GF position. If they did, then it would be impossible for them to assign case to a cognate object (e.g. "a hearty laugh") or to the subject of a small clause (e.g. "us" in "us off the stage"). (See Burzio (1986) for extended discussion of this matter.) We must, therefore, assume that (11) is correct in leaving the  $x$ -variable, i.e. the "agent" theta-role, lexically uncommitted. The question now is this: Can we *explain* the fact that the  $x$ -variable is external? We suggest that the explanation is to be found ultimately in an asymmetry inherent in the LCS and inevitably projected in the syntax. However, we are not absolutely certain what the correct view of the matter is. We will, accordingly, present two ideas. The first idea involves a slight reinterpretation of the LCS representation of *laugh* and other unergatives. Let us imagine that the LCS of (11) is merely a shorthand expression of (14):

(14) John  $x$  do something (*LAUGH* be realized)

According to this view the sentence *John laughed*. has a representation closely similar to *John broke the pot*. That is to say, if John laughed, then John did something which resulted in a laugh being realized. If this is the correct conception of an unergative LCS representation, then the grammatical properties of those verbs follow from the same asymmetry inherent in ergative verbs like *break*. It is therefore no mystery that the  $x$ -variable is committed to the external grammatical function.

There is, however, a problem with the LCS suggested in (14). That LCS, being exactly parallel to that of the transitive *break*, implies that the "causation" inherent in the event denoted by the verb could be "indirect". With *break* this is clearly the case since the sentence *John broke the pot* can be truthfully used in a situation where the entity denoted by the subject, in this case *John*, has no direct contact whatsoever with the pot. All that is required is that John's action and the breaking of the pot be parts of the same event in the sense of Davidson (1967) and Higginbotham (1985). The sentence would be appropriately uttered, for example, if John danced a jig in the parlor, causing the pot to fall from a shelf in the pantry. The same definitely cannot be said of a sentence like *John laughed*. That sentence cannot mean that John did something which, for example, caused a laugh to emanate from the body of another

person. In *John laughed* the laugh in a very real sense is John's action. Therefore, while *John broke the pot* can be correctly thought of as having two subevents, it seems to us that *John laughed* cannot. Therefore, the LCS cannot have the form displayed in (14). Instead, we suggest, its LCS must be something like (15):

(15)  $x$  do LAUGH

Here, the restricted variable LAUGH is to be taken as the "name" of John's action. The LCS (15), therefore, corresponds just to the initial portion of the LCS of (14) but with the general variable "something" is replaced by the restricted variable. The essential feature of (15) is that it is not a composite consisting of more than one subevent.

If (15) is the correct LCS representation of the unergative verb *laugh*, we must answer the question: Why is the single unrestricted variable  $x$  externally committed in the syntactic representation given in (11)? We know that this is so because *laugh* is a canonical unergative verb as indicated by the grammaticality of (12) and (13) above. The question is: Does this follow in any way from the LCS representation, as we would like to claim? That is to say: Can we argue that the LCS of an unergative verb exhibits an asymmetry which would commit the  $x$ -variable to the external GF?

It is possible to argue that there is, in fact, an asymmetry in the LCS of unergative verbs. The asymmetry consists in the "dependency" relation which holds between the two entities involved in any event denoted by an unergative verb, the two entities being the so-called agent, or actor, symbolized by the  $x$ -variable and the action itself represented by a restricted variable. The action is, of course, dependent upon the actor in the sense that it cannot be realized without the actor. By contrast, the actor is entirely autonomous with respect to the event. One might contend that it is this asymmetry which is expressed in the syntactic projection that defines the organization of a predicator's arguments. The external argument is regularly the *dominant* argument in an asymmetrical relation. In the case of the verb *laugh* the dominant argument, of course, is the actor; i.e. the entity which produces the laugh.

The position we take here, however, is that the external argument in (15), namely  $x$  is external simply because the event which it appears in is not subordinate. By contrast in (10) the argument represented by the variable  $x$  is subordinate and is, therefore, internal by hypothesis. If we assume that an argument which is not "subordinate", in the sense of appearing in a subordinate event, will be assigned externally, then this together with a principle of "cyclic theta-role assignment"—will guarantee correct assignment of semantic roles to GF's for these two classes of verbs.

### 3 English and Romance Are Different

Our explanation of the constraints on the English middle predict that a perception verb like English *see* cannot enter into this construction. Hence the ungrammaticality of (16):

(16) \*Planets see easily.

The ill-formedness of (16) follows from the fact that the LCS representation of the verb simply cannot be realized in the middle form. The Romance languages have a construction which is often referred to as a middle—e.g. the Spanish *voz media* or the French constructions with *se moyen* (cf. Grimshaw (1982, p. 124) for an analysis of the French construction). However, the Romance translation of (16), in the Spanish variant, at least, is ungrammatical:

(17) \*Los planetas se ven facilmente.

To complete the exposition of our theory of the middle, we must address the question of why the Romance middle is not constrained in the same way as the English middle. In order to explain the Romance/English discrepancy we will argue that what appear to be parallel constructions in the two languages are, in fact, not parallel at all. The apparent parallelism between English and Romance exists only in comparisons such as those involving the standard ergative alternations of the type represented by (18):

- (18) a. John broke the glass.  
b. The glass broke.  
c. Juan rompio el vaso.  
d. Se rompio el vaso.

and standard examples of the middle alternations as in (19):

- (19) a. John cut the bread.  
b. The bread cuts easily.  
c. Juan corto el pan.  
d. El pan se corta facilmente.

The area of overlap is just the area which includes the verbs whose LCS representations are of the type which can be realized as middles (or unaccusatives) in English. The class of Romance verbs entering into the so-called Romance middle construction is much larger than the English class. The latter is, in fact, a proper subset of the former.

As we have argued in this paper, the English middle is the realization in syntax of the elemental LCS structure of English verbs which involve a central subevent of change resulting from some circumstance. That is to say, the English middle is an automatic property of verbs whose LCS representations take the form:

(20)  $c \rightarrow (y \text{ "undergo change"})$ .

Such LCS representations correspond, we have argued, to two distinct syntactic projections, one of which has an external argument and one of which has no external argument. This depends on the syntactic realization of the LCS component we have symbolized "c". Thus, the limits on the middle are determined just by the lexical and conceptual structures which project the syntax of the middle construction.

By contrast, the Romance construction sometimes referred to as the "middle" involves the use of a particular (reflexive) morphology whose property in the construction at hand is that of "absorbing" the external argument in the lexical representation of transitive verbs. This property accounts for the fact that the Romance middle extends beyond the range of verbs to which the English middle is limited. This follows, since the class of verbs which have external arguments in the lexical representations greatly exceeds the class which has the LCS representation in (20).

From the analysis just given, it is obvious that the English middle and the middle voice of Spanish are not comparable constructions. They do, however, have a syntactic feature in common. Both involve the NP-movement variant of the general rule Move-alpha. This accounts for the appearance in subject position of the argument which in lexical structure is the internal argument of the verb. General principles, in particular the extended projection principle and case theory insure the application of Move-alpha in both cases. At bottom, however, the two constructions could not be more different—the English middle is simply a realization of a particular LCS while the Romance middle voice is the result of a morpho-syntactic rule which affects a particular syntactic position, namely, the external argument.

## 4 The Use of Restricted Variables

The analysis we have suggested for the ergative alternation—and, by hypothesis, the middle—depends rather heavily on an element of the relevant LCS representations which has not been justified adequately and which might well seem, on the face of it, highly questionable. This questionable feature of our analysis is the element “c”, representing the conceptual category “circumstance”. Use of this feature permits us to attribute to the monadic variants of ergative verbs an asymmetry within their LCS representations which situates the sole argument variable in a subordinate subevent. And the alternative realizations of “c” in syntax account for the monadic and dyadic variants of processual verbs.

It is quite reasonable to ask whether the use of the element “c” is theoretically superior in any way to other devices which might be used to represent the fact that the processual verbs at issue here have two variants. In Hale and Keyser (1987), for example, we briefly considered the use of a redundancy rule relating the two alternatives, rejecting this on the grounds that there is in principle no way to constrain the use of redundancy rules to define just the classes of diathesis alternations that are linguistically possible. This defect, we assume, raises serious doubts about the linguistic reality of redundancy rules. But cannot the same be said about devices like our “c” element? We think not. The “c” belongs to a class of LCS elements which, we maintain, are undeniable, as rocks are undeniable to a geologist. To be sure, this class of elements, which we will refer to as *restricted variables*, is implicated in a particular lexical framework—to wit, one which recognizes LCS representations. Within this framework, however, the use of restricted variables is natural and, we claim, unavoidable; it simply reflects a fact of natural language and must, accordingly, have its counterpart in all descriptively adequate theories of grammar.

In our discussions heretofore, we have used *unrestricted* variables (represented by the letters *x*, *y*, *z*, etc.) to represent the arguments of a predicator which are associated obligatorily with grammatical functions (GFs) in the syntactic (LS) projection from the lexicon. By contrast, *restricted variables* (represented here by English words or abbreviations) are only optionally projected as GFs in syntax. In our view, the theory of restricted variables is, in essence, a theory of the notion “optional argument”, of the type represented, for example, by the English verb *eat*, as in:

- (21) a. John ate the bread.  
b. John ate.

The verb of (21b), we contend, has just one lexical entry. Its “internal argument” is a restricted variable *FOOD*, which, in accordance with the theory of restricted

variables, may or may not be associated with a GF position in syntax. If not, then the "intransitive" variant results, and the verb is understood as meaning "eat food"; but if the restricted variable is projected to a GF in syntax, the transitive variant results, and the verb phrase has a meaning which is appropriate, or inappropriate, depending upon the degree to which the entity denoted by the object can be considered to be food.

Our position is that the element "c" is simply a restricted variable ranging over circumstances. As such, it may or may not be projected in syntax. When it is not, the monadic (or "intransitive") variant results. Although we do not fully understand the principles according to which restricted variables are realized overtly, we assume that this matter is governed by completely general principles, of the same category as those involved in "semantic selection" and corresponding "canonical structural realization", as formulated by Grimshaw (1979), for example. Be this as it may, the variable "c"—as is typical for argument variables in LCS—may be overtly realized as a noun phrase. And this, given the "cyclic" character of theta-commitments, will assume the external (i.e., subject) function—e.g., *The heat broke the pot.*, *The dancing broke the pot.*, *John broke the pot.*, and so on. Where the NP which realizes the variable denotes, in and of itself, a circumstance (e.g., *the heat*, *the dancing*), the interpretation is straightforward; the mere existence of the circumstance leads to (or "causes") the event. Where the NP does not, strictly speaking, denote a circumstance (e.g., as *John* does not), the causal circumstance is taken to be some action or process on the part of the entity denoted by the NP (e.g., John's action(s), John's doing something, or the like). This is what is intended by the notation "*x* do something". We are not sure what status this latter expression should have in the theory of LCS representations; in the context of our own investigations, at least, LCS theory is at best incipient (but see Jackendoff (1983)), and it would be premature to take a stand on the precise representation of so-called "volitional agents" of transitive processual predicators. For the moment, we will simply assume that the restricted variable "c" can be replaced by the expression "*x* do something", the *x*-variable being lexically uncommitted and therefore external.

While we are satisfied that the foregoing account of the theta-commitment properties of processual verbs is correct in spirit, we cannot, as yet, honestly claim that we can support the analysis with evidence of the sort which should be required of any serious proposal in the theory of grammar. We have, for example, presented no direct evidence in favor of LCS representations containing the circumstance variable "c". Our "evidence" has been indirect—the *c*-variable is simply a necessary part of our account for lexical theta-commitment for processual verbs. But if the LCS of *break*, as in *The pot broke.* is in fact complex in the manner we have claimed—i.e., if it consists in a "central subevent" (a change involving separation in material integrity) embedded in a matrix event of causation (a circumstance leading to, or resulting in the central subevent)—then it is reasonable to expect evidence for this complex

structure to emerge in some way.

Although the sentences involved are marginal for many speakers, we believe that there is evidence in favor of a complex LCS representation of monadic processual verbs, in the interpretation of adverbs such as *easily* appearing in construction with them. Consider for example, the following:

(22) The pot broke easily.

For many speakers of English, including the present authors, this sentence is well-formed on an interpretation according to which no "agent" (in the usual meaning of this term) is involved in the event depicted. To be more exact, no "volitional agent" is involved. On this interpretation, the adverb *easily*, it seems to us, is "modifying" the *circumstance* which leads to the separation in the pot's material integrity, not the pot itself or the manner of breaking. Thus, this sentence—according to our understanding of it, at least—means something to the effect that *not much had to happen for the pot to break*. And if this is the correct interpretation, then the complex (i.e., "subevent within event") structure is undeniable. The alleged interpretation could not be accounted for otherwise.

In concluding this essay, we would like to give a brief resume of the fundamental point of view we have adopted. Our position is that in the unmarked case the behavior of linguistic elements follows automatically from the nature of those elements and the manner in which they interact. The present investigation is a part of a long term study of the principles inherent in the lexicon and the projection of lexical items onto syntactic structures. We have considered here just a tiny fraction of the domain, to wit, the projection of arguments from verbs belonging to the so-called ergative class in English. We believe that the behavior of these verbs, specifically the theta-commitment properties which they exhibit, can be understood in terms of a conception of their lexical entries which recognizes at least two components: (1) the LCS, i.e. the representation of the meaning of a verb and (2) the LS, i.e. the projection from the lexical item of a syntactic structure. The structure of the LS representation embodies two aspects of the lexical projection. One is the *categorical projection*, i.e. the projection of the category V to a phrasal node VP. The other is the *organization of the arguments of the verbs*. The arguments are presented by the variables in the LCS representation. The organization of the arguments consists in their commitment (or non-commitment) to grammatical functions embodied in the LS. Our claim is that the organization of the arguments is simply an impoverished representation of the asymmetry inherent in the LCS representation.

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**Studies in Generative Approaches to Aspect**

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### Preface

The papers in this volume are based on talks presented in the Lexicon Seminar at MIT in the fall of 1987. These papers explore a range of approaches to aspect and examine its place in generative grammar. Aspect, by which we mean the internal temporal structure of events, is a fundamental feature of natural language, but it has received little attention in many current theories of generative grammar. This is unfortunate, because aspect is a meeting ground of syntax and semantics, and therefore a fertile area for study.

The papers fall into two general categories. The first group places its main emphasis on lexical semantics; the second on syntax. The first three papers focus on issues surrounding the representation of meaning. Tenny proposes that the mapping between thematic roles and syntactic structures is mediated by the aspectual properties of thematic roles, and particular aspectual properties are associated with particular syntactic positions. Pustejovsky discusses a calculus for the event structures of verbs, which permits a fine-grained and restrictive characterization of the lexical semantics of verbs. In Pustejovsky's calculus of aspect thematic roles are derivative notions. Hale and Keyser do not specifically mention aspect in their paper, but they are concerned with elucidating the internal structure of the events expressed by verbs that participate in ergative and middle constructions. They represent these events as complex structures, organized in such a way that certain syntax-semantics linkings may be predicted. All three papers include proposals for constraints on or principles governing the internal structure of events as expressed by natural language.

The second group of papers approaches aspect from a more syntactic perspective. Cheng discusses the "ba-" construction in Mandarin and shows that this syntactically interesting construction correlates with certain aspectual properties. Roeper discusses the changes in aspect that accompany nominalization of English verbal compounds, and proposes that these changes arise from syntactic constraints on their derivation. Manfredi looks at verb movement in *Abę*, and proposes an account of that phenomenon which entails a syntactic projection of aspect. Each of these three papers focuses on some correspondence between aspect and syntax.

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